Stormbuster

NATIONAL WEATHER SERVICE ALBANY, NY

NWS Albany Staff Update

In this edition, we will share an interview with NWS Albany Lead Meteorologists Brian Frugis who has been part of the NWS Albany family since mid April 2007.

When did you first become interested in Meteorology?
I have been interested in meteorology ever since I was a young kid, growing up in northern New Jersey.   I always was interested in all different types of weather: I would track hurricanes on my own hurricane tracking charts that I received in the mail after writing a letter to National Hurricane Director Dr. Bob Sheets. I would keep a notebook with hand-drawn maps for winter storms and storm total snowfall measurements and would also watch the approach of thunderstorms from my back deck.

Where did you go to college and where did you work before the NWS at Albany?
I attended Rutgers, the State University of New Jersey. While at Rutgers, I was the President of the Rutgers student chapter of the American Meteorological Society during my senior year and we won Student Chapter of the Year at the AMS Annual Meeting in Seattle, Washington in January 2004.   During the fall of my senior year, I was a student volunteer intern at the National Weather Service Forecast Office in Mount Holly, New Jersey, where I got my first taste of issuing actual products, including a Post-Tropical Cyclone Report after Hurricane Isabel which impacted coastal New Jersey and a Winter Storm Watch for the December 2003 Winter Storm, which brought over a foot of snow to much of New Jersey.   During my spring semester of senior year, I interviewed at AccuWeather for a full-time job and immediately began after graduation. I worked there from June 2004 until April 2007 as a Forecaster.

How many years have you worked in the NWS?
I have worked at the National Weather Service since April 2007. I started here at NWS Albany as an "Intern Meteorologist".   I was promoted to "General Forecaster"/"Meteorologist" in April 2012.   I held that position until December 2021, when I was promoted to "Lead Meteorologist".

What have you enjoyed the most at the NWS Albany?
I enjoy the variety of weather that occurs here in Upstate New York. There is some type of excitement in the weather during all four seasons. I enjoy the challenge of warning on convective storms during the summer; the threat for tropical systems during the fall; forecasting snow and ice during winter storms and the excitement for the first arrival of warm weather in the Spring, as well as the threats for snow, thunder, drought, floods, fire
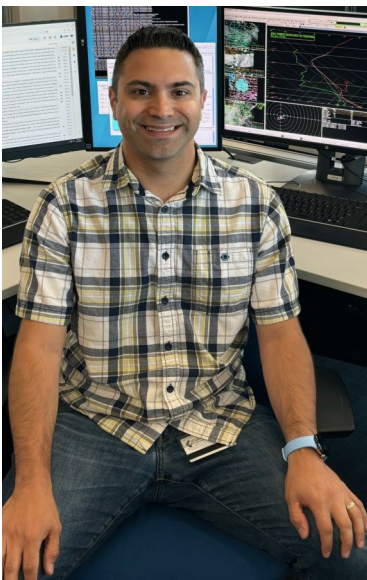
weather and heat, which are all possible during the transition Spring season.

What is your favorite type of weather?
This is a hard question since I really do love it all! If I had to really pick one, I would probably choose Winter Storms, because they are so challenging to get right and can have such a huge impact on our life here in Upstate New York.

What career aspirations do you have in the National Weather Service?
I am looking forward to continuing to improve our forecasts and our office here at the NWS Albany, so I am willing to do whatever it takes to make that happen! I would be interested in being the office's "Warning Coordination Meteorologist" someday, but love being a Lead Meteorologist.

What aspect of weather do you enjoy the most? What are the top 3 historical weather events you recall you have worked?
I really like helping figure out the best forecast and passing along that information to our partners and the public. I enjoy doing briefings and interviews about the weather and its impacts. My top 3 events here at NWS Albany include Tropical Storm Irene in August 2011, The Severe Thunderstorm and Tornadoes that occurred on May 15, 2018; and the Heavy Snowstorm of December 2020. Tropical Storm Irene was my first shift back after my wedding and honeymoon, and it turned out to be a double shift into the midnight shift, helping backup NWS Burlington, which was down due to the severe flooding and power outages. I helped issue severe thunderstorm and tornado warnings during the May 15 2018 event, which was one of the only days we had multiple tornadoes and large hail across our area during the same event within the past 15 years. During the snowstorm of December 2020, I arrived at work for the midnight shift with a light dusting on the ground, but left with over two feet, which made for a memorable trip home. All of these events were very different, but showed how powerful weather can be and how difficult it can be to predict exactly how things will go.

