Stormbuster

NATIONAL WEATHER SERVICE ALBANY, NY

Volume 28, Issue 2 Fall 2022

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Meet a Meteorologist

Welcome to "Meet a Meteorologist!" This is where you will get to know fun facts about one of our staff members. In this edition, we introduce our newest Meteorologist, Abigayle Gant, who comes to us from Delaware!

When did you first become interested in Meteorology?

My parents are both in the medical field, and I knew from a young age that I did not have the interest nor the stomach for that profession. I was about five when I first started to express an interest in weather. My dad always had (and still has) a non-occupational interest in the weather. As a flight medic, he had to be concerned about it since weather dictated such a major part of his job. He would check weather conditions frequently and watch the Weather Channel, and as an impressionable little girl who wanted to do everything her dad was doing, I followed along and started becoming interested. But what really made me fall in love with the weather was following him out onto the porch to watch thunderstorms. I can remember being in awe of lightning, thunder, and heavy rain. I got into watching shows such as Storm Chasers and dreamed of being able to do what they did some day. From then on, I held onto the dream and every step I took led me to becoming the meteorologist that I am today.

Where did you go to college and where did you work before the NWS at Albany?

I attended Millersville University of Pennsylvania and earned my Bachelor's Degree in Meteorology. I am currently attending Mississippi State University online part time to earn my Master's Degree in Applied Meteorology. In the summer leading up to my senior year of college, Summer of 2020, I participated in the NWS Volunteer Program at WFO Mount Holly. Unfortunately, it had to be done virtually due to the pandemic.

What do you enjoy most about coming to NY (from Delaware)?

I am really excited to live in a place that gets a lot of snow. I absolutely love snow! Back home, we really don't get much unless it's one of those "once every five year" storms that dumps 2 feet. I have been told that I will get tired of it, but I don't think that will happen for a while. I also heard there are a lot of great trails to walk/hike around here and places to go apple picking and those are two of my favorite things to do, especially in the fall, so I am really excited about that too! Honestly I am just really excited to meet new people and just get to know my way around a new place!

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What will you miss the most about Delaware?

Above anything else, I will miss my family. My immediate and most of my extended family live in Delaware. We are a tight-knit group, so being away will definitely be difficult. I'll also miss my family's dog, Axl. He is a puggle and the most high maintenance dog we have ever had, but he's also very sweet and is always making us laugh with his antics. Honestly, I think I will just miss the little traditions that my family and I have: going to evening mass on Saturdays followed by dinner at our favorite restaurant, family dinner every night, playing games and catching up on the shows we like to watch, constantly quoting movie lines that apply to any and every situation, etc. But the best part about leaving is knowing that I have all of that to go home to when I have the opportunity. And FaceTime helps too!

What aspect of weather do you enjoy the most? Any favorite storms or historical weather events?

As I said in a previous question, I really love snow, but snow isn't my favorite aspect of weather. Honestly, I don't think there is an aspect of weather that I don't enjoy. Something that really enhanced my love for weather was the show "Storm Chasers." Watching that show when I was younger enhanced my interest in severe thunderstorm and tornadoes. Honestly, I think tornadoes are my favorite meteorological feature to study. While it can be devastating that they lead to so much destruction, from a scientific perspective, I find them to be so fascinating. I think the most fascinating thing about them is that we, as meteorologists, don't know a lot about them. Uncertainty is scary, but I think it's also an amazing opportunity to learn and explore.

Do you have any hobbies? What do you like to do in your spare time?

I love to read, but as I pursue a master's degree at that moment, I don't get to read as much as I would like to. I love walking/hiking nature trails, going on bike rides, and just being outside in general especially in the fall. I love to bake! My brother and I got into baking and decorating cookies over the pandemic so we do that together fairly often. I'm an avid player of board games, card games, and I love doing jigsaw puzzles. I think my family and I did 6 or 7 1000 piece puzzles over the pandemic's lockdown period and we always do at least one 1000 piece puzzle on our vacation to the Outer Banks every year. I am a huge Philadelphia Flyers fan, so I watch/go to the games as much as possible, though their recent lack of success makes it less watching and more yelling at the TV.

What are you most excited about working for the National Weather Service?

Growing up I was taught two lessons that have shaped my entire life: (1) Being in service to others is how we learn to appreciate what we have, how we learn selflessness, and how we become inspired to do something meaningful in life. (2) Loving what you do will give you the passion to strive for greatness not just for personal gain, but to positively impact those whom your work affects. I fell in love with community service very early on in my life from participating in countless projects through church and school and I always wanted to have a job that would allow me to make a difference in the world. As I grew up and became aware of just how important the weather was to day to day life, I knew that I was pursuing the right career for me. I knew that not only would I be doing something that I loved, but I would be able to do so while having a positive impact on other people. So, I think what I am most excited about in working for the National Weather Service is being part of an organization that contributes so much to the well being of the people throughout the nation. When I first heard the mission of the National Weather Service I just thought "Wow! This is exactly what I want to do, this is how I am going to leave my mark on the world." Getting to walk through the doors of the office every day and know that I am on a team of passionate individuals who are determined and dedicated to being part of something bigger than ourselves is just the best feeling.

What are your career goals/hope to accomplish in the National Weather Service?

