Climate Change in Cazenovia and Neighboring Communities

February 2026

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Lakeland Park, Cazenovia

INTRODUCTION

This 2025 annual report documents long-term climate indicators in Cazenovia and neighboring communities. Line graphs and summaries on the following pages show trends for climate features including precipitation, snowfall, air temperature, lake water temperature, ice duration on Cazenovia Lake, drought, and extreme storm events. The descriptive narrative within each chapter explains why continued evaluation of these indicators is significant and how our local conditions compare to statewide and national trends.

Project Objectives

Documentation of trends for climate indicators is important because we need to see where we came from in order to set community goals for the future. By taking a look back and documenting historical trends, our communities will be better positioned to define a path as we move forward.

We live in a beautiful area and haven't experienced the dramatic floods, hurricanes and fires that have occurred in other parts of the country. So, should we be concerned about climate change? Absolutely, yes. The effects of climate change are occurring across the United States and throughout the world and it should be a top priority for all of us. According to the NYSDEC, the average temperature across the United States has risen at an average rate of 0.16°F per decade since the beginning of the 20th century, increasing at an even faster rate of 0.31 to 0.54°F per decade since the 1970s. Some parts of the United States, including the Northeast region, have experienced greater rates of warming than the rest of the country.

On a positive note, the Town and Village of Cazenovia and the Town of Nelson are certified as Climate Smart Communities. This means that our municipal officials are converting to clean, renewable energy sources while implementing climate-smart land use policies. These projects make our communities more resilient to the effects of climate change.

Collaboration and the Value of Partnerships

Dealing with a changing climate requires a responsible transition to clean energy and for families, governments, academic institutions, and businesses to take action. We can all contribute in one form or another to implement plans that address mitigation and adaptation, reduce vulnerabilities, and enhance resilience. By working together, we can focus on climate solutions so that anticipated climate changes can be better managed in a less costly and more efficient way.

Bottom line … we need fewer stories about inevitable devastation and more stories about the many creative changes at the local level that will lead to a brighter future.

The Power of Positive Thinking

Cazenovia's success with the implementation of programs to address flooding, erosion and other weather-related issues will depend on our continued focus on proactive management and policy initiatives throughout the town and village. Monitoring of long-term climate trends in this report can help local community leaders define priority goals and can justify adaptation measures in the coming years. Hopefully it will also improve our understanding of climate issues and inspire change.

Climate change is a difficult message to convey but it's important that we remain proactive. We can't simply expect that the environment will get better on its own. We all have a responsibility to implement changes in our daily lives to make our world safer for our children and future generations.

Optimism can be a powerful call to action. For this reason, a chapter is included at the end of this climate report called, "On the Bright Side: A Local Response to Climate Change," found on page 25. It provides a brief summary of creative actions taken by local governments and organizations to address climate change.

Please let me know if you have edits or additions for this report and if you would like to help with data collection and analysis for future reports. Thank you.

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United Climate Action Network (UCAN)
February 2026

ACKNOWLEDGEMENTS

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Thanks also go to Dr. Walid Shayya, professor, Natural Resources Engineering, School of Agriculture, Business, and Technology at SUNY Morrisville, for providing precipitation information from the SUNY Morrisville weather station.

The cover photograph was provided by Chelsea Chapman Photography.

Many thanks to educator, Wendy Everard and three members of the Cazenovia High School Environmental Club: Janna Herringshaw, Brooks Ruddy, and Brooklyn Benson. They collected updates from several community leaders that are found in the "On the Bright Side" chapter.

And finally, special appreciation goes to my son Jonathan Saltman who helped with the Excel graphs and to my husband Roger Saltman who provided technical assistance with computer glitches while offering encouragement and support.

AUTHOR'S NOTE

- 2025 has been a dramatic year for weather conditions throughout Central New York. In addition to common terms such as lake-effect snow, meteorologists introduced us to relatively new terms such as arctic blast, polar vortex, bomb cyclone, and atmospheric river. Definitions for these and additional terms are provided on page 30.

- This report doesn't include the causes of climate change, projections for the future, or recommendations on adaptation and mitigation strategies. This type of information is presented on UCAN's website, Cazenovia's Climate Action Plan, and NYSERDA's Climate Impacts Assessment. Refer to the "Helpful Resources" chapter found on page 34.

- An equipment malfunction that occurred at Cazenovia's weather station in 2024 and 2025 prevented us from using local precipitation data. Therefore, precipitation trends from SUNY Morrisville were used for this report. Morrisville was selected because of similar elevation and weather conditions compared to Cazenovia.

KEY FINDINGS: CAZENOVIA and NEIGHBORING COMMUNITIES

- Four years of temperature data (2022, 2023, 2024 and 2025) is currently available from the Cazenovia weather station. The trend shows a very slight increase in temperature during this time period.
- The USDA Plant Hardiness Zone Map for Cazenovia changed from 5a to 5b in 2023, reflecting a temperature change of +4°F. The zone map found on page 11 is based on the average annual extreme minimum winter temperature.
- Average air temperatures for Madison County between 1899 and 2025 show a more dramatic display of temperature fluctuations (especially since 1983) and an increase in temperature over time.
- The precipitation mechanism at the Cazenovia weather station malfunctioned in late 2024 and 2025 so information was collected from SUNY Morrisville. Annual precipitation data from 2012 to 2025 show an increasing trend. Precipitation levels in Madison County that were collected from 1899 to 2025 show an increasing trend since the 1960s.
- Surface and bottom water temperatures in Cazenovia Lake have been recorded since 1988 through the Citizens Statewide Lake Assessment Program. The trend shows a gradual increase in surface temperatures from 1988 to the mid-2000s, followed by minimal change. The bottom water temperatures show a decreasing trend from the mid-2000 to 2024.
- The duration of ice on Cazenovia Lake is decreasing. In addition to local record-keeping, ice coverage on Cazenovia Lake has been collected by the Cornell Biological Field Station. The 2023-2024 winter ice cover was the lowest on record. Cornell researchers report a decreasing trend in ice duration by four weeks from 1843 to 2024 and the change is accelerating. The Cornell data set for Cazenovia Lake is valuable because it is one of only 78 lakes worldwide with 100+ years of ice cover data.
- The Madison County Mitigation Plan warns of the increased probability of climate-related hazard events in Cazenovia. The report also states that the Town's overall vulnerability for ice storms, severe thunderstorms, wind, winter storms or hail events is high and that climate change is expected to cause an increase in weather volatility and temperature extremes.
- Seasonal snowfall totals in Central New York have been recorded from 2009 to 2025 but show no definitive long-term trend. Cazenovia experiencing heavier and more frequent lake-effect snowfall events even while the total annual snowfall is expected to decline.
- Abnormally dry conditions remained during much of this past summer but improved by the end of the year. Rainfall in October and November helped but the area still faced a precipitation deficit, resulting in low stream flows and groundwater levels.

THE BIG PICTURE: CLIMATE CHANGE IN NEW YORK STATE

Information on the following pages is from the "New York State Climate Impacts Assessment," a report that was published in February 2024 by the New York State Energy Research and Development Authority (NYSERDA.) The Assessment provides a science-based investigation of what to expect from climate change in New York State in the coming years. NYSERDA worked with leading academic institutions, science organizations, and community leaders to research and present the findings. The report provides an opportunity for decision-makers at all levels—from individual residents, businesses, and landowners to municipal and state government—to better understand the impacts of climate change and make informed decisions about how to prepare for them. A condensed list of key findings is found below. The full report is located here.

New York State's lakes and rivers have experienced increased water temperature, fluctuating water levels, and decreased ice cover, and these changes are expected to intensify in a warmer, wetter future. Lakes are projected to experience more severe summer heat waves and decreased winter ice cover as temperatures rise in the coming decades. The Great Lakes could experience greater year-to-year variability in water levels, driven by periods of drought and extreme precipitation. Flood intensity and damage are expected to increase with extreme rainfall and broader changes in streamflow.

Climate change is affecting New York State now and is projected to continue to change and affect every region of the state.
The NYS DEC reports that the annual statewide average temperature in New York has warmed 3°F (0.6°F per decade) since 1970. The state's average temperatures are projected to rise by as much as another 3°F by 2080 with the greatest warming occurring in the northern parts of the state. Rising annual temperatures are already having widespread impacts on New York's communities and ecosystems and impacts are expected to increase. New York State's changing climate may no longer be able to support the types of plants, insects, and wildlife living in New York, particularly those in high-elevation regions like the Catskills and Adirondacks. As New York's temperatures increase, these species will extend their range north, impacting the industries and economies that depend on them such as fishing, hunting, and tourism.

