



# First Hollow Stem

—by Stephanie Bowen

**AS SPRINGTIME NEARS**, farmers and ranchers will begin to consider when to pull their cattle off wheat pastures. First Hollow Stem (FHS) is the optimal growth stage of wheat to remove cattle in order to optimize returns from dual-purpose wheat production systems.

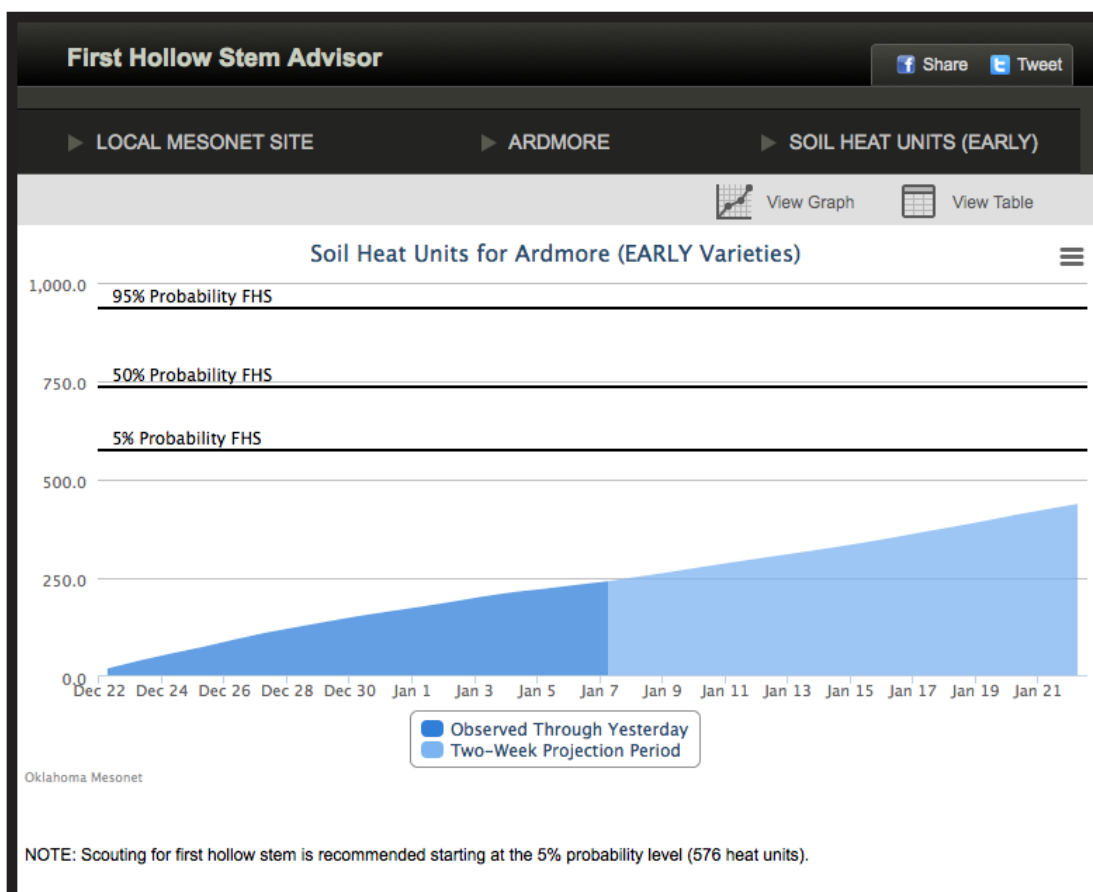
FHS occurs when stems of nongrazed plants begin to elongate and the stem above the roots and below the developing head becomes hollow. The wheat plant is said to be at FHS when the hollow stem portion of the plant is 5/8 inch long.

The Mesonet First Hollow Stem Advisor, made possible thanks to a grant from the Oklahoma Wheat Commission, uses 4-inch Soil Temp Under Vegetative Cover to estimate probabilities for the date when FHS is expected to occur. Soil temperatures from December 22 at or above 31 degrees F are used for wheat varieties that are in early or middle FHS category groups. Late FHS category wheat varieties use data from January 1st and soil temperatures at or above 34 degrees F.