Overall, I think I have the same goal that every NWS meteorologist has and that is to become the best that I can be in order to positively contribute to the mission of protecting life and property. In order to achieve this broad ambition, I have set a smaller goal to take advantage of every opportunity to learn, grow, and take on each day's challenges head on. I think right now my biggest ambition is to work through my training so that I can be added into the forecast shift rotation and be more independent when it comes to product creation and publication. Going forward, I would really love to work up the ladder and go from forecaster to lead forecaster to management and then eventually become an MIC. I have had a lot of truly amazing role models in my life who have taught me what it takes to be a leader and, though I still have a lot to learn both on the leadership spectrum and in regards to meteorology, I would love to be entrusted with leading, guiding, and inspiring a team of meteorologists to carry out the mission of the NWS.

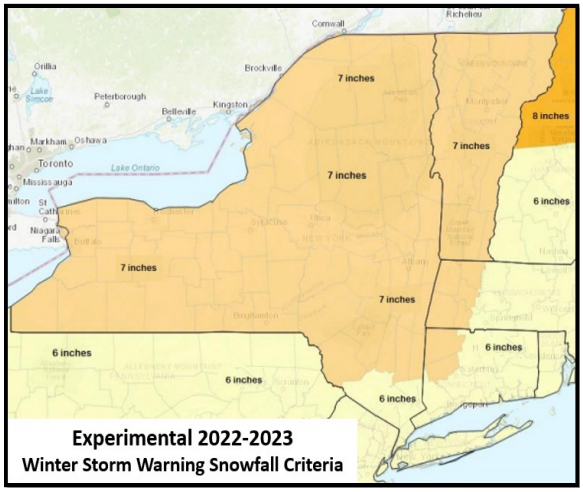
- Abigayle Gant, Meteorologist

Autumn/Winter Skywarn Safety Training

The National Weather Service in Albany, along with our state and county partners, are excited to announce our autumn/winter Skywarn Safety Training Sessions. We are offering a mix of in-person and virtual session. These interactive sessions will teach you more about our Weather-Ready Nation initiative, how to measure snow and ice, ways to communicate your observations to the forecast office and several unique case studies from recent notable high-impact winter weather events. To register for these free sessions, please visit https://www.weather.gov/aly/skywarn and select a date convenient for you. Additional classes will be added over the next several weeks so check back often. Announcements will also be made on social media through Facebook and Twitter.

-Christina Speiclae, Meteorologist

What's New for Winter 2022—2023?



Experimental 2022-2023
Winter Storm Warning Snowfall Criteria

This winter season, 2022-23, the National Weather Service (NWS) Forecast Office in Albany, NY will test a change to the Winter Storm Warning Snowfall Criteria. The new experimental criteria is based on local snowfall climatology to better align Winter Storm Warnings to average annual snowfall. Based on this approach it will limit over warning in western New England that is used to more snowfall. Warning criteria for snowfall remains essentially the same for our New York counties. Evaluation of this experiment will take place in the spring of 2023 to determine if these changes will become official policy for the winter of 2023-24.

The snowfall criteria for **Winter Weather Advisories will NOT change**:

- 4 inches: New York State excluding the Lower Hudson Valley, New York City & Long Island and for Vermont.
- 3 inches: in New York State for the Lower Hudson Valley, New York City & Long Island and for Connecticut & Massachusetts.

Impact-Based Warning (IBW) tags for Snow Squall Warnings (SQWs) will be implemented on or after November 7th, 2022. IBW tags will be used to characterize the snow squall impact and source information. This is similar to what is already being done for Severe Thunderstorm Warnings, Flash Flood Warnings, and Tornado Warnings. Currently, Wireless Emergency Alerts (WEAs) are issued for all SQWs. Once the IBW tags are implemented, WEAs will be limited to only those SQWs with the Snow Squall Impact tag of "Significant." Impact-Based Snow Squall Warning Factsheet

NWS Experimental Winter Storm Outlook (WSO): The WSO displays the probability of realizing hazardous snow/ice accumulations using specific watch/warning criteria as a proxy threshold. It is one of a few key factors considered in the issuance of official NWS Winter Storm Watches, and utilized in the coordination process between the Weather Prediction Center & affected Weather Forecast Offices.

NWS Winter Storm Severity Index (WSSI): Forecast of the potential severity of community impacts from winter storms throughout the contiguous United States, including tree damage, property damage, transportation impacts, and disruptions to daily life. This index utilizes the official deterministic NWS weather forecast office snowfall forecasts. Winter Storm Severity Index User Guide

Stay situationally aware of potential weather hazards and impacts by monitoring:

NWS Albany website
NWS Albany Winter Weather Forecast Page
Experimental Graphical Hazardous Weather Outlook
NWS Albany event-based Decision Support Weather Briefings

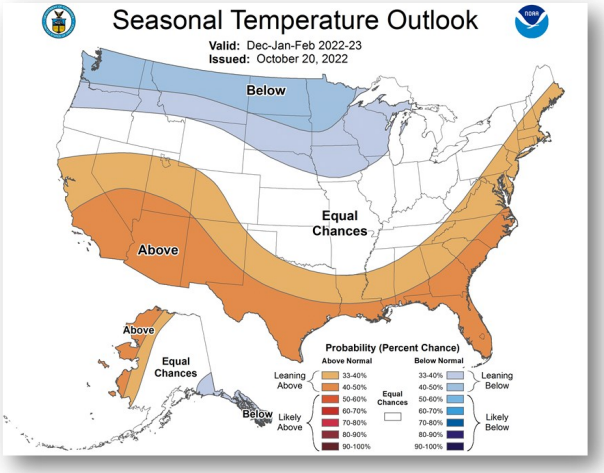
Also, follow us on social media @ NWSAlbany Twitter and NWSAlbany Facebook

