

Weather Briefing Review of Super-Derecho Windstorm Event June 29th and 30th, 2012

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Gary Szatkowski

NOAA's National Weather Service

Philadelphia/Mt. Holly NJ Forecast office

Weather.gov/phi



Purpose of briefing

- Briefing #1 for event
- Promote situational awareness for emergency management community & partners
- Provide guidance for planning efforts
- Briefing applies to Mount Holly service area – shaded in green on map



Executive Summary

- This briefing package contains a short weather outlook as recovery efforts continue in the wake of the major Derecho event on June 29th and 30th, 2012.
 - There will be a increase in heat and humidity, as well as the risk of thunderstorm activity over the next several days.
- A quick review of the event: what happened and what the NWS Mount Holly office did
- A review of what products we issue during events like this and a look to the future

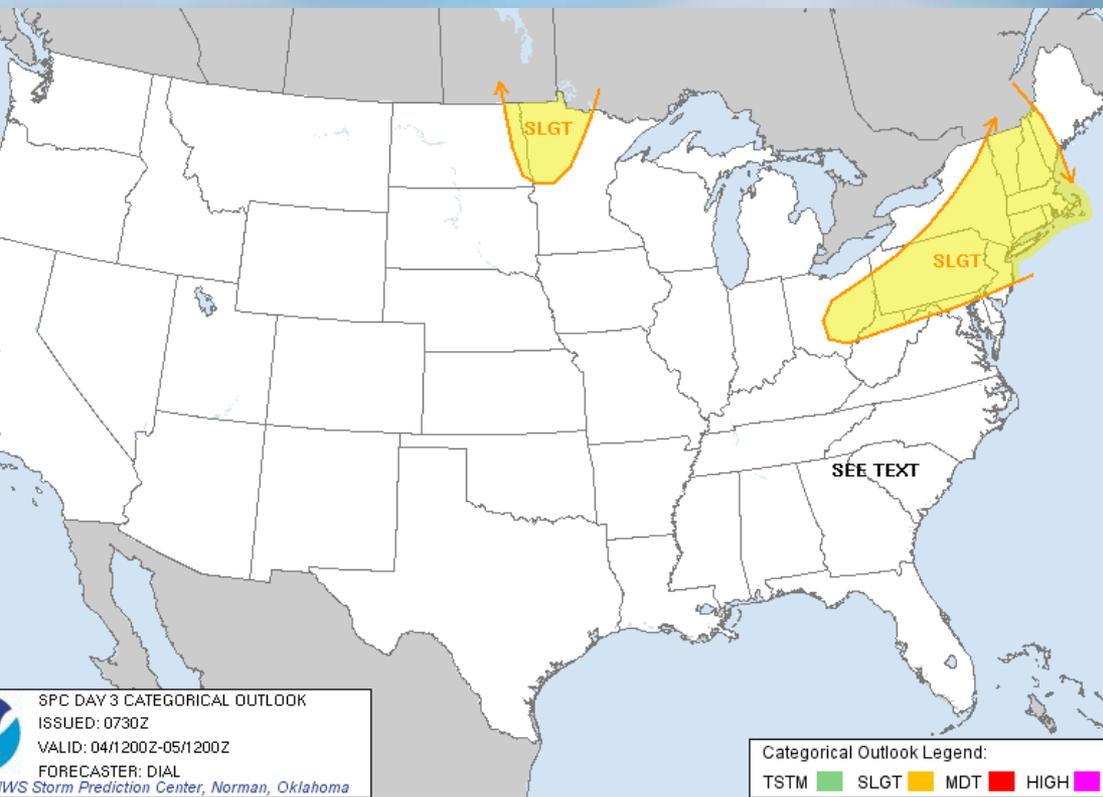


Weather conditions expected this week

- Today's weather features lower humidity levels. Temperatures are still exceeding 90 in some locations, but Heat Index values are substantially lower because of the humidity decrease
- Temperature and humidity levels will increase as the week goes on, and Heat Index values will climb back into the 95 to 100 degree range for southern New Jersey and northern DelMarVa.