“Grazing past FHS has showed reduction in grain yields by as much as 5% a day in some instances,” said Mike Schulte, Executive Director of the Oklahoma Wheat Commission. “By having this tool available to producers, it can warn them of potential impacts of grazing past FHS.”

Available on the Mesonet website (mesonet.org), the FHS Advisor is located in the Agriculture section, under both the “Crop/Wheat” and “Livestock/Cattle” tabs. A guide on how to use the Advisor is located in the “Learn More” section of the website. Producers can select their wheat variety (early, middle or late) then use maps, charts or graphs to check probability of FHS occurrence.

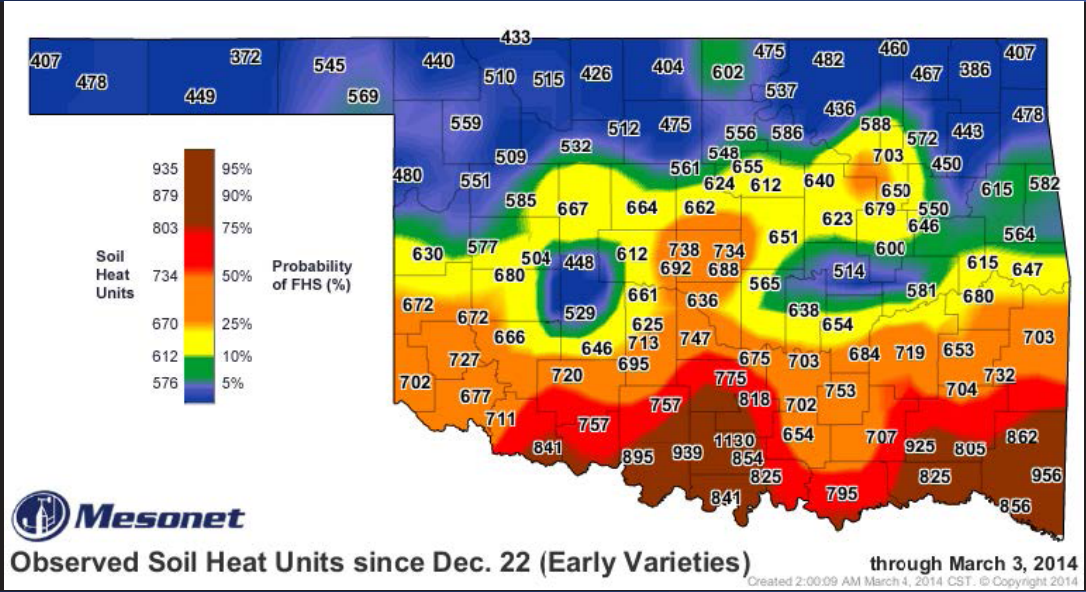
“It is actually putting the tools in the hands of the producer and allowing them to make more educated decisions,” Schulte said. “Hopefully making them more profitable at the end of the day.” ■



# MESONET IN PICTURES

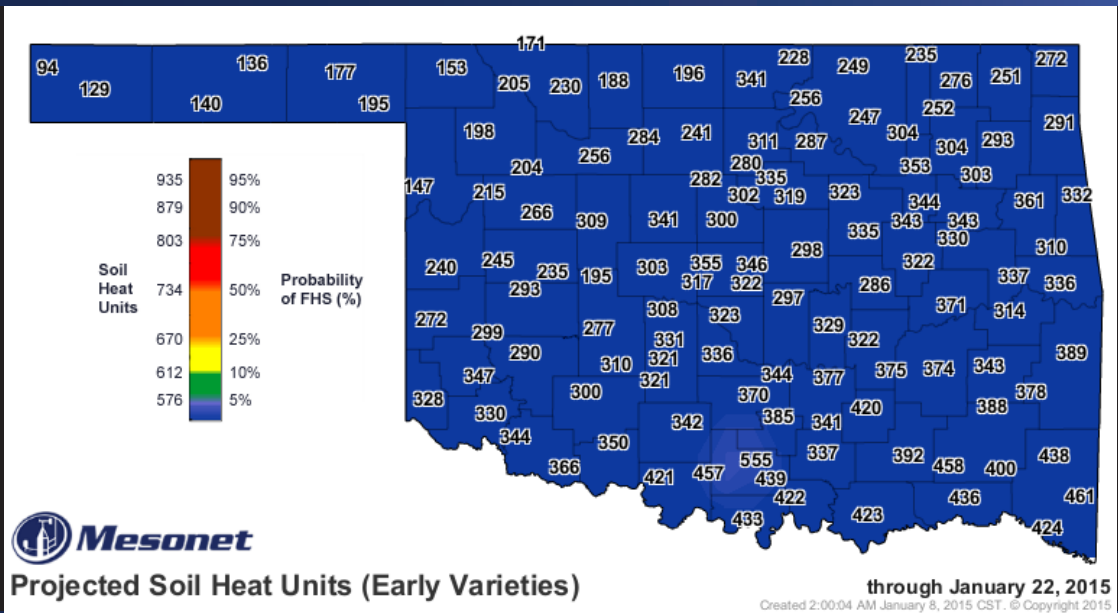
## First Hollow Stem - Early Varieties - Current Conditions Map 3/3/2014