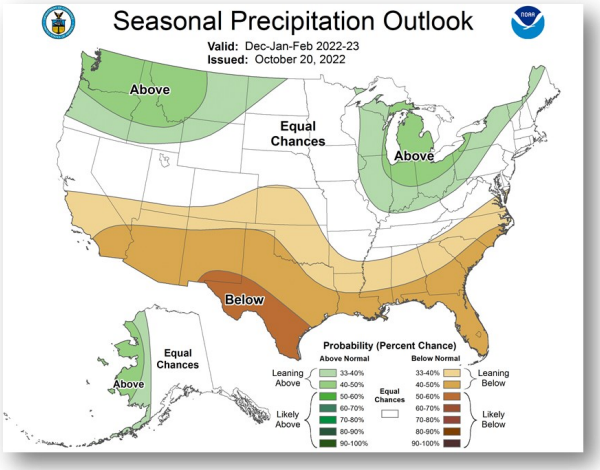
Ingrid Amberger, Lead Meteorologist

Winter 2022—2023 Outlook

NOAA's U.S. Winter Outlook was released on October 20, 2022 by the Climate Prediction Center - a division of the National Weather Service

Here's the big picture:





Warmer-than-average temperatures are also favored in the Southeastern U.S. and along the Atlantic coast.

The greatest chance for warmer-than-average conditions are in western Alaska, and the Central Great Basin and Southwest extending through the Southern Plains.

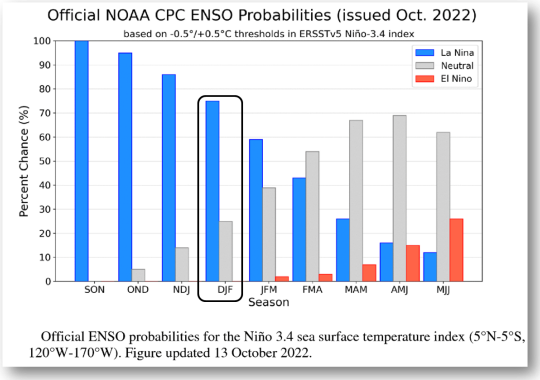
Below-normal temperatures are favored from the Pacific Northwest eastward to the western Great Lakes and the Alaska Panhandle.

Wetter-than-average conditions are most likely in western Alaska, the Pacific Northwest, northern Rockies, Great Lakes and Ohio Valley.

The greatest chances for drier-than-average conditions are forecast in portions of California, the Southwest, the southern Rockies, southern Plains, Gulf Coast and much of the Southeast.

The remainder of the U.S. falls into the category of equal chances for below-, near-, or above-average seasonal total precipitation.

There is a focus on El Niño-Southern Oscillation (ENSO) when making seasonal outlooks as it is one of the most important climate phenomena on Earth due to its ability to change the global atmospheric circulation, which in turn, influences temperature and precipitation patterns across the globe. ENSO's arrival can often be predicted many seasons in advance of its strongest impacts on weather and climate. La Niña is a cooling of the ocean surface, or below-average sea surface temperatures, in the central and eastern tropical Pacific Ocean. El Niño is a warming of the ocean surface, or above-average sea surface temperatures, in the central and eastern tropical Pacific Ocean. There is a 75% chance of La Niña during the Northern Hemisphere Winter (December-January-February) 2022-23.



Official ENSO probabilities for the Niño 3.4 sea surface temperature index (5°N-5°S, 120°W-170°W). Figure updated 13 October 2022.

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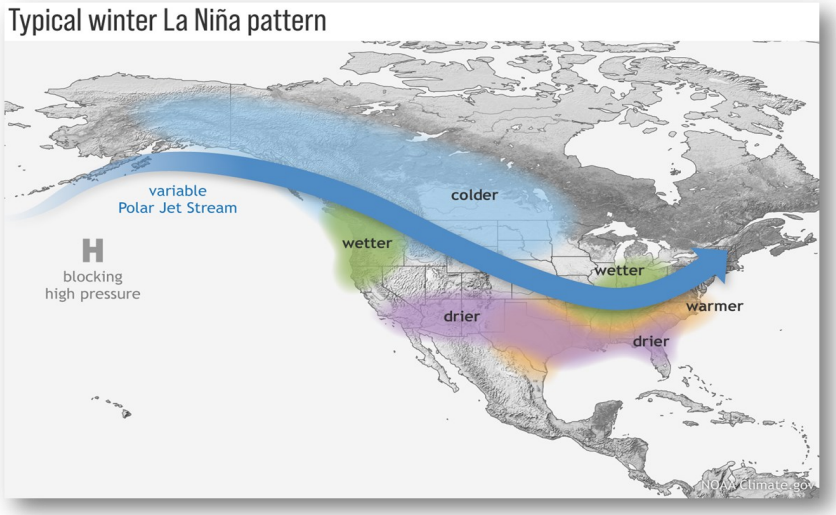
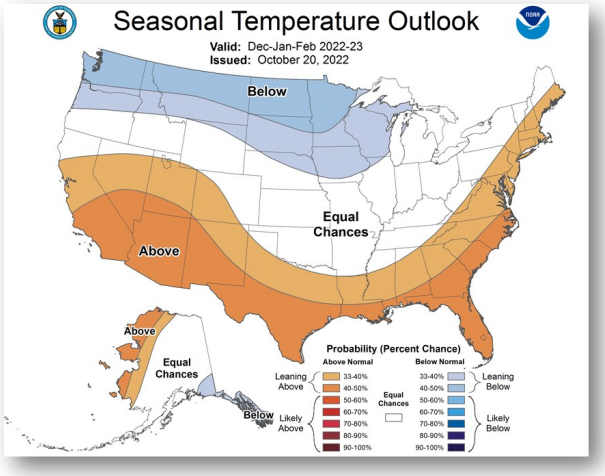
Winter 2022—2023 Outlook (cont'd)

