



Forecasting to False Alarms

What You Need to Know
This Tornado Season

One Call **Now**
POWERED BY ONSOLVE

The 2021 tornado season had a quiet start. Although April was an unusually quiet month — with the fewest reported tornadoes since 2000, the United States experienced 23 hurricanes in 24 hours. So what does that mean for the rest of the season? This year, a La Niña pattern kept Pacific Ocean temperatures below normal, which may indicate a more active season. These conditions are similar to the 2011 season, which also got off to a slow start and became one of the most active seasons in history. Accuweather is predicting a slightly higher than average tornado activity for the year, with the number of tornadoes expected to be between 1,350 to 1,500, just above the normal annual average of 1,250 and 1,400. Most experts expect the worst of the tornado activity to occur in the Mississippi River Valley, the Ohio Valley, and the mid-Atlantic. Cities like Nashville and Memphis, Tennessee; Little Rock, Ark.; St. Louis and Indianapolis all risk experiencing tornado activity. Over the past forty years Tornado Alley has shifted a bit eastwards.

No matter the forecast or where you reside, you should know tornado safety tips. In the spring and summer, check daily forecasts and pay attention to shifting fronts and storm patterns that produce tornadoes.

A Little Known Link

The National Oceanic and Atmospheric Administration (NOAA) defines El Niño as “the large-scale ocean-atmosphere climate interaction linked to a periodic warming in sea surface



temperatures across the central and east-central Equatorial Pacific.” Although they are irregular in frequency, El Niño episodes can occur as often as every two years and may last for up to 12 months at a time. Not only that, but concerns about climate change are prompting weather experts to warn of stronger, more frequent storms in the future.

While El Niño mostly brings to mind thoughts of torrential rain, a Columbia University Study published in April 2015 in the scientific journal, *Nature Geoscience*, also reveals a troubling link between El Niño and tornado frequency — particularly in Tornado and Dixie alleys.

Meanwhile, La Niña is the counterpart to El Niño, pushing the jet stream further north, creating warmer winter temperatures in the South and cooler temperatures in the North. La Niña can create a wavy jet stream, which causes more atmospheric instability and wind shear.

Though La Niña conditions ended in May and neutral conditions will remain through summer, the chance of a second-year La Niña are about 50-55%, reports the ENSO blog. That may effect tornado activity later in the year and next season.

Cautions the Columbia study's lead author John Allen of Columbia's International Research Institute for Climate and Society in the Earth Institute, "It's important to remember, though, that even the most quiet seasons still produce 800 tornadoes."

Preparing for Tornadoes

One of the most challenging aspects of preparing for tornadoes is their vast unpredictability. In fact, the National Weather Service (NWS) can typically give no more than 8-10 minutes of advance warning to people when a tornado is about to touch down. While this is a huge improvement on the five minutes (or less) warning we might have had back in Dorothy's days, it's still precious little time for people to take shelter.

One of the first steps in maximizing the time you do have is to understand the warning system and to educate your constituents, as well.

Issued by NOAA's Storm Prediction Center (SPC), tornado watches simply indicate that conditions are favorable for a tornado. A watch offers the ideal opportunity to review your emergency plan, inventory your supplies, and check your shelter.

Tornado warnings, meanwhile, are issued by the local forecast office of the National Weather

Service (NWS) and mean that tornadoes are an imminent threat in your area. A tornado warning requires immediate action: take shelter, avoid windows, and protect yourself from flying debris.

Get the Message Out

While national agencies are hard at work looking for ways to improve disaster warnings, organizations can help ensure that essential and even life-saving messages are heard by having a communication plan in place and ready to go.

With most tornadoes taking place between 4 pm and 9 pm, it begs the question: Is your organization fully prepared for [tornadoes and other weather-related emergencies](#)? Many forwardthinking organizations are turning to prerecorded message systems including critical communications and information which can be simultaneously delivered to all relevant constituents in less than seconds.

