



TORNADO STRIKES AT MESONET SITES

—by Stephanie Bowen

The Oklahoma Mesonet has recorded several interesting measurements over the years. Our sensors have taken some damage from bad weather, but never in Mesonet history has a site been taken down or severely damaged due to a tornado before 2011.

“El Reno is our first site directly affected by a tornado,” said Cindy Luttrell, Lead Mesonet Operator for the Oklahoma Climatological Survey. “The El Reno tornado (May 24, 2011) was rated an EF5, and we believe our site was on the outer edge of the tornado circulation. The location of the El Reno site didn’t have much debris nearby, so that site was minimally impacted by flying debris.”

At El Reno, the highest wind gust ever recorded by the Mesonet was observed that day, 151 mph. The Mesonet sites at Tipton and Fort Cobb might have recorded higher wind gusts on November 7, 2011 but didn’t have the chance.

“Our Tipton and Fort Cobb sites are our first sites to be toppled by a storm,” Luttrell said. “Both sites just happen

to be located on OSU research farms, and unfortunately nearby debris knocked the towers over before we could measure significant wind gusts.”

Although the Tipton and Fort Cobb sites were hit by two different tornadoes, both formed from the same storm. Almost all of the sensors at the Tipton site were destroyed. The Fort Cobb sensors were minimally damaged as there was much less debris.

An 86 mph gust was recorded at the Tipton site before being destroyed (page 2), and Fort Cobb measured 91 mph before being toppled. The estimated winds based on damage for Tipton were 166-200 mph, thus making the Tipton tornado the latest EF4 recorded in a calendar year for the U.S.

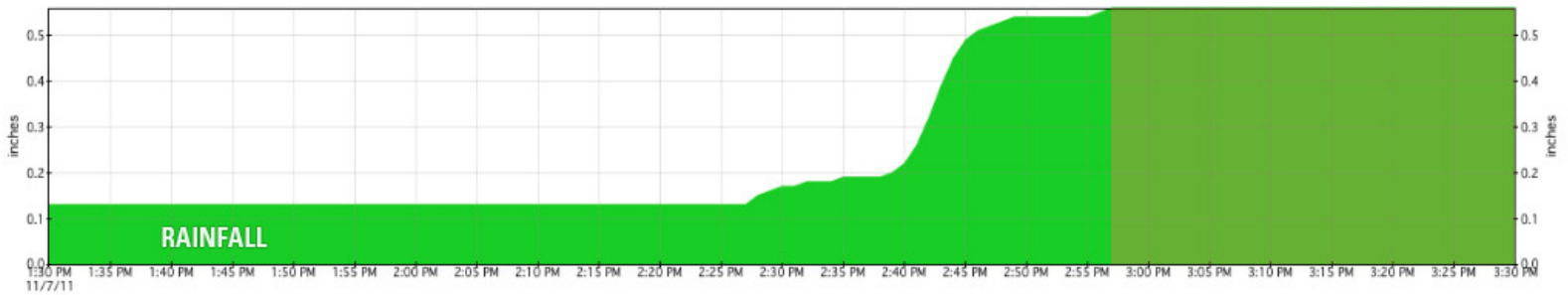
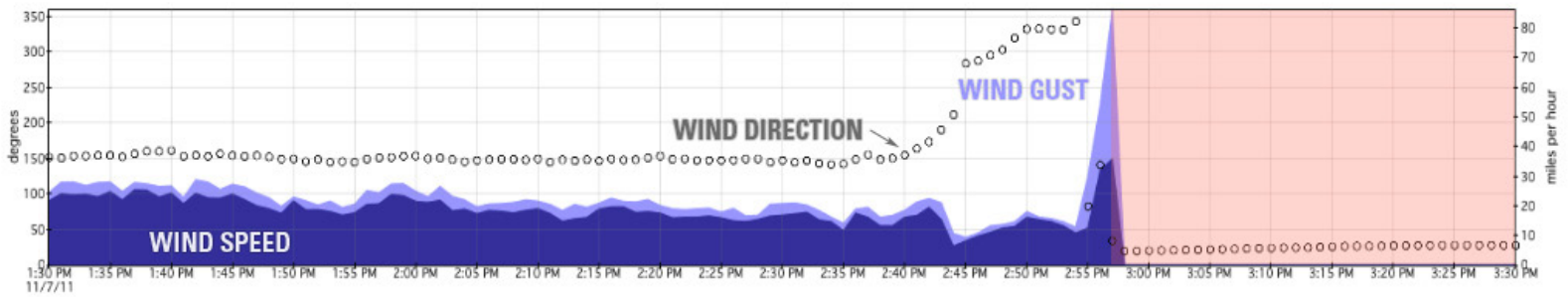
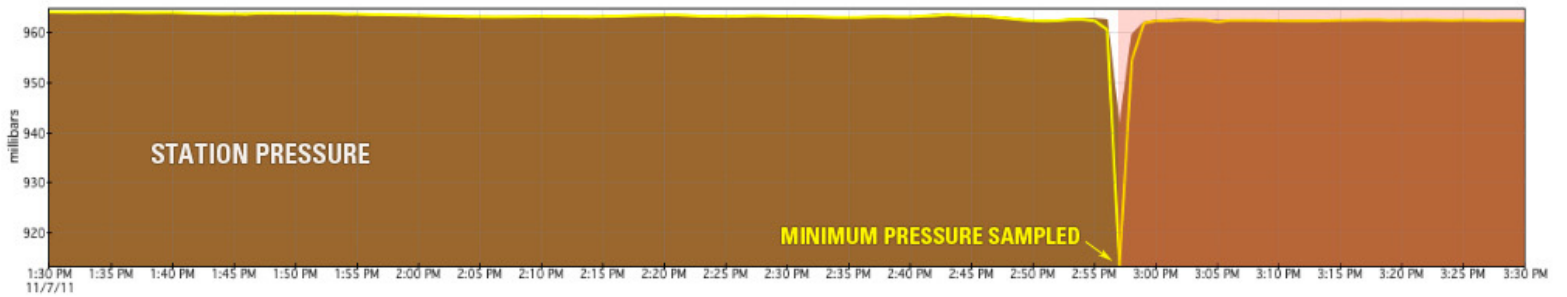
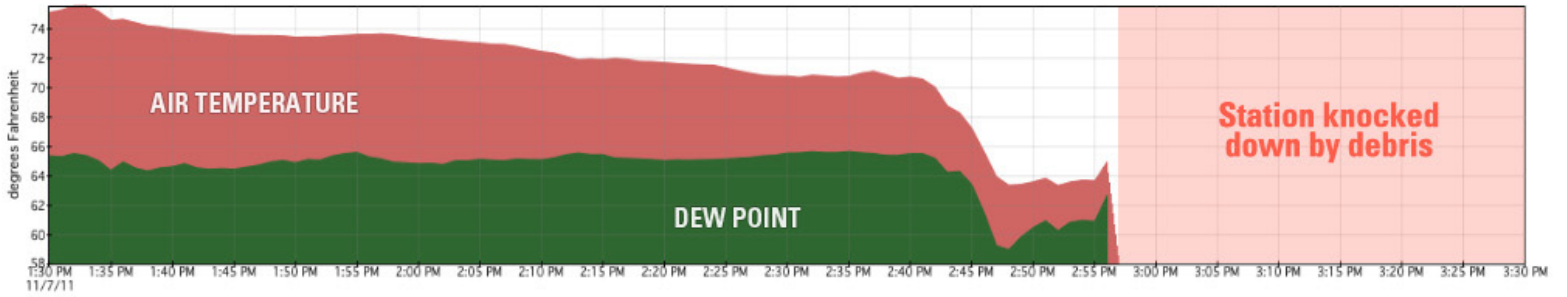
Prior to 2011, the Mesonet has recorded wind gusts over 100 mph on three different occasions. In August 1994, the Lahoma site recorded 113 mph during a hailstorm. The Bowlegs Mesonet site recorded 102 mph in November 1998, and in May 2006, 106 mph was recorded at the Idabel site. ■