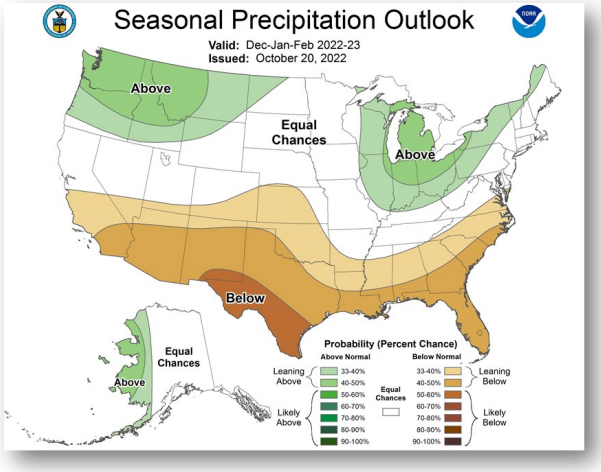
During La Niña, the Pacific jet stream often meanders high into the North Pacific. Southern and interior Alaska and the Pacific Northwest tend to be cooler and wetter than average, and the southern tier of U.S. states, from California to the Carolinas, tends to be warmer and drier than average. Farther north, the Ohio and Upper Mississippi River Valleys may be wetter than usual.



One or more of these climate patterns have occurred during many La Niña events in the past. That doesn't mean that all of these impacts happen during every episode. Every event is somewhat different. In other words, the influence of La Niña on U.S. winter climate is a matter of probability, not certainty. By modifying the jet streams, La Niña can affect temperature and precipitation across the United States and other parts of the world. The influence on the U.S. is strongest during the winter (December-January-February), but it may linger into early spring.

So what does this mean for Upstate New York and Western New England? There is not a strong signal in the pattern for either temperatures or precipitation for our area this winter (December-January-February). Note: The outlooks don't predict how much above or below temperatures or precipitation may be for the outlook period.





There is a slight tilt toward above normal temperatures for areas to the south and east of the Capital District.

The temperature outlook does not predict individual arctic outbreaks which are still possible.

There is a slight tilt toward above normal precipitation for areas to the northwest of the Capital District.

The precipitation outlook represents rain, snow, sleet and freezing rain events.

It does not represent the number of storms or their intensity.

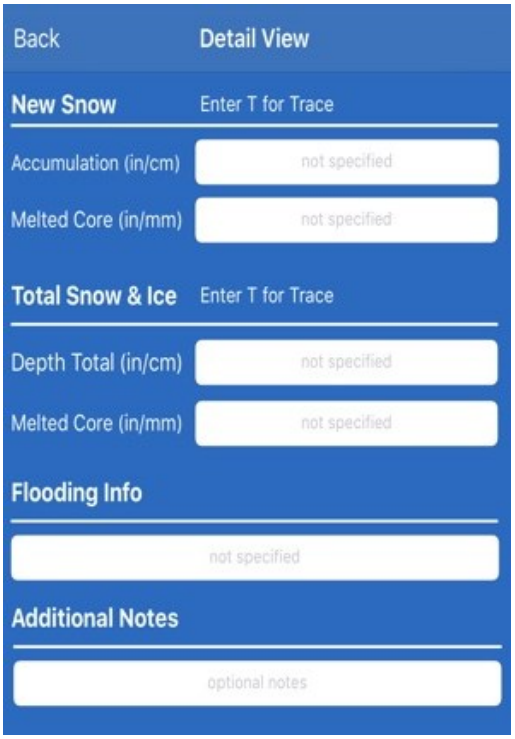
- Ingrid Amberger, Lead Meteorologist

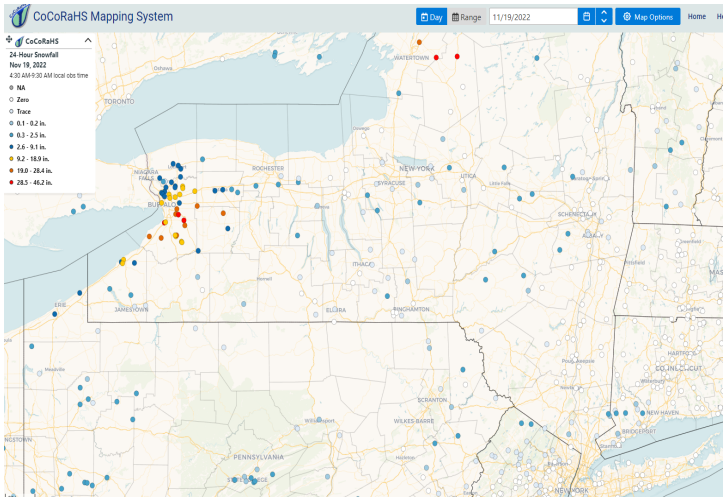
Measure Snow from Your Home & Join CoCoRaHS!

Do you have a passion for winter weather and enjoy measuring snow in your backyard? If so, consider joining our growing network of citizen scientists who submit their snow reports to enhance the weather and hydrologic community's understanding of just how much snow fell and is on the ground. This data is very valuable not only to meteorologists who are trying to forecast and verify what happened during or after snow storms but to multiple other partners. Examples include state and county partners who can declare a state of emergency and help a local area receive funding to recover from natural disasters. Hydrologic or water partners also benefit from the data from these backyard weather observers as it helps them learn which areas have a large snow depth and could be susceptible to flooding or which areas may be entering into a drought.

