



Aware

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Winter Storm Severity Index Will Better Alert Users to Dangerous Weather

By [Steve Baxter](#), Winter Weather Program Lead, NWS Silver Spring, MD

On September 29, 2020, NWS will transition its experimental Winter Storm Severity Index (WSSI) for 116 Weather Forecast Offices (WFO) across the Contiguous United States to operational status.

The WSSI provides NWS forecasters, partners, and the public with an indication of the severity of winter weather hazards and the potential for related societal impacts.

The index uses official forecasts for several meteorological variables from the National Digital Forecast Database (NDFD) and combines them with climatological information and non-meteorological variables (e.g., land use). These variables are used in a series of algorithms related to specific characteristics of winter weather. The WSSI does not depict official warnings and should always be used in context with official NWS forecasts and warnings.

The WSSI will be updated every 2 hours at approximately 0100 Coordinated Universal Time (UTC), 0300 UTC, 0500 UTC, etc. No communication system changes are required to view this web-based information. Additional information is provided in the [Product Description Document \(PDD\)](#).

WSSI Scale	
Potential Winter Storm Impacts	
	No Impacts Impacts not expected.
	Limited Impacts Rarely a direct threat to life and property. Typically results in little inconveniences.
	Minor Impacts Rarely a direct threat to life and property. Typically results in an inconvenience to daily life.
	Moderate Impacts Often threatening to life and property, some damage unavoidable. Typically results in disruptions to daily life.
	Major Impacts Extensive property damage likely, life saving actions needed. Will likely result in major disruptions to daily life.
	Extreme Impacts Extensive and widespread severe property damage, life saving actions will be needed. Results in extreme disruptions to daily life.

Teamwork Leads to Quick Radar Repair Hours before Hurricane Laura's Landfall

By [Jessica Schultz](#), Deputy Director, NWS Radar Operations Center

What do you do when your radar unexpectedly goes down right before a major hurricane? That was the question faced by NWS Shreveport, LA, when Hurricane Laura approached on August 26, 2020. At 1 pm CDT, the Shreveport WSR-88D experienced a cooling issue resulting in a failed power supply. Normally, the office would request a replacement part via overnight shipping, but Hurricane Laura was only hours from landfall.

Anticipating the NEXRADs in Lake Charles and Fort Polk could lose communications during the storm, having the Shreveport radar operational was critical. The Shreveport Electronic Systems Analyst Michael Waddell worked with Frank Hewins, Tony Ramirez, and Fabian Moreno at the NWS Radar Operations Center (ROC) in Norman, OK, to devise a plan to pull working parts from the ROC's testbed and drive them to Shreveport.

While Hurricane Laura's outer bands were moving across Louisiana, WFO Shreveport technician Steve Jenkins met Tony Ramirez and Fabian Moreno east of Dallas and exchanged the parts.

Back at the Shreveport NWS office, Jenkins worked diligently to install the replacement power supplies and get the radar up and running. By 11:15 pm, less than 12 hours after it went down, the Shreveport radar was back online. Just in time to track Laura's strongest winds already impacting southern Louisiana.



NWS Shreveport, LA, radar

Science Education Webinars Draw Large Audience

By [Joe Dellicarpini](#), Science and Operations Officer, NWS Boston, MA

The WFO Boston/Norton Science and Training Team developed an innovative way to increase science sharing and strengthen relationships with core partners and the public. In the past, the team conducted event reviews of significant weather events and shared the presentations via email. Increased telework during the pandemic spurred the team to increase science sharing and build internal and external relationships by hosting webinars to share these event reviews.



The webinars have been well received and attended by a diverse audience including NWS staff and southern New England TV meteorologists and emergency managers. Thanks to an active weather pattern this spring in New England, the team hosted two to three webinars each month from March through June, covering a variety of high impact events such as severe weather, flash flooding, "null events," winter storms, and even an arctic outbreak.

The webinars included a review of how the event was messaged and evaluated ways to enhance and improve our messaging for future events. The feedback has been overwhelmingly positive. Several TV meteorologists commented that the webinars helped them "connect the dots" after an event turned out differently from what they had forecast.

Based on this success, the team expanded the webinars to include the public by offering a series of less technical event reviews and webinars. Topics such as "All About NWS Boston," "Weather 101," "Severe Weather 101," and "Marine Weather 101" have drawn large audiences and have helped develop a positive relationship between the NWS and those in local communities, enhancing weather safety in an effort to

protect life and property.