Severe Weather threat



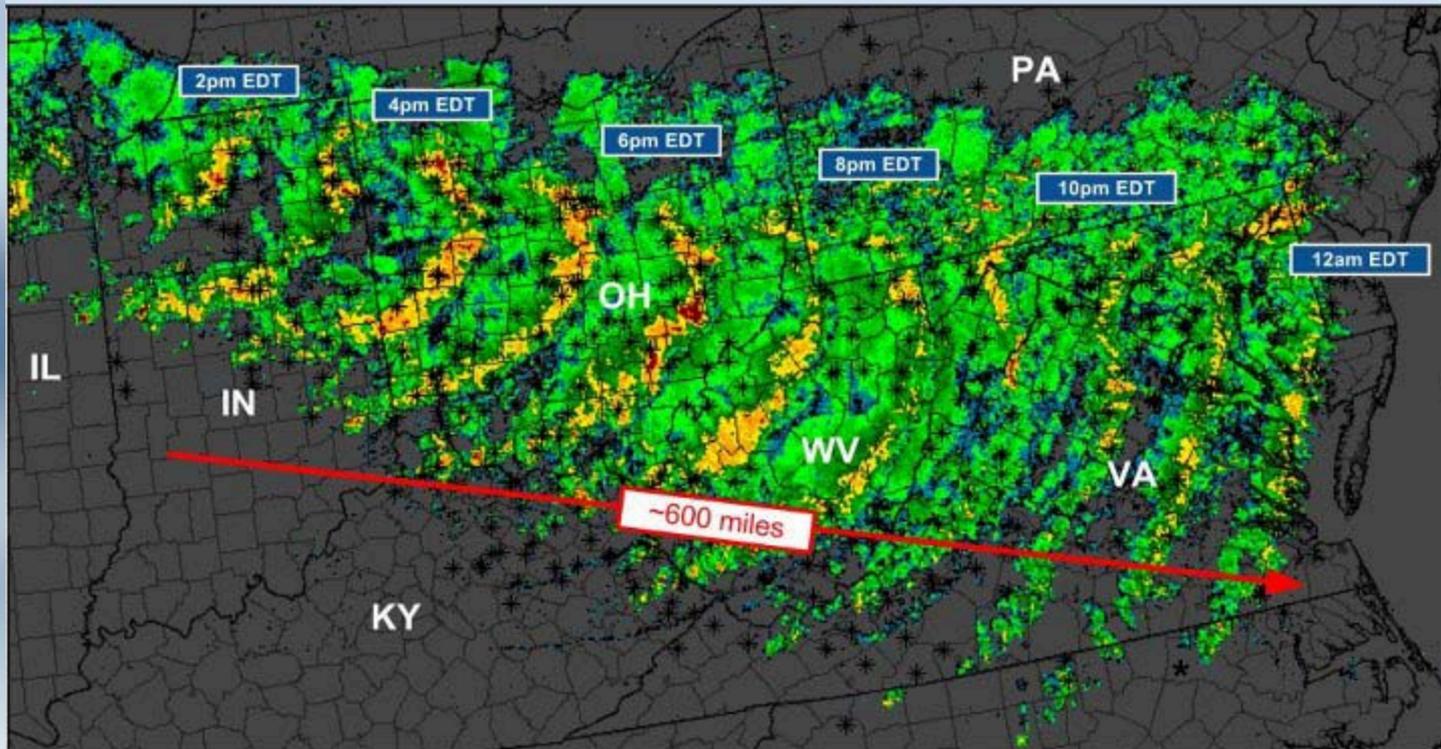
- There is a slight risk of severe weather over portions of our forecast area between 800 AM Wednesday and 800 AM Thursday this week.

Review of Super-Derecho June 29th and 30th

- What is a derecho?
- A derecho (pronounced "deh-REY-cho" in English) is a widespread, long-lived wind storm that is associated with a band of rapidly moving showers or thunderstorms. Although a derecho can produce destruction similar to that of tornadoes, the damage typically is directed in one direction along a relatively straight swath. As a result, the term "straight-line wind damage" sometimes is used to describe derecho damage.