While no one likes to think it's going to happen to them, the statistics say otherwise: an average of 91 deaths are attributed to tornadoes every year and insurer Aon says insured loss from severe convective storms, including tornadoes, cost at least \$10 billion per year since 2008. These numbers are likely to climb as storms become more volatile and frequent due to the impact of climate change. The tragic truth? Many of these deaths and injuries could have been avoided with better warning systems and more comprehensive communications plans in place.



Tornado Forecasting: Is Longer Really Better?

Imagine you had just 10 minutes to prepare for the possibility of a tornado touching down where you live. When it comes to the complexities involved in tornado forecasting, the truth is that this timeline may be the best-case scenario in terms of lead time. However, even as scientists continue to push the boundaries of knowledge and technology in order to improve tornado forecasting, others worry that doing so risks losing sight of the main message. Let's take a closer look at the current research, along with why more time may not translate to decisions that save lives.



Tornado Forecasting 101

Meteorologists use a combination of current weather conditions and forecast models to predict severe weather. While these computer programs have some value, they rely on one critical factor: That notoriously unpredictable weather will actually behave the way we think it will. Sophisticated new forecasting technology also helps meteorologists understand just how likely the weather is to conform to expectations, as well as to understand the full range of possible weather conditions.

While today's average lead time of 8-10 minutes may not sound like much, it's vastly longer than the less-than-five minutes of just decades ago. But is adding more time the most life-saving solution? Some experts say, "No."

More Time, Less Preparation?

The concern is rather than giving people more time to prepare for impending storms, history shows that additional lead time may trigger poor decision-making. For example, rather than shoring up their homes and putting disaster plans in place, many people instead succumb to the urge to flee — in itself a dangerous prospect when multiplied across millions of people doing the same thing.

So what's the alternative to more time? More information. Understanding the value of planning and preparation is the first step. Also of equal importance? Better communication practices.

Ultimately, knowing that a storm is coming is only one small part of the picture. Having a plan in place to weather that storm is equally vital, and yet can be dangerously overlooked in the push for more time.

The Emergency Notification System Solution

Luckily, there are things every organization can do right now to save lives in the event of an extreme weather event — whether with five days or five seconds of lead time.

Long before a tornado watch or warning becomes imminent, devise communication strategies aimed at making sure people get the essential information they need when they need it. This means taking into consideration not only the different channels through which people communicate in our omni-channel world, but also differences among individuals themselves. In other words, it's more than a mere matter of conveying information, but also in conveying it through the most productive means.

Think of it this way: While tornado sirens don't tell you what to do in an emergency, timely, pre-recorded, optimally delivered emergency notification systems can and do. Rather than helplessly wondering when a tornado or other weather-related emergency will occur, visit [OnSolve One Call Now](#) to learn more about how to ensure optimal decision-making among your constituents when disaster strikes.



Tornadoes, False Alarms and Public Complacency: What You Need to Know

We often lament the problem of limited lead times for tornado warnings, but what about watches and warnings which never come to be? While it's easy to discount a false alarm as for the greater good, can multiple false alarms eventually trigger a "The Boy Who Cried Wolf" effect? Let's take a closer look at the issue of tornado forecasting false alarms, along with whether they might be a greater threat to public safety than most people realize.

How Common Are False Alarms?

On average, roughly 70 percent of tornado warnings issued in the U.S. are false alarms. This means only three in 10 tornado warnings contain a verified tornado within the warned area during the time of the warning. Not only that, but some regions may see multiple tornado warnings at one without a single tornado ever actually touching down.

The Trouble With False Alarms

While one mode of thinking holds with the old adage, "Better safe than sorry," another school of thought proposes that too many false warnings may result in a dangerous level of public complacency.

Does this potentially translate to more injuries and deaths? According to a study published in *Weather, Climate and Society*, "tornadoes that occur in an area with a higher false-alarm ratio kill and injure more people, everything else being constant." Why? Because when people live through enough warnings in situations where tornadoes never actually materialize, they start to ignore them.

Still not convinced? Following Alabama's April 2011 "Super Outbreak," which resulted in 324 tornado-related deaths as well as 24 additional fatalities caused by extreme weather, renowned broadcast journalist James Spann concluded, "I firmly believe apathy and complacency due to a high false alarm ratio over the years led to inaction in many cases that could have cost lives."