- This map from last March shows current Soil Heat Units and the probability of FHS. Scouting for first hollow stem is recommended at the 5% probability level (576 heat units). To view First Hollow Stem Maps, go to [www.mesonet.org](http://www.mesonet.org), click on "Agriculture," and then select "Wheat" from the "Crop" sub-heading. From the left side menu, select "First Hollow Stem Advisor," then select "Statewide Maps."



## First Hollow Stem - Early Varieties - 2 week projection map

- The statewide maps also provide a 1 week or 2 week projection. This map from 1/8/2015 is a projection through 1/22/2015. To view First Hollow Stem Maps, go to [www.mesonet.org](http://www.mesonet.org), click on "Agriculture," and then select "Wheat" from the "Crop" sub-heading. From the left side menu, select "First Hollow Stem Advisor," then select "Statewide Maps."



## The 2014 Oklahoma Mesonet Extremes

### Temperature

Maximum Air Temperature  
FREEDOM 106.9 F 07/26/2014

Minimum Air Temperature  
NOWATA -12.1 F 01/06/2014

Maximum Heat Index  
LANE 112.6 F 08/08/2014

Minimum Wind Chill  
ALVA -25.0 F 01/06/2014

Greatest 1-hour Temperature Change  
KENTON 32.9 F (80.6 F 11/10/2014 21:55 to 47.7 F 11/10/2014 22:50)

Greatest 24-hour Temperature Change  
SLAPOUT 66.2 F (84.6 F 11/10/2014 20:40 to 18.3 F 11/11/2014 13:15)

### Humidity

Highest Dew Point Temperature  
BROKEN BOW 81.3 F 07/27/2014

Lowest Dew Point Temperature  
MIAMI -18.8 F 01/06/2014

### Rainfall

Greatest 1-hour Rainfall  
HINTON 3.07" 06/19/2014

Greatest 24-hour Rainfall  
CLAYTON 6.60" (07/30/2014 - 07/31/2014)

### Wind Speed

Maximum Wind Speed (5-minute average)  
BEAVER 59.7 mph 07/01/2014

Maximum Wind Gust  
BURNEYVILLE 105.8 mph 07/31/2014

### Pressure

Highest Mean Sea Level Pressure  
CHEROKEE 1044.55 mb 01/23/2014

Lowest Mean Sea Level Pressure  
MAY RANCH 989.17 mb 04/27/2014

# 2014 Year in Review

—by Gary McManus, *The Ticker*, December 29, 2014

**THE WEATHER OF 2014** would probably be considered boring by most, and rightfully so. After all, there were no EF-5 twisters ravaging the countryside, nor was there a never ending onslaught of days with triple-digit heat. The blizzards of the last few years never materialized, nor did that other unwelcome winter visitor, the ice storm. What we did have, however, was drought, the most boring if not most damaging of Oklahoma's weather hazards. That particular guest has been plaguing Oklahoma's ecosystem, agriculture and economy since its beginning in late fall 2010 to the tune of several billion dollars in damage.

The spring rainy season was mostly a bust, although a return of moisture in late May paved the way for more rain during June and July. That uncharacteristically timed relief delayed the re-intensification of drought that started earlier in the year, but more dry stretches from August forward left over 60 percent of the state in drought at year's end. The year ended with a dark, dank and dreary December in which the sun was mostly a no-show at only 35.4 percent of possible sunshine according to the Oklahoma Mesonet's solar radiation sensors.