MESONET IN PICTURES



Tipton (TIPT) NOVEMBER 7, 2011



MESONET IN PICTURES

November 7, 2011 Tornado - Tipton site

- The Mesonet site at Tipton was damaged by debris from one of the tornadoes on November 7. An irrigation pipe trailer took the Tipton site down.



November 7, 2011 Tornado - Fort Cobb site

- The Mesonet site at Fort Cobb was also damaged by debris from one of the tornadoes on November 7. A center pivot irrigation system took down the Fort Cobb site.



Behind the Scenes

—by Stephanie Bowen

EVERYONE AT THE OKLAHOMA MESONET is vital in providing you with accurate, up-to-date data. From our Mesonet operators to our field technicians, the Mesonet has people behind the scenes making sure everything runs smoothly. After the storm on November 7, our field technicians were left with a lot of work to do.

On a usual day, maintenance for a site includes cleaning dirt from the sensors that can mess up data collection, checking the tower and instruments to verify they are functioning correctly, and mowing the site.

After the storm on November 7, the technicians had a lot more to do. Both the Fort Cobb and Tipton Mesonet towers were knocked over. Parts of the towers were bent and mangled to an extent they couldn't be repaired. The towers sit on a 3/8" steel base plate, and even those were bent.

"We inspect the towers very vigorously, especially after a storm like that," said James Kilby, Mesonet Field Operations

Manager. "The storm was a pretty violent occurrence to bend the towers and that 3/8" steel."

At Fort Cobb, one-third of the tower had to be replaced. More extensive damage occurred at the Tipton site, and a whole new site needed to be installed. Luckily, our technicians were prepared for disasters like this.