Even under a lower-emissions scenario, climate change impacts across New York State will be substantial. Heat-trapping greenhouse gases that were emitted in the past have already changed the climate in ways that are causing impacts now. It is important to recognize that adapting to current and future climate change impacts is necessary to safeguard New York State.

The frequency and intensity of extreme events such as heavy rainstorms, seasonal droughts, and heat waves are projected to increase and will have serious consequences for human health, communities, infrastructure, and ecosystems. Adaptation and design

strategies that consider long-term climate projections with a focus on extreme events will better address future climate risks.

New York State has experienced a large increase in the number and severity of extreme precipitation events. Recent flash flood events have severely affected the state, including: 2003 flooding in Binghamton**;** Hurricane Irene and Tropical Storm Lee in 2011, a non-tropical system in August 2014 that broke precipitation records in Islip**;** Hurricane Ida in New York City in September 2021; and July 2023 flash flooding in the mid-Hudson and Finger Lakes regions. These floods were associated with extreme precipitation.

Ice cover records on multiple lakes throughout New York State show decreases in the amount of time with ice coverage. In addition to Cazenovia Lake, Mirror Lake, Lower Saint Regis Lake, Otsego Lake, and Lake George have all seen ice freezing later and/or thawing earlier since the late 19th or early 20th century. Lake Champlain has had multiple ice-free winters in recent decades. Lake Erie, which used to freeze almost completely in most years, has had much-lower-than-normal ice cover since 1998.

Climate change will introduce new risks and opportunities into nearly every dimension of New York State's economy. Natural resource-based sectors, including forestry and fisheries, will need to contend with loss of some species and in-migration of new species adapted to warmer temperatures. The loss of snow and ice cover will profoundly affect traditional winter recreational activities and the local economies that depend on them, though warmer temperatures could increase outdoor tourism during longer spring and fall seasons. For agriculture, variable and extreme weather conditions could lead to more crop damage and livestock stress; however, warmer temperatures and longer growing seasons could increase some yields and offer new crop opportunities. The state's large finance, insurance, and real estate sectors are exposed to national and global climate change risks, including weather-related property damage claims and economic disruptions, yet there are also opportunities for businesses in New York State that incorporate climate risk into decision-making.

Climate change poses escalating health and safety risks for the people of New York State, including risks to mental health. Heat waves, floods and property loss or displacement, and extreme storms are known to have detrimental effects on both physical and mental health, especially for children, older adults, and those with pre-existing health concerns or limited access to health care.

Infrastructure provides vital services across New York State but is vulnerable to climate-related impacts. Buildings, energy, transportation, and water infrastructure can be affected by climate hazards such as heavy rain and flooding, coastal storm surge, and extreme heat. Additionally, much of the state's infrastructure, including bridges, culverts, and water infrastructure, is aging and in need of repair, which increases its vulnerability to climate change. Designing new infrastructure and upgrading existing infrastructure to

incorporate climate projections can offer the dual benefits of building climate resilience for the future while providing immediate improvements in function.

Every community and every sector in New York State have the potential to contribute and to innovate climate solutions that reduce vulnerabilities, foster resilience, and enhance equity. Climate solutions will need to consider those who will be disproportionately burdened by economic disruption, such as small businesses; fiscally constrained, small, and rural municipalities and cultural institutions; frontline workers; and essential public servants including police, firefighters, and teachers. Local and state governments, schools and universities, nonprofits, museums and cultural institutions, and the private sector all play vital roles in raising climate change awareness, supporting educational and workforce training efforts, and identifying opportunities for innovation that will be necessary to prepare New York State for a changing climate. Centering equity in adaptation and resilience actions and aligning these actions with greenhouse gas reduction strategies is crucial for a successful and sustainable climate change response.

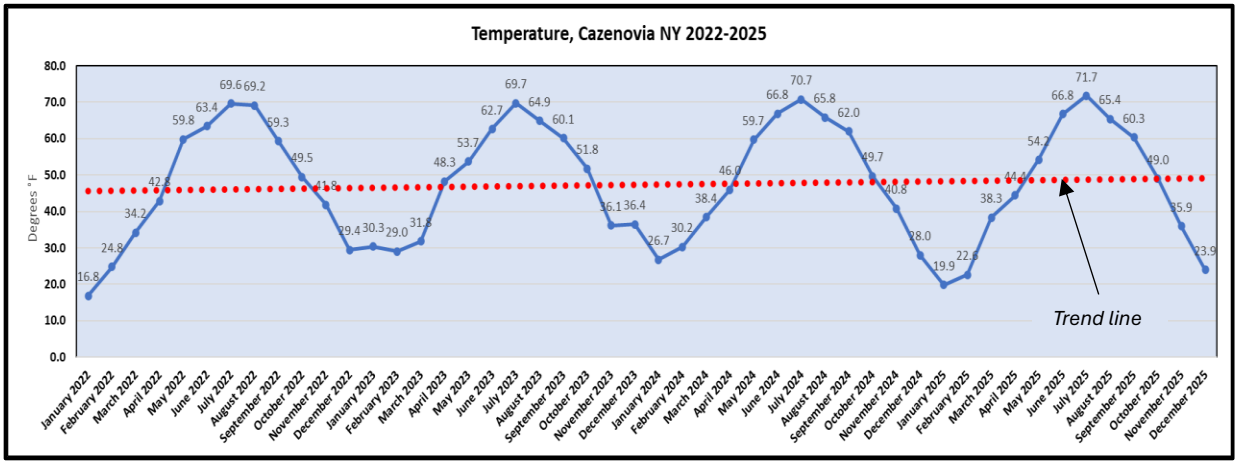
Personal reflections: Taking Action at the Local Level

Community leaders in Cazenovia and neighboring municipalities continue to implement programs to protect our communities from flooding, erosion and other climate-related issues. Local groups such as UCAN are also working with the public to define goals that address adaptation measures as we move forward. A list of several important reports is available on page 34 that present a greater understanding of climate issues and potential for change. The environment won't improve without our active involvement. We have a responsibility to implement changes in our daily lives and to make our world safer for future generations. Be sure to check the chapter called, "On the Bright Side, a Local Response to Climate Change" found on page 25.

DATA AND TRENDS

AIR TEMPERATURE

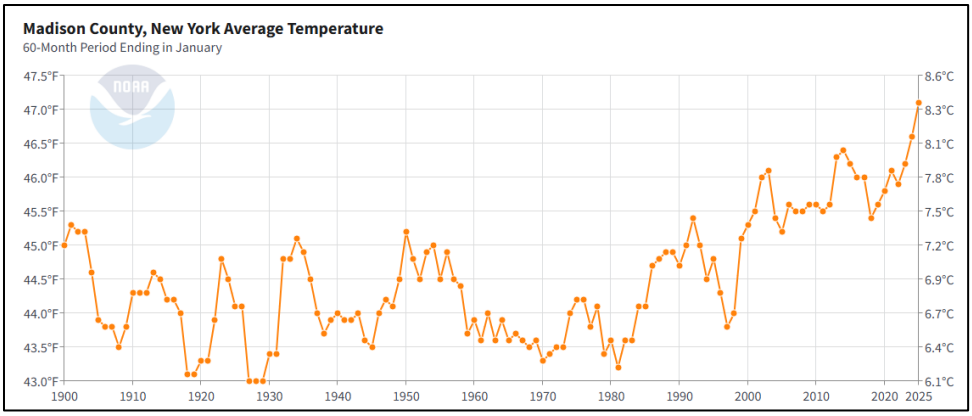
The graph below shows average monthly temperature readings from the Cazenovia weather station located at the town highway garage. Four years of data (2022, 2023, 2024 and 2025) is currently available. The red trend line shows a slight increase in temperature during this time period.



Source

Average air temperatures for Madison County collected from 1899 to 2025 are displayed in the following graph. The information shows a more dramatic display of temperature fluctuations (especially since 1983) and an increase in temperature over time.