Left Image: CoCoRaHS gauge in an observer's backyard. Right image: A CoCoRaHS observer measuring snow

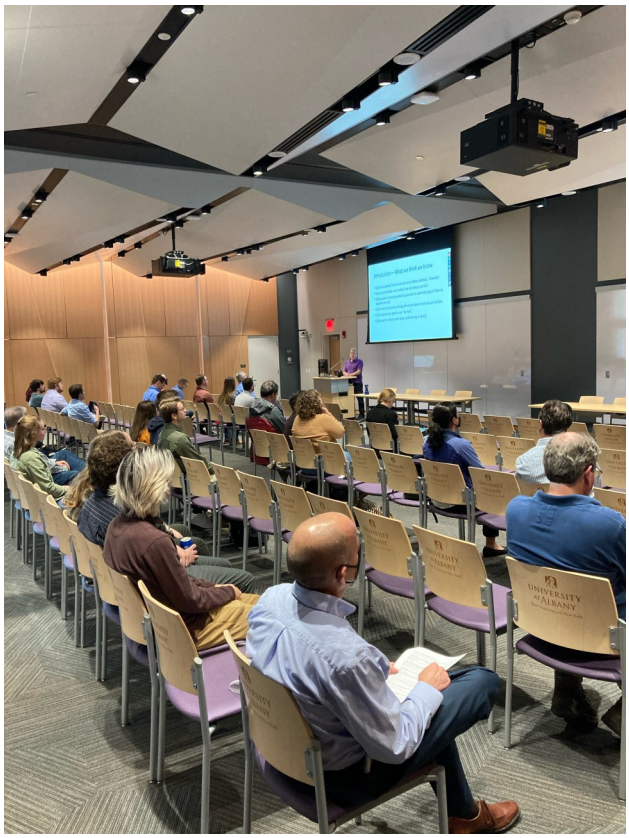
If you would like to help the National Weather Service and a variety of other partners gain a better understanding of just how much snow fell from winter storms this year, become a CoCoRaHS observer! CoCoRaHS is a nationwide effort and your participation can truly make a difference. All the training is free and available online directly from the CoCoRaHS website and you can submit your snow, snow depth and/or liquid precipitation (rain and/or melted down snow) via the app (see image to the left). You also can purchase a rain gauge from the website if you need one. While it is ideal to report every day, we understand life happens and appreciate as much data as you can submit. Help us grow our network of





- Christina Speciale, Meteorologist

Northeast Regional Operational Workshop (NROW) 2022



The 23rd Northeast Regional Operational Workshop (NROW XXIII) was held 2–3 November, 2022, in Albany, NY. This event was the beginning of a new era for NROW, since it was the first one to be held at the ETEC building, the new home of WFO Albany on the campus of the University at Albany–SUNY. It was also the first in-person NROW since 2019. NROW brought together attendees and presenters from several organizations housed at ETEC, including NWS, the UAlbany Department of Atmospheric and Earth Sciences, the UAlbany Center of Excellence in Weather and Climate Analytics, the New York State Mesonet, the UAlbany Atmospheric Sciences Research Center, and the UAlbany College of Emergency Preparedness, Homeland Security, and Cybersecurity. Other presentations were delivered by representatives from WFOs Boston/Norton, Mount Holly, and Pittsburgh, WPC, Hofstra University, Stony Brook University, and NCAR, and attendees joined in person and virtually from across the Northeast, Canada, and beyond. Session topics included severe and winter weather, IDSS and messaging, and novel products and techniques for operations.

"An event like NROW really demonstrates the benefit of having WFO Albany under the same roof as some of our partners in academia and emergency preparedness," said NROW Steering Committee Chair and WFO Albany Meteorologist Dan Thompson. "We want NROW to be the premier event for meteorologists and social scientists across the Northeast to come together and share research and ideas in order to improve our understanding of high-impact weather in the region and our provision of decision support services."

The keynote speech was delivered by Jackie Bray, Commissioner of the New York State Division of Homeland Security and Emergency Services (DHSES). Commissioner Bray spoke about her background working in the office of Louis Uccellini where she discovered the value of medium-range forecasting, and her current position where she emphasized the importance of collaboration between DHSES and NWS on blue-sky days in order to build trust when impactful weather occurs.

An agenda, book of abstracts, and presentations are linked at the NROW XXIII website: weather.gov/aly/nrow23.

Dan Thompson, Meteorologist

The 2022 Tornado Season Across Eastern NY and Western New England

(Source(s): NOAA/NCEI Storm Data and NWS at Albany Public Information Statement)

The National Weather Service (NWS) at Albany forecast area includes east-central New York (NY) and western New England (southern Vermont, the Berkshires of western Massachusetts (MA), and Litchfield County in northwest Connecticut (CT)). A total of 2 tornadoes occurred in 2022 within the NWS at Albany forecast area between January 1st and August 31st.

