National Weather Service, Louisville

SHAREHOLDERS REPORT

2022

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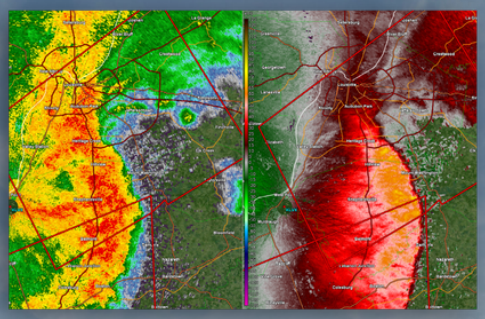

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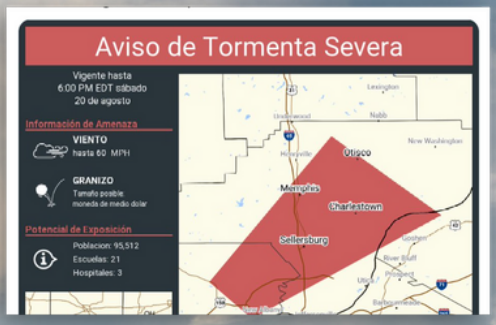

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Background: sunset from the Ohio River northeast of Louisville August 5, 2021. *Cecelia Reaugh*

WELCOME

John Gordon, Meteorologist-in-Charge

Our mission: the protection of life and property

Though we have gone by different names in the past, what we know today as the Louisville National Weather Service forecast office (NWS Louisville) has been serving its shareholders for 151 years. We continue to be committed to serving the people of southern Indiana and central Kentucky 24 hours a day, every day of the year. This document, our 18th annual Shareholders Report, details the activities of NWS Louisville across the 59 counties we serve. In the challenging days of the global pandemic, recovery after devastating tornado outbreaks in December 2021 and January 2022, and late winter flooding, it has been a busy time for NWS Louisville.

The aftermath of the historic nighttime Quad State Tornado Outbreak December 10-11, 2021 presented many opportunities including research, working with a National Storm Assessment Team, numerous Emergency Management meetings, and giving educational presentations to the public.

We have made significant strides in reaching the Spanish-speaking community. Meteorologist Adrian Lopez Lago has created a variety of helpful information in Spanish (see page 15).

NWS Louisville has conducted several meetings with Mammoth Cave National Park and Abraham Lincoln Birthplace National Historical Park. We will be providing weather support for their largest outdoor events and our weather information will be available to the public in the visitor centers. The National Park Service will also benefit from a new river forecasting point on the Green River near Mammoth Cave in the Fall of 2023.

Lead Forecaster Tom Reaugh has worked tirelessly with NWS Aberdeen (South Dakota) meteorologist Scott Doering culling through thousands of historical weather events to develop a master historical weather event database for the United States.

I hope you find that our activities outlined in the following pages demonstrate the sort of stewardship you expect from your public servants. We believe in integrity, customer service, proactiveness, and public accountability. The NWS cost each American only $3.83 in 2022. I welcome your suggestions as to how the National Weather Service office in Louisville can be an even better investment for you.

I am grateful to Lead Forecaster and Shareholders Report Editor Tom Reaugh for assembling this report, and to Science and Operations Officer Ryan Sharp for his thorough review of the document.

GOALS FOR 2023

1

More staff deployment to provide on-site weather support for major outdoor events

2

Training meteorologists and the public on the creation and presentation of probabilistic forecast messaging

3

Enlist Weather-Ready Nation Ambassadors on the Bourbon Trail®

4

Improve the in-office Situational Awareness Display used by forecasters to monitor local weather conditions, hazardous material spills, unplanned fires, and other socially impactful events

5

Use data from Indiana and Kentucky transportation departments for use in winter weather operations

The Future of the NWS Is Here

SUPPORTING DECISION-MAKERS

MIKE KOCHASIC, WARNING COORDINATION METEOROLOGIST

Decision support is at the core of what NWS Louisville provides to our partners for the protection of life and property. From timely and accurate forecast updates to going above and beyond the forecast with graphics, emails, conference calls, and onsite support, 2022 was a busy year following the deadly December 2021 central Kentucky tornadoes. 2022 brought a "new normal" to the post-pandemic world with an increase in requests for in-person meetings, outreach participation, and other event support.

At the heart of service to our partners is establishing relationships before disastrous weather occurs. In 2022 there was a focus on rekindling partnerships at all levels among our 59 counties across southern Indiana and central Kentucky. Several in-person meetings and exercises were conducted with local officials. In March a table-top exercise was held in Brownsville, KY, to discuss NWS products and services. We also met with Churchill Downs, Mammoth Cave National Park, and Abraham Lincoln Birthplace National Historical Park to practice severe weather scenarios and discuss what NWS Louisville can do, in concert with our partners, to keep people safe. Meetings like these are our chance to hear directly from our core partners while gathering critical feedback on how we can better convey information. Pre-season coordination ahead of severe weather is crucial to everyone's success in protecting what matters most: lives and property.

Left: Mike Kochasic stands next to meteorological instruments used to monitor weather conditions for Thunder Over Louisville. Above left: Mammoth Cave National Park becomes a Weather-Ready Nation Ambassador. Above right: Continuing to develop our partnership with Churchill Downs.

The most disastrous weather event in Kentucky this year was the eastern Kentucky flash flooding in late July. While the central part of the state, covered by NWS Louisville, saw only limited impacts from this heavy rain event, staff at NWS Louisville stepped up to help our partners support those affected. Lead Forecaster Brian Schoettmer answered the call to deploy to the Hazard County Emergency Operations Center (EOC) for three days to provide weather updates to crews working around the clock at ground zero of the devastation. During the flood, Hydrologist Andrea Schoettmer worked virtually with NWS Jackson, the office responsible for eastern Kentucky. Andrea forecasted record flooding on the rivers, prepared briefing slides for partners, and provided hydrological expertise to local forecasters. After the flood, Andrea and NWS Jackson surveyed the damage, including drone footage of the destruction.

NWS Louisville Warning Coordination Meteorologist Mike Kochasic worked at the State Emergency Operations Center in Frankfort to provide weather updates and support to Kentucky Emergency Management. Mike briefed the Federal Emergency Management Agency and the Governor's staff for planning purposes in support of the hard-working crews in eastern Kentucky.

