



# Aware

Aware is published by NOAA's National Weather Service to enhance communications between NWS and the Emergency Management Community and other government and Private Sector Partners.

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## NWS Teams with Coast Guard on Hazardous Marine Weather Outlook

By [Daniel Brown](#), WCM National Hurricane Center

The NWS Ocean Prediction Center (OPC) and forecasters in the National Hurricane Center's (NHC) Tropical Analysis and Forecast Branch (TAFB) are teaming up to provide weekly hazardous marine weather outlooks to the U.S. Coast Guard (USCG) District 5. District 5 covers the Mid-Atlantic States and is responsible for a large portion of the western Atlantic Ocean. In July, OPC and TAFB meteorologists began collaborating on weekly briefings that are issued each Monday morning.

The briefings provide the Coast Guard District with an overview of potential marine weather hazards for the upcoming week. The USCG distributes the briefings to marine subscribers via its "govdelivery" system.

The idea for the briefings grew out of several recent tragedies, or near tragedies, caused by hazardous marine weather. The need for this type of information was demonstrated when a series of Nor'easters produced winds with hurricane-force strength and significant seas over the western Atlantic this last March. The briefings highlight areas of significant winds and seas and discuss the potential for marine-related warnings. During the hurricane season, the briefings also discuss the potential for tropical storms and hurricanes in the western Atlantic. The briefings were provided daily once Florence began bringing significant wind and seas to western Atlantic.

According to USCG, the pilot project already has 150 mariners signed up to receive the briefings. Based on this success, the Coast Guard asked the NWS to consider producing similar hazardous marine weather outlooks for the Caribbean Sea, Gulf of Mexico, and portions of the eastern Pacific Ocean. Those interested in these outlooks can sign up at [govdelivery](#) and indicate which outlook they want.



Example of the September 3, 2018, Outlook

## Exercise Helps Smaller Communities Prepare for Tornadoes

By [Kevin Smith](#), Forecaster, NWS Paducah, KY

Even small communities can suffer a devastating impact from severe weather. Joppa, IL, a town of about 400, was ground zero for a devastating EF-3+ tornado that struck on August 24, 2018. Joppa is on the Ohio River, just west of Metropolis (home of Superman!) in Massac County on the southern tip of Illinois.

Although the Joppa tornado was just part of a table top exercise, the gathering of local, county, state, and federal partners was critical to coordinate agency specific responses ahead



Superman statue, Metropolis, IL

of a natural disaster. Massac County is not a stranger to significant weather, with nearly 14 tornadoes reported from 1950 through August 2018. One of the strongest tornadoes in the county, an EF-4 that struck on May 6, 2003, occurred just north of Joppa.

Brian Horn, Interim Massac County Emergency Management Director, and Don Swiatkowski, Staff Development Specialist from the Illinois Emergency Management Agency (District 11), hosted the Joppa Tornado Table Top Exercise. Fire, police, public safety, and emergency medical services participated. NWS Paducah, KY, provided weather injects for the exercise, with an eye toward offering resources and expert advice for the decision makers. The team used actual NWS severe weather event information from April 3, 2018, in the exercise.

This exercise proved excellent opportunity for NWS Paducah meteorologists to see the inner workings of an expanding Incident Command response to a natural disaster. NWS Paducah continues to plan for future opportunities to work with core partners.



From left, Illinois EMA Rep Don Swiatkowski, Metropolis EM Keith Davis, NWS Paducah, KY, Meteorologists Mike York, Derrick Snyder.

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## Wildfire, Debris Flows Challenge NWS Staff

By [Alex Tardy](#), WCM, NWS San Diego, CA



Severely burned steep canyon areas from the Holy Fire in the Santa Ana Mountains above many small communities.

Two major wildfires burned along steep mountain terrain this summer in extreme southern California. The Holy Fire reached 23,000 acres and the Cranston Fire burned around 13,000 acres. The Holy Fire scar crossed the Santa Ana Mountains on steep canyon slopes draining into thickly vegetated neighborhoods that had not burned for more than 40 years.

The Cranston Fire scar is on the steep slopes of Mt. San Jacinto, near Idyllwild, CA, in terrain from 4000 to 8000 feet elevation. The U.S. Forest Service assigned both areas to a Burn Area Emergency Response (BAER) team of which NWS San Diego, CA, was a member.

BAER meetings included local, state and federal agencies. The sessions included extensive discussion of Flash Flood Watches and Warnings for burn scars. The team also planned how to coordinate evacuation procedures and warning

notification practices, including county-based Wireless Emergency Alerts and other public announcements.

The Holy Fire scar presents major threats with most of the 23,000 acres having a 80 percent chance of debris flows in several steep canyons. At the bottom of the canyons there are neighborhoods and an elementary school. The considerable threat has resulted in a special California Watershed Emergency Response Team to begin additional analysis, mitigation recommendations and develop scenarios working with agencies including NWS and Riverside County Flood Control. Emergency management and the Riverside County Sheriff expressed their satisfaction with the NWS decision support services and efforts to save lives in this mountainous community.