In the end, 2014 left us with memories of a (mostly) cold and (mostly) dry year, with a few bursts of excitement to satisfy most weather enthusiasts. Here are a few of the more notable weather highlights (or lowlights) from 2014, as well as the top extremes as measured by the Oklahoma Mesonet.

According to preliminary data from the National Weather Service (NWS), 2014 ended up with a total of 16 tornadoes, the lowest count since accurate records began in 1950. That bests the previous minimum annual twister count of 17 back in 1988. That stands in stark contrast to recent years that ranked near the top for annual tornado totals. The record of 145 is still held by 1999, but 2011 and 2010 rank with the second- and fourth-highest totals at 119 and 103, respectively. And 2013 tied for ninth highest at 82. The annual average tornado total for Oklahoma is approximately 56.

- The strongest 2014 tornado listed was an EF-2 that struck the small town of Quapaw in Ottawa County, killing one and heavily damaging as many as 50 structures.
- A tornado touched down near Lake Arcadia in central Oklahoma on the December 14, only the 25th tornado since 1950 for that month.
- Of the 16 confirmed tornadoes, 11 were of the weakest rating of EF-0.
- Although not associated with a tornado, a thunderstorm near Burneyville on July 30th produced a wind gust of 106 mph, tied for the fourth highest in Mesonet history.

According to preliminary data from the Oklahoma Mesonet through December 28, the statewide average precipitation total for the year thus far was 28.56 inches, 7.74 inches

below normal. Depending on what possible precipitation falls in year's final three days, it is estimated that 2014 will rank somewhere from 25th to 30th driest since 1895 (note: the rankings in the statistics table below are since 1921).

- The Mesonet site at Kenton recorded 13.2 inches of precipitation during 2014, the lowest such total in the state. Broken Bow and Clayton led the state with 50.8 inches each.
- The spring (March-May) rainy season was the 11th driest on record with a statewide average of 6.57 inches, more than 5 inches below normal.
- The January-May statewide average was 7.39 inches, the 3rd driest first five months of the year on record.
- June and July combined were the 15th wettest on record across Oklahoma with an average of 10.28 inches, nearly 3.5 inches above normal.

A no-show summer and a frigid first few months of the year guaranteed a cool 2014, and the statistics back that up. Preliminary data from the Oklahoma Mesonet place the statewide average temperature for 2014 at 58.9 degrees, about a degree below normal. Depending on what occurs the last few days of the year, that would rank 2014's temperature somewhere in the 20-30th coolest on record range. Interestingly, 2013's final statewide temperature also finished at 58.9 degrees.

- Summer itself was the 24th coolest on record with a statewide average of 78.6 degrees, 1.1 degrees below normal.
- July was the fifth coolest on record and 4.3 degrees below normal.
- A brush with frigid weather in the middle of November proved to be one of the most significant early-season winter outbreaks on record for Oklahoma. The cold snap began with a cold front on the 11th that dropped temperatures from the 70s and 80s into the 30s and 40s. The Oklahoma Mesonet station at Boise City struggled to a high of 15 degrees on the 12th just two days after reaching a high of 81 degrees. Most of the state had spent from 100 to more than 150 hours below freezing. The event also came with a statewide blanket of snow. Amounts of 3-4 inches were common across parts of western, northern and central Oklahoma.
- December finished the year off with one last warm month, but not in the way one would normally think. There were very few pleasantly warm afternoons, as daytime highs were actually a bit below normal. The morning lows, however, were another story. Through the 29th, the statewide average low temperature was 35.2 degrees, 7.7 degrees above normal. Overall, the statewide average through the 29th was 3.4 degrees above normal. The last two days of December promised to be quite chilly, however, which could bring that average down just a bit. ■



# Winter Finally Finds December

By Gary McManus, State Climatologist

## DECEMBER WRAP-UP

Winter was noticeably absent through much of December, a deceptively warm month that ended more than 2 degrees above normal to rank as the 38th warmest since records began in 1895. The season finally lived up to its name during the month's final week, however, with a swath of 3-5 inches of snow along the I-44 corridor in southwestern Oklahoma, along with another icy plunge to ring in the New Year. New Year's Eve was celebrated with patches of freezing drizzle, snow, sleet and below-zero wind chills. Despite the snow and ice, preliminary data from the Oklahoma Mesonet still tracked a deficit of 0.67 inches for the month, the 55th driest December on record. The year itself was cool and dry as a whole, with 2014's statewide average temperature at 58.9 degrees, one degree below normal and the 27th coolest on record. The January-December statewide average precipitation total of 28.47 inches was more than 8 inches below normal and the 26th driest year on record. The 2014 Mesonet precipitation totals ranged from 13.2 inches at Kenton while Clayton had the most with 50.9 inches.