Do you have any hobbies? What do you do in your spare time with your family?
I enjoy spending time with my wife and three children during my time away from the office. I enjoy playing whiffle ball with my sons and listening to music with my daughter. My wife and I enjoy going out to eat, visiting breweries and wineries and going on day trips to the outlets. I love watching sports, especially the New York Mets for baseball, New York Rangers for hockey and Rutgers Basketball and Football. I like to get outdoors and enjoy hiking, snowshoeing and taking care of my yard. I also like to play Pokemon Go on my phone!

What has changed the most since the first day you entered the National Weather Service?
The biggest change would be how much weather support we give to EMs and other partners, such as New York State. When I started, we spent a lot of time creating the forecasts, but not a lot of time explaining or sharing them. Nowadays, we speed up the process of creating the forecast with more tools and using more model blends and we spend more time explaining the forecasts in briefings, emails and social media posts.   This helps ensure that the users understand our forecast and the impacts that we expect to occur.

If you did not work in the National Weather Service or have a career in meteorology, then what would you do?
If I wasn't a meteorologist, I think I would be some type of an engineer, perhaps a Civil Engineer, Environmental Engineer or even an Engineer with the US Navy. I would have also been interested in being an Astronomer and/or working for NASA.

Brian Frugis Lead Meteorologist

The April 8, 2024 Total Solar Eclipse

On April 8, 2024, a total solar eclipse passed across the continental United States with the path of totality stretching from Texas to Maine, including western and northern portions of New York State. New York State had 29 counties within the path of totality. Across the National Weather Service (NWS) Albany, New York County Warning Area, all areas had greater than 90% coverage with the path of totality crossing northern Herkimer and Hamilton counties.

Forecasters closely monitored the cloud cover forecast prior to the event in hopes that the eclipse would be viewable across the region. From a climatological standpoint, cloud cover on April 8 ranges from 60 to 80 percent, making viewing conditions less favorable versus other areas in the country within the path of totality. The weather pattern a week prior to the event favored ideal viewing conditions with an area of high pressure forecast to be over the region. At least, that forecast brought fairly high confidence that no precipitation would occur on the day of the eclipse. The days leading up to the event

The April 8, 2024 Total Solar Eclipse (cont.)

brought a slight trend toward more cloud cover as some mid and high level clouds would advance farther eastward ahead of a warm front approaching from the Ohio Valley.

The final forecast cloud graphic from the Weather Prediction Center displayed 60 to 80 percent cloud coverage across much of New York state, close to the climatological normals. Lower and middle level clouds were expected across western and central parts of the state with just high clouds farther to the east. In the end, while mid and high clouds did stream across the region, viewing conditions were at least fair in most areas with the best viewing conditions across northern and eastern portions of our region, where clouds were thinnest.

NWS Albany along with NWS Buffalo and Binghamton provided impact-based decision support (IDSS) to state partners to provide the latest weather information before, during and after the eclipse. The main focus on the day of the eclipse shifted to the North Country where traffic would be enhanced due to this region having the best viewing conditions across the state.

New York state will have to wait until May 1, 2079, for the next total solar eclipse, with the path of totality over the City of Albany and points south and east.

Did You Know?

Solar eclipses can make their own weather:
- The most notable change in weather is the drop in temperatures as the decrease in solar insolation causes the air near the surface to cool. Observed temperatures within the path of totality fell between 3 and 10 degrees across New York state with the larger drops across the North Country where there were fewer/thinner clouds.
- Solar eclipses can also lead to a decrease in cloud cover, especially for locations where fair weather cumulus develops. This is because the heating of the ground drives the development of these clouds, but the cooling of the ground surface during the eclipse can cause these to dissipate.

