NY CoCoRaHS Newsletter

June 2024

Contents:

The June 2024 NY CoCoRaHS newsletter is brimming full of great information! This time we highlight the efforts of a northern New York observer, showcase Condition Monitoring Reports, review the solar eclipse and state's warm winter, and preview La Niña and the hurricane season.

If you'd like to provide feedback, be featured in our observer profile, or submit a photo, feel free to reach out to your county or regional coordinator or me!

Thanks for reading!

- Samantha Borisoff, NYS Coordinator

Photo by NY-TM-38

Observer Recognition

We appreciate all of our volunteers! Consistent precipitation reports, even the zeros, are essential to the CoCoRaHS network and those who use its data. As a special thank you to those observers who report nearly every day, we have created the golden, silver, and bronze raindrop awards. This newsletter is highlighting observers who reported 99% (golden raindrop), 95% (silver raindrop), and 90% (bronze raindrop) of all days from January 1 through May 31.

Golden Raindrop

NY-AB-1
NY-AB-21
NY-AB-47
NY-AL-11
NY-BM-56
NY-CB-15
NY-CB-16
NY-CB-23
NY-CB-26
NY-CL-12
NY-CM-21
NY-CQ-5
NY-CQ-9
NY-CQ-22
NY-CQ-42
NY-CR-1
NY-CR-3
NY-CY-2
NY-CY-5
NY-CY-14
NY-CY-34
NY-DL-25
NY-DL-32
NY-DL-34
NY-DT-8
NY-DT-12
NY-DT-24
NY-DT-29
NY-DT-32
NY-DT-34
NY-DT-35
NY-DT-49
NY-ER-39
NY-ER-50
NY-ER-56
NY-ER-57
NY-ER-59
NY-ER-75
NY-ER-102
NY-ER-122
NY-ER-158
NY-ER-189
NY-ER-194
NY-ER-219
NY-ES-5
NY-FK-7
NY-GN-23
NY-GN-27
NY-GR-6
NY-GR-14
NY-GR-15
NY-HM-8
NY-HM-10
NY-JF-30
NY-LV-5
NY-LV-8
NY-LW-3
NY-LW-12
NY-MD-16
NY-MD-22
NY-MG-1
NY-MG-3
NY-MG-5
NY-MR-15
NY-MR-21
NY-MR-65
NY-MR-89
NY-NG-2
NY-NG-12
NY-NG-27
NY-NG-30
NY-NG-58
NY-NS-42
NY-NS-46
NY-NS-70
NY-OD-2
NY-OD-21
NY-OD-23
NY-OD-67
NY-OD-69
NY-OG-10
NY-OG-71
NY-OG-79
NY-OR-4
NY-OR-17
NY-OR-21
NY-OR-23
NY-OS-15
NY-OS-38
NY-OT-11
NY-PT-2
NY-QN-33
NY-QN-39
NY-RC-1
NY-RL-8
NY-RN-1
NY-RN-13
NY-RN-20
NY-SC-2
NY-SC-27
NY-SF-16
NY-SF-44
NY-SF-73
NY-SF-77
NY-SF-92
NY-SF-100
NY-SF-103
NY-SF-110
NY-SF-114
NY-SF-123
NY-SF-127
NY-SF-138
NY-SF-158
NY-SL-6
NY-SL-21
NY-SN-11
NY-SR-4
NY-ST-3
NY-TG-15
NY-TG-28
NY-TG-33
NY-TM-4
NY-TM-23
NY-TM-52
NY-TM-56
NY-UL-19
NY-UL-28
NY-UL-29
NY-UL-31
NY-UL-32
NY-UL-34
NY-WC-18
NY-WC-22
NY-WN-6
NY-WR-17
NY-WR-21
NY-WY-10
NY-WY-11
NY-YT-8
NY-YT-12

Silver Raindrop

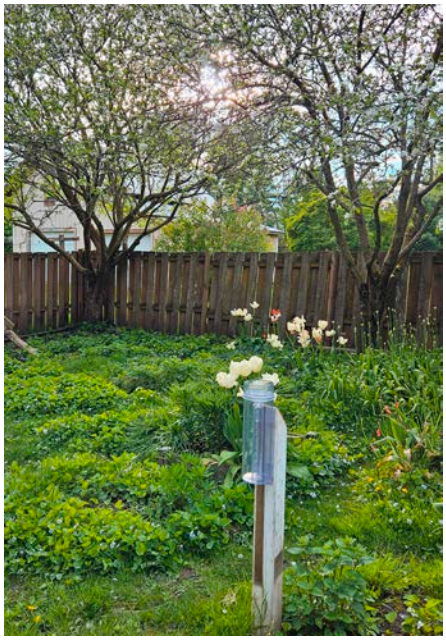
NY-AB-23
NY-AB-66
NY-AB-76
NY-BM-21
NY-BM-24
NY-BM-52
NY-CB-19
NY-CQ-35
NY-CQ-41
NY-CY-37
NY-DL-28
NY-ER-72
NY-ER-135
NY-ER-166
NY-ER-261
NY-GN-13
NY-GR-7
NY-HR-18
NY-JF-47
NY-LW-13
NY-MD-10
NY-MG-2
NY-MR-23
NY-MR-50
NY-MR-90
NY-NG-55
NY-NS-65
NY-NS-66
NY-OD-19
NY-OD-66
NY-OD-70
NY-OG-12
NY-OG-46
NY-OG-52
NY-OG-70
NY-OS-1
NY-SC-17
NY-SF-2
NY-SF-84
NY-SF-85
NY-SR-16
NY-ST-30
NY-TM-5
NY-WC-6
NY-WN-18
NY-WR-15