As a follow-up, a special public awareness event was held to highlight awareness of debris flows and flash floods. In early September, partners met to discuss debris flow threats to an elementary school and numerous homes. Representatives from the school district and homeowners associations attended with many questions.

The team will meet again to discuss action items, plans and mitigation efforts. There are plans for 4 additional community meetings related the Holy Fire debris flow threats. Finally, NWS San Diego provided 25 “When Flooded Turn Around Don’t Drown” signs to place in low lying areas and debris flow potential locations.

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## Video Chat Brings Weather Education to More Schools

By [Tim Brice](#), Senior Forecaster, NWS El Paso, TX

Each year, advances in technology make it easier to communicate via video chat. At the same time, shrinking budgets and increased time demands make it harder for NWS forecasters to make as many in-person appearances at schools as they would like. The School Outreach via Video Team is a group of about 25 NWS forecasters. The program is advertised via Twitter, Facebook and Google Plus and by word of mouth. An interested teacher can send an email to the group coordinator Tim Brice, who schedules a time for the video chat.

A calendar entry is made on a shared Google calendar, and then on the day of the chat, the forecasters who responded “yes” on the calendar receive a link to join the hangout. In addition, an email is sent the Science Operations Officer and Warning Coordination Meteorologist at the nearest NWS office to give them an opportunity to join the video chat. The program offers numerous benefits to NWS and to the public:

- ◆ Saves NWS staff travel time and costs and allows staff to reach more schools, especially those far from an NWS office
- ◆ Causes minimal disruptions to NWS operations and offers school more flexibility
- ◆ Offers opportunity to hone video chat skills
- ◆ Offers NWS staff the chance to practice answering on the spot weather questions and students and teachers the chance to pose these questions
- ◆ Provides schools with vital safety messages from scientists



*Students learn from NWS Meteorologists using the latest video technology.*

When it comes to weather education, many teachers are somewhat intimidated by the material. With the help of the video chats, NWS staff meteorologists are able to fill in the gaps on some of the weather concepts and ideas that challenge some teachers. In addition, the presentations can be archived on YouTube for later playback and referral.

Here are some teacher tweets about the program: “Great science connection with meteorologist,” “Thanks for sharing your knowledge of weather with our 5th Aspire students!” “Amazing weather Skype with Tim Brice and Pat Hyland from NOAA!”

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## A Picture is Worth 1090 Words: Aviation Improves Forecasts

By [Joe Jurecka](#), Senior Meteorologist, Silver Spring, MD

Just a few years ago, unless someone worked for the Federal Aviation Administration or in a NWS Center Weather Service Unit, it was difficult to fully comprehend aircraft flight patterns or how air traffic control dealt with weather. Thanks to Automatic Dependent Surveillance Broadcast (ADS-B) technology, mandated to take effect by 2020, it will

be much easier to get a picture of airspace activity. Using ADSB technology, aircraft transmit their position twice per second. This data is a vital tool to facilitate a Weather-Ready Nation.

ADSB technology dates to 2011, when Weather Forecast Office (WFO) Lubbock, TX, Senior Meteorologist Joe Jurecka started experimenting with 1090 MHz ADSB. As software capabilities evolved, he formed a group of volunteer enthusiasts, from Texas to Arizona and as far north as Kansas and Colorado, that aggregates the data from around 60 receivers scattered across the Southwest. Soon, an aviation situational awareness display was added to the operations area at these WFOs for easy reference. Then, one winter evening, WFO Lubbock realized the real benefit of this technology.

With the local aircraft approach control playing on the operations radio scanner, a pilot could report temperatures aloft and icing or the lack thereof. Without the help of ADSB, it would have been impossible to pinpoint the aircraft's location. Further, that pilot report, like so many others, was not provided to the NWS because it did not meet FAA criteria; however, with the added insight, NWS Lubbock used sound observational data to confidently cancel a winter storm product and a local airport weather warning. The report was a proof of this technology as an internal and external decision support tool for our office. Since then, this aircraft display has proven itself repeatedly as a valuable resource and teaching tool.



*Observed traffic near Houston Intercontinental Airport*

WFO staff can now see, in real time, how weather affects flight patterns as well as learn the general flow of aircraft in our area. These data have been used in the warning decision process and to determine low cloud impacts for the Terminal Airdrome Forecast (TAF).

There also have been many instances in which we have seen an aircraft heading toward an encounter with high winds, frontal boundaries or icing regions. We then call the local air traffic control facility and give them a heads up. This information is passed on, allowing the pilot to prepare for or avoid a potentially life-threatening situation. Our office has worked with our TAF sites, city and county officials, and school districts to install webcams. We also added ADSB receivers to further enhance low level aircraft coverage. Both our NEXRAD Electronic Technician and Regional Facilities Manager have been instrumental installing these technologies. Our strategy: promote the equipment installations as a win-win for both the host site and NWS.

**Aware**

NOAA's National Weather Service, Analyze, Forecast and Support Office

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