There are four types of solar eclipses (Total, Annular, Partial and Hybrid). Learn more about each of these by going to https://science.nasa.gov/eclipses/types/.

The counterpart to a solar eclipse, a lunar eclipse, occurs when the earth is directly between the sun and the moon as light passing through the earth's atmosphere gives the moon an orangish or reddish color. The next total lunar eclipse viewable across eastern New York and western New England will be on March 14, 2025. Learn more about lunar eclipses by going to https://science.nasa.gov/moon/eclipses/#hds-sidebar-nav-1.
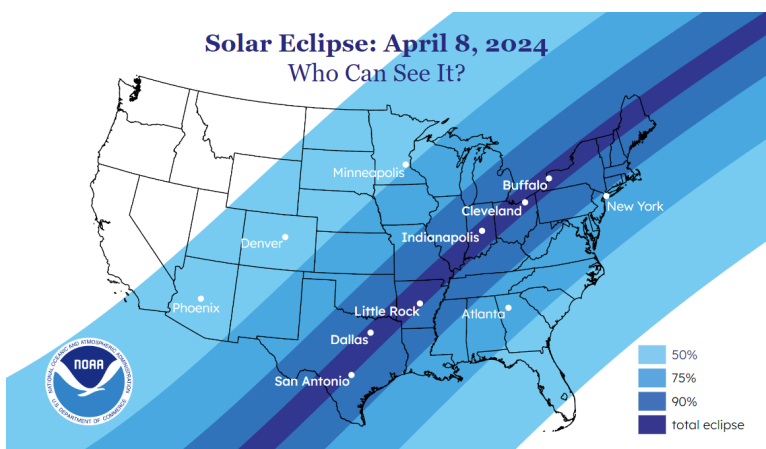

Figure 1: Map showing the viewing percentage of the solar eclipse across the continental United States. All of New York State with the exception of Long Island had 90 percent or greater coverage with the path of totality stretching across western and northern New York.
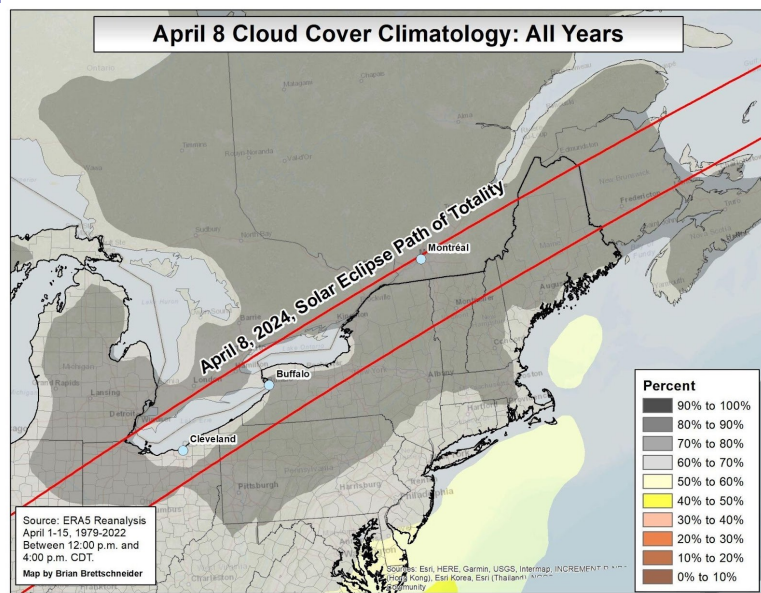
Figure 2: Cloud cover climatology across the northeastern United States on April 8. Image courtesy of Brian Brettschneider.

Figure 3: The final key message update regarding cloud cover across the United States prior to the start of the solar eclipse from the Weather Prediction Center in College, Park, MD.

Figure 4: NWS Albany Lead Meteorologist Christina Speciale took this photo of the solar eclipse during totality at the Town of Crown Point, New York in Essex County.