Warning Coordination Meteorologist Mike Kochasic provides a weather briefing to state officials and disaster teams in Frankfort during the catastrophic July floods.

Whitesburg, KY. *Missy Bush via NWS Jackson*

Jackson, KY. *Sean Moody via NWS Jackson*

NWS Louisville provided remote support for more than two dozen events from October 2021 through September 2022, and deployed on-site personnel for Thunder Over Louisville (Lead Forecasters Ron Steve and Brian Schoettmer), Kentucky Oaks and the Kentucky Derby (Ron Steve and Brian Schoettmer), and the Madison, IN Regatta (Forecaster Brian Neudorff). NWS Louisville personnel also conducted many storm damage surveys throughout the year, beginning with a tornado outbreak on New Year's Day. There were 41 severe weather events for which NWS Louisville composed weather briefing slide decks and shared them with partners. We also began sending briefings ahead of, and during, drought.

Ohio Valley weather can be wild and dangerous, but the commitment to our partners from the staff at NWS Louisville remains strong. In the coming years we fully expect an increase in on-site support for large outdoor venues.

Top to bottom: Tornado damage in the Kentucky counties of Barren, Warren, Madison, and Taylor.

A Rough Start to 2022

NEW YEAR'S TORNADOES

JOHN GORDON, METEOROLOGIST-IN-CHARGE

Our mission is the protection of life and property, and we had a challenging weather event on New Year's Day. Thunderstorms that developed initially that morning showed signs of strong rotation aloft, in the clouds, as well as the classic "hook echo" signature on radar. However, despite the dramatic appearance, the rotation was not reaching the ground. A recent focus for meteorologists at NWS Louisville has been to use a careful study of the environment immediately surrounding storms to determine if that environment is favorable for severe weather. Despite the rotation seen aloft in the storms early on New Year's Day, they were not in an environment conducive to tornado formation. The NWS Louisville warning team, via careful environmental analysis and open communication among team members, was able to successfully avoid issuing unnecessary Tornado Warnings. Radar operators showed superior technical proficiency and meteorological savvy and did not issue Tornado Warnings for the rotating storms that were remaining aloft.

By midday, however, the storms continued to show rotation and were forming on the side of an air mass boundary where it would be more likely for the rotation detected within the storms to make it all the way down to the ground as a tornado. NWS Louisville began issuing Tornado Warnings for these storms, and later field surveys and analysis revealed eight tornado tracks across central Kentucky. See weather.gov/lmk/Jan1_2022Tornadoes.

After the event, WDRB meteorologist Jude Redfield said, “Thank you for NWS Tornado Warning restraint. (The storms were) all spinning, and during the busiest college football TV day of all. So thankful for the gang at the NWS Louisville office, who (were practicing) good science and radar decision making."

From WAVE Chief Meteorologist Kevin Harned: "Thank you for not issuing dozens of tornado warnings (during the) January 1 football frenzy... NWS Louisville did a bang-up job."

2022 Relatively Quiet, but Still Packed a Punch

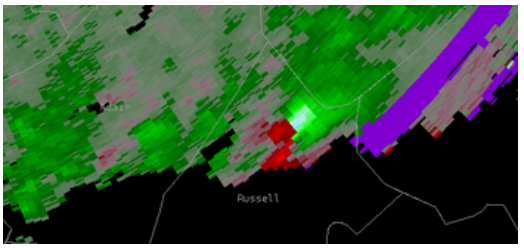
SEVERE WEATHER

RYAN SHARP, SCIENCE AND OPERATIONS OFFICER

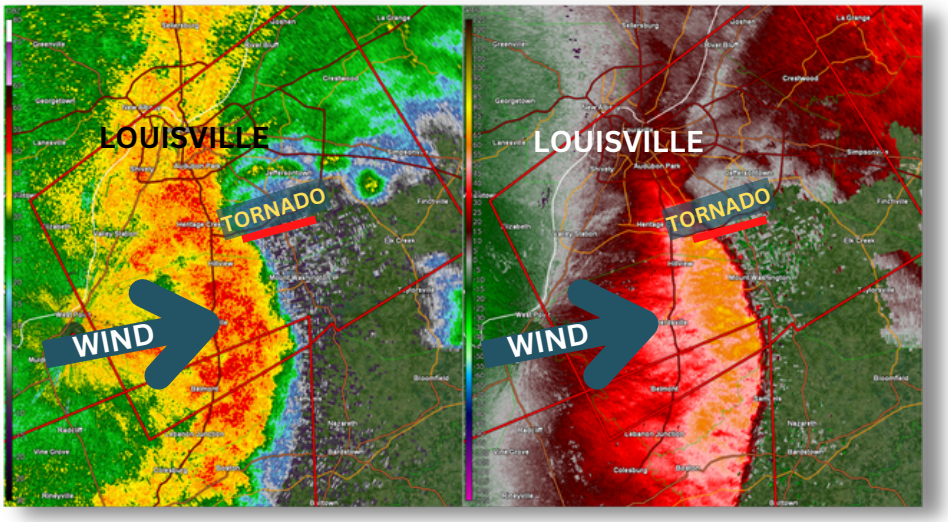
2022 continued a recent trend, beginning in 2019, of relatively diminished severe weather activity in our part of the Ohio Valley. From 2011 through 2018, NWS Louisville issued an average of about 400 total Severe Thunderstorm and Tornado Warnings per year, but over the past few years those numbers have been cut approximately in half.

2022 did start off with a bang, however, with 8 tornadoes touching down on January 1 (see previous page). Compared to the December 10-11, 2021 event, the New Year's Day tornadoes were of EF-0 and EF-1 strength and subsequently not as impactful.

As noted on page 7, storms on the morning of January 1 showed impressive rotation but did not produce tornadoes. In the image to the right, the bright green and red colors suggest strong rotation in a storm over Russell County. Analysis of the environment indicated that the rotation would stay aloft and not become a tornado. No Tornado Warning was issued and, indeed, this storm produced no severe weather.