Bronze Raindrop

NY-AB-10
NY-AB-32
NY-AB-72
NY-BM-1
NY-BM-14
NY-CB-25
NY-CT-22
NY-CT-30
NY-CY-8
NY-CY-26
NY-CY-35
NY-CY-36
NY-CY-38
NY-DL-23
NY-DT-23
NY-ER-54
NY-ER-63
NY-ER-86
NY-ER-138
NY-ER-151
NY-ER-211
NY-ER-234
NY-ER-242
NY-ER-255
NY-ER-266
NY-ES-6
NY-FL-12
NY-GN-28
NY-HR-16
NY-HR-24
NY-MR-55
NY-MR-84
NY-NS-34
NY-NS-74
NY-OG-80
NY-OL-5
NY-ON-15
NY-ON-17
NY-OR-19
NY-OT-31
NY-OT-35
NY-PT-13
NY-RL-13
NY-RN-15
NY-SC-16
NY-SF-34
NY-SF-62
NY-SF-70
NY-SF-145
NY-SR-29
NY-SR-40
NY-SR-59
NY-ST-10
NY-ST-33
NY-ST-41
NY-ST-50
NY-TG-31
NY-TM-18
NY-TM-42
NY-TM-45
NY-TM-60
NY-UL-37
NY-UL-38
NY-UL-39
NY-UL-44
NY-WC-11
NY-WC-32
NY-WC-34

Observer Profile: NY-SL-21

by Seth Kutikoff, NWS Burlington



Heather Dodds is a dedicated observer located in the village of Heuvelton, New York, in western St. Lawrence County. She was born and raised in the area. She moved around for a period of 14 years before returning to northern New York where she lives car-free. She says by being home regularly, it is good for storm watching; she can sit in one place and observe.

Heather joined CoCoRaHS following the pre-Christmas blizzard of 2022. It was an unusually severe event in a localized area, and people were driving from small towns towards the bigger town of Ogdensburg to do pre-Christmas shopping and getting into serious trouble with fire department rescues needed. Snow drifts of several feet were observed. Heather noted the powdery snow would blow through cracks and with the persistent wind, storm damage was significant. Interestingly enough, only after starting CoCoRaHS did Heather notice she was on the eastern edge of where heavy lake-effect snow typically is located. Ironically, she noted how if she was doing CoCoRaHS at the time, with all of the drifting snow it'd be difficult to measure.

In addition to the remarkable snowstorm, two other factors led Heather to be involved. She found the call for observers compelling as prompted on the National Weather Service webpage for northern New York, as she could see a lack of observers on the map; 2 in a whole county seemed quite few. On a more personal note, Heather chose to be involved in memory of her father, who was a weather observer in the Air Force. He would always get excited about observing the first snow each year, and upon retirement in Duane, New York, they would regularly have conversations about the weather.

Significant Weather Report

Station Number: NY-SL-21 **Station Name: Heuvelton 0.3 WNW**

Observation Date:	1/14/2024 11:00 AM
Submitted	1/14/2024 11:16 AM
Notes:	Just came out of a lake effect snow band. Heavy, fluffy snow for the past 3 hours. Gauge was nearly full and measured by weight. Snowboard was cleaned at 7:50 a.m. (3 hours prior) and measured with a metric ruler at 7"
Precip Duration Minutes:	190
Gauge Catch:	0.25 in.
Total Gauge Catch:	NA
Snowfall:	7.0 in.

One aspect of Heather's involvement in CoCoRaHS that got my attention is her style of writing in the Condition Monitoring Reports. They are extremely detailed! She likens them to Victorian diaries, with a focus on categories: soil, trees/garden, wildlife, birds, insects, allergies. Although they are long, there's no question the text can be mined for useful observations. As of early June, she has written 12 consecutive, weekly condition monitoring reports.

Heather finds the comparison to nearby sites compelling, akin to a friendly competition. Unfortunately, her neighbor in South Russell, New York, recently moved away, leaving the region even drier for daily precipitation reports. To reiterate Heather's point on the sparse map, we need more daily precipitation observers in northern New York, including in St. Lawrence County where snowfall amounts can vary so dramatically in short distances. Thank you, Heather, for setting a great example for future volunteer observers in CoCoRaHS!

Condition Monitoring Reports

by Jim Brewster, NWS Binghamton

As we continue to navigate the ever-changing climate, accurate and consistent weather data becomes increasingly essential. Among its many initiatives, CoCoRaHS's Condition Monitoring Reports (CMOR) stand out as a crucial tool in understanding local environmental conditions. CMORs are a systematic way for CoCoRaHS volunteers to provide subjective, detailed descriptions of the environmental conditions in their area, including droughts, flooding, and general soil and vegetation health. Unlike regular precipitation reports, which focus on measurable quantities of rain, hail, and snow, Condition Monitoring Reports offer a qualitative look at how weather affects the local environment.

Why are These Reports Important?

1. Enhanced Climate Data: By combining quantitative data with qualitative observations, Condition Monitoring Reports provide a more comprehensive picture of local climate conditions. This richer dataset helps meteorologists, climatologists, and other scientists understand the broader impacts of weather patterns.

2. Drought and Flood Monitoring: These reports are particularly valuable in identifying the onset and progression of droughts as well as the antecedent precursor conditions to flooding. Volunteers note changes in soil moisture, streamflow levels, and vegetation health, providing early indicators that can prompt timely interventions.

3. Community Resilience: Local governments and community planners can use this information to enhance resilience against extreme weather events. For instance, knowing about emerging drought conditions can help in water management and conservation efforts.

4. Educational Outreach: Participating in CMORs educates volunteers and the broader community about the importance of environmental stewardship and the science of meteorology. This increased awareness can drive more community engagement in climate-related initiatives.