Brett Rathbun, Meteorologist

Hurricane Awareness Tour Visits NWS Albany

On May 7, 2024, the National Weather Service (NWS) in Albany partnered with the Albany International Airport to host the NOAA Hurricane Hunters and two aircrafts (the NOAA WP-3D and the USAF Reserve WC-130J) during the Hurricane Awareness Tour. This was the first time either aircraft has ever visited Albany! Multiple local schools visited the Albany International Airport where NOAA hurricane hunters gave tours of each aircraft and answered questions. NWS Albany meteorologists and staff as well as hydrologists from the Northeast River Forecast Center provided presentations and hands-on activities for students to discuss weather hazards and impacts from hurricanes, especially flooding. Students also had a chance to walk around and visit various tables hosted by the State University of New York (SUNY) Albany, the New York State Mesonet, and the Red Cross for additional education on hurricane preparedness actions and weather instruments that help scientists record data during tropical events. Local emergency manager partners and broadcast meteorologists were also in attendance.

Besides students, local and state leaders as well as leaders from NWS Headquarters and the National Hurricane Center (NHC) also spoke at a press conference discussing New York's vulnerability to hurricane hazards and partnerships between state and federal agencies to keep New Yorkers prepared. Leaders included the Commissioner of the New York State Department of Homeland Security and Emergency Services Jackie Bray, the NWS Director Ken Graham, the NHC Director Michael Brennan, and the SUNY Albany President Havidán Rodríguez.

Albany was one of five stops along the East Coast during the Hurricane Awareness Tour which also included Portland, ME, Norfolk, VA, Charleston, SC, and Orlando/Sandford, FL.

- Christina Speciale, Lead Meteorologist

2024 Hurricane Outlook for the Atlantic Basin

NOAA released the 2024 Hurricane Outlook for the Atlantic Ocean on May 23, 2024(https://www.noaa.gov/news-release/noaa-predicts-above-normal-2024-atlantic-hurricane-season). An active tropical season has been forecasted! The NOAA National Weather Service Climate Prediction Center (CPC) is predicting a very active season with an 85% chance for above normal activity (see **Figure 1**). There is only a 10% chance of a near normal season and a 5% chance of a below normal season. The Atlantic season is from June 1st to November 30th. NOAA CPC is forecasting 17 to 25 named storms (winds ≥ 39 mph or greater). Out of that group 8 to 13 are forecast to become hurricanes (winds ≥ 74 mph) which include a forecast of 4 to 7 major hurricanes which would be a category 3, 4, or 5 with winds ≥ 111 mph. This forecast was based on 70% forecaster confidence with these ranges.

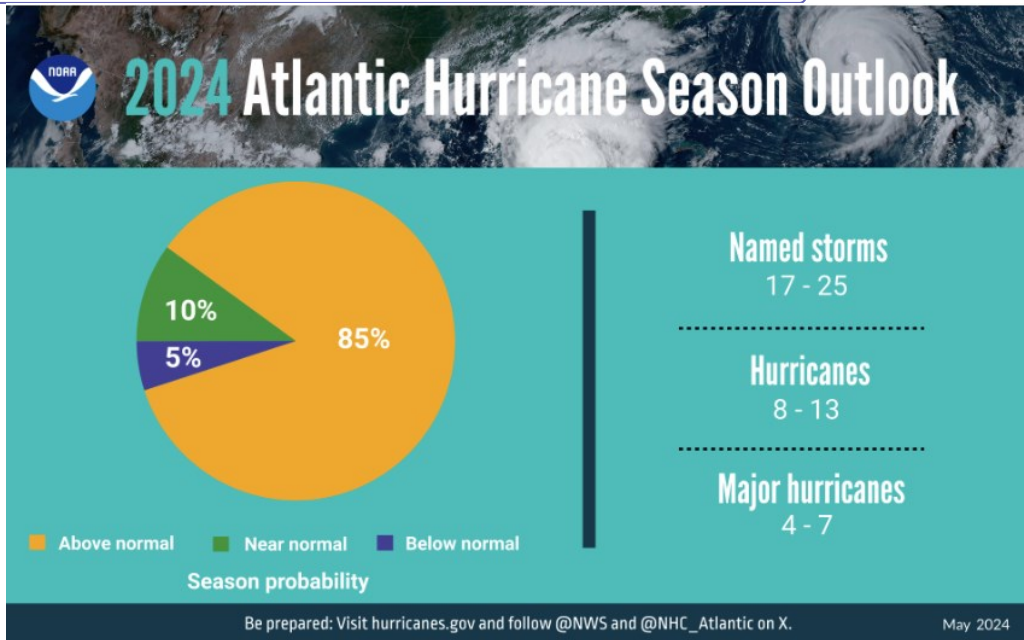## 2024 Hurricane Outlook for the Atlantic Basin (cont'd)