Radar mosaic

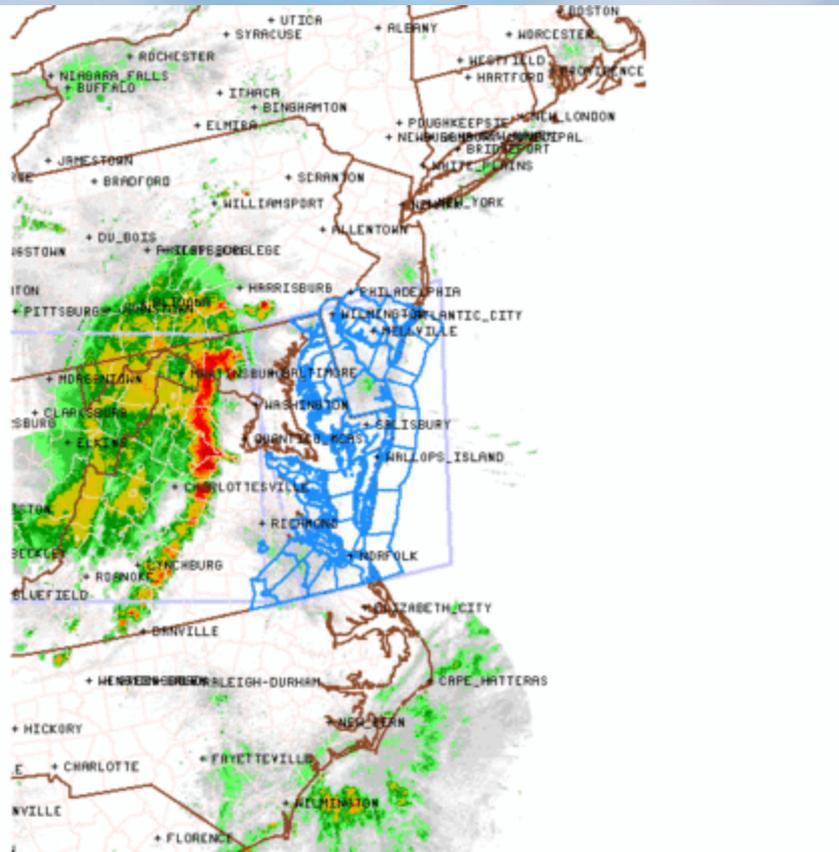
June 29, 2012 Midwest to East Coast Derecho
Radar Imagery Composite Summary 18-04 UTC
~600 miles in 10 hours / Average Speed ~60 mph



Over 500 preliminary thunderstorm wind reports indicated by *
Peak wind gusts 80-100mph. Millions w/o power.