There were two tornadoes that occurred in July in eastern NY. The first occurred on July 13th in the town of Hurley in Ulster County. An EF-1 tornado touched down 1 mile northeast of Hurley on Hurley Avenue and was on the ground for a little over a half mile (0.52 miles) and had an estimated width of 300 yards. The tornado was on the ground form 849-851 PM EDT and moved southeast to about a mile west of Kingston which was close to the New York State Thruway. It crossed a subdivision where several trees were snapped or uprooted. A car canopy was blown away and a home had some shingles removed. Several homes had trees fallen on them. Aerial photos later showed a swath of downed trees from a second vortex related to the tornado on the northeast side of the sub-division. The EF-1 tornado had maximum estimated winds of 90 mph. A supercell thunderstorm that caused the tornado also had a macroburst associated with it earlier that evening. The Mayor of Kingston declared a local state of emergency with 6,000 people without a power in the city (restricting all

Continued on Page 8

The 2022 Tornado Season Across Eastern NY and Western New England (cont'd)

unnecessary travel in the city and nearby). Several thousand dollars in damage occurred from the tornado and macroburst. The macroburst also had estimated peak wind of 90 mph. It occurred between 837-847 pm EDT and went from 9 miles west of Kingston to 4 miles south of Kingston. The macroburst also produced extensive tree damage in the Kingston and surrounding area. No injuries or fatalities were reported. An EF-U tornado occurred on July 18th. A waterspout was videotaped on the Hudson River one mile south/southeast of Rhinecliff in Dutchess County. An EF-U tornado designation is one in which no survey-able damage can be done. For example, the tornado does not strike a damage indicator (power pole, building, etc.). In this case the tornado was spotted on the Hudson River, but no damage could be determined on land. A path length of 0.01 mile and a width of 10 yards was assigned to it.

The Albany forecast area averages about three tornado events each year based on a tornado climatology mean period from 1950-2022. An analysis since 1980 shows that the 3 greatest seasons annually in the Albany County Warning Area (CWA) occurred in 1992, 2003 and 2020 (**Fig. 1**). In the past, multiple reports of the same tornado are entered separately in *Storm Data* which can cause a higher number (i.e. 2003) of total reports. The 2020 record breaking season consisted of all separate tornadoes (14). The peak month(s) for tornadoes since 1980 across eastern NY and western New England are usually in July (33) and May (31), but August is steadily catching up with 3 in 2019 and 11 touchdowns in 2020 with a total of 25 since 1980 (**Fig. 2**). The majority of the tornadoes in the NWS at Albany forecast area are EF-0/U or EF-1 (~87%) since 1980 (**Fig. 3**). The operational Enhanced Fujita Scale is a set of wind estimates based on degree of damage. This tornadic damage scale was modified from the old Fujita Scale by a team of meteorologists and engineers, and was implemented on February 1, 2007. The EF scale ranges from 0 to 5, and has estimated 3-second wind gust ranges in miles per hour (mph). An EF-0 has winds of 65-85 mph, and an EF-1 has winds of 86-110 mph. An EF-2 has estimated 3-second wind gusts of 111-135 mph. Estimates of the damaging gusts are based on the subjective judgment of the survey team on 8 levels of damage to 28 structural and vegetative indicators. More information on the EF Scale, and the transition from the old Fujita Scale, can be found at the following website: https://www.spc.noaa.gov/efscale/.

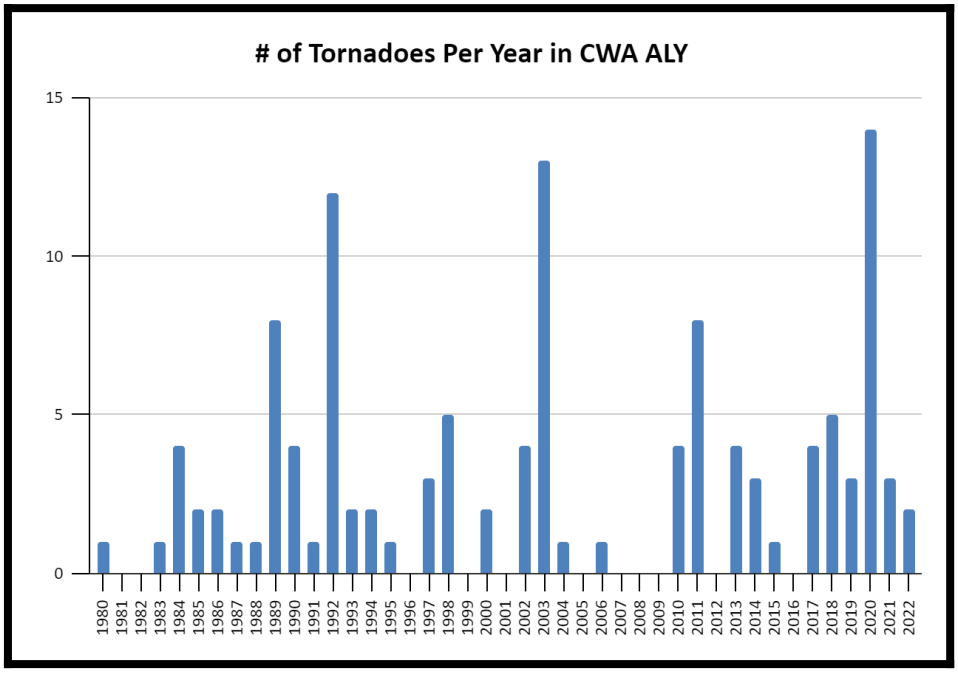


Figure 1: The number of tornadoes per year from 1980 to August 31, 2022 in the NWS at Albany County Warning Area (CWA). A total of 122 tornadoes have occurred.