"We do our best to keep a stock of everything, so we aren't waiting two weeks for a special bolt or something like that," Kilby said. "We have a list, down to every bolt and washer. So generally we can be to a site after an emergency situation the next day. We just load up the trailer and head out."

Thanks to our technicians, the Fort Cobb site was back up after three working days. Although slowed down a bit while waiting for debris to be cleared from the road, the Tipton site was back up after seven working days. ■

Inset below: Our technicians - James Kilby, Kirk Wilson, Robert Heck and Phil Browder





November Rains Have Drought on the Run in Oklahoma

By Gary McManus, Associate State Climatologist

DECEMBER WRAP-UP

With Oklahoma experiencing one of its most severe droughts on record, an extended period of above normal rainfall was desperately needed. Fortunately, that is exactly what occurred as Oklahoma enjoyed its 12th wettest November since records began in 1895. According to preliminary data from the Oklahoma Mesonet, the month finished more than an inch above normal with a statewide average of 4.22 inches. Combined with September and October, the climatological fall season still came up a bit short with an average of 8.61 inches across the state, 1.4 inches below normal. The month was also a bit on the mild side at 1.2 degrees above normal, the state's 52nd warmest November on record. Oklahoma's summer, officially the hottest since 1895 for any state, propelled the January-November period to the fifth warmest on record at 2.3 degrees above normal.

Significant long-term precipitation shortfalls remain across much of Oklahoma. The January-November statewide average finished at 22.67 inches, 12 inches below normal, to rank as the ninth driest such period on record. The western half of the state remained the hardest hit during that period with average deficits ranging from 10 inches in the Panhandle and the northwest to 15 inches in the southwest. South central Oklahoma's deficit was still a whopping 18 inches even after the recent rains. For western and south central areas of the state, the January-November period was one of the top-three driest since 1895. The Oklahoma Mesonet site at Hooker has recorded less than 5 inches of rain for the year thus far. The lowest annual total for any location in Oklahoma dating back to the late 1800s is Regnier's 6.53 inches from 1956. Twelve Mesonet sites in far western Oklahoma have recorded less than 10 inches of rainfall for the year, with another 13 reporting 15 inches or less.

The latest Drought Monitor released on Thursday, Dec. 1, now has only 10 percent of the state in the exceptional drought category. The exceptional category is the worst possible designation under the Drought Monitor intensity scale. That figure was 69 percent at the end of August. Approximately 40 percent of the state remains in the extreme-exceptional category, the worst two designations. All of that hardest hit area lies in the western half of the state. In Contrast, over 85 percent of the state was covered in extreme-exceptional drought three months ago. The Drought Monitor now has 85 percent of the state under some drought designation, from moderate to exceptional on the intensity scale. Only three percent of the state was considered to be in drought at this time a year ago.

12th WETTEST

November since records began in 1895

4.22" RAINFALL

statewide average for November

12" BELOW

statewide precipitation
for Jan. 1, 2011 to Nov. 30, 2011

< 5" RAINFALL

recorded at the Hooker Mesonet
site for the year thus far

CALENDAR

DECEMBER

- ▶ 1st: EarthStorm Field Trip, Enid High School
- ▶ 8th: EarthStorm, Judge at Olive Science Fair
- ▶ 13th: Drought Update, OSU Winter Crop School, Stillwater
- ▶ 19th: OK-FIRE computer workshop, Stillwater
- ▶ 23rd-Jan 2nd: OCS/Mesonet Closed for OU/OSU Winter Break

JANUARY

- ▶ 6-7th: Oklahoma Horticulture Industry Show exhibit, Tulsa
- ▶ 12th: Drift Risk and Weather, Turf and Landscape Workshop, Davis
- ▶ 16-17th: Oklahoma Aerial Applicators Association Exhibit, OKC
- ▶ 17th: OK-FIRE Prescribed Fire Seminar, OSU OCES Conference, Stillwater
- ▶ 18th: Mesonet Rain and Drought Tools, OSU OCES Conference, Stillwater
- ▶ 19th: EarthStorm Pre-Collegiate GATE, Norman 6th grade
- ▶ 24th: EarthStorm Pre-Collegiate GATE, Norman 6th grade

CONTACTS

Accessing recent (within the past 7 days)
Mesonet data

Contact: [Mesonet Operator](#)

Instrumentation, telecommunications, or
other technical specifications

Contact: [Chris Fiebrich](#)

Mesonet agricultural data and products

Contact: [Al Sutherland](#)

Mesonet meteorological data

Contact: [OCS Data Requests](#)

K-12 educational outreach

Contact: [Andrea Melvin](#)

OK-First

Contact: [James Hocker](#)

OK-FIRE

Contact: [J.D. Carlson](#)

Not sure?

Contact: 405-325-2541 or [Chris Fiebrich](#).

FORECAST FOR DECEMBER

[Click here to view the original maps from the Climate Prediction Center.](#)

