



Meeting the Needs of Oklahomans

—by Stephanie Bowen

With parts of Oklahoma still in an extended drought and with warmer months ahead, the increased risk of a wildfire outbreak weighs heavily on the minds of emergency managers and firefighters. Concerns also arise from prescribed burners about knowing when the best time is to burn. The Oklahoma Mesonet's OK-FIRE program was created to help meet the needs of these communities through workshops and online tools.

“There are two major types of applications for OK-FIRE, one having to do with those who anticipate and suppress wildfires, like fire departments,” said J.D. Carlson, OK-FIRE program manager. “The other is for those who conduct prescribed burns, such as landowners.”

An 84-hour weather forecast is used in conjunction with the fire danger models to help give an idea of what the fire danger levels will be over the next three days. Emergency managers and firefighters can then prepare for the amount of staff they may need on a given day.

“If it is going to be a high fire danger day, they need to have their staff ready to go,” Carlson said. “When a wildfire is going on, they can use OK-FIRE to look at current weather and fire danger conditions monitored by the Mesonet. Fire managers can look at the 84-hour weather and fire danger forecasts to see how that will impact fire management decisions. So if a wind shift or cold front is coming through, firefighters can be safely moved to better attack the wildfire.”

For prescribed burners, the Fire Prescription Planner allows them to input their own prescription criteria based on what are considered safe burning conditions.

“Before starting a burn, they should monitor the current Mesonet weather conditions over the course of the burn to see if the conditions are still suitable for the burn,” Carlson said. “The 84-hour forecast is updated every six hours and can change, so they should use it right up to the time they are ready to burn.” ■



Participants in the OK-FIRE workshop in Stillwater, Okla., on December 19, 2011, complete computer exercises to learn more about the OK-FIRE tools available to them.



MESONET IN PICTURES

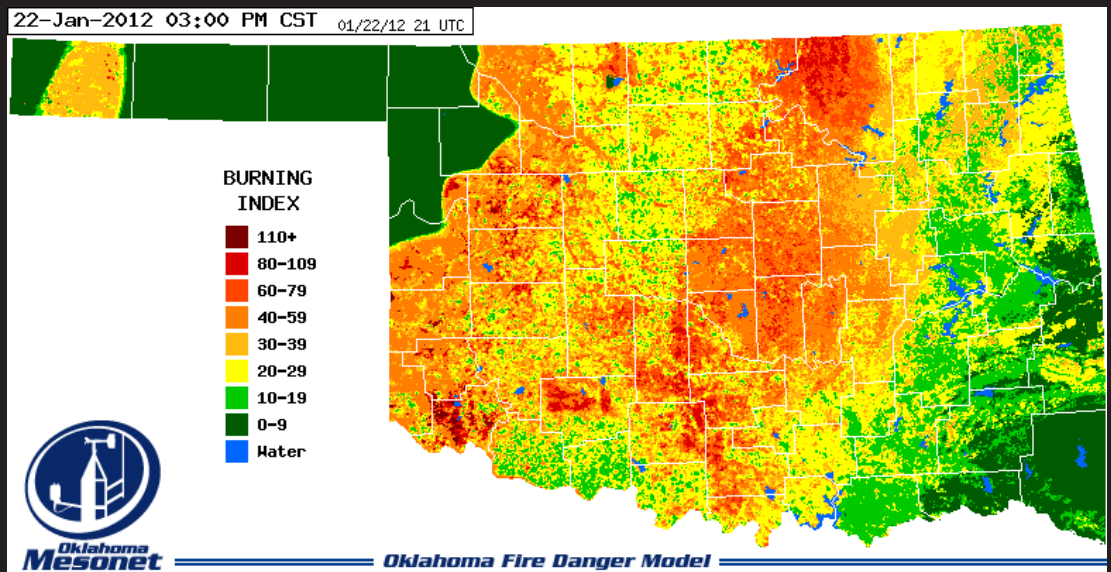
OK-FIRE - Fire Prescription Planner

- The Fire Prescription Planner allows you to input your own fire prescription criteria to see if any windows of opportunity exist over the next 84 hours for your burn. From the OK-Fire homepage, click on WEATHER in the top menu bar, then click Fire Prescription Planner in the sidebar on the left.

