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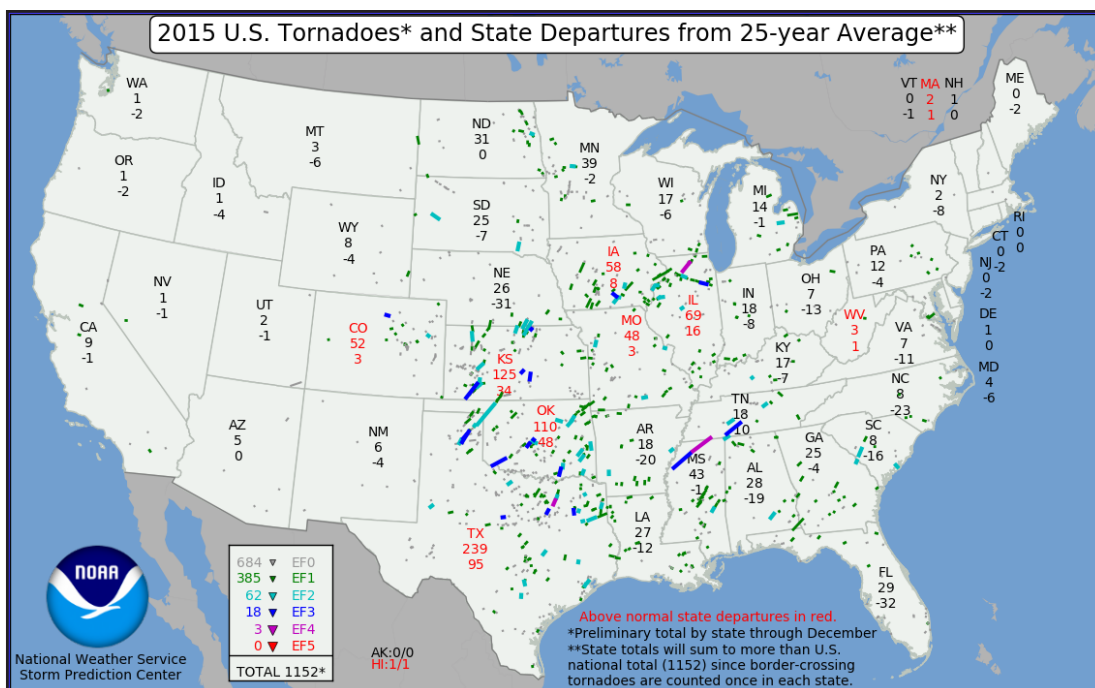
Aware is published by NOAA's National Weather Service to enhance communications between NWS and the Emergency Management Community and other government and Private Sector Partners.

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SPC Releases Preliminary 25-Year Average Map for U.S. Tornadoes

By [Greg Carbin](#), WCM, Storm Prediction Center, Norman, OK

The NWS Storm Prediction Center just released a preliminary look at how 2015 stacks up against the 25-year average for U.S. tornadoes. The graphics below shows tornadoes by state and by month.



		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Tornadoes	2015	28	3	10	170	380	181	116	44	17	40	98	65	1152
	25y Avg	35	34	78	175	263	234	123	76	67	58	53	25	1221
Tornado Days	2015	4	2	2	21	28	30	24	14	10	10	9	7	161
	25y Avg	6	6	12	18	25	27	25	21	15	10	7	6	178
Tornado Deaths	2015	0	0	1	2	7	0	0	0	0	0	0	26	36
	25y Avg	2	8	9	25	19	3	1	2	1	1	6	2	79

2015 counts remain preliminary pending further review. 1990-2014 period used for averages.
NOAA/National Weather Service, Storm Prediction Center

Impact-Based Decision Support Services List takes on Larger International Flare

By [John Paul Martin](#), WCM, NWS Bismarck, ND



Damage to Interstate Highway 680 near Council Bluffs, IA. The Souris River crested in nearby Omaha, NE, at 36.29 feet on July 2, 2011, which was around 2 feet above the level shown on the photo dated August 16, 2011.

After successfully creating a strong decision support program with local EMs, NWS Bismarck reached out to its international partners across the nearby Canadian border. The local program, started in 2002, evolved into telephone conference calls and eventually, by 2009, to webinars with graphics when major flooding impacts western and central North Dakota. The service has expanded to include weather, water and climate events.

NWS may extend IDSS activities to public safety officials in neighboring countries, if this type of support is within the scope of an existing international agreement. A NOAA agreement with Environment Canada has supports IDSS with our partners in Canada.

As a best practice after the severe flooding on the Missouri and Souris rivers of 2011, NWS Bismarck started including officials from neighboring Saskatchewan and Manitoba, Canada, in its notification emails. The Souris River flows out of Saskatchewan into North Dakota and then back north into Manitoba.

Today this partnership has grown to include more than a dozen contacts, many of whom forward the notification to other officials within their respective agencies. Included within this notification list is a wide variety of officials from Environment Canada, including Warning Preparedness Meteorologists, Hydrologic Forecasting and Coordination Directors and Intelligence Officers for Emergency Management. Canadian partners have also added NWS Bismarck to their notification lists. Jeff Savadel, Meteorologist-In-Charge of NWS Bismarck said, "I'm glad to see communication and collaboration increase across the international border. People on both sides will benefit".