SEVERELY WET	MODERATELY WET	MILDLY WET	NEAR NORMAL	MILDLY DRY	MODERATELY DRY	SEVERELY DRY
• **Use this category sparingly** • Wet conditions have persisted for several weeks • Major flooding • Soil is saturated	• Wet conditions have persisted for a few weeks, or there has been a major rainfall event • Standing water and minor flooding • Soil is very damp	• Frequent precipitation for several days • Standing water is common • Soil moisture is above normal	• Observed conditions normal for this time of year • **This should be your default entry**	• Dry conditions have persisted for a few weeks • Soil is somewhat dry	• Dry conditions have persisted for several weeks • Lakes and rivers are low • Water use restrictions start • Soil is very dry	• **Use this category sparingly** • Dy conditions have persisted for months • Soil is completely dry • Water is scarce • State of Emergency

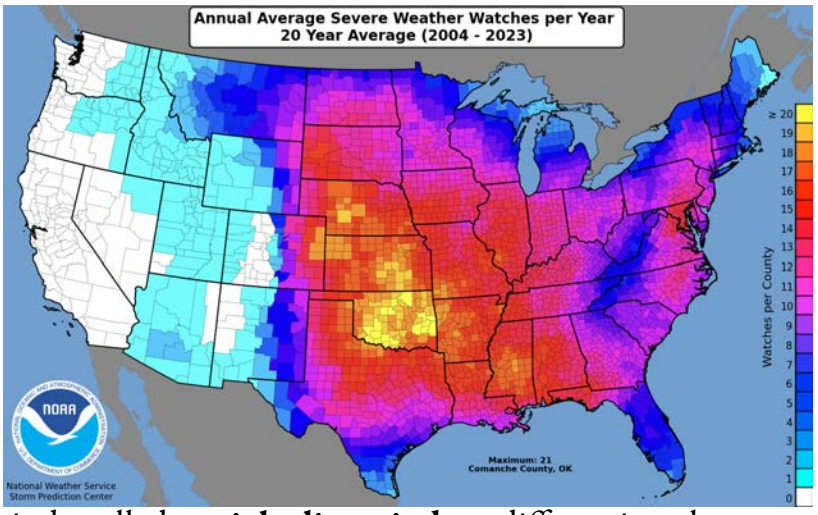
How Can You Get Involved?

Contributing to Condition Monitoring Reports is straightforward. Begin by completing the training modules provided by CoCoRaHS to learn how to collect and report data accurately. Once trained, you can start submitting your observations through the link in the "Enter My New Reports" menu at the left side of the website. Your reports can be as detailed or as simple as you prefer, focusing on notable changes in your local environment. At the end of the day, CMORs bridge the gap between citizen science and professional meteorology, empowering individuals to contribute to our understanding of the climate Whether you're passionate about weather or simply care about your local environment, your participation in all aspects of CoCoRaHS is valuable, and we thank you!

Severe Weather

by Samantha Borisoff, NYS Coordinator

Severe weather, which includes tornadoes, hail, and strong thunderstorm winds, can happen any time of the year in New York. However, the historical probability of severe weather increases from late April through mid-September, peaking from roughly early June through early August.



Severe thunderstorms can produce strong winds, called **straight-line winds** to differentiate them from tornadic winds, that can be just as strong and damaging as some tornadoes. There are several types of straight-line winds including microburts and derechos. Some of the strongest thunderstorm wind gusts in New York were estimated to be between 115 and 125 mph.

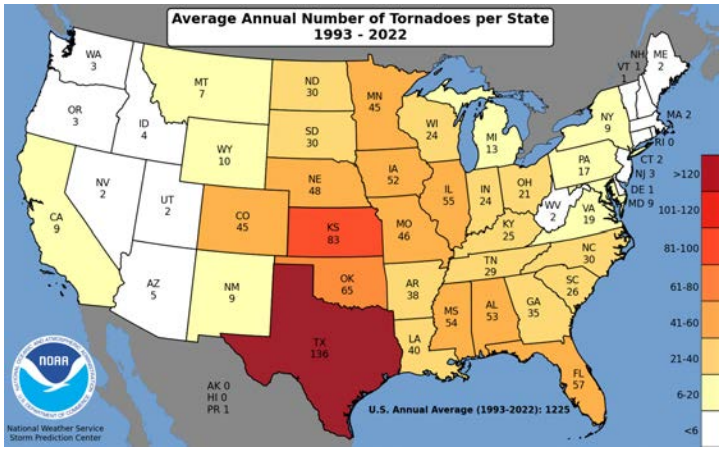
Straight-line winds of up to 100 mph destroyed two barns in Tompkins County in July 2023. Image courtesy of NWS Binghamton

Most **hail** that falls in New York is less than 2 inches (lime-sized or smaller). However, hailstones of 3+ inches have been observed on occasion. The largest hailstones measured 4 inches (about the size of a softball), falling in Montgomery County on May 22, 2014, and in Niagara County on September 27, 1998. Hail can be reported via the hail report on the CoCoRaHS website.

Flash floods, which occur quickly after an event such as extreme rainfall, are another hazard associated with thunderstorms. Due to this, flash floods generally happen more frequently during the summer and in the afternoon and evening hours. For instance, 4 to 9 inches of rain fell over a three-hour period on top of already saturated ground in southeastern New York in early July 2023, washing away roads, destroying buildings, and stranding motorists. Similarly, up to 8 inches of rain in Delaware County led to flash flood event that caused millions of dollars in damage and resulted in a few deaths in June 2007. You can report flooding by submitting a Significant Weather Report.

Above - Baseball-sized hail in eastern New York in May 2018. Credit: NWS Albany; Below - A washed-out road and bridge due to a flash flood in Delaware County in June 2007. Credit: NWS Binghamton

Severe Weather Continued



New York has seen at least one tornado every year from 1954 through 2023. The state averages at least one tornado a month from April through September, with July being the peak month, and averages nine tornadoes a year. Weak tornadoes, rated EF-0 or EF-1, are the most common in New York, but the state has experienced stronger tornadoes on multiple occasions. For instance, New York saw a significant tornado outbreak on May 31, 1998. There were several F3 tornadoes, including one that tracked 30.5 miles across eastern New York and into Vermont, injuring 68 people and causing millions in damage. Another notable tornado event occurred in the state on August 7, 2023. An EF-3 tornado in Lewis County caused damage, which you can read more about in the January 2024 issue of the NY CoCoRaHS newsletter. During that same event, several tornadoes touched down in central New York.