December's average temperature might have finished on the warm side, but that statistic didn't come with lots of warm, sunny days. In fact, it was the least sunny December since Mesonet records began in 1994, receiving only 35 percent of possible sunshine. Fog was a frequent visitor throughout the month, and the high humidity values aided in suppressing fire danger. The clouds and moisture also helped account for the warmth, trapping heat close to the surface at night and preventing the low temperatures from plummeting. The statewide average high temperature, held down by the cloudiness, was actually more than a degree below normal, but the average low temperature was nearly 6.5 degrees above normal. The highest temperature recorded by the Mesonet in December was 75 degrees at Burneyville on the fifth. The lowest temperature, minus 6 degrees, came on the month's final day at Kenton. The lowest temperature of 2014 was minus 12 degrees at Nowata back on January 6, and the highest temperature of 107 degrees came on July 26 at Freedom.

Severe weather made an appearance during the month, including a weak tornado near Lake Arcadia in central Oklahoma on the 14th, only the 25th December tornado since 1950. According to preliminary data from the National Weather Service (NWS), 2014 ended with a total of 16 tornadoes, the lowest count since accurate records began in 1950. If that total holds at 16, it would best the previous minimum count of 17 back in 1988. Large hail and severe winds also accompanied the storms on the 14th.

No drought improvements were noted during the month thanks to the dry conditions. The U.S. Drought Monitor depicted 60 percent of the state in drought to start December and 62 percent as it ended. The amount of extreme-to-exceptional drought, the worst two categories on the Drought Monitor, increased from 18 percent to 22 percent. One year ago, 38 percent of the state was considered to be in drought. Nearly 1.5 million Oklahomans were still affected by drought as the year came to a close.

# Least Sunny

December since records began in 1994

# 28.47"

average statewide precipitation for 2014

# 58.9°F

average statewide temperature for 2014

# 62 PERCENT

of the state in drought according to the U.S. Drought Monitor on December 30

## CALENDAR

### JANUARY

- ▶ 9th-10th: KNID Agrifest exhibit, Enid
- ▶ 12th-18th: OK-First Re-certification Class (Online)
- ▶ 19th-21st: Oklahoma Ag Aviation Association Conference, Midwest City

### FEBRUARY

- ▶ 6th: Okla Assoc Environmental Education 2015 Expo, NWC, Norman
- ▶ 13th: Okla Crop Improvement Annual Meeting presentation, OKC
- ▶ 13th-14th: American Farmers & Ranchers Annual Convention, Norman
- ▶ 16th: OSU Lifelong Learning: Mesonet History, Okla History Center, OKC
- ▶ 19th-20th: Mesonet booth at Oklahoma Sheriff's Association Conference
- ▶ 23rd: OSU Lifelong Learning: Mesonet Instruments, Okla History Center, OKC
- ▶ 28th: Organic Oklahoma 2015 presentation, OSU-OKC

### ***Tweet of the Month***

*@dustbury - Dec 27 - It's one of THOSE nights again: 9° in Kenton, 57° in Durant, per @okmesonet. #okwx*

Find us on



## 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](#)

Earthstorm - K-12 educational outreach

Contact: [Andrea Melvin](#)

OK-First - Public safety outreach

Contact: [James Hocker](#)

OK-FIRE - Fire management outreach

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

Not sure?

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

## FORECAST FOR JANUARY

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

**DISCUSSION:** Equal chance for above normal, normal or below normal temperatures statewide. Chance for above normal precipitation across the lower half of Oklahoma.

**Equal chance for above normal, normal or below normal temperatures across the state and a chance for above normal precipitation across the lower half of Oklahoma**