Madison County New York Air Temperature, 1899 to January 2025



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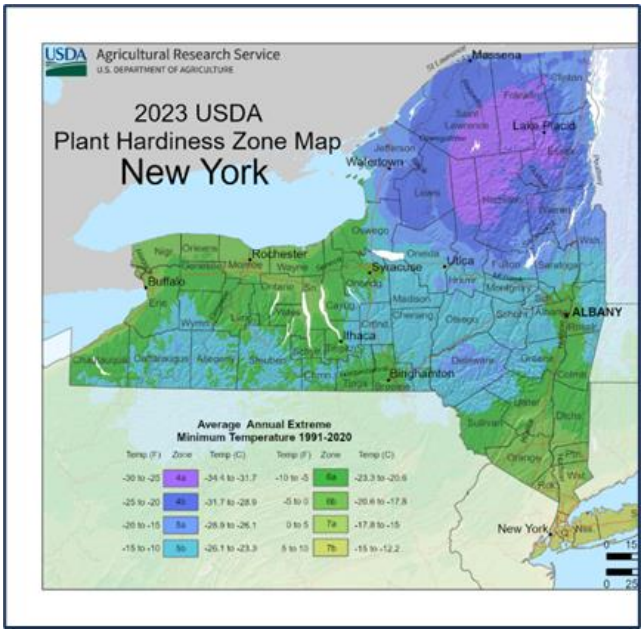
New York State air temperature trends

Statewide temperature changes are documented by the NYSDEC. Researchers report that New York winters have warmed three times faster than summers. Warmer winter temperatures, with fewer days below freezing, are bringing more winter precipitation to New York as rain, less snow, reduced snow cover, and earlier spring snowmelt. Less snowfall and earlier snowmelt are already having and will continue to have increasing economic impacts on New York's winter recreation industry. Average temperatures in the state as a whole have increased by approximately 2.6°F from 1901 to 2022 at an average rate of approximately 0.21°F per decade. (source)

As readers may have observed, warmer winters here in Cazenovia and throughout the state are also affecting the winter-spring season transition, impacting the timing of blooming for trees and flowers that migrating and hibernating wildlife depend on for food.

Periods of extreme high temperature during the summer months can have additional far-reaching impacts. The NYSDEC reports that the economic effect of a warming climate can be felt through the increasing cost of food and increased energy demand for cooling when people use air conditioners. This produces more greenhouse gas emissions and increases the effects of climate change. Extended periods of high temperature also affect agricultural production by reducing crop yields, increasing stress levels among farm animals, and increasing the need for irrigation.



The USDA Plant Hardiness Zone Map

The Plant Hardiness Zone Map is the standard by which gardeners and farmers can determine the planting time when perennial plants are most likely to thrive at a given location. The United States Department of Agriculture (USDA) changed the Zone Map in 2023 to account for the warming temperatures throughout the nation. According to the 2023 Hardiness Zone Map, Cazenovia is in Zone 5b (-15°F to -10°F). This is a change from the 2012 Hardiness Zone Map which had Cazenovia in Zone 5a (-20°F to -15°F). The change was based on a temperature change of +4°F in CNY.

Why is air temperature important to monitor?

Air temperatures can impact human and animal health as well as agricultural productivity. Increasing temperatures also influence the amount of precipitation and frequency of storm events. Warmer average air temperatures will result in warmer water and oxygen depletion in Cazenovia Lake. This can create stress for fish, plants and other aquatic organisms. Increased water temperatures in the lake may also contribute to the frequency and extent of toxic algal blooms which will, in turn, affect the local economy when access to the lake is restricted.

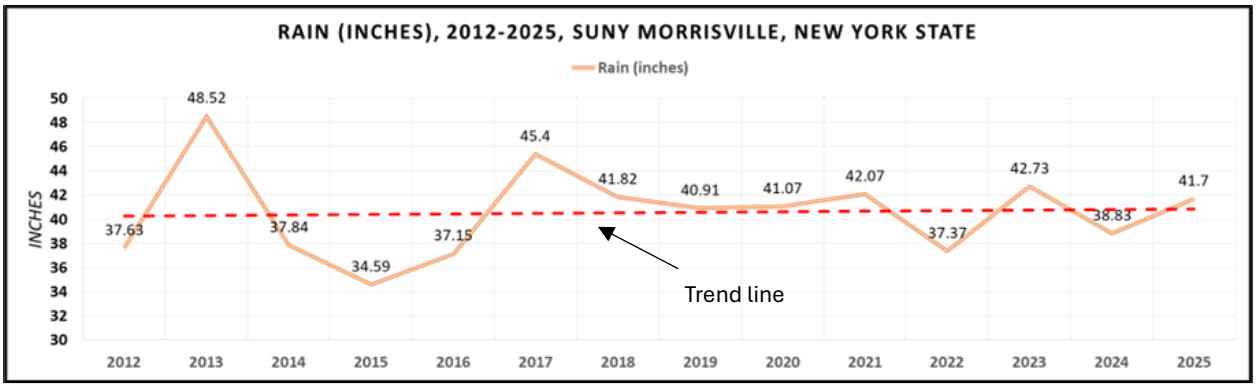
Climate impacts can be intensified when multiple events occur close together in time or space. For example, a heat wave that occurs right after a storm that causes a power outage could have more serious impacts than either event on its own. Resilience efforts on the part of local municipalities would benefit from planning and design strategies that consider the impacts of compounding climate events.

How does temperature affect populations of invasive species?

NYSERDA and other New York State agencies report that a warming climate is projected to accelerate the introduction, spread, and negative impacts of invasive species. Recent climate trends and rising atmospheric carbon dioxide concentrations have been identified as the causes of new and expanding infestations. A reduced number of freezing days per year allows new invasives such as the emerald ash borer and the hemlock woolly adelgid to survive during the winter months and invasive populations tend to grow faster and larger during warmer temperatures. Changes in temperature extremes and precipitation rates can also expand the geographic range, increase the population, and lengthen the activity period for ticks, mosquitoes, and other insects that spread illnesses such as Lyme disease and West Nile Virus.

PRECIPITATION

The graph on the following page shows annual precipitation in Morrisville from 2012 to 2025. The red line displays an increasing trend in rainfall during this time period. Data from the SUNY Morrisville weather station was used to generate this graph because of a problem with the precipitation collection mechanism at the Cazenovia weather station. This problem has been fixed, thanks to help from the Town of Cazenovia personnel.

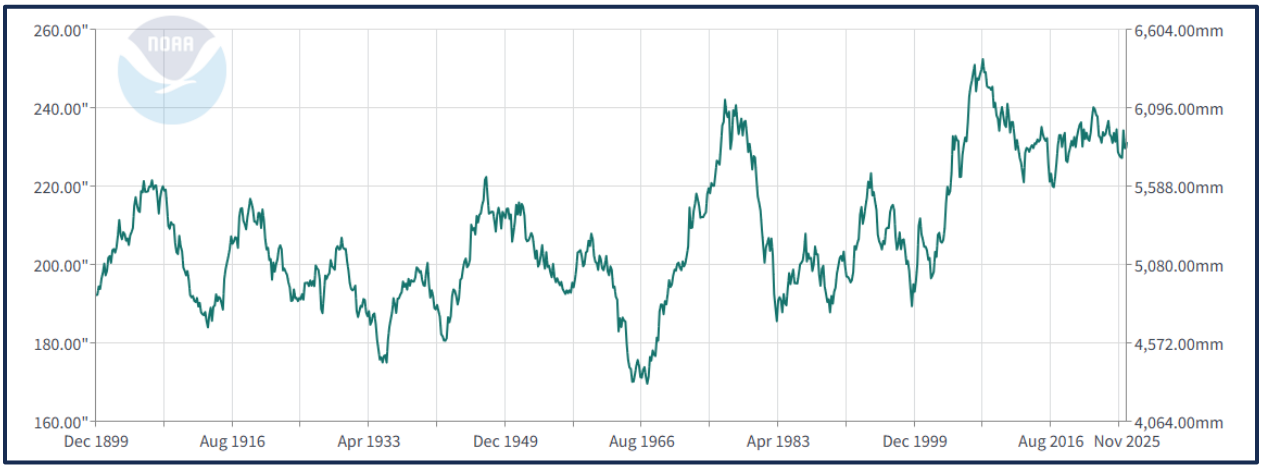


Source

How has precipitation changed in Madison County?

The following graph displays long-term precipitation levels in Madison County from December 1899 to November 2025. The graph shows an increasing trend in precipitation since the 1960s.

Madison County New York Precipitation from 1899 to 2025



Source

How have New York State precipitation levels changed?

According to the New York Climate Impacts Assessment, annual precipitation is increasing statewide. From 1901 to 2022, total annual precipitation in New York State increased by between 10% and 20%. Across New York State, total precipitation is projected to keep increasing by about 6% to 17% by the end of the century. The largest increases are projected for New York City, the Catskills, and the lower Hudson River Valley.

Significant environmental threats to the Cazenovia area include flooding and strong winds. Heavy rain can cause homes and businesses to flood and flooded roads can make travel

and evacuations hazardous. Runoff from heavy rain storms can decrease water quality when sediment and pollutants flow into Cazenovia Lake and its tributaries.

Flooding, strong winds and heavy rainfall can close schools and businesses, damage property, increase public exposures to health risks, and disrupt critical government services and operations. Heavy rainfall can also overwhelm our local wastewater treatment plant and fallen trees from strong winds can damage utility lines, leading to power outages.