NWS Binghamton: August 2023 CNY Tornadoes by Bryan Greenblatt

During the early evening of August 7, 2023, multiple tornadoes touched down in Central New York. Within NWS Binghamton's forecast area, a total of five tornadoes were confirmed. Four of these tornadoes were rated an EF-1 and one rated an EF-0.

A passing disturbance, combined with ample instability and very strong wind shear supported multiple rotating thunderstorms. While tornadoes are not nearly as common in New York compared to the middle part of the country, known as "tornado alley," we do occasionally have tornadoes in this region. What made this particular event unique for Central New York was the number of tornadoes in a relatively short distance and time apart. These five tornadoes all occurred within 90 miles of each other. Three of those occurred within 30 miles of each other (Munnsville/Madison County, Vernon/Oneida County, Taberg/Oneida County). All five of these tornadoes occurred within around a two hour time window (~5:15 PM - ~7:15 PM).

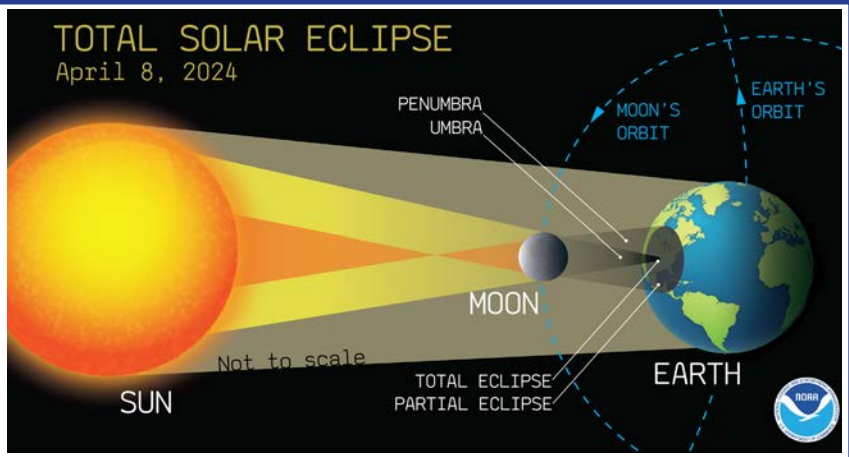
Some structural damage was observed on the storm surveys, but the majority of the damage seen were uprooted and snapped trees. Fortunately, no injuries were reported in any of these tornadoes or other thunderstorms that occurred that evening.

Tornado damage in Broome County in August 2023. Image courtesy of NWS Binghamton

As we enter the summer months again, now is the time to make sure you have multiple ways of receiving weather information and have a plan of action if severe weather strikes your area. While the August 7th severe weather outbreak was mainly a tornado event, straight-line wind damage from severe thunderstorms can be just as damaging, and sometimes more damaging.

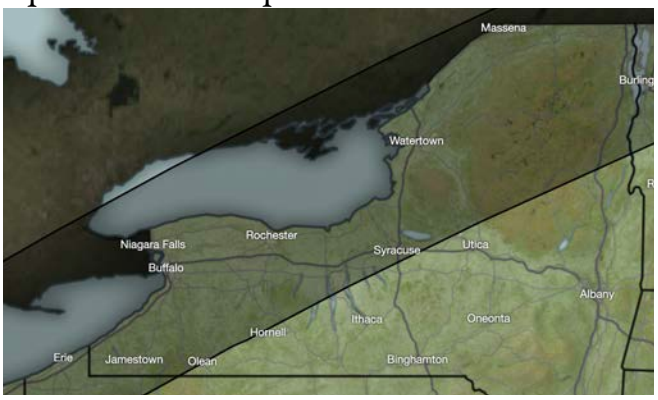
Solar Eclipse

by Samantha Borisoff, NYS Coordinator



On the afternoon of Monday, April 8, the Moon passed between the Sun and Earth, blocking the sun and creating a solar eclipse.

A total solar eclipse occurred in areas in the center of the Moon's shadow. Known as the path of totality, this area experienced total darkness during the eclipse. During the April 8 eclipse, the path of totality went through New York, including places like Buffalo, Rochester, Syracuse, Watertown, and Plattsburgh. Areas outside the path of totality experienced a partial solar eclipse.



Areas shaded gray were in the path of totality. Image courtesy of NASA

During the solar eclipse, temperatures dropped by several degrees as less solar energy reached Earth's surface. This can be observed in the temperature graph below from a location in northern New York. The solar eclipse also led to a temporary increase in humidity and decrease in wind speed. A thorough analysis of the solar eclipse can be found on NWS Burlington's website.

The next total solar eclipse in the Lower 48 states on August 23, 2044, will only be visible in parts of Montana, North Dakota, and South Dakota. The following year, onAugust 12, 2045, a total solar eclipse can be viewed in an area stretching from northern California to Florida. New York will have to wait until May 1, 2079, to be in the path of totality again.