Referencing the storms on January 1, WLKY Chief Meteorologist Jay Cardosi remarked, “This was initially a classic “false alarm trap” set-up that NWS Louisville did not fall for because of your team’s knowledge and experience. A truly job well done by all in the Louisville office."



WSR-88D radar reflectivity (left) and velocity (right) images at the time the "Destructive" tagged Severe Thunderstorm Warning was issued on April 13.

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LAT...LON 3810 8523 3798 8548 3799 8549 3796 8553
      3783 8581 3816 8602 3846 8551
TIME...MOT...LOC 0024Z 237DEG 60KT 3819 8551

TORNADO...POSSIBLE
THUNDERSTORM DAMAGE THREAT...DESTRUCTIVE
HAIL THREAT...RADAR INDICATED
MAX HAIL SIZE...1.00 IN
WIND THREAT...RADAR INDICATED
MAX WIND GUST...80 MPH
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The “Destructive” tag on the April 13 Severe Thunderstorm Warning that triggered Wireless Emergency Alert (WEA) messages.

Another tornado event occurred on April 13 when nine tornadoes touched down, again all EF-0's and EF-1’s. This event was notable as one of the first times NWS Louisville issued a Severe Thunderstorm Warning with a “Destructive” tag in it. That tag is given to warnings for storms expected to produce either 80 mph winds or baseball sized hail. Those thresholds are triggers for Wireless Emergency Alert (WEA) messages to go off on mobile devices. The tag was used on a Severe Thunderstorm Warning for a line of storms crossing the southern Louisville metro, as seen in the radar imagery on the left. The line produced an EF-1 tornado just outside the Gene Snyder Freeway. The twister damaged the home of one of the meteorologists working in the office that night.

New Advancements in Short-Term Forecasting

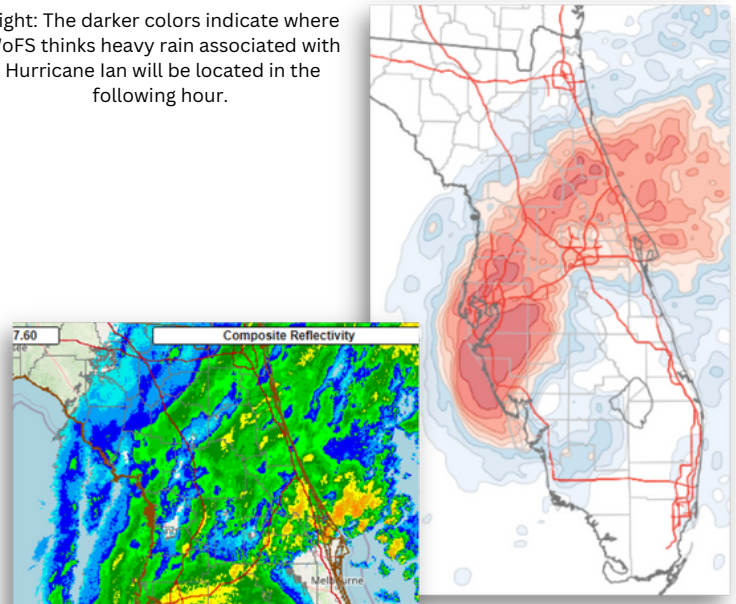
WARN-ON-FORECAST

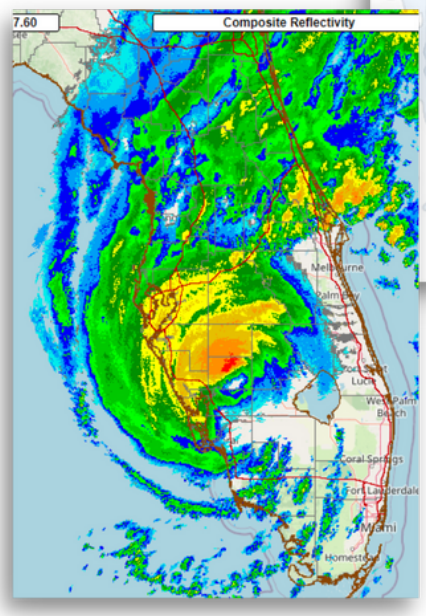
RYAN SHARP, SCIENCE AND OPERATIONS OFFICER

A new forecasting model, run by the National Oceanic and Atmospheric Administration (NOAA) and the National Severe Storms Laboratory (NSSL), is making breakthroughs in messaging hazardous weather in the gap between watches (severe weather possible in the next several hours) and warnings (severe weather imminent within the hour). The Warn-on-Forecast System, or WoFS, is a high resolution computer forecast model that ingests radar and other observational data and produces quick-updating local forecasts. It produces forecasts of weather over the next 6 hours, with updates every 30 minutes. Given the computational complexity of this system, it typically is only run in areas of particularly high risk for impactful hazardous weather events, such as Hurricanes Ian and Nicole striking Florida.

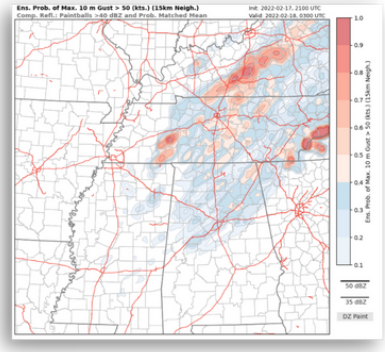
Southern Indiana and central Kentucky were in the WoFS domain for five weather events in 2022 (2/17, 3/30, 4/13, 5/18, and 5/26). The tool provided many different ways of looking at forecast data.

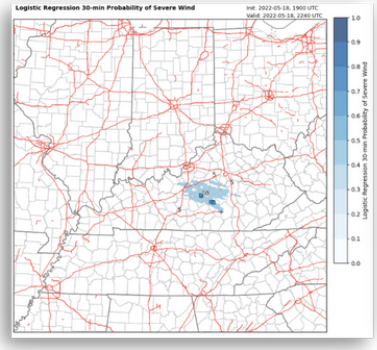
Right: The darker colors indicate where WoFS thinks heavy rain associated with Hurricane Ian will be located in the following hour.