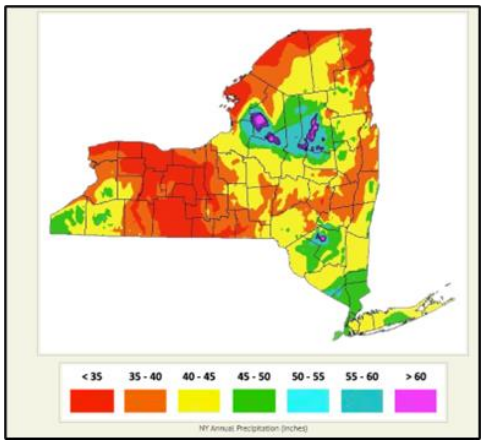
Why is it important to monitor precipitation?

Municipal representatives rely on rainfall data to assist with infrastructure planning for flood control, and farmers monitor rain and soil moisture in order to predict when to plant and harvest agricultural crops. Precipitation measurements also generate storm warnings for the Cazenovia vicinity and can help communities decide if safety precautions should be implemented.

Why are we experiencing stronger rain events?

The NYSDEC reports that climate change can influence the intensity, frequency, and even type of precipitation that a region experiences. Average temperatures of oceans are rising as more heat is absorbed from the warming atmosphere. This, in turn, increases the amount of water that evaporates into the air. As the moisture-saturated air moves over land, it can produce more intense precipitation and high humidity.

Total annual precipitation has increased over land areas both globally (0.10 inches per decade) and in the U.S. (0.20 inches per decade) during the last century. The average precipitation rate is just above 40 inches per year.

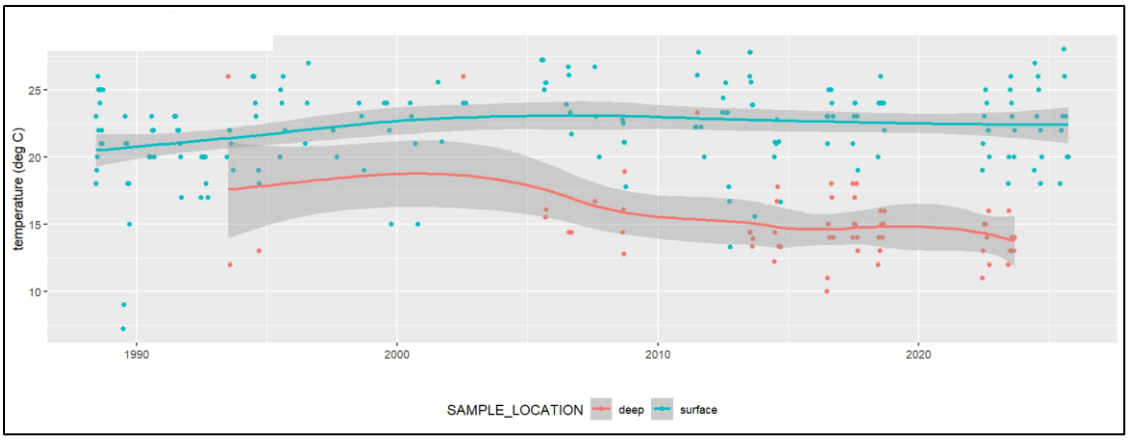


Source

SUMMER WATER TEMPERATURE, CAZENOVIA LAKE

Surface (epilimnion) and bottom water (hypolimnion) temperatures in Cazenovia Lake have been recorded since 1988 through the Citizens Statewide Lake Assessment Program (CSLAP.) Temperature readings are collected several times during the summer months by local CSLAP volunteers. The graph on the following page was developed by the NYS Department of Environmental Conservation (NYSDEC) and the NYS Federation of Lake Associations. The graph shows a gradual increase in surface temperatures from 1988 to the mid-2000s, followed by minimal change. The bottom water temperatures show a definitive decreasing trend from the mid-2000 to 2024.

Summer Water Temperature in Cazenovia Lake, 1988 - 2025



Source: correspondence with NYSDEC

What are the statewide trends for lake water temperature?

According to the NYSDEC, lakes throughout New York State are experiencing increased water temperatures and decreased duration of winter ice cover. As the air temperature increases in the coming years, lakes will experience higher water temperatures and decreased winter ice cover.

Why is Cazenovia Lake water temperature important to monitor?

Lake water temperature is important to monitor because it affects the amount of oxygen in the water, the length of the recreation season, and the composition, range, and distribution of fish, plants, and other aquatic life. When the temperature increases, fish and other organisms that are adapted to cold water will tend to migrate to cooler waters, and species adapted to warmer water will move into previously colder habitats. Warmer water temperatures can also create ideal conditions for cyanobacteria and algae to thrive, with some algal-producing harmful toxins that can cause health risks for humans and pets during water-related activities.

ICE DURATION ON CAZENOVIA LAKE

Ice duration on Cazenovia Lake was selected as an indicator of climate change in this report because of the close relationship between ice cover and air temperature. The duration of ice on Cazenovia Lake was the subject of a research report written in 2006 by Pelle Rudstam titled, "Ice Cover in Central New York and its effects on Phytoplankton, Daphnia and Yellow Perch (Perca flavescens)." Rudstam accessed records of ice formation, melting dates, and other climate information dating back to 1839 that are currently stored at the Lorenzo State Historic Site. Additional sources of ice duration were provided by Dr.

Ken Stewart at the University of Buffalo. The diaries were originally developed by members of the Cazenovia-based Ledyard family, including Philip Hart and his father. This data set is highly valuable as it is one of only 78 lakes worldwide with 100+ years of ice cover data (Sharma et al. 2022).

For the past several years, Cazenovia resident, Dwight (Tad) Webster, has recorded ice duration on the lake. He observes the lake on a daily basis throughout the winter and records the dates of ice formation and melting using the following guidelines:

- Ice-In - This is the first date when ice forms across Cazenovia Lake from Beckwith Bay on the west side to the Notleymere dock on the east side. Notes are recorded if ice is located at both the north and south ends of the lake.
- Intermittent Thaws - When intermittent thaws occur during the winter season, relevant dates and locations are recorded such as areas that are artificially kept open by geese.
- Ice-Out - This refers to the date when the ice is fully melted between Beckwith Bay and the Notleymere dock and doesn't reappear during that winter season. The date when ice is melted from the north and south ends is also recorded.
- Ice In/Ice Out - This is the total number of days from when ice first formed on the lake to when it completely melted. It does not include the number of days that the ice melted within this period.
- Ice Duration - This is the actual number of days that ice remained on Cazenovia Lake. This total accounts for periods when the ice melted in the middle of the winter season.

In early December, Mr. Webster reported that "Ice (covered with snow) was noted on December 9, 2025. This is the earliest "ice in" date I've recorded." The dates of ice coverage since 2022 are recorded on the following page.

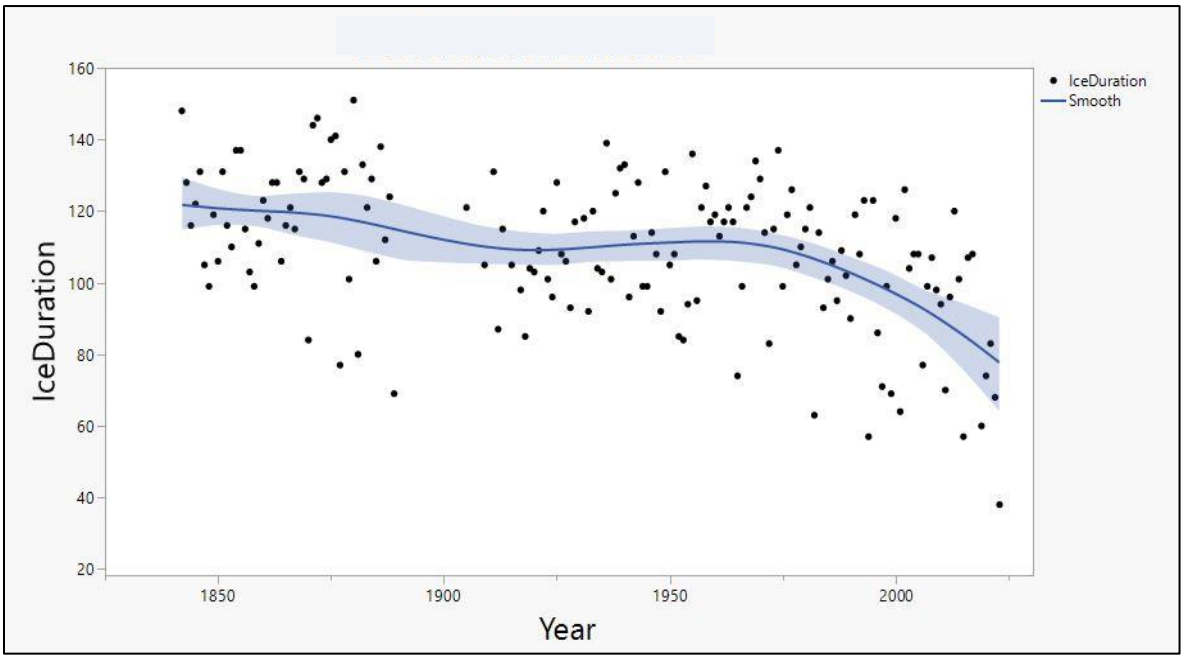
Winter Season	Number of days from when ice first completely formed on the lake to when it completely melted (including periods of ice and thaw)	Ice duration - number of days of full ice coverage on the lake (not including periods of thaw)
December 22, 2022 to April 2, 2023	101 days	82 days
January 17, 2024 to February 27, 2024	42 days	38 days