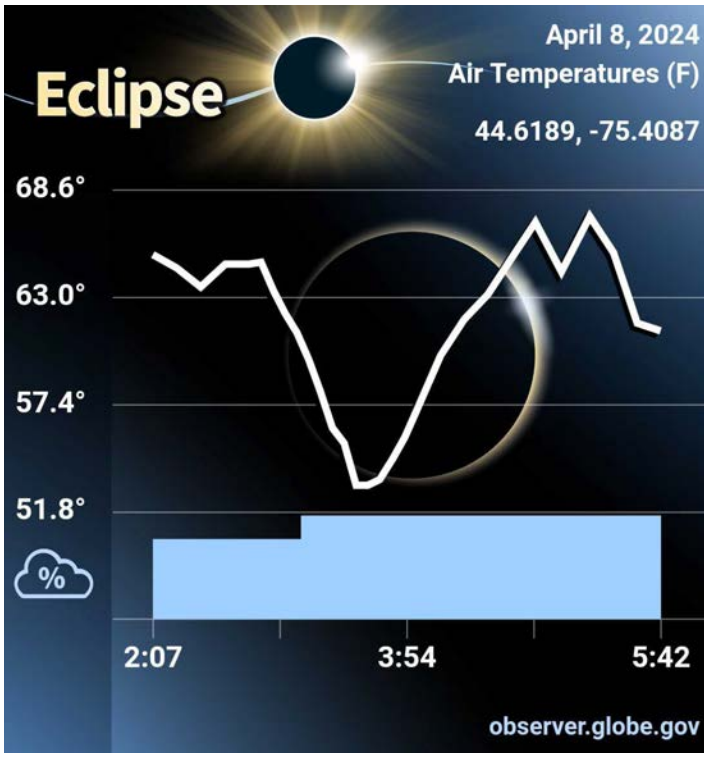
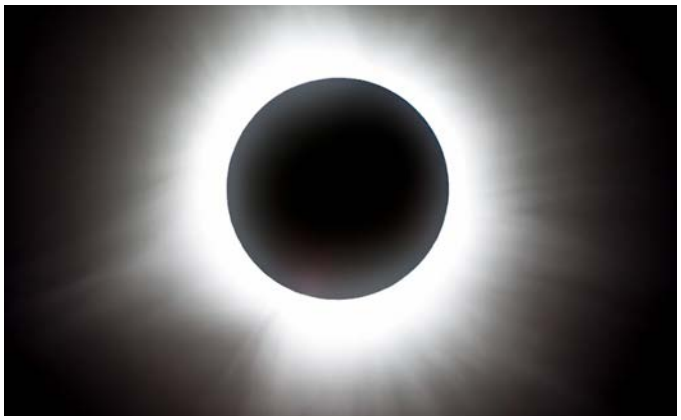
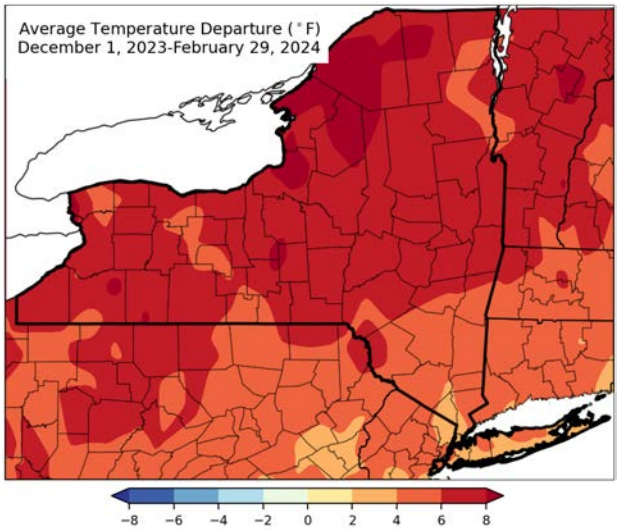


Image captured in the path of totality during the April 8 total solar eclipse. Courtesy of Conor Lahiff, NWS Burlington



Warm Winter

by Samantha Borisoff, NYS Coordinator

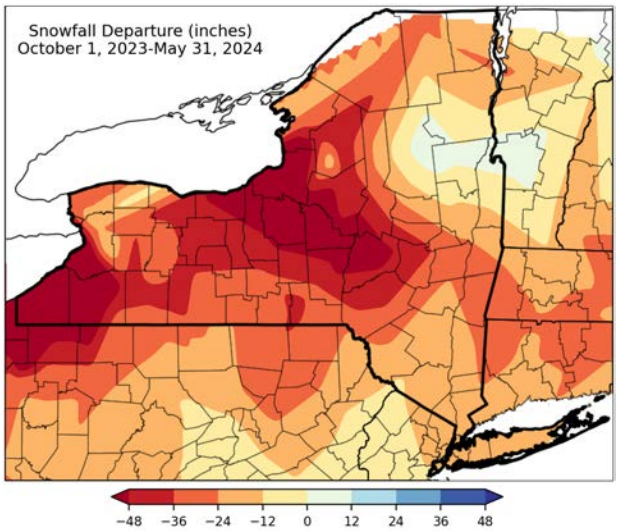


New York State experienced its warmest winter (December–February) since recordkeeping began in 1895. The state's winter average temperature of 30.7°F was 6.4°F warmer than normal. Of New York's 10 climate divisions, six were record warm and the other four had one of their five warmest winters. Several sites across the state had a record warm winter including Binghamton at 7.3°F warmer than normal and Albany at 6.6°F warmer than normal. Many additional locations had one of their 10 warmest winters.

Much of the season's precipitation fell as rain or a mix of precipitation types instead of all snow. This allowed precipitation totals, which include rain and melted snow and ice - think gauage catch, to be above normal but caused snowfall to be below normal. Binghamton had its wettest winter on record, picking up 151% of normal precipitation, but its seventh least snowy winter, seeing a snowfall deficit of 22 inches. Meanwhile, sites like Islip and Albany had one of their five wettest but 20 least snowy winters. Some of the greatest snowfall deficits for winter exceeded 48 inches in portions of western and central New York. For instance, Syracuse saw only 40.1 inches of snow this winter compared to its average of 94.9 inches, a deficit of 54.8 inches and making it the site's 11th least snowy winter.