Overall, the 2022 tornado season was slightly below average across eastern NY and western New England. Two tornadoes occurred with 1 EF-U and 1 EF-1. In 2020, a total of 13 tornadoes occurred with 6 EF-0's and 7 EF-1's from May to August 2020. The record-breaking 14th occurred with the October 7th derecho. The tornado season does not officially end until the end of the year, but November and December tornadoes are rare. The last couple of seasons (2021 and 2022) have been well below normal compared to 2020.

The 2022 Tornado Season Across Eastern NY and Western New England (cont'd)

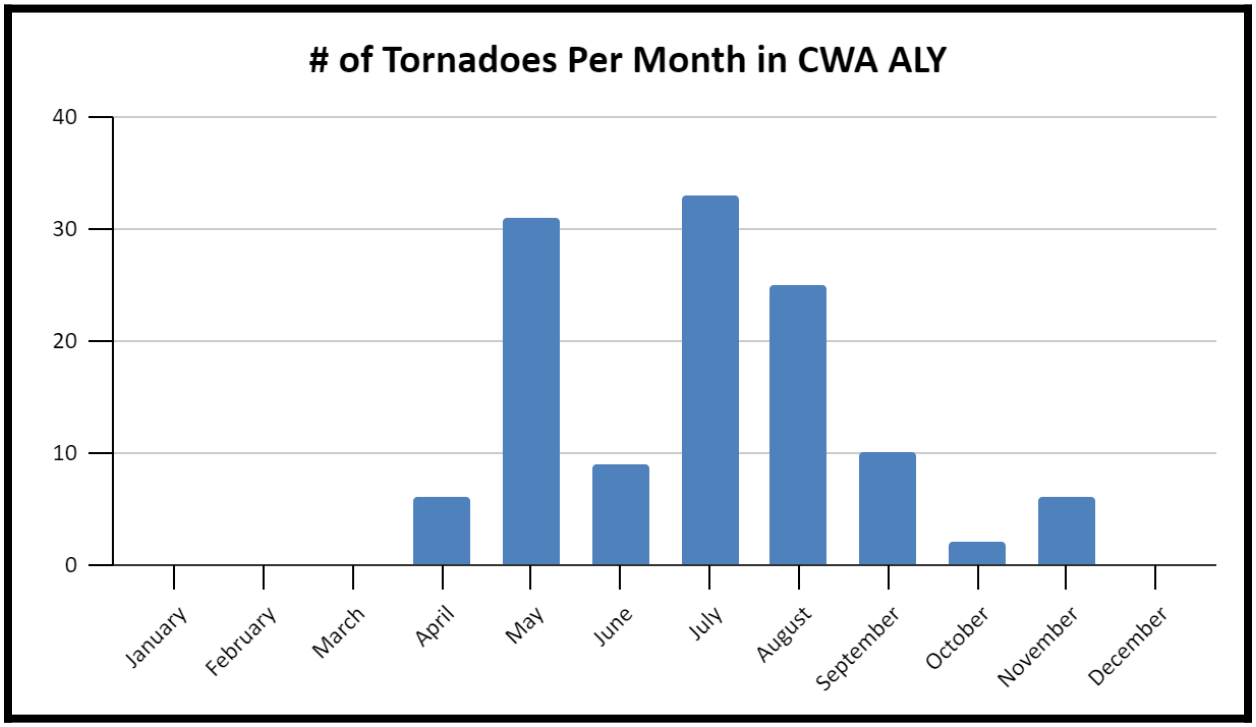


Figure 2: The number of tornadoes by month from 1980 to August 31, 2022 in the CWA of the NWS at Albany which is across eastern NY and western New England. A total of 122 tornadoes have occurred with maxima's in the late spring and summer. July has the most tornadoes followed by May, though a steady increase has occurred in August the past few years.