Cazenovia Lake has exhibited several freeze-thaw events in the past several years. This refers to the thawing of lake ice after it had been established. Ice formed on Cazenovia Lake on January 17, 2024 and completely melted on February 27, 2024 for an "Ice-In/Ice Out" total of 42 days. However, there were several days during that period when the ice on the lake melted. The total ice duration, therefore was 38 days. This methodology for recording ice on Cazenovia Lake will continue in the coming years in order to provide a long-term trend.

Researchers at the Cornell Biological Field Station also keep track of ice duration on Cazenovia Lake and Oneida Lake. Sapna Sharma, a professor at the University of Toronto, uses these data for further analyses. She reports that for Cazenovia Lake, 25% of years had multiple freeze-thaw events from 1838 to 1889 and 13% of years from 1904 to 1957. More recently, 60% of the years from 2000 to 2024 had multiple freeze-thaw events. Dr. Sharma states that the frequency of these events is expected to increase as the air temperature increases.

The graph on the following page and current information are from a data set on Cazenovia Lake curated by the Cornell Biological Field Station. The 2023-2024 winter had ice lasting for 38 days and is by far the lowest on record. Researchers further report that there is a decreasing trend in ice duration by four weeks from 1843 to 2024 and the change is accelerating. This trend is also found in other long-term data sets from around the globe (Sharma et al. 2021). The decrease in ice coverage causes a change in the length and duration of thermal stratification which will, in turn, impact the release of phosphorus from the bottom sediments.

Cazenovia Lake Ice Duration, 1826 to present



Source

Why is ice duration on Cazenovia Lake important to monitor?

Ice duration on Cazenovia Lake is important to monitor because of its influence on thermal stratification, fisheries, recreation, and other characteristics of the aquatic ecosystem. In the next several years, researchers predict that the number of "ice duration days" on lakes will decrease as the annual mean temperature increases. Warmer water during ice-free days is expected to alter the composition and abundance of fish, plants, and other organisms, which will then impact recreational uses of the lake and the local economy.

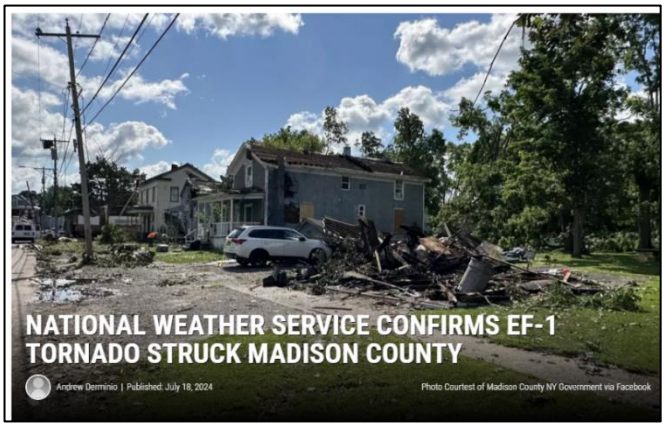
How do local conditions compare to national observations?

The Environmental Protection Agency states that "Lakes in the northern United States are freezing later and thawing earlier compared with the 1800s and early 1900s. Freeze dates have shifted later at a rate of roughly half a day to one-and-a-half days per decade. All of the lakes studied were also found to be thawing earlier in the year, with spring thaw dates growing earlier by up to 24 days since 1905." A study by Sharma and colleagues showed accelerating ice loss since year 2000 across the world for the 24 lakes with data sets longer than 100 years, including Cazenovia Lake and Otsego Lake in New York State. (*Sharma, S., Richardson, D.C., Woolway, R.I., Imrit, M.A., Bouffard, D., Blagrave, K., Daly, J., Filazzola, A., Granin, N., Korhonen, J., Magnuson, J., Marszelewski, W., Matsuzaki, S.-I.S., Perry, W., Robertson, D.M., Rudstam, L.G., Weyhenmeyer, G.A., Yao, H., 2021. Loss of ice cover, shifting phenology, and more extreme events in Northern Hemisphere lakes. JGR Biogeosciences 126, e2021JG006348)*

EXTREME WEATHER

The term “extreme weather” in Central New York refers to a variety of different conditions including winter snow and ice storms, thunder and lightning storms, strong winds, heavy precipitation, hail, nor'easters, tornadoes, drought or hurricanes. National and State environmental agencies report that storm events have become more frequent, significantly stronger, larger, and more destructive in the past several years. NYSDEC Commissioner Basil Seggos said, “The impacts of a changing climate have been prevalent in New York and beyond with increased frequency of extreme weather events that has led to damaging floods, dangerous heat, and hard-hit critical infrastructure.”

Extreme weather in Cazenovia and nearby communities Tornadoes and other severe weather disasters are rare in Madison County. Historical earthquake activity in this area is significantly below the New York State average and it is 96% smaller than the overall U.S. average.



Some parts of Madison County experienced a strong storm event in 2013 that met or exceeded the 100-year-storm and caused millions of dollars in damage. This resulted in a Federal Disaster Declaration for Madison and seven additional counties in New York State. The following year, a tornado hit the Town of Smithfield.

The National Climate Data Center reported four thunderstorm wind events in the Town of Cazenovia between 2019 and 2022. According to the Madison County Mitigation Plan, Cazenovia experienced a local microburst in 2020 that caused tree damage and boat damage on the lake. Severe thunderstorms moved through the area during the mid-afternoon of July 16, 2024. One of the storm cells moved through Canastota, producing an EF1 tornado that touched down between the Conrail railroad tracks and Barlow Street.

The Madison County Mitigation Plan warns of the increased probability of climate-related hazard events in Cazenovia. The report states that the town’s overall vulnerability for ice storms, severe thunderstorms, wind, winter storms or hail events is high and that climate change is expected to cause an increase in weather volatility and temperature extremes.

Why are we experiencing stronger storm events?

In New York State, thunderstorms can occur year-round but are frequently seen between July and August. Nor'easters can happen any time of year but they are most common between September and April. The NYS Climate Assessment states that the observed increases in air temperature, ocean temperature, and Great Lakes water temperature over the past century contribute to the development of stronger storms. Rising air temperatures intensify the global water cycle by causing increased evaporation and precipitation. The changing patterns of precipitation that result include more rain falling in heavy events, often with longer dry periods in between. Increased air temperatures also cause higher levels of oceanic evaporation which intensifies the water cycle. As a result, storm events around the globe are gradually becoming more extreme with stronger wind and higher amounts of rainfall.

Why is extreme weather important to monitor?

Current and historic records of strong storm events are important for planning, response, and mitigation of future events. Rain, wind, and snow storms often reduce opportunities for recreation and tourism and they can threaten natural resources such as agriculture, forestry, and fisheries. Climate hazards can also increase insurance rates and threaten the financial health of entire communities.

Statewide and national extreme weather events

According to NYSERDA and the NYSDEC, extreme climate events such as intense storms, droughts, and heat waves are increasing in frequency and intensity across New York State and the northeastern United States. Heavy downpours in New York State have increased over the past 50 years and this trend is projected to continue, causing an increase in localized flash flooding. As we have seen in California and other western states, extended periods of dry weather increase the threat of wildfires with subsequent damage to homes, property, infrastructure, and air quality.

The NYS Climate Impacts Assessment reported that between 1851 and 2022, fifteen storms hit New York State at hurricane strength, plus many more at tropical storm strength. The state also experiences frequent nor’easters, lake-effect blizzards, and other storms. In 2011, Hurricane Irene and Tropical Storm Lee hit the east coast, resulting in damaging winds, extreme precipitation, and significant flooding in eight upstate New York counties. In 2012, Hurricane Sandy hit the east coast with heavy rains, strong winds, and record storm surge, causing catastrophic damage to the New Jersey shore, New York City, Long Island, and other coastal regions. The hurricane caused over $60 billion in damages, created widespread power outages, disrupted transportation and the region's supply chain, and physically altered New York's coastline. Increases in air temperature, ocean temperature, and Great Lakes water temperature over the past century contribute to these and other storms.