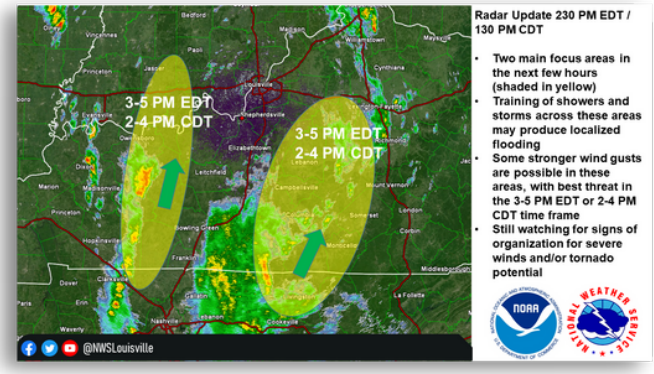


Left: Radar shows what happened, with heavy rain depicted by the yellow and red colors.





Above left: Forecast probability of severe wind gusts for a swath of storms moving across the region on the afternoon of February 17. There were several reports of damage east of I-65. Above right: On May 18, a small low pressure system ignited afternoon storms. A machine learning tool gave the probability of a severe wind report (shades of blue), with verified reports depicted by the blue boxes.



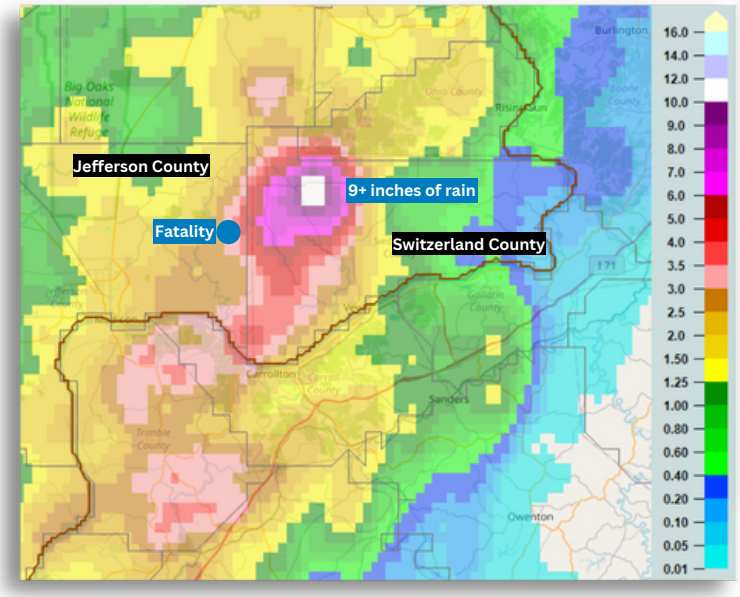
For an event on May 26 we were forecasting areawide rains and the Storm Prediction Center had the entire region in a slight risk for severe storms. WoFS was able to fine tune that forecast into a couple of swaths of heavy rain predicted in a 3-4 hour window. Based on that information, we posted the image above on our website and social media to show those areas. Over the coming years, the public should see this type of information more frequently as we gain confidence in using this new tool and as NOAA/NSSL expand the program.

Small Creek Becomes Raging Torrent

FATAL FLOOD

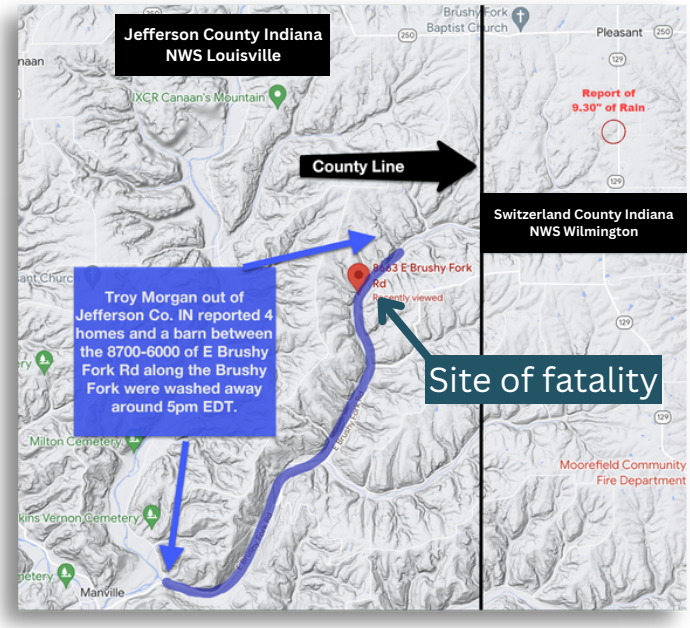
ANDREA SCHOETTMER, SERVICE HYDROLOGIST

During the late afternoon and evening of September 3 a slow moving storm over western Switzerland County, Indiana dropped 9-11 inches of rain in just four hours.



Runoff not only flowed down the primary drainage along Indian Creek through Switzerland County, but also ran through a secondary drainage along Brushy Fork in Jefferson County, Indiana. A large volume of flood water accelerated down a 400 ft ridge into Brushy Fork causing deadly flash flooding. Note on the map above how a fatality occurred, but not where the heaviest rain fell.

Brushy Fork after the flood. Homes, barns, and the red vehicle shown here were swept away by the sudden floodwaters.



Shortly after 5pm four homes and a barn were completely washed away along East Brushy Fork Rd by Brushy Fork's powerful flood waters, unfortunately resulting in one fatality. Seven homes were damaged in Switzerland County with three completely demolished. Several bridges were destroyed and roadway surfaces were scoured of pavement in both counties. Mature trees along the creek were washed away or flattened.

Following this devastating flash flood, Hydrologists Andrea Schoettmer (NWS Louisville) and Julia Dian-Reed (NWS Wilmington, OH) surveyed the damage on the ground and with a drone. This was the first flash flood survey completed by NWS Louisville. The survey revealed flattened vegetation and water lines on structures, telltale signs of the extent of the flood waters. Large pieces of structures and many personal belongings were left scattered along the creek banks and adjacent trees.

The ground and drone surveys will be used to document the flood and study ways to better predict flash flooding along that creek in the future.