Feedback has been tremendous and the team received several suggestions for future topics. Many people commented they like “putting a face” to the staff at NWS Boston/Norton. One person wrote “You all do a great job; the slides are well done and a great complement to your enthusiastic and enjoyable presentations. Thanks so much for offering these.” Another wrote “I am a big weather fan and am constantly on your website reading your forecast discussion and watching the radar when storms are forming. This video helped strengthen my knowledge of severe weather. Not sure who came up with the idea to have these videos, but it was an excellent idea. Keep them coming.”

All of the public webinars are recorded and posted to the office’s [YouTube page](#), which has helped boost the office’s social media presence.

Excessive Runoff and Debris Flows after Wildfires Require Team Approach

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

On July 31, 2020, the Apple fire erupted just north of I-10 in southern California, on the Riverside and San Bernardino County line, well north of the cities of Riverside and Palm Springs.

The fire produced a massive pyrocumulus and spread rapidly into higher elevations due to the low humidity and hot temperatures. The wildfire consumed 34,000 acres between the elevations of 2000 to 9000 feet MSL on Mount San Gorgonio (11,450 ft MSL). Investigators determined the cause of the fire to be a faulty vehicle driving in Cherry Valley. Southern California had been experiencing a wet water year but temperatures just before the event were much above average in the area and the area had observed nine separate heat waves and a very late start to the monsoon season. This wet year meant live fuel was abundant and the heat waves and late monsoon season turned that fuel critically dry. Three teams surveyed the Apple fire:



Photo from aircraft flying towards LAX airport, shared with Alex Tardy.

- ◆ U.S. Forest Service Burn Area Emergency Response (BAER)
- ◆ Bureau of Indian Affairs and California State Watershed Emergency Response Team (WERT)
- ◆ U.S. Department of Agriculture National Resources Conservation Service (NRCS)

The WERT was focused on Morongo tribal areas but provided results the U.S. Geological Survey (USGS) used for hydrological modeling and development of rainfall rate thresholds.

The team held several virtual meetings in August and reviewed the recent thunderstorm impacts and areas that might be affected by future heavy rain, a flash flood warning, forecast trends and mitigation efforts. The team found unusual severe burned mountain slopes: 50 percent of the scar showed moderate severity and 25 percent showed severe conditions.

USGS already had developed a public map interface detailing the basins and areas most at risk for a debris flow. The Riverside County Flood Control agency created a dashboard to monitor rainfall similar to

one used during the 2018 Holy and Cranston fires. Fortunately, the thunderstorms that produced 1-2 inches of rain in August stayed up at the top of the watershed, outside the burn scar and within the headwaters of Whitewater and Santa Ana rivers.

NWS San Diego started specialized impact-based decision support services forecasts for the Apple scar on August 15 at the request of the Riverside Emergency Management Department, in addition to the spot forecast requests for USFS. Coordination meetings will continue into the fall. Once the Debris Flow Flood Task forces agencies have a better plan for mitigations and notification, the team will do outreach to the communities potentially impacted by mud and debris flows. The Caltrans District 8 has already begun information announcements with “When Flooded Turn Around Don’t Drown” messaging.

Creating Inclusive Preparedness Videos to Protect All Users

By WCM [Scott Overpeck](#) and MIC [Kerry Jones](#), Albuquerque, NM

NWS Albuquerque Meteorologists Alyssa Clements and Todd Shoemake led a year-long effort to create weather safety and preparedness videos to better reach the public, including those with hearing or visual impairments. NWS partnered with the New Mexico Commission for the Deaf and Hard of Hearing and the New Mexico Disability Emergency Planning Advisory Council to guide these efforts. This partnership enabled our office to create American Sign Language and Audio Descriptive versions of the videos. Our partners are featured in multiple videos along with several NWS Albuquerque staff members. The project also included creating a web page to launch the videos with access on the office’s YouTube channel.

Recognized the need for a Spanish translation, Alyssa and Todd reached out to National Hurricane Center Meteorologist Maria

Torres and NWS Miami Meteorologist Anthony Reynes. The two spent many hours translating seven videos. These translations would later be inserted as Spanish subtitles on English language videos. Maria and Anthony also helped created Spanish versions of the main video project launch webpage as well as seven additional embedded pages. Spanish weather graphics were incorporated into the web pages, improving the site’s reach.

Visit the [WFO Albuquerque Preparedness Website](#) and the [WFO Albuquerque YouTube Channel](#) to view the materials.



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