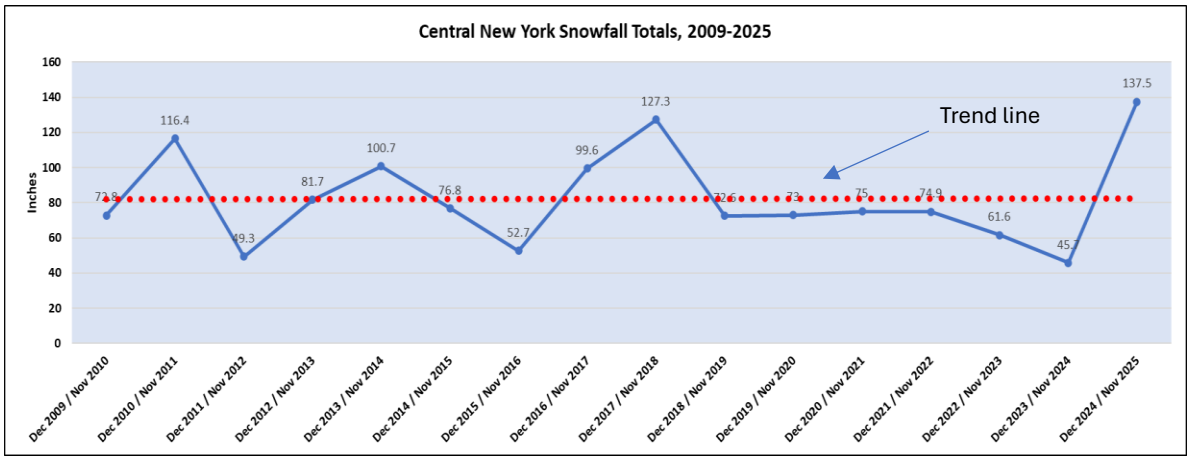
SNOWFALL

Cazenovia and neighboring communities experienced a relatively early, heavy snowstorm in December 2025 that produced nearly two feet of snow. However, just as skiers and snowboarders were dusting off their equipment, we experienced a warming period with rain that melted most of the accumulation. The rapid fluctuation in temperature is a common occurrence in areas impacted by climate change.

According to Cazenovia's Climate Action Plan, the increased water temperature and reduced duration of ice cover on Lake Ontario results in Cazenovia and other areas to the east and south of us to experience heavier and more frequent lake-effect snowfall events even while the total annual snowfall declines.

Source

CNY Weather.com recorded seasonal snowfall totals in Central New York from 2009 to 2025. Snowfall totals are found in the following graph.



Snowfall trends in Syracuse

Due to the prevailing wind direction, Cazenovia missed some of the heavy lake-effect snowfall in Syracuse in December. By the end of 2025, the snowfall total had reached 83.1” and meteorologists predicted an additional snowy forecast for the rest of the winter.

Why is snowfall important to monitor?

Due to increasing annual temperatures, many regions throughout New York State are seeing a decrease in winter precipitation falling as snow and an increase in winter rain. The combined effect of fewer snow days, decreased snow depth, and earlier snowmelt will continue to impact natural resources and local industries such as ski resorts. Shallower snow cover also influences wildlife populations, disrupts predator/prey relationships, and increases the ground freeze/thaw conditions that determine vegetative growth.

What are the statewide and national trends with snow conditions?

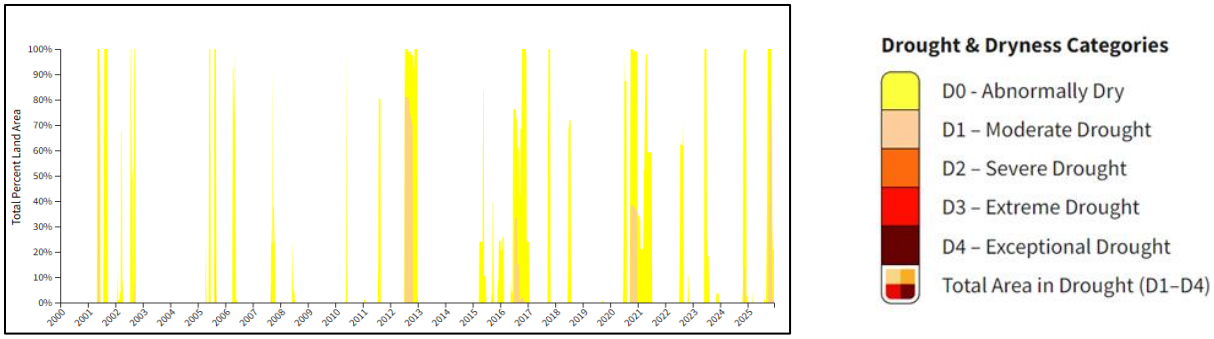
NYSDEC climate scientists predict that increased winter precipitation will continue to fall as rain rather than snow. The EPA reports that total snowfall has decreased in many parts of the country since widespread observations became available in 1930. Of all the sampling sites across the nation, the average change is a decrease of 0.19 percent per year. More than 80 percent of the weather stations across the contiguous 48 states have experienced a decrease in the proportion of precipitation falling as snow. Snowfall trends, however, vary by region. A few areas such as the Great Lakes region have seen modest increases and currently receive more snow per year than in the past.

DROUGHT

Drought conditions remained during much of this past summer but conditions improved by the end of the year. Rainfall in October and November helped but the area still faced a precipitation deficit, resulting in low stream flows and groundwater levels. Despite the rainfall, voluntary water conservation was strongly encouraged due the low precipitation rates and with stream flows and groundwater levels still below normal. To prevent worsening conditions, Madison County residents were encouraged to water lawns only when necessary, fix leaky faucets, hoses, and pipes, wash only full loads of laundry and dishes, take shorter showers, and use a broom, not a hose, to clean their driveways.

Drought conditions for Madison County from 2001 to 2025, compiled by NOAA, are presented on the following page. Most of the recent drought conditions in our region reflect periods that are “abnormally dry.”

Drought Conditions in Madison County New York, 2000-2025



Source

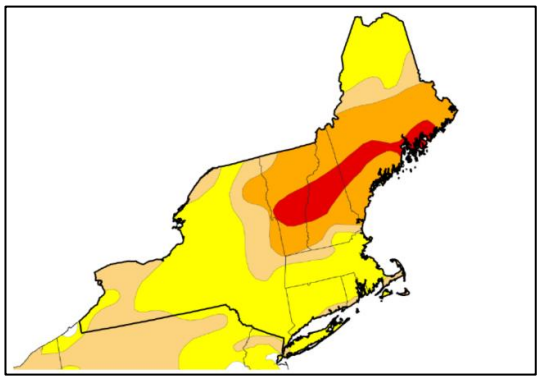
Why are drought conditions important to monitor?

Drought conditions are important to monitor because periods with minimal or no precipitation will impact the planting dates, growth rates and yield of agricultural crops, lawns and gardens, well-water availability, wildlife health, and stream flow. As we have seen in western states, extended periods of drought have contributed to extensive fire damage.

Streams, lakes, and coastal regions in New York State are fed by an average annual precipitation that ranges from 60 inches in the Catskills to 28 inches in the Lake Champlain Valley. However, normal fluctuations in regional weather patterns can lead to periods of dry weather. NYSERDA predicts that these weather patterns in the future will result in more rain falling in heavy storm events, often with longer dry periods in between.

How do local conditions compare to statewide and national trends?

According to the National Integrated Drought Information System (NIDIS) New York State experiences drought, on average, every two to three years. The last severe droughts in New York State occurred in the mid-1960s and again in the early and mid-1980s.



source

New York State's most severe drought recorded to-date occurred in the 1960s and lasted for multiple years. Overall, from 1895 to 2022, the state has become slightly wetter but has continued to experience short-term droughts, especially in the summer.

Drought conditions across the nation have varied over time. The 1930s and 1950s saw the most widespread droughts, while the last 50 years have generally been wetter than average. The eastern United States (in particular the Midwest and Northeast) have experienced wetter conditions. In terms of scale and duration, the droughts of the 1930s Dust Bowl era remain the most extreme.

ON THE BRIGHT SIDE: A Local Response to Climate Change

The Village of Cazenovia, Mayor Kurt Wheeler

This has been a busy year for the Village of Cazenovia. We secured a grant to add two new EV charging stations at the Burton Street Park and are currently working through the logistics with National Grid for getting them installed. We are also in the process of upgrading our EV charging stations at Lakeland Park. Burton Street Park now has energy efficient heat pumps. Significant progress has been made with the Lower Dam Removal on Chittenango Creek. The Village completed Phase I of the removal and we were awarded a grant to complete Phase II of the removal process and creek restoration. This effort will eliminate environmentally damaging "backflow" events during heavy rain storms that carry pollutants, nutrients and sediment into Cazenovia Lake. And finally, the Village has applied for a grant to map and identify improvements needed in our stormwater system to support climate resilience.

The Town of Cazenovia, Supervisor Kyle Reger

The Town of Cazenovia has made meaningful progress toward environmental stewardship by adopting the Climate Smart Communities pledge, updating our 2024 Greenhouse Gas Emissions Inventory, and implementing a Comprehensive Plan that prioritizes farmland protection, clean water, and responsible land use. The Town earned Clean Energy Communities designation and used a $60,000 grant award to add an electric pickup truck to our fleet. We are also advancing Source Water Protection planning and designing major upgrades to the Water Pollution Control Facility to meet new NYSDEC standards. As part of the Town's park improvement initiative, we are planning to install an EV charging station in New Woodstock. With the recently awarded grant funding earned by the Village in collaboration with the Cazenovia Lake Association, the Mill Street dam will be removed to reduce storm-driven sediment backflow into Cazenovia Lake and improve watershed health. Together, these efforts reflect the Town's ongoing commitment to climate resiliency, renewable energy, and the long-term protection of natural resources.

The Town of Nelson, John LaGorga, Deputy Supervisor

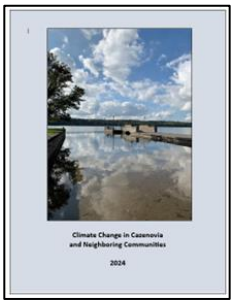
The Town of Nelson has made significant progress in adapting to a changing climate. The Town adopted the Climate Smart Communities (CSC) pledge. This means that our municipality is working on a shift to clean, renewable energy sources while implementing climate-smart land use policies and projects that make our community more resilient to climate change. We support policies that reduce our carbon footprint while encouraging climate change adaptation. Continued focus is on implementation of green infrastructure, open space preservation, energy efficiency retrofits, and the use of low and zero-carbon transportation

options. In response to the Clean Energy Communities designation, the town received a $60,000 grant. With this funding, we installed solar panels in 2025 and are nearly net-zero in electrical usage.

Nelson recently donated over 25 acres of wetlands to New York State for conservation purposes. The Nelson Swamp Unique Area Boardwalk Trail was opened in 2024 on these donated lands. The Town also supports a volunteer Watershed Management Committee. The committee has secured funding for two marquee projects. One project improved the shoreline of a small island in Tuscarora Lake, which significantly reduced erosion. The second project created a stormwater retention pond to reduce sediment reaching Tuscarora Lake. Nelson's Highway Department also participates in training to install stormwater best management practices throughout the Town's drainage systems.

The United Climate Action Network (UCAN), Phil Rose

The United Climate Action Network (UCAN) of Madison County is an active environmental advocacy organization that sponsors major environmental events as well as on-going projects. We organize two major events each year including an annual environmental gathering around Earth Day each spring that brings hundreds of local folks to participate in our information booths, activities, EV models, and more. The event is an educational and awareness building day. We also sponsor an annual Climate Leadership Summit that invites local leaders to examine the impact of the climate crisis on the local environment and economics. More than 40 people came to our invitation-only 2025 summit during which community members set goals for the coming year and created networks of people working together.



On-going work includes our advocacy and educational focus. The Advocacy Committee works on local and state legislation and policies that support a better climate including the Bigger Better Bottle Bill and the Packaging Bill. Along with the Cazenovia High School Environmental Club, we visit our representatives and lobby for quality legislation.

The UCAN steering committee offers educational events with guest speakers and films that address climate and environmental concerns. We will sponsor a movie in February that addresses the impact of climate change on our water resources.

The League of Women Voters of Cazenovia, Helen Beal, Director

The League of Women Voters is a nonpartisan, grassroots organization. Members work to protect and expand voting rights and ensure equal representation in our democracy. We promote the understanding of public policy issues through advocacy and education and organize program studies and discussions on local, statewide and national issues such as natural resource and environmental protection.

Cazenovia Area Community Development Association (CACDA), Lauren Lines, Executive Director

CACDA works to enhance economic vitality and to preserve the rural, historic character of our region. With CACDA's administrative and grant writing assistance, the Town and Village of Cazenovia and the Town of Nelson are now 2-star Clean Energy Communities and have each earned $60,000 in grants. With these funds, the Town of Nelson installed a solar array that will make them net zero for electricity and the Town of Cazenovia purchased an electric pickup truck to replace a gas pickup truck. The Village of Cazenovia is installing electric vehicle (EV) chargers at Lakeland and Burton Street Parks, heat pumps at the police and fire departments and Burton Street Park, and will purchase an electric utility cart to replace the gas cart that is used to water plants.

Cazenovia Lake Association, Dave Miller, President

The goal of the Cazenovia Lake Association is to maintain the water quality of the lake and to keep it an enjoyable, usable resource of the public. During strong rain storms or snowmelt events, the Mill Street Dam creates situations where water flows "backwards" from Chittenango Creek and into the lake. This water can be polluted with sediment, phosphorous, nitrates and other contaminants. The Lake Association is currently working with other local groups to remove the dam. Once it is removed, we will restore the creek back to its "old" system, where fish can pass from the downstream section to the upstream section, creating an overall healthy ecosystem.

The Lake Association also works with the town on education of the public related to shoreline protection and best management practices for the lake, its watershed and the entire ecosystem. This includes limitations on moving soil at the shoreline, cutting trees or brush, or putting up any structures near the shoreline. The purpose of protecting the shoreline is because this area is the last filter of stormwater runoff during storm events so it is critical in helping to keep pollutants out of the lake.

Izaak Walton League, Central New York Chapter - Young Naturalists Program – Mat Webber, President, CNY Chapter

The Izaak Walton League's CNY Chapter has, for 10 years, run a program called Young Naturalists at regional libraries. In coordination with the State University of New York's Environmental Science and Forestry (SUNY ESF) the chapter brings college students, trained in environmental programming, to area libraries to run interactive "hands-on" nature lessons that focus on local flora, fauna and environmental issues (including dedicated curriculum on watersheds and climate change impacts) for community youngsters. Currently we bring the program to nine libraries with instruction from ten ESF interns. Cazenovia Public Library, a long-time participant in the program, has an average of 10 to 15 elementary age children

attending the monthly sessions. Visit the Young Naturalists website by linking to www.cnyiwla.org and clicking on the Young Naturalist program on that homepage.

The New Woodstock Free Library, Mary Bartlett

The New Woodstock Free Library has several educational programs focused on climate change adaptation. In 2024, we welcomed Cornell Cooperative Extension which presented workshops on "Native Plants and Pollinators" and "Backyard Composting." In 2025, we hosted a workshop on "Emergency Preparedness" for extreme weather events and "Getting Ready for Winter" with programs and techniques to save energy and reduce carbon emissions. In addition, in 2025, LED lighting was installed in the Children's Room and a solar array was installed on the roof of the library that offsets the energy costs of the library.

Stone Quarry Art Park, Emily Zaengle, CEO

In 2023, Stone Quarry Art Park converted its historic Dorothy Riester House and Studio (Hilltop House) from oil and propane to electric heat pumps. The following year, we launched a three-year project to improve the health of the Art Park forest stands and restore native plants to the hedgerows. In 2025, we established a native grassland meadow where a large swath of diseased Ash trees had been removed.

Trout Unlimited, Madison Chapter – Mat Webber, Secretary

Trout Unlimited, Madison Chapter recently completed three stream improvement projects on Chittenango Creek. In 2026 members plan to do another stream improvement project between the villages of Cazenovia and Chittenango. The purpose of these projects is to improve habitat and water quality for fish and other wildlife with the important added benefit of slowing flood water, helping to protect communities downstream during high-water events. The project will be done in partnership with the NYS DEC, US Fish and Wildlife Service and National Trout Unlimited. Another project the chapter does annually is the strategic planting of trees along Chittenango Creek. Once established, these trees stabilize the stream's banks and help to prevent erosion and slow destructive flood waters.

Cazenovia High School Environmental Club, Wendy Everard

The Cazenovia High School Environmental Club members have attended meetings with political leaders such as New York State Senator Joe Griffo to urge them to support the Bigger Better Bottle Bill and support redemption centers around the area that are in danger of closing. Members of the club have run tables at Caz's Earth Day celebration in April, circulating petitions for attendees to sign and educating them about the Bottle Bill and other environmental initiatives.