Direct Communication with Decision-Makers

KENTUCKY RIVER EMERGENCY

ANDREA SCHOETTMER, SERVICE HYDROLOGIST

On January 3, NWS Louisville Hydrologist Andrea Schoettmer provided real-time incident decision support services to the Clark County, KY Emergency Manager (EM) after the EM office received a call about a structure having been swept away in the Kentucky River. Andrea contacted the Ohio River Forecast Center, which forecasts river levels for the Kentucky River, for the river velocity. Andrea then mapped out the 1, 2, and 2.5 hour forecast locations of the flood wave that carried away the structure and passed that information along to the EM so the rescue team could catch the structure before it hit Ford Lock.

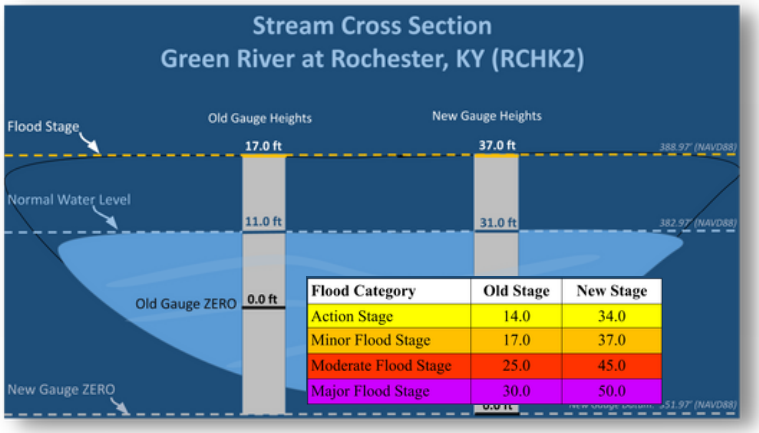
The river stage that day was 15 feet, so Andrea provided the EM with pictures of what the river at Ford Lock looks like at that level. Ultimately the houseboat-like structure was recovered and caused minimal damage.

Ford Lock at a Kentucky River stage of 15 feet

Updating a Vital River Forecast Point

NEW AUTOMATED RIVER GAUGE

ANDREA SCHOETTMER, SERVICE HYDROLOGIST



Installation of the new river gauge on the Green River at Rochester necessitated a change in how the river stages are measured and reported. Equivalent river level values are now 20 feet higher than the manual readings that were taken on the old staff gauge.

The river gauge on the Green River at Rochester underwent a datum change on October 6. The datum change was made after a new United States Geological Survey automated river gauge was installed replacing the manual river observations that had been taken by the ferry operator for several decades. Manual observations were taken and reported once per day, but the automated gauge reports every 15 minutes. This change will benefit users of the Rochester river gauge by providing more frequent river observations and more accurate river forecasts.

Coming in 2023: a new river forecast point on the Green River in Mammoth Cave National Park

Drones Give a Bird's-Eye View

AN ACTIVE YEAR FOR DRONES

DAN MCKEMY, LEAD FORECASTER

NWS Louisville continued to use drones for river flood and storm damage surveys in 2022. The year started out with a bang as a New Year's Day severe weather event resulted in eight tornadoes across southern and central Kentucky. Many of the tornadoes occurred in areas where terrain and trees made it difficult to see extended damage paths from ground level, but the drones allowed surveyors to quickly assess the damage and accurately determine the path widths and lengths of the tornadoes. The drones were also used in tornado damage surveys after storms that occurred on March 18 and April 13.

Background: damage from a tornado in Louisville April 13

Our neighbors in eastern Kentucky experienced significant flooding in late July. NWS Louisville's Hydrologist, Andrea Schoettmer, assisted NWS Jackson with river flood surveys and used the drones to evaluate damage and flood crests. All of the data gathered with the drones have helped to improve the overall accuracy and timeliness of the surveys, which ultimately benefit our customers (you!).

Lead Forecaster Dan McKemy Excels

OPERATIONAL ACHIEVEMENT AWARD

JOHN GORDON, METEOROLOGIST-IN-CHARGE

Above: Damage from an EF-1 tornado in Taylor County January 1. Right: Scan the QR code to see one of Dan's drone videos of damage after the December 2021 Bowling Green tornado.

The National Weather Association (NWA) presented Lead Forecaster Dan McKemy with the prestigious Operational Achievement Award at the association's annual meeting in August. The award was in recognition of his work with the national drone project, along with his radar analysis skills during times of dangerous weather.

Dan was involved in a 3-year drone test and evaluation period with NWS Headquarters to determine the feasibility of drone usage in the NWS. NWS Louisville completed 44 flights over eight days of surveying after the devastating December 10-11, 2021 Quad State Tornado Outbreak. Many of the drone footage videos were used by national and international media outlets.

Radar skills are important for any meteorologist, and Dan's are exemplary. Not only does he know when to issue Tornado Warnings, he knows when to hold off and *not* issue warnings for storms that are unlikely to produce a tornado. Dan's false alarm rate of 46% is well below the national average.

Ohio County residents were provided an hour of advance notice that the Mayfield tornado was headed their way, and half an hour warning before Bowling Green was struck by an EF-3 tornado December 11, thanks to Dan's radar acumen.

Dan developed several case studies to train NWS Louisville staff on severe storm structure and radar interpretation. As part of this training, Dan shares "Radar Image of the Month" emails with dozens of NWS offices. He has tremendous interpersonal and customer service skills, mentoring his co-workers and peers empowering them to grow personally and professionally.

Cornerstone of the Nation's Weather Record

COOPERATIVE OBSERVER PROGRAM

CLIFF GOFF, OBSERVATION PROGRAM LEADER

The NWS's Cooperative Observer Program, also known as COOP, has over 8700 volunteers who provide weather observations across the nation. Here in southern Indiana and central Kentucky, there are roughly 50 volunteers, ranging from citizens to national parks, that provide forecasters and climatologists with weather data such as temperature, precipitation, and soil moisture.

In 2022 our program focused on strengthening partnerships with some of our national and state parks including Mammoth Cave National Park, Abraham Lincoln Birthplace National Historic Park, and Perryville Battlefield State Historic Site. Daily observations provided by these parks will verify forecasts, sharpen local meteorologists' situational awareness, enable meteorologists and park rangers to better communicate weather hazards, and improve climatological records.