FIRE PRESCRIPTION PLANNER		
Prescription Forecast Element	Lower Limit	Upper Limit
<u>Air Temperature</u> (F)	<input type="text" value="35"/>	<input type="text"/>
<u>Relative Humidity</u> (%)	<input type="text" value="40"/>	<input type="text"/>
<u>Wind Speed</u> (mph)	<input type="text" value="5"/>	<input type="text" value="15"/>
<u>1-hour Precipitation</u> (inches)	<input type="text"/>	<input type="text"/>
<u>Dispersion Conditions</u>	<input type="text" value="Moderately Good"/>	<input type="text"/>
<u>1-hour Dead Fuel Moisture</u> (%)	<input type="text" value="8"/>	<input type="text" value="20"/>
<u>10-hour Dead Fuel Moisture</u> (%)	<input type="text" value="8"/>	<input type="text"/>
<u>Burning Index</u> (10*ft)	<input type="text"/>	<input type="text"/>
<u>Ignition Component</u> (%)	<input type="text"/>	<input type="text"/>
<u>Spread Component</u> (ft/min)	<input type="text"/>	<input type="text"/>
<u>Energy Release Component</u> (BTU/ft2)	<input type="text"/>	<input type="text"/>
<u>KBDI</u> (0-800)	<input type="text"/>	<input type="text"/>

OK-FIRE - Burning Index map

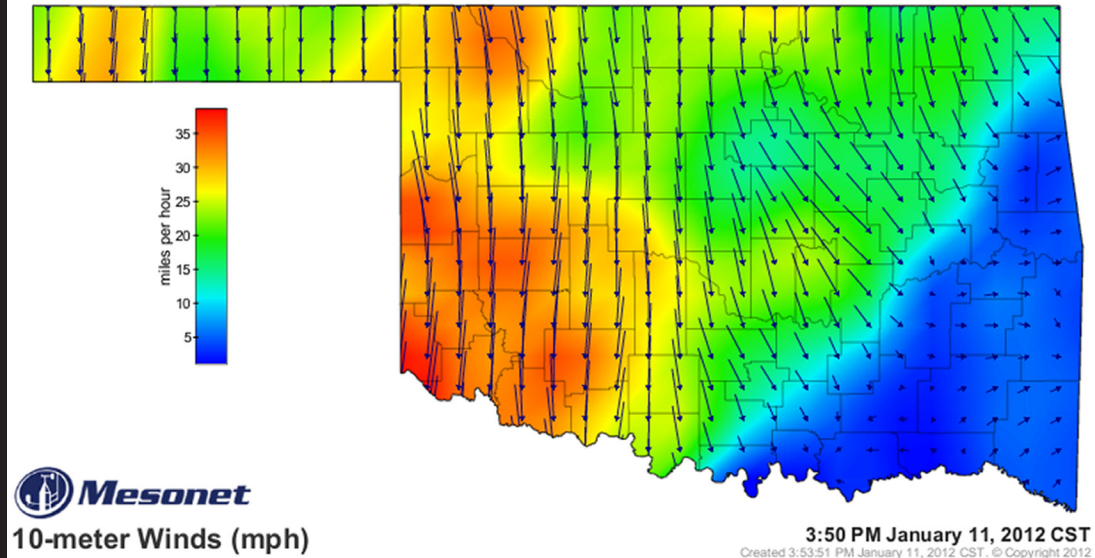
- The Burning Index map is used to indicate the level of fire intensity if a fire were to break out and is impacted by weather, fuel moisture, and fuel type. From the OK-FIRE homepage, click on FIRE in the top menu bar, then click CURRENT Fire Danger in the sidebar on the left, and click on Burning Index.