Location	Winter 2023-24 Precip (in.)	Normal (in.)	Percent of Normal	Rank (wettest)	Winter 2023-24 Snowfall (in.)	Normal (in.)	Departure (in.)	Rank (least snowy)
Albany, NY	11.23	8.14	138%	5	20.8	42.6	-21.8	17
Binghamton, NY	12.27	8.11	151%	1	36.4	58.4	-22.0	7
Buffalo, NY	10.57	9.59	110%		57.3	70.1	-12.8	
Central Park, NY	14.04	11.21	125%	15	7.5	23.8	-16.3	19
Islip, NY	18.28	11.66	157%	3	10.9	24.2	-13.3	17
Kennedy Airport, NY	15.15	9.95	152%	3	12.8	20.6	-7.8	
LaGuardia Airport, NY	14.40	10.26	140%	4	10.5	23.6	-13.1	
Rochester, NY	7.75	7.35	105%		39.0	72.8	-33.8	
Syracuse, NY	10.73	8.32	129%	13	40.1	94.9	-54.8	11

Most of the state also saw snowfall deficits for the full snowfall season, which runs October through May. Once again, snowfall deficits exceeded 48 inches in parts of western and central New York. The snowfall season was among the 10 least snowy for places like Central Park, Binghamton, and Syracuse, which was missing 67.0 inches of snow for the full snowfall season.



On the following two pages, NWS Buffalo will highlight the warm, reduced snowfall winter in western and north-central New York, and NWS Albany will showcase an interesting storm event from late March in eastern New York.

Warm Winter Continued

NWS Buffalo: Snow Lacking, and Warmth a Plenty this past winter across Western and North Central New York by David Thomas

Winter 2023–24 was anticipated to be mild as the El Niño - Southern Oscillation (ENSO) was forecasted to be in the positive El Niño phase. Of slightly less certainty, would this mild winter translate to little snowfall for CoCoRaHS observers to measure? Off the western South American coast a pool of warmer water, which only deviated from the climatological normal by a few degrees, had significant global impacts on the jet stream, keeping a fast zonal flow in the upper levels that aided in locking up colder air well to our north. This allowed for milder air from the south to continually flood the eastern Great Lakes region. Long-term climate stations for the meteorological winter months of December, January, and February finished either near or at the top for the warmest winter on record, during what turned out to be a strong El Niño.

Buffalo had its second warmest winter (34.5°F), averaging just a tenth of a degree lower than the all-time warmest winter (34.6°F) of 1931–32. Rochester had its warmest winter (34.9°F), breaking the former record (34.5°F) set during winter 1931–32. Watertown smashed its record by more than a degree, with this winter (30.8°F) besting the previous (29.4°F) warmest winter record of 2001–02. Several long-standing Cooperative Observers measured the warmest, or nearly the mildest winter on record. Albion, Franklinville, Hemlock, Little Valley, Lowville, Oswego, and Warsaw had their warmest winters. Alfred, Allegany State Park, Canandaigua, and Geneva had their second warmest.

While a mild winter does not always equal below-normal snowfall (winter of 2022–23 was mild and also one of the snowiest for Buffalo and Watertown), this winter saw well below normal snowfall region-wide, and in a few locations record low amounts of snow. Buffalo finished the snowfall season about 2 feet below normal, while Rochester finished nearly four feet below normal. Two Cooperative Observers, Geneva and Oswego, had their least amount of snow for the season on record. Since 1969, the 18.8" of snow at Geneva and, since 1891, the 38.7" of snow at Oswego are the all-time least amount of snow measured for the snowfall season. Oswego was an astonishing 8 feet lower than their seasonal average. On the other end of the stick, the greatest amount of snow measured this season was at a CoCoRaHS station in Lewis County, with LW-3, Constableville, measuring 146 inches of snow, which is still quite low for the central Tug Hill region.

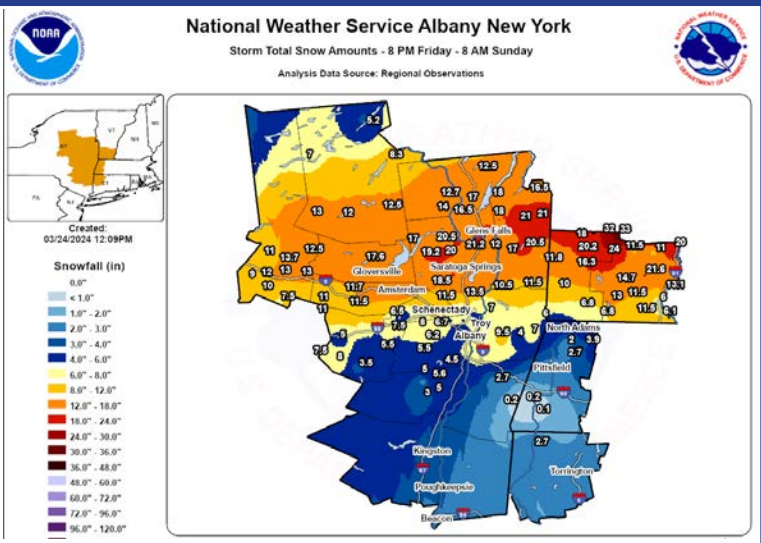
Rain in western New York on December 23, 2023. Credit: NWS Buffalo

While snowfall was well below normal there were several rain events through the winter to keep precipitation closer to normal for the season. The lack of deep cold days kept ice thin on area creeks and rivers with little to no ice jam flooding. This mild winter also kept Lake Erie ice free, the 10th such occurrence in the nearly 100 years of recordkeeping, but the 7th such occurrence this century.

The warmer waters off the South American coast have sloshed back to the west this spring, with cooler waters replacing the warmer waters. With an expected return to La Niña conditions for next winter, only time will tell how much snow, or little snow, is to come.

Warm Winter Continued

NWS Albany: March 22–23 Storm in Eastern New York by Deanna Marks



Beginning March 22 and lasting into the 23rd, an early spring multi-hazard event brought heavy snow, freezing rain, and flooding rains to New York and western New England, causing significant impacts ranging from widespread power outages, downed trees and power lines, road closures, and hazardous travel conditions.

On the evening of Friday, March 22, a persistent snow band set up across the Southern Adirondacks, Mohawk Valley, Lake George Saratoga Region, and southern Vermont. Moderate to heavy snowfall ensued, and snowfall rates were 1–2" per hour. As the CoCoRaHS observations started rolling in the next morning, reports showed that north of the Capital District, about 7–10" of snow fell overnight, with about 2–5" falling from Albany and south. Even with a healthy dose of overnight snowfall, this event wasn't close to over!


Credit: Joe Villani

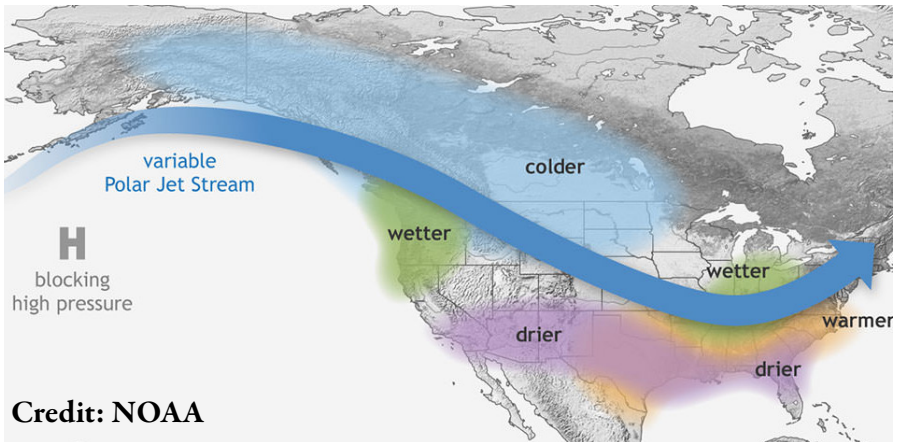
In the early morning hours of Saturday, March 23, the snowfall waned and transitioned to freezing rain across the Capital Region and Schoharie County. Temperatures were ripe for ice accretion, which caused a localized ice event with a bullseye over the Capital Region. Ice accumulated efficiently, and flat ice measurements ranged from 0.25–0.75" in the Capital Region. After a transition back to snow later in the day, another 3–8" fell on top of the accumulated ice, the combination of which led to numerous downed trees and limbs, resulting in nearly 100,000 power outages across the Capital Region and Schoharie Valley. Travel was nearly impossible, with multiple accidents reported and several road closures. Another 3–8" of snow fell across the Southern Adirondacks, Mohawk Valley, and the Lake George Saratoga Region. However, the lion's share of the snow fell across parts of Washington County, NY, and southern Vermont, which saw another 10–20" of snow. Not to be forgotten, the eastern Catskills, mid-Hudson Valley and western Connecticut received a light dusting of snow and a thin coating of ice on Friday, but were doused with drenching rains on Saturday. Nearly 3" of rain fell across these areas, causing the Housatonic and Still Rivers to swell into minor flood stage, requiring flood warnings to be issued.

A multi-faceted event such as this presents many challenges from a forecast standpoint but having ground truth observations throughout the duration of the event provides the National Weather Service with critical information and allows for after-the-fact studies to be conducted in order to hone our forecast processes. Many thanks to the CoCoRaHS observers who diligently reported snowfall, rainfall, ice accretion, and local impacts during this event. Your observations and significant reports help us compile data to create storm total maps (an impressive 33" of snow storm total from Landgrove, VT!), which are distributed to the local community and our partners alike. Your diligence and dedication to providing excellent, thorough observations is appreciated by the scientific community far and wide!

La Niña Conditions

by Samantha Borisoff, NYS Coordinator

A La Niña develops when sea surface temperatures are cooler than average in the equatorial Pacific Ocean for an extended time. This affects the position of the jet stream, which impacts weather patterns in the U.S., especially in the winter.

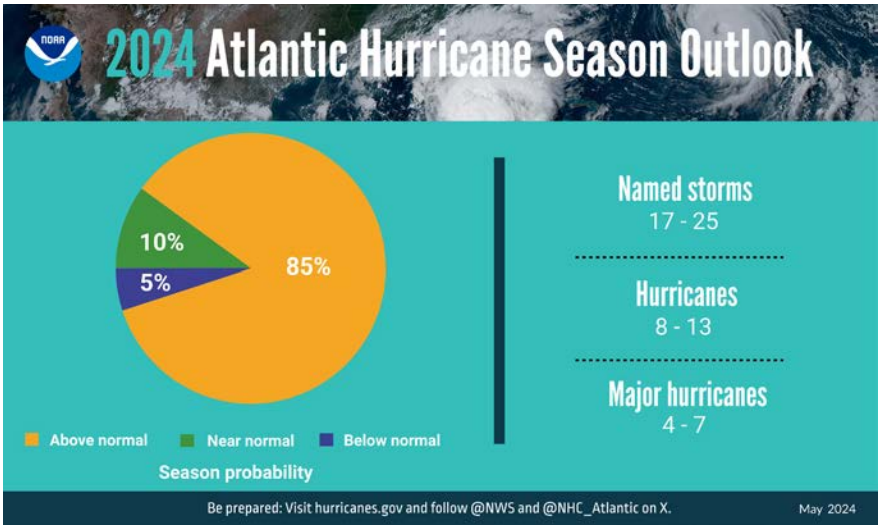


Credit: NOAA

An area of high pressure over the eastern North Pacific leads to increased blocking. The jet stream strength is variable, but usually enters North America in the northwestern U.S. The jet stream tends to be wave-like, with the active storm track along the northern states. This pattern tends to bring increased storminess and above-normal precipitation to the Ohio Valley. There is also an increased frequency of cold air outbreaks in the central U.S. Conversely, conditions tend to be drier and warmer across the southern U.S.