Due to retirements or turnover, new observers were added to the roster this year at both new sites and established sites. Special thanks are extended to weather observers at the following locations: Bernheim Arboretum and Research Forest, Danville Water Filtration Plant, and Fordsville Elementary School.

In 2022 we recognized several of our volunteer observers who reached milestone anniversaries with the program: Tommy Hines of Morgantown, KY, and Lewis Carter of McDaniels, KY (pictured above on the left, with Observation Program Leader Cliff Goff) both celebrated 10 years as observers. David Calvert of Scottsville, KY (pictured below with John Gordon) celebrated his 20 year anniversary in the program.

In addition to the Cooperative Observer Program, the National Weather Service also participates in the Community Collaborative Rain, Hail, and Snow Network (CoCoRaHS). In CoCoRaHS, volunteers measure and report rainfall each morning. It's fun and easy! For more information see cocorahs.org or contact Tom Reaugh at (502) 969-8842 Monday-Friday 8am-6pm Eastern Time.

NWS Louisville offers our condolences to the family of the late Thomas A. "Tommy" Hart of Bardstown, KY. Tommy provided daily weather observations for over 34 years, exemplifying what it is to be a reliable observer. We will miss the friendly conversations we had with him each evening when he would call in with his report. Rest well, Tommy.

Reaching Out to Spanish Speakers

SPEAKING THE LANGUAGE

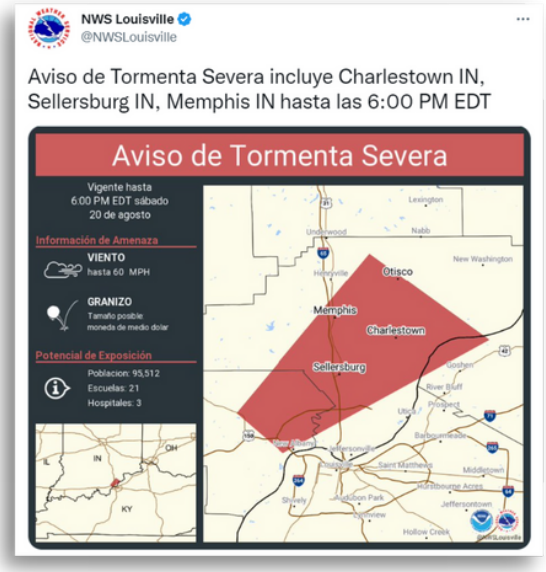
ADRIAN LOPEZ LAGO, METEORÓLOGO
C J PADGETT, METEOROLOGIST

El Servicio Meteorológico Nacional (SMN) está mejorando los servicios dirigidos a la comunidad hispana en los Estados Unidos. En el 2022, la oficina de Louisville del SMN comenzó a brindar información del tiempo en español a través de sus plataformas digitales. El contenido ofrecido incluye avisos de tornados, tormentas severas, inundaciones repentinas, los pronósticos del tiempo, y en general información sobre seguridad pública.

El Equipo de Difusión en Español de la oficina de Louisville y el Equipo de Asistencia Multimedia en Español del SMN son recursos para asistir a los empleados no hispanohablantes del SMN en la traducción de información importante del tiempo. El objetivo final es impulsar la misión del SMN de proveer información crítica para salvaguardar la vida y la propiedad mientras se exploran nuevas vías para llevar el mensaje a la comunidad hispana de los Estados Unidos.

The NWS is invested in improving service to our Hispanic communities across the country. In 2022, NWS Louisville began providing social media graphics with Spanish text. Graphics included Tornado Warnings, Severe Thunderstorm Warnings, Flash Flood Warnings, weather forecasts, and safety awareness information.

The NWS Louisville Spanish Outreach Team and the NWS's Multimedia Assistance in Spanish Team are resources to assist non-Spanish speaking NWS employees in translating important weather information into Spanish. The end goal is always to further the reach of the NWS mission of providing critical information for the protection of life and property, and to explore new ways to reach Spanish speakers.