Figure 1: 2024 Atlantic Hurricane Season Outlook (Image credit: NOAA)

The forecast is based on a weakening of the trade winds and above normal temperatures expected in the Atlantic Ocean, as well as the transition from El Nino conditions to La Nina in the Pacific Ocean. Research studies have shown that La Nina conditions favor enhanced tropical development in the Atlantic Ocean with a decrease in wind shear. The 2023 Atlantic hurricane season was a busy one late year with the 4th most-named storms all-time in a year. Records go back to 1950. The Atlantic had 20 named storms with seven hurricanes and three that became major hurricanes. A typical season averages 14 named storms with seven hurricanes and three major hurricanes. Hurricane Idalia was the only continental US landfalling hurricane last year. It was a Category-3 hurricane that struck near Keaton Beach, Florida on August 30th with a strong surge of 7 to 12 feet with flooding across Florida and the Southeast. Hurricane Lee was a memorable one that made landfall as a post-tropical cyclone near Nova Scotia, Canada on Sept 16th. The strong winds gusts with Lee caused power outages in Canada as well as Maine.

The list of the names for the 2024 tropical cyclone season (**Figure 2**) was selected by the World Meteorological Organization. The official start for the season is June 1st and time will tell how many tropical cyclones will occur. NOAA and the National Weather Service will focus on forecast communication, safety and preparedness before any system. NOAA's CPC will update the 2024 Atlantic Tropical Outlook in early August.

Figure 2: 2024 Atlantic Tropical Cyclone Names (Image credit: NOAA)

Thomas Wasula, Lead Meteorologist

Severe Weather

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

Funnel Cloud   Squall Line   Microburst   Hail

Flash Flood   Lightning   Downburst

Mammatus   Gustnado   Supercell

Tornado   Derecho

- Thomas Wasula, Lead Meteorologist

Word Scramble

Tropical Weather

OCLNCEY   _____

LPITRCAO ORMTS   _____

RRICEHAUN   _____

OHPTNYO   _____

OPTLRACI PRESDEISON   _____

PLARICOT AWEV   _____

TREUO ANDB   _____

EYE LWAL   _____

RTSOM RSUGE   _____

RWUJAHFIA FCFTEE   _____

Word Search Answer Key

Severe Weather

Thunderstorm	Cumulonimbus	Mesocyclone	Anvil
Funnel Cloud	Squall Line	Microburst	Hail
Flash Flood	Lightning	Downburst	
Mammatus	Gustnado	Supercell	
Tornado	Derecho		

- Thomas Wasula, Lead Meteorologist

Word Scramble Answer Key

Tropical Weather

OCLNCEY	CYCLONE
LPITRCAO ORMTS	TROPICAL STORM
RRICEHAUN	HURRICANE
OHPTNYO	TYPHOON
OPTLRACI PRESDEISON	TROPICAL DEPRESSION
PLARICOT AWEV	TROPICAL WAVE
TREUO ANDB	OUTER BAND
EYE LWAL	EYE WALL
RTSOM RSUGE	STORM SURGE
RWUJAHFIA FCFTEE	FUJIWHARA EFFECT

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