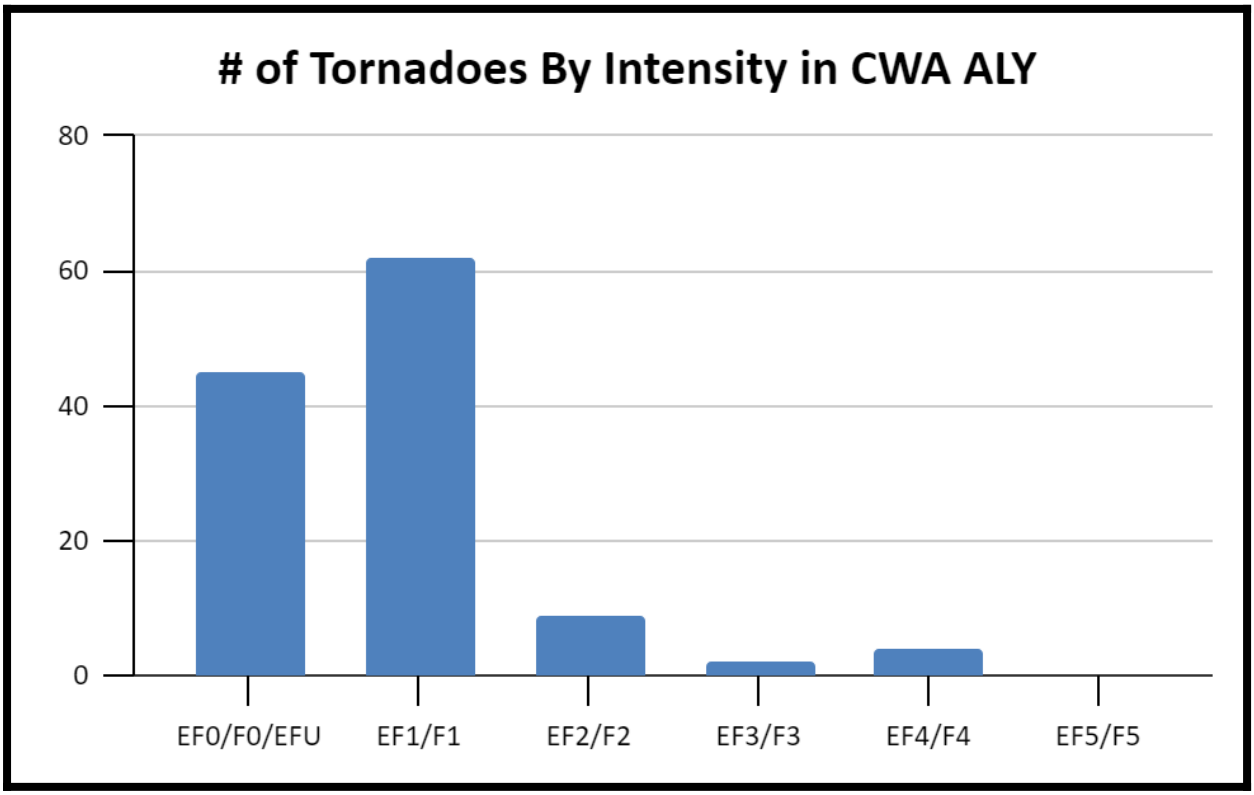


Figure 3: The # of tornadoes by intensity from 1980 to August 31, 2022 in the CWA at Albany. 106 of 122 tornadoes are EF-0/U(65-85 mph) or EF-1 (86-110 mph).

- Thomas Wasula, Lead Meteorologist

Word Search

Winter Weather

S C S N O W S T O R M G S A I K M L R A
U W U Z J K T H F K G U Y H C T W T T J
Y Q A V M Q B L I Z Z A R D P I F F K S
B S L E E T D B L A K E E F F E C T F C
K E M N X J D O P I S J R G W N Z O U H
T B L A C K I C E H S N O W S Q U A L L
I C E S T O R M S G K I T F X B O W S L
E P K R G W P X S O K B L Q Z D T J V L
X S U B R V G K F R E E Z I N G R A I N
B L O W I N G S N O W W D N P R T L Y L
L B X E F L U R R I E S I B S R Y C T Q
C O Z O B P Q R N U Q T M N W D D X S R
P L F D M D P L C O C R S U D D A G D A
I D I C D L J L S P R O M U A Y I E D U
C O J P F G Q E X S N E L J L I D U E Y
E I L X P Y U T F N B B A V J K W C Y Q
J F U Y X E V M J J O Y E S Z N U Y M H
A Z N B T H R A D L F K S Q T H Z G Y J
M W O G M O O A K U C V I J X E E H G D
B X W I N D C H I L L Q O F B R R X N R

Freezing Rain	Blowing Snow	Lake Effect
Snow Squall	Snowstorm	Wind Chill
Noreaster	Flurries	Blizzard
Black Ice	Clipper	Sleet
Ice Storm	Windy	Ice Jam

- Thomas Wasula, Lead Meteorologist

Word Scramble

Winter Precipitation

CEI EPSELTL _____

FIGZREEN ANRI _____

APGRLUE _____

SWON LEFKAS _____

HAVYE WNOS _____

ARNI _____

RLDIZZE _____

- Thomas Wasula, Lead Meteorologist

Word Search Answer Key

Winter Weather

S C S N O W S T O R M G S A I K M L R A
U W U Z J K T H F K G U Y H C T W T T J
Y Q A V M Q B L I Z Z A R D P I F F K S
B S L E E T D B L A K E E F F E C T F C
K E M N X J D O P I S J R G W N Z O U H
T B L A C K I C E H S N O W S Q U A L L
I C E S T O R M S G K I T F X B O W S L
E P K R G W P X S O K B L Q Z D T J V L
X S U B R V G K F R E E Z I N G R A I N
B L O W I N G S N O W W D N P R T L Y L
L B X E F L U R R I E S I B S R Y C T Q
C O Z O B P Q R N U Q T M N W D D X S R
P L F D M D P L C O C R S U D D A G D A
I D I C D L J L S P R O M U A Y I E D U
C O J P F G Q E X S N E L J L I D U E Y
E I L X P Y U T F N B B A V J K W C Y Q
J F U Y X E V M J J O Y E S Z N U Y M H
A Z N B T H R A D L F K S Q T H Z G Y J
M W O G M O O A K U C V I J X E E H G D
B X W I N D C H I L L Q O F B R R X N R

Freezing Rain	Blowing Snow	Lake Effect
Snow Squall	Snowstorm	Wind Chill
Noreaster	Flurries	Blizzard
Black Ice	Clipper	Sleet
Ice Storm	Windy	Ice Jam

- Thomas Wasula, Lead Meteorologist

Word Scramble Answer Key

Winter Precipitation

CEI EPSELTL	ICE PELLETS
FIGZREEN ANRI	FREEZING RAIN
APGRLUE	GRAUPEL
SWON LEFKAS	SNOW FLAKES
HAVYE WNOS	HEAVY SNOW
ARNI	RAIN
RLDIZZE	DRIZZLE

- Thomas Wasula, Lead Meteorologist

NATIONAL WEATHER SERVICE
Albany, NY

1400 Washington Ave
Albany, NY 12222
(518) 626-7573

OFFICE WEBSITE
WWW.WEATHER.GOV/ALY

Editor: Christina Speciale
Editor: Thomas A. Wasula

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