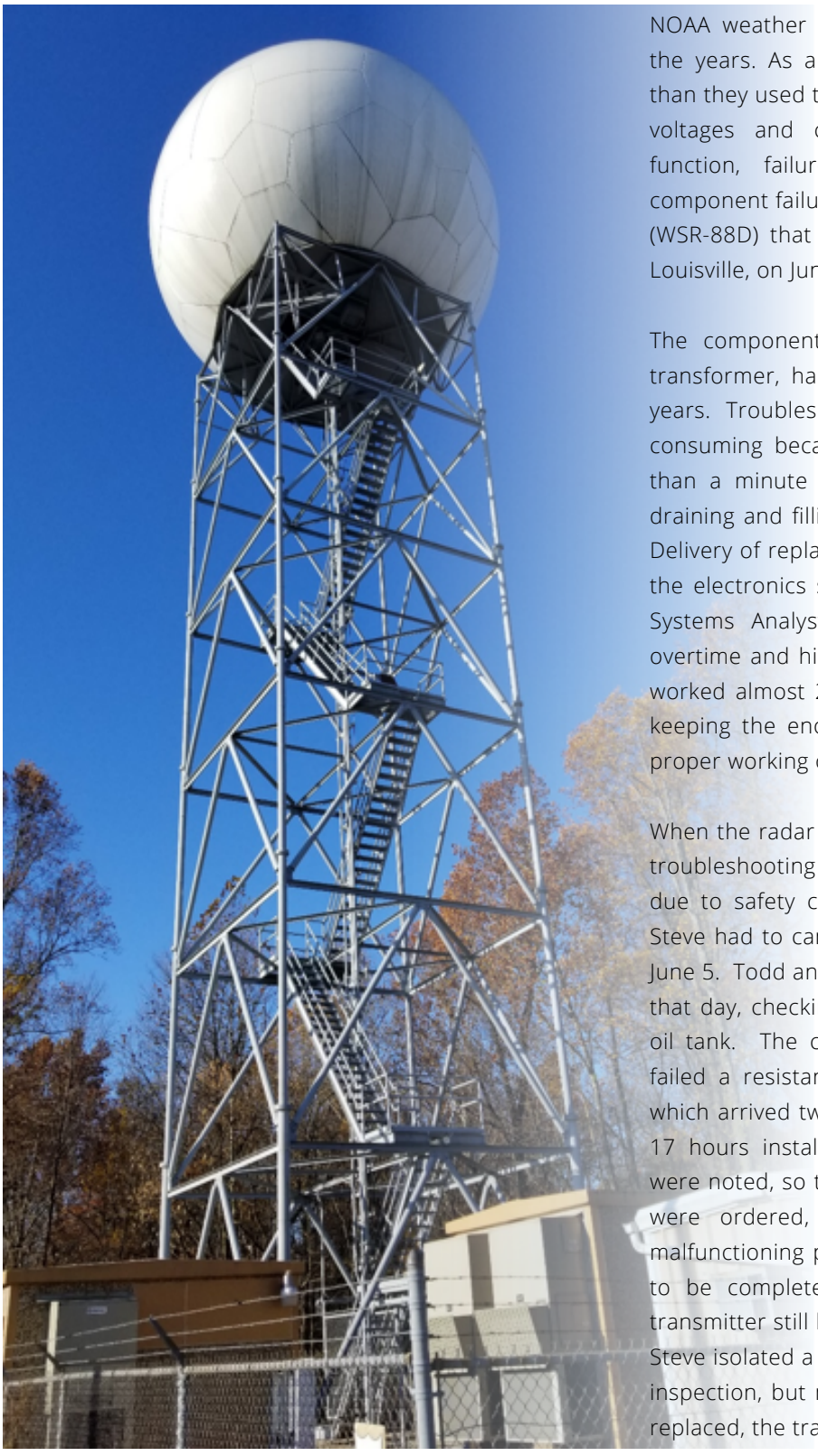


Electronics Staff Goes Above and Beyond

DEDICATION

STEVE GOODLETT, ELECTRONICS TECHNICIAN

"The radar is our most valuable piece of equipment. The immense dedication of Steve and Todd to troubleshoot multiple radar problems, and to complete the job as quickly as they did, goes above and beyond any standard. We are so thankful to have both Steve and Todd at the Derby City office. They epitomize what government public service is all about."
-- John Gordon, Meteorologist-in-Charge



NOAA weather radars have undergone many updates over the years. As a result, transmitter outages are much rarer than they used to be. Nevertheless, due to the high operating voltages and currents required for the transmitter to function, failures will still happen eventually due to component failures. This happened to the local Doppler radar (WSR-88D) that is located on Fort Knox, and used by NWS Louisville, on June 4.

The component that needed to be replaced, a charging transformer, had been in the system for an impressive 25 years. Troubleshooting transmitter problems is very time consuming because each time power is removed for more than a minute it requires a 12 minute preheat cycle and draining and filling the oil tank which takes roughly an hour. Delivery of replacement parts takes time as well. By the time the electronics staff restored the transmitter, our Electronic Systems Analyst, Todd Adkins, had worked 30 hours of overtime and his Electronics Technician, Steve Goodlett, had worked almost 25. The electronics staff is absolutely vital in keeping the enormous array of sophisticated equipment in proper working order, day and night.

When the radar failed on June 4, Todd responded and began troubleshooting the problem until he reached a point where, due to safety concerns, a second technician was required. Steve had to cancel vacation and meet him Sunday morning, June 5. Todd and Steve troubleshot the problem for 11 hours that day, checking all the components in the modulator and oil tank. The charging transformer located in the oil tank failed a resistance check and a replacement was ordered, which arrived two days later. Todd and Steve worked nearly 17 hours installing the transformer. However, new alarms were noted, so troubleshooting began again. Additional parts were ordered, and arrived on the 9th. Replacing the malfunctioning parts required several calibration procedures to be completed. After completing the calibrations the transmitter still had alarms. More troubleshooting. Todd and Steve isolated a capacitor in the modulator that passed visual inspection, but needed replacement. After the capacitor was replaced, the transmitter was restored to operation.

NWS Louisville Gives Back and Has a Little Fun

BEYOND THE WEATHER

CHASE GRAHAM, METEOROLOGIST

After getting off to a strong start in its inaugural year in 2021, the NWS Louisville Culture Team continued its work of promoting a positive office culture in 2022. As many of the restrictions associated with the pandemic were lifted, the Culture Team was presented with greater opportunities to plan activities and events that had not been possible during the previous couple of years.

During the summer months, NWS Louisville welcomed two student volunteers and one Ernest F. Hollings scholar to the office. Members of the Culture Team organized events throughout the summer including welcome dinners, social outings, and outreach opportunities to ensure that the students felt welcomed into the team and had an enjoyable time outside of work exploring Louisville and the surrounding area. Additionally, in June, several office staff participated in a community outreach event at Louisville's Broad Run Park, volunteering during their time off by helping park staff complete landscape maintenance projects.

Above: Meteorologist CJ Padgett (left) and Lead Forecaster Tom Reaugh (right) assist with landscaping duties in Louisville's Broad Run Park.

Late in 2022 the Culture Team was able to host two social events, the first of their kind since 2019. In November the annual NWS Louisville Chili Cook-Off (left, above) was celebrated with staff, family members, former staff, and broadcast media partners participating in the competition. For many of the NWS Louisville employees hired since the beginning of the pandemic this event marked the first opportunity to interact with former staff as well as the broadcast media partners who participated. More than a dozen chilis were entered into the competition, with Science and Operations Officer Ryan Sharp winning the award for “Best Overall” chili. Then in December the inaugural Bake-Off and Ugly Sweater social (left, below) was held with a wide assortment of delicious desserts and tacky holiday apparel enjoyed by staff and family members.

The Slugger of the Month program, a peer-nominated award which recognizes employees going above and beyond the call of duty, was continued in 2022. All employees were nominated at some point during the year, and nominations were shared anonymously on a quarterly basis. The goal of the Slugger of the Month program is to create an environment in which staff feel appreciated by their coworkers and management to facilitate a more positive and productive office.