Summary Map by G. Carbin
NWS/Storm Prediction Center

Severe thunderstorm watch issued at 1010 PM Friday June 29th

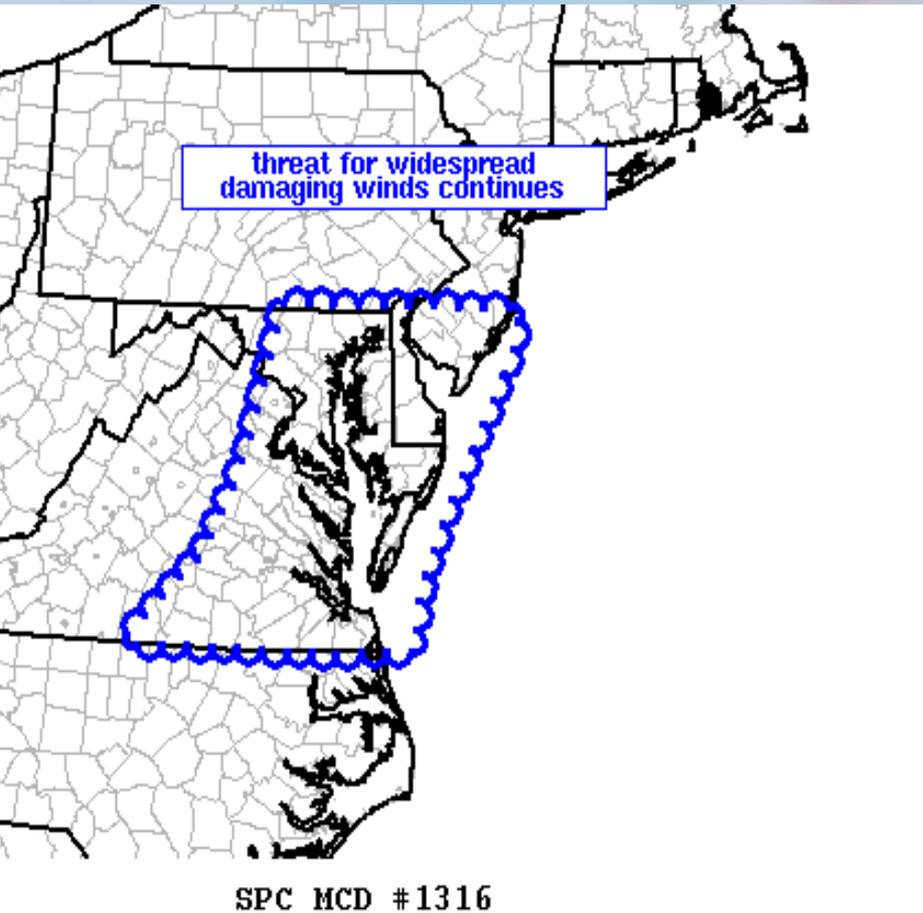


- Map shows counties affected highlighted in blue and radar map at time of issuance.
- Derecho is still west of the region but racing eastward at 60 miles an hour

Severe Thunderstorm Watch # 439 - Valid from 1010 PM until 200 AM EDT
NWS/Storm Prediction Center Updated: 20120630/0211 UTC



Storm Prediction Center update



- Issued at 1051 PM EDT Friday June 29th – Well organized derecho continues moving across mid-Atlantic region. Expect widespread damaging wind threat to continue to the coast.



Language in severe thunderstorm warnings issued by NWS Mt. Holly

- LINE OF SEVERE THUNDERSTORMS CAPABLE OF PRODUCING DESTRUCTIVE WINDS IN EXCESS OF 70 MPH
- THIS STORM HAS A HISTORY OF PRODUCING WIDESPREAD WIND DAMAGE ACROSS VIRGINIA AND MARYLAND. THIS IS AN UNUSUALLY DANGEROUS SITUATION. SEEK SHELTER NOW INSIDE A STURDY STRUCTURE AND STAY AWAY FROM WINDOWS!



Severe thunderstorm warning verification performance for this event

- Accuracy rate – 99%
- Average lead time – 36 minutes
 - Lead time is the difference between the time the warning is issued and the time of the onset of severe weather conditions
 - Severe weather is defined as wind speeds of 58 mph or greater and/or hail one inch in diameter or greater



Post assessment

- By our usual metrics, our office performed very well.
 - A severe thunderstorm watch was in place 1.5 to 3 hours before the onset of severe conditions.
 - An update from the Storm Prediction Center stressed the threat of widespread wind damage
 - Warnings were issued with extremely high accuracy and above average lead time
 - Very strong wording was included in the warnings to highlight the damaging wind threat.
- Yet...the amount of damage and devastation was overwhelming, and for most part, unexpected.



The problem?

- If a thunderstorm produces 60 mph winds for 30 seconds, knocks down 20 trees, and knocks out power to a couple hundred people, the product we issue is –
 - **A Severe Thunderstorm Warning**
- If a thunderstorm produces 80 mile an hour winds for over an hour, knocks down thousands of trees, knocks out power to 75% of the people in an area, blocks all major roads with fallen trees and power lines, the product we issue is –
 - **A Severe Thunderstorm Warning**
- Is this a problem?



Extreme severe weather events

- Do we need an 'extreme' severe thunderstorm warning?
- Something to identify very high impact severe thunderstorm events
 - Unusually high threats to life and property
 - Unusually high societal impacts
- An experiment is underway this year in the Central U.S. - Impact based warnings.



Impact Based warnings

- **The focus is on:**
 - Identifying the high impact severe weather events
 - Promoting situational awareness and urgency
 - Structuring the warning message in terms of societal impacts
- **A two page document describing the experimental product is attached**
- **Would this type of product have been helpful during the Super-Derecho?**



Questions and comments?

- For the latest information, visit our website at weather.gov/phi
- If you have any questions or comments, please contact us.
- Gary.Szatkowski@noaa.gov
- Office 609-261-6602 x222
- Cell 609-320-7205





Impact Based Warning Experimental Product

OVERVIEW / Background

2011 proved to be a historic year in terms of the number of tornado fatalities across the United States with over 550 fatalities. The May 22, 2011, Joplin tornado resulted in 158 of those, making it the deadliest single tornado since modern record keeping began in 1950. Following the historic Joplin tornado, the National Weather Service (NWS) conducted a service assessment for the purpose of evaluating NWS warnings and societal response to those warnings.