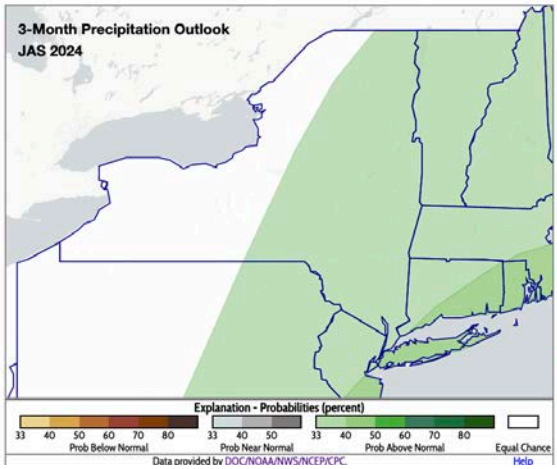
It is important to note that each La Niña is different and other factors can affect winter conditions, such pre-exisiting global snow cover patterns or climate variability associated with the Arctic Oscillation and North Atlantic Oscillation. These patterns are less able to be forecast far in advance compared to La Niña, meaning it is uncertain how much they will affect the upcoming winter. Another factor is long-term climate trends, which can overshadow the La Niña signal. In the Northeast, there is a trend toward wetter conditions. As for snowfall, preliminary research suggests that weaker La Niña events are snowier over the Northeast on average, particularly in northern New England and portions of New York. La Niña winters also tend to be snowier for lake-effect areas. However, individual storm tracks can influence where precipitation falls as rain versus snow.

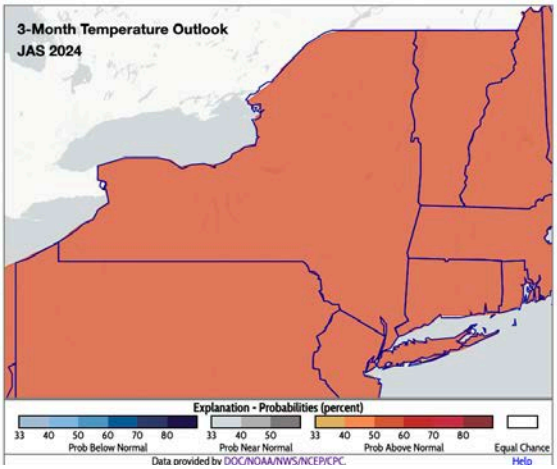
For summer and fall, La Niña can lead to a more severe hurricane season. NOAA is expecting an extremely active Atlantic hurricane season with 17–25 named storms, of which 8–13 are expected to become hurricanes, including 4–7 major hurricanes. Multiple factors such as exceptionally warm Atlantic sea surface temperatures and a developing La Niña leading to reduced wind shear are expected to align to potentially make this season very active. The greatest number of named storms in the Atlantic was 30 in 2020, while the greatest number of hurricanes was 15 in 2005. Both of these years also featured a record-tying seven major hurricanes. The Atlantic hurricane season runs from June 1 through November 30, peaking from mid-August to late October.



Outlooks

by Samantha Borisoff, NYS Coordinator





For July–September, NOAA's Climate Prediction Center favors wetter-than-normal conditions for eastern parts of New York, with the greatest likelihood in southeastern New York. This is tied to factors such long-term climate trends and the potential for increased tropical moisture. Equal chances of below-, near-, or above-normal precipitation were forecast for the rest of the state. Normal precipitation for the period includes 10.05 inches in Rochester, 10.56 inches in Buffalo, 10.94 inches in Syracuse, 11.10 inches in Islip, and 11.16 inches in Watertown.

Above-normal temperatures are favored for July–September across New York. Normal average temperatures for the period include 60.8°F in Lake Placid, 65.4°F in Binghamton, 67.5°F in Watertown, 68.5°F in Buffalo, 69.3°F in Albany, and 74.3°F in New York City.

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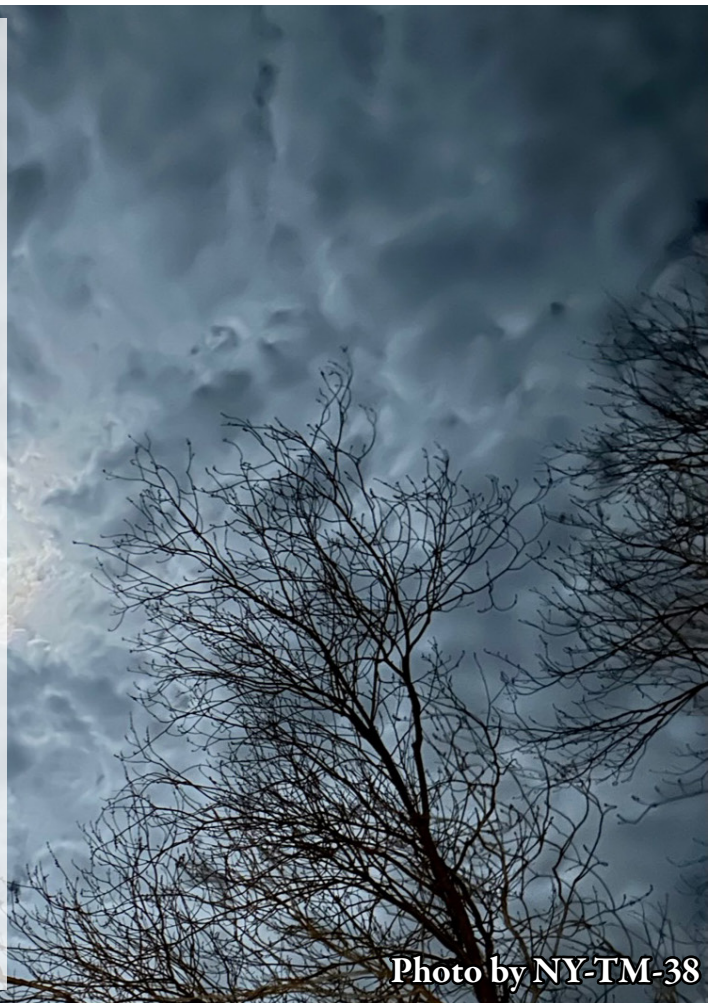
Photo by NY-TM-38