NWS Bismarck Exercises Backup Operations at Alternate SEOC

By [John Paul Martin](#), WCM, NWS Bismarck, ND

NWS Bismarck Information Technology Officer Dave DeRung, Emergency Response Specialist Corey King and Warning Coordination Meteorologist John Paul Martin exercised NWS backup operation capabilities at the North Dakota Alternate State Emergency Operations Center (ASEOC) in January. This exercise was the first completed at the newly established North Dakota ASEOC.

The NWS joined about two dozen other federal and state agencies at the exercise. NWS staff set up and tested its ability to gather and share weather intelligence at the ASEOC in the event that the primary SEOC is rendered inoperable. This capability is in support of high impact weather, water and climate events and disasters requiring on-site Impact Decision Support Services (IDSS).

Some of the main goals were:

- ◆ Ensure notification procedures successfully activated the ASEOC
- ◆ Evaluate response times of agencies reporting to the alternate site



- ◆ Determine the amount of time needed for the ASEOC to become fully operational
- ◆ Determine whether or not the ASEOC was capable of meeting communications and other needs of those agencies

Greg Wilz, North Dakota Department of Emergency Services Homeland Security Division Director said, “It was great to have the National Weather Service participate. I’m glad to know that such a core partner is capable of supporting our operation and the people of North Dakota at a moment’s notice.”

Earth, Wind & Fire Simulates Winter Storms

By [Todd Lindley](#), SOO, NWS Norman, OK

In November, NWS Norman partnered with the Oklahoma Department of Emergency Management to facilitate a statewide winter storm exercise called Earth, Wind & Fire. The partnership involved NWS Norman meteorologists developing a multi-day winter weather scenario based on historic weather events.

Using that scenario, exercise planners developed planned injects to test first responder capabilities, with impacts ranging from wide-spread power outages, to the closure of an interstate highway, to evacuation of an assisted living facility.

In addition to testing responses from emergency personnel, NWS Norman ensured that its forecasters received realistic training on how to conduct multimedia webinars for Impact-Based Decision Support Services (IDSS) and familiarization with experimental Weather Prediction Center (WPC) probabilistic snowfall information.

NWS email updates and briefing webinars began to alert EMs across the state of the “pending” winter storm starting on Friday, November 13. After a weekend of pre-storm communication and preparations, the weather scenario called for an ice storm to impact western Oklahoma on Monday, November 16, followed by light snow accumulations across the state on Tuesday, November 17, and blizzard conditions on Wednesday, November 18.

In an effort to demonstrate NWS backup operations for our EM partners, NWS Fort Worth conducted Tuesday’s multimedia webinar as part of the exercise and of a planned service backup to support an AWIPS build upgrade. While implementing this facet of the exercise was simple, it served as an effective way to build partnerships and confidence in the continuity of NWS IDSS.

Since November’s Earth, Wind & Fire exercise, Oklahoma has experienced two major winter storms that struck on holiday weekends. The state was impacted with significant ice accumulations on November 27-28 and on December 26-27. There is no doubt that the operational readiness of both NWS meteorologists and first responders before these winter weather episodes was enhanced thanks to the unique opportunity offered by the Earth, Wind & Fire exercise.



*Christmas weekend storm in Oklahoma.
Photo courtesy Richard Fenney taken near
Fort Cobb, OK.*

Snow Squalls Take Focus of Integrated Warning Team Meeting

By [Brandon Peloquin](#), WCM, NWS Cincinnati, OH

NWS Wilmington, OH, in cooperation with local EMs, held an Integrated Warning Team meeting in December at the Franklin County, OH, Emergency Management and Homeland Security.

This meeting was a great opportunity for the NWS to meet with central Ohio EMs and broadcast media, the Ohio Department of Transportation and Public Utilities Commission of Ohio to strengthen our relationships, to understand

how different weather events impact each of them, and to work together to find ways to better communicate weather hazards through both messaging and preparedness/education. Some of the topics attendees addressed include:

- ◆ Increasing awareness and better messaging during snow squall events
- ◆ Issuing Winter Weather Advisories for lower snow criteria during high impact times
- ◆ Providing Minimum, Mostly Likely, and Maximum Snowfall Graphics as part of the Winter Probabilistic Snowfall Experiment
- ◆ Working together during Storm Damage Surveys

The snow squall topic promoted active discussion. Most snow squalls are sub-Advisory level, but since they tend to be extremely dangerous for travelers, NWS Wilmington will start providing briefings to EMs and other partners in the days leading up to a potential snow squall event.

In addition, after discussion, Ohio DOT has agreed to include messages on road signs to alert drivers to hazardous conditions when NWS Wilmington issues Special Weather Statements related to this and other road hazards.

The feedback from the meeting was positive, and highlighted the need to effectively communicate a clear, consistent message for weather hazards and to work together to ensure these messages are delivered.



Attendees at the central Ohio Integrated Warning Team meeting focused on snow squalls and their impact on roads and other emergency services among many vital topics.

Aware

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