KEY FINDINGS FROM THE 2011 JOPLIN ASSESSMENT

- * The majority of people identified local outdoor warning systems as their first source of warning.
- * The majority of people sought confirmation from additional sources before seeking shelter.
- * Credible, extraordinary risk signals prompt people to take protective actions.

DEMONSTRATION PROJECT

To address these findings NWS Central Region has identified five offices to expand the impact based convective warning experimental product to better communicate threats to partners and constituents. The "Impacts-Based Warnings" demonstration will occur in the Wichita KS, Topeka KS, Springfield MO, St. Louis MO, and Kansas City/Pleasant Hill, MO forecast areas starting in the spring of 2012 (April 2, 2012). The goal in this multi-step process is to provide more information to media and EM partners, to facilitate improved public response and decision making; and to better meet societal needs in the most life-threatening weather events. This initial demonstration project is just a first step.

Any effort to change core convective warning products must operate under tight restrictions, including time constraints and procedural limitations. In addition, any radical changes to the convective warning products would demand a rather large adjustment by core customers and partners; and a massive public education effort. Therefore, this demonstration will work within the boundaries of the well-established weather enterprise infrastructure to ensure easy absorption into mass communication channels.

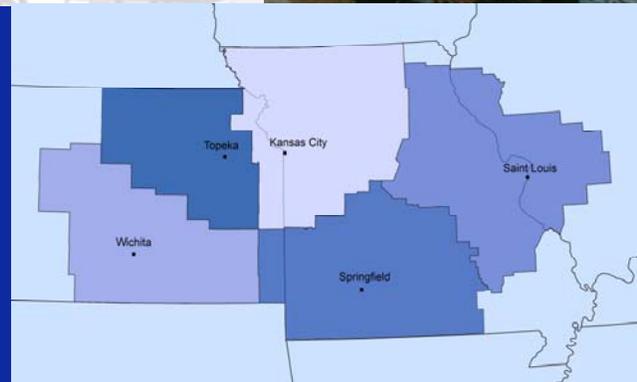
Initial efforts will build upon pre-existing Central Region efforts to employ "event tags" at the bottom of each warning for severe thunderstorm and tornado warnings. The additional tornado event tags will have tornado threat information attached to them as a quick means to provide users and partners with potential high impact risk signals that prompt faster risk assessment and protective action.

INTENDED OUTCOMES OF THE IMPACT BASED WARNING DEMONSTRATION

- * Optimize the convective warning system within the existing structure
- * Motivate proper response to warnings by better distinguishing situational urgency
- * Realign the warning message in terms of societal impacts
- * Communicate recommended actions/precautions more concisely
- * Evaluate ability to distinguish between low impact and high impact convective events



The goal is to provide more information to the media and Emergency Managers, to facilitate improved public response and decision making; and to better meet societal needs in the most life-threatening weather events.



Impact Based Warnings will Enhance Current Efforts

1. Impact Based Warnings will improve communication of critical information
2. Enhanced format will make it easier and quicker to parse out the most valuable information
3. Will enable you to prioritize the key warnings in your coverage area
4. Provides different levels of warning within the same product
5. A particular warning might highlight a storm that is particularly dangerous
6. This allows users and vendors to develop apps and tools for the public and broadcast meteorologists to better communicate areas of increased risk
7. Tags will enable the NWS to express a level of confidence of potential impacts

Examples of Tags

Tornado Tags

TORNADO...RADAR INDICATED

Evidence on radar and near storm environment is supportive, but no confirmation.

TORNADO...OBSERVED

Tornado is confirmed by spotters, law enforcement, etc.

Tornado Damage Threat Tag

TORNADO DAMAGE THREAT...SIGNIFICANT

When there is credible evidence that a tornado, capable of producing significant damage, is imminent or ongoing.

TORNADO DAMAGE THREAT...CATASTROPHIC

When a severe threat to human life and catastrophic damage from a tornado is occurring, and will only be used when reliable sources confirm a violent tornado.

Tornado Tags for Severe Thunderstorm Warnings

TORNADO...POSSIBLE

A severe thunderstorm has some potential for producing a tornado although forecaster confidence is not high enough to issue a Tornado Warning.

Feedback

To provide your input on the Impact Based Warning Demonstration Project, visit:

goo.gl/buxTZ

<http://www.weather.gov/survey/nws-survey.php?code=IBW>



For more information, please contact :

Mike Hudson, IBW Experimental Product Lead
(816) 268-3132

Michael.Hudson@noaa.gov