Members of the club have attended UCAN's Climate Summit each year, including this past year, in order to facilitate discussion between NYS Senator Rachel May, Town Supervisor Kyle Reger, and the community about environmental issues and engage in discussion with other leaders in the community about these issues. Members of the club also ran a recyclable wrapping paper giveaway during the holiday season to offset the use of non-recyclable holiday wrap.

The club organized a silverware drive last year for the high school to offset the use of plasticware in the cafeteria. While the initiative was not successful with students, the club was able to learn a lot from their peers about why this was the case, in case future action may wish to be taken by subsequent members of the club. They ended up donating the silverware to the Faculty Room at the High School, which was received well and which helped offset the use of plasticware by the faculty.

Cazenovia Preservation Foundation (CPF), Jennifer Wong, Executive Director

The Cazenovia Preservation Foundation preserves over 3,800 acres of land in and around Cazenovia, including 3,100 acres of working agricultural land. Most of these lands are protected by perpetual conservation easements which ensure that the conservation provisions remain in place, even when the land changes hands. CPF owns 436 acres of land outright, protecting forestland, wetlands, and other open space, while providing 14 miles of year-round public access hiking trails.

CPF updated its Strategic Land Conservation Plan in 2022. The plan prioritizes projects that protect Cazenovia Lake and Chittenango Creek, areas that are identified as important habitat areas and corridors in The Nature Conservancy's Resilient and Connected Network, and farmland with prime soils and soils of statewide importance. In 2024, CPF was awarded a Forest Conservation Easements for Land Trust Grant through the Land Trust Alliance in partnership with the NYSDEC to permanently protect approximately 470-acres of forestland in the southeastern portion of Cazenovia.

WEATHER DEFINITIONS

Arctic Blast and Polar Vortex

Central New York experienced several days of frigid temperatures and snowfall during the month of December that were called **Arctic blasts**. The North Pole is covered by a massive circular upper-air weather system called the **polar vortex**. The normal pattern tends to contain the coldest weather close to the North Pole and is stronger in the winter. The jet stream normally locks it in place but occasionally a portion of the cold weather can drift south. According to AccuWeather, as the leading edge of Arctic air moves southward, local weather conditions produce areas of flurries, snow and larger snow squalls.

Bomb Cyclone

Local meteorologists also referenced bomb cyclones in 2025. The term refers to a very strong, winter storm that grows fast when air pressure drops quickly. Bomb cyclones form when cold, dry air is met with warm, wet air, causing strong winds, heavy snow or rain, and near-blizzard conditions. Bomb cyclones have officially been recorded in Central New York during the past few years but have had greater impacts in New England states.

La Nina

La Nina events are triggered by changes in Pacific Ocean temperatures that affect the pattern of tropical rainfall from Indonesia to the west coast of South America. The changes in rainfall patterns affect weather conditions throughout the world. La Nina events usually occur every three to five years but on occasion can develop over successive years. Episodes during the winter months are identified as a wave-like jet stream flow across the United States and Canada. The effects are normally strongest during the winter months and are characterized by colder and stormier than average conditions across the North, and warmer and less stormier conditions across the south.

Atmospheric River

Meteorologists reported on atmospheric rivers during recent weather reports for Central New York. The term refers to periods of heavy precipitation (rain or snow), strong winds with gusts up to 45 mph, and cold air that are fueled by the jet stream. This type of weather pattern is commonly found along the Pacific Coast but it's occasionally found in other regions of the US. During warm seasons of the year, atmospheric rivers can cause persistent rain and flooding.

Aurora Borealis

The Aurora Borealis or "Northern Lights" occurs during geomagnetic storms when charged particles impact the Earth's upper atmosphere. Usually, it is only visible in the far northern and southern polar regions. But during an extreme space weather event, the Aurora will be visible in places that usually never see it. For example, during the extreme events that occurred around Halloween of 2003, the Aurora Borealis was visible as far south as Texas. Central New York experienced several Aurora Borealis displays in 2025, especially during strong geomagnetic storms in November.

Lake-Effect Snow

Meteorologists often described snowfall in our region during the late autumn and throughout the winter months as "lake-effect." Lake-effect snow forms when cold air moves across the open waters of the Great Lakes. As the cold air passes over the relatively warm lake waters, warmth and moisture rise to the lowest portion of the atmosphere. When the air rises, clouds form and create a narrow band that can produce two to three inches or more of snow per hour. Wind direction and topography determine which areas in New York State are impacted.

Wind and weather patterns normally move in an easterly direction, so Cazenovia and nearby municipalities to the east of Lake Ontario are impacted the most by lake-effect snow. The greater the temperature contrast between the cold air and the warm water, the heavier the resulting lake-effect snowfall will be.

Snow Squall

If you travel during the winter months in Central New York, you have probably experienced the frightening impacts of a snow squall. A snow squall is a sudden, intense, short-lived burst of heavy snowfall with strong, gusty winds, causing rapid visibility drops to near-zero (whiteout conditions) and creating slick, icy roads very quickly, often linked to cold fronts and posing significant danger to travelers. These events are brief (minutes to an hour) but very dangerous.

Photo source:

Microburst

A microburst is a localized column of sinking air (downdraft) within a thunderstorm and is usually less than or equal to 2.5 miles in diameter. Microbursts can cause extensive damage at the surface, and in some instances, can be life-threatening. There are two primary types: wet microbursts and dry microbursts. Wet microbursts are accompanied by significant precipitation and are common in the Southeast during the summer months.

Weather vs Climate

Weather refers to conditions during a short period of time that can change within minutes or hours. It is frequently referenced in terms of temperature, humidity, precipitation, cloudiness, brightness, visibility, wind, and atmospheric pressure. **Climate**, on the other hand, refers to conditions over extended periods of time and is reported as the long-term average of the weather in a specific location. Weather can change in a short period of time, but climate change develops over longer periods, covering decades or centuries.

Severe Thunderstorms

According to the National Weather Service, severe thunderstorms are storms that are capable of producing hail that is an inch or larger or wind gusts over 58 mph. Hail this size can damage plants, buildings and vehicles. Wind this strong is able to break off large branches, knock over trees or cause structural damage to trees. Some severe thunderstorms can produce hail larger than softballs or winds over 100 mph. Thunderstorms can also produce tornadoes and dangerous lightning and heavy rain can cause flash flooding.

Watches and Warnings

The National Weather Service issues the following watches and warnings to alert the public about high wind events and strong storms.

- **High Wind Watch:** Sustained, strong winds are possible. Secure loose outdoor items and adjust plans as necessary so you are not caught outside.
- **High Wind Warning:** Sustained, strong winds with even stronger gusts are happening.
- **Wind Advisory:** Strong winds are occurring but are not so strong as to warrant a High Wind Warning.
- **Severe Thunderstorm Watch:** Winds 58 mph or higher and/or hail one inch or larger are possible in a severe thunderstorm.
- **Severe Thunderstorm Warning:** Severe thunderstorms are defined as storms that are capable of producing hail that is an inch or larger or with wind gusts over 58 mph. Hail this size can damage property such as plants, roofs and vehicles. Wind this strong can break off large branches, knock over trees or cause structural damage to trees. A warning is announced when a severe thunderstorm is happening or is imminent.
- **Hurricane Watch:** Winds are possible within the next 48 hours.
- **Hurricane Force Wind Warning:** Hurricane Force Wind Warnings are issued for locations along the water when one or both of the following conditions is expected to begin within 36 hours: sustained winds of 64 knots (74 mph) or greater or frequent gusts (duration of two or more hours) of 64 knots (74 mph) or greater.

“Feels Like” Temperatures

"Feels like" temperature calculates how hot or cold it feels by combining air temperature with humidity (heat index for warm weather) or wind speed (wind chill for cold weather.) Complex formulas are used that model human heat exchange and some advanced models also factor in solar radiation. Hot conditions feel hotter due to humidity slowing sweat evaporation, while cold conditions feel colder because wind speeds heat loss from the body, creating these perceived temperature shifts.

If you are longing for a positive outlook on our natural environment, check a webcast called Planet Visionaries. It presents interviews with inspiring people that are working to solve some of today's most pressing conservation issues.

A list of references used in this report is found below:

- NYSERDA's New York State Climate Impacts Assessment
- NYSDEC Observed and Projected Climate Change in NYS
- Cazenovia Climate Action Plan
- Town of Cazenovia Comprehensive Plan 2030
- NOAA National Weather Service
- NOAA National Centers for Environmental Information
- NYSDEC Climate Change Effects and Impacts
- NYSDEC Impacts of Climate Change in New York
- 2023 National Climate Assessment
- Madison County Multi-Jurisdictional Hazard Mitigation Plan