Student Contributions

STUDENT PARTICIPATION

C J PADGETT, METEOROLOGIST

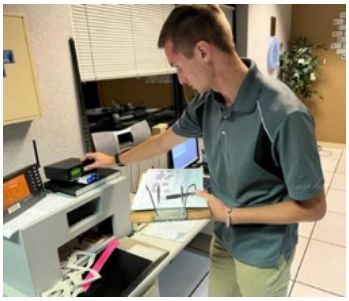
After a two year hiatus of in-person student internships due to COVID restrictions, we were finally able to welcome students back into the office this year. During their time here at NWS Louisville, our students spent time working on research projects, shadowing meteorologists to learn the forecast process, and helping during severe weather events. Students also gained experiences outside the office, such as attending familiarization trips with our staff to the KLVX radar, partner meetings, and outreach events.

ERIC CAROTHERS
VALPARAISO UNIVERSITY
SUMMER VOLUNTEER
Worked on a study of temperatures in the Lexington metropolitan area, confirming the presence of a notable micro-climate at Blue Grass Field. He presented his findings to media partners, other NWS offices, and will present at the national conference of the American Meteorological Society in 2023.

Students enjoying a visit to the radar site at Fort Knox

LILY MULLER
PENNSYLVANIA STATE UNIVERSITY
HOLLINGS SCHOLAR
Researched Pediatric Vehicular Heatstroke (PVH). Her research has helped the NWS improve our messaging on PVH and other hazards during heat waves.

Lily Muller presents her research at NWS Louisville

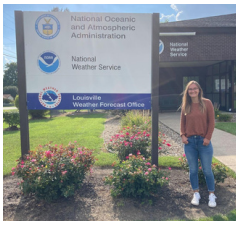


Eric Carothers records data during an overnight shift at NWS Louisville

MADISON WALLNER
VALPARAISO UNIVERSITY
FALL VOLUNTEER
Created a radar feature catalog for NWS Louisville. This catalog will assist radar operators in identifying specific storm signatures and serve as radar training material.

LIV DELLECAVE
WESTERN KENTUCKY UNIVERSITY
SUMMER VOLUNTEER
Participated on a team that collaboratively designed and produced a GIS Story Map for the 25th anniversary of the 1997 Flood.

RACHEL WYNALDA
BALL STATE UNIVERSITY
SUMMER VOLUNTEER
Crafted weather history graphics for our social media platforms. Rachel also compiled a demographic database of our student program.



Rachel Wynalda in front of the NWS Louisville office

SAM MICHLOWITZ
NORTH CAROLINA STATE UNIVERSITY
PATHWAYS STUDENT
Sam worked several shifts alongside NWS Louisville meteorologists in preparation of joining the NWS full-time in 2023.

National Weather Service

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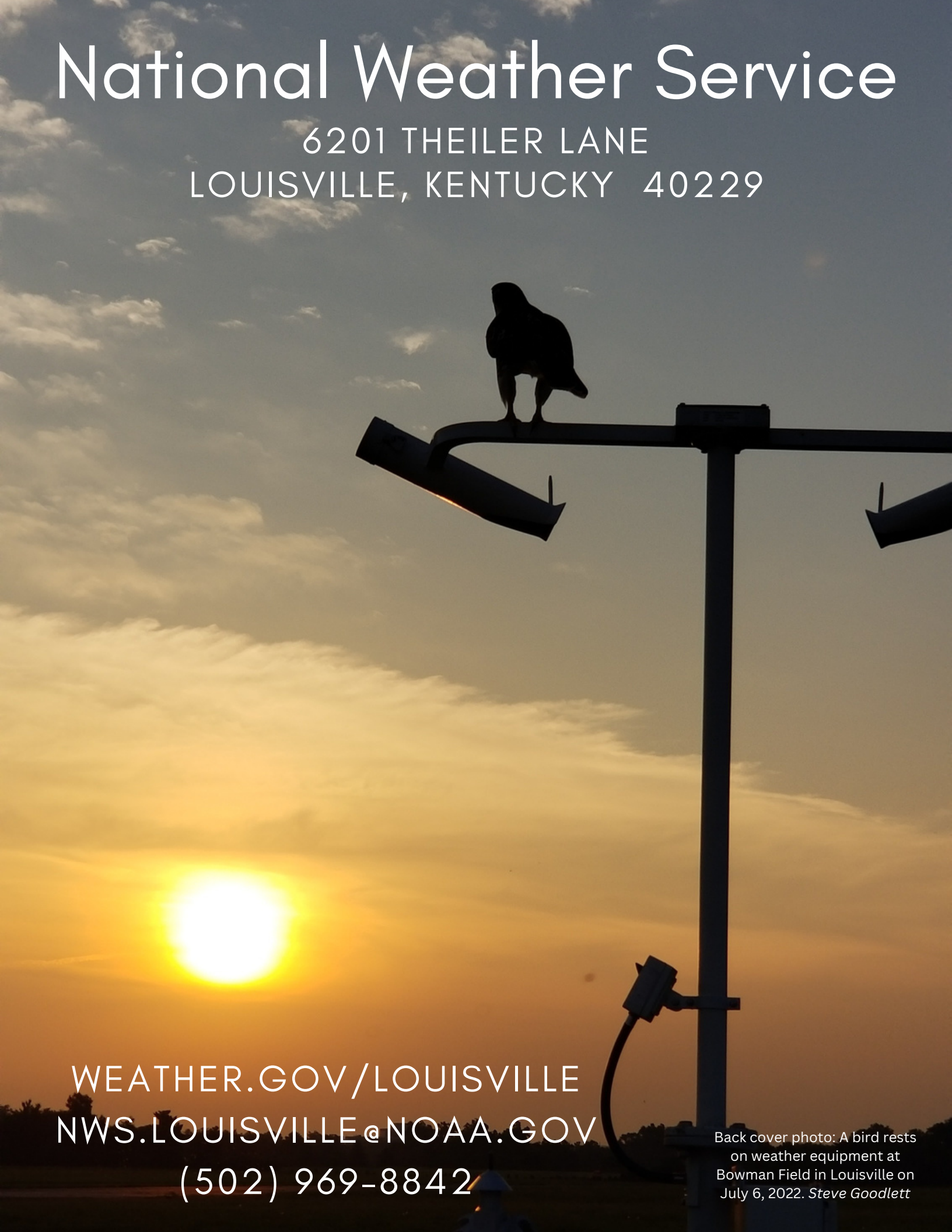

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Back cover photo: A bird rests on weather equipment at Bowman Field in Louisville on July 6, 2022. *Steve Goodlett*