More Accuracy, Fewer False Alarms?

As no one knows better than storm chasers — including Tim Samaras, his son Paul and their partner Carl Young, all three of whom died in 2013 when an Oklahoma twister took an unexpected and deadly turn — tornadoes are unpredictable by nature. Small Unmanned Aerial Systems (sUAS), commonly referred to as drones, are becoming widely used to capture the evolving dynamics of temperature, moisture, and wind within the boundary layer under different weather conditions. This is leading to improvements in weather forecast models used by NOAA's National Weather Service.

Beyond Forecasting

Ultimately, while we can't know for certain what the weather holds — particularly when it comes to erratic tornadoes — we can and do know that better information and heightened awareness make a difference in ensuring that people are prepared for whatever extreme weather heads their way. Armed with the knowledge that prompt, accurate and reliable communications are an essential part of protecting public safety, can you say that your organization is doing everything it can to make sure emergency messages are delivered in the most effective, expedient way? One Call Now's emergency notification system offers a lifesaving solution.

[One Call Now's emergency messaging system](#) is the perfect solution for reaching dozens, hundreds, even thousands of contacts within minutes via phone call, text message or push notification. It's simple to use and requires no software, hardware or additional phone lines. Visit [One Call Now](#) to find out how to make sure your organization is ready to get the message out when it matters the most.

How Do You Keep Everyone Informed During an Emergency?

When disaster strikes, it is vital that organizations have the ability to coordinate quickly and efficiently to ensure the safety of its members and maintain operations. An emergency mass notification system allows you to do just that.

1. <https://abcnews.go.com/US/severe-weather-threats-unusually-quiet-april-tornadoes/story?id=77463686>
2. <https://www.accuweather.com/en/severe-weather/accuweathers-2021-us-spring-severe-weather-tornado-forecast/901242#:text=Tornado%20activity%20is%20forecast%20to,to%20AccuWeather%20long%2Drange%20meteorologists>
3. https://www.upi.com/Top_News/US/2021/04/03/tornado-season/5081617462050/
4. <https://oceanservice.noaa.gov/facts/ninonina.html>
5. <https://www.nbcnews.com/science/science-news/tornado-season-la-nina-year-bring-supercharged-storms-rcna472>
6. <https://www.climate.gov/news-features/featured-images/el-ni%C3%B1o-and-la-ni%C3%B1a-affect-spring-tornadoes-and-hailstorms>
7. <https://www.climate.gov/news-features/blogs/enso/may-2021-enso-update-bye-now-la-ni%C3%B1a>
8. <https://weather.com/storms/tornado/news/2021-04-05-tornado-warning-nws-accuracy>
9. <https://www.nssl.noaa.gov/education/svrwx101/tornadoes/>
10. <https://weather.com/storms/tornado/news/2021-04-05-tornado-warning-nws-accuracy>
11. <https://www.weather.gov/hazstat/>
12. [https://www.iii.org/fact-statistic/facts-statistics-tornadoes-and-thunderstorms#Tornadoes%20And%20Related%20Deaths%20In%20The%20United%20States,%202000-2019%20\(1\)](https://www.iii.org/fact-statistic/facts-statistics-tornadoes-and-thunderstorms#Tornadoes%20And%20Related%20Deaths%20In%20The%20United%20States,%202000-2019%20(1))



Check out our [severe weather resources](#) and be prepared for any emergency.

[LEARN MORE](#)

About OnSolve One Call Now

OnSolve One Call Now, one of OnSolve's market-leading critical communications products, enables groups and organizations of all sizes and types to quickly, securely and reliably distribute critical information to large numbers of people on virtually any device and network. OnSolve sends over two billion notifications annually and has provided more than 60 years of proven support to both the public and private sectors. We deliver critical event management solutions that give our customers the ability to proactively keep everyone informed, instill confidence, foster teamwork, mitigate disruptions, improve operational outcomes, protect assets, and save lives.

Visit [OnSolve.com](#) to learn more.

One Call Now
POWERED BY ONSOLVE