MESONET IN PICTURES

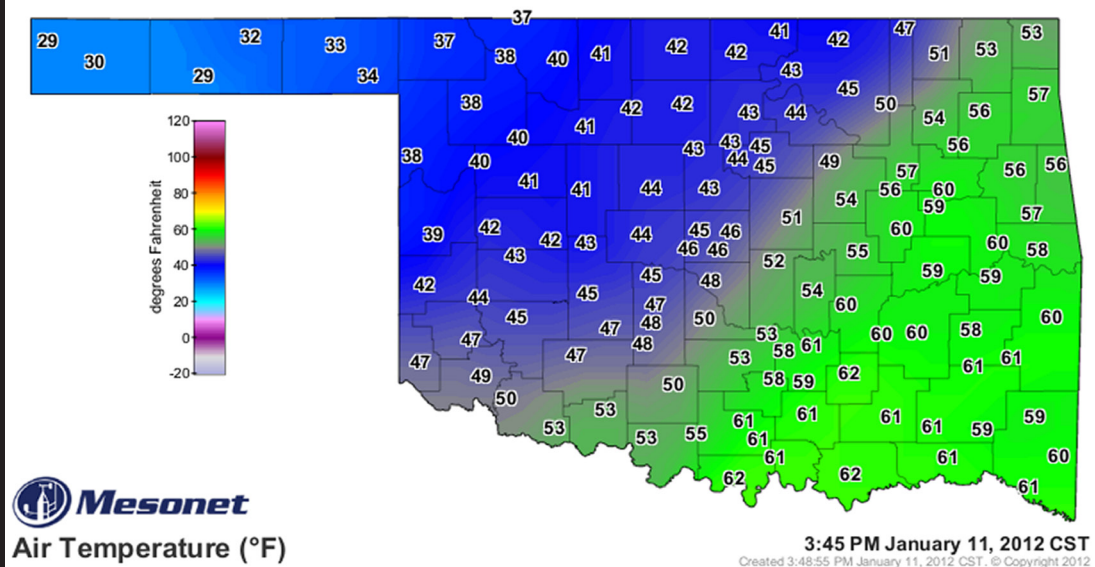
10-meter Winds Map

- Reading the Mesonet 10-meter Winds map can help you see when a cold front is moving across the state and how wind speeds and direction are changing as a cold front moves in. From the Mesonet homepage, click on Weather in the top menu bar, then click on Wind in the sidebar on the left, and click on the Gradient-Filled Wind map.



Air Temperature Map

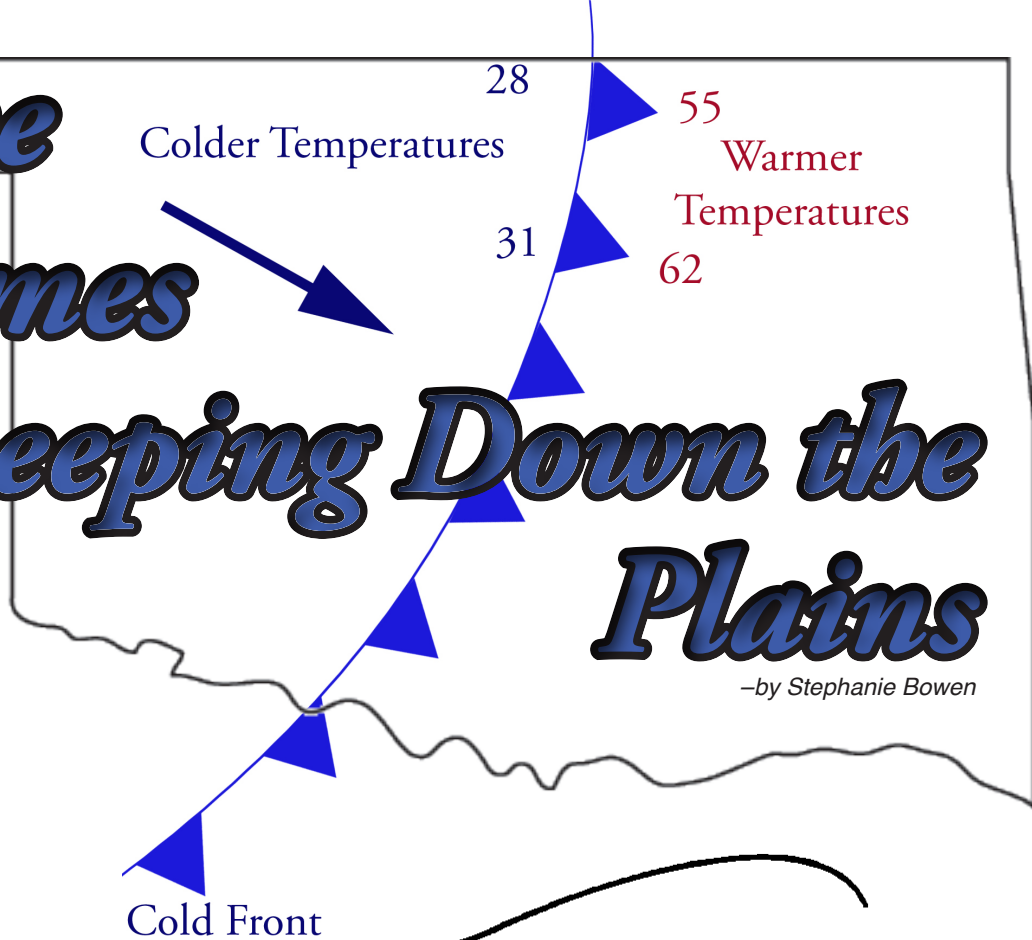
- Reading Mesonet Air Temperature maps can help you see when a cold front is moving across the state and where it is located at the time. From the Mesonet homepage, click on Weather in the top menu bar, then click on Air Temperature in the sidebar on the left, and click on the Air Temperature map.



Where the Cold Comes

Sweeping Down the Plains

—by Stephanie Bowen



WE HAVE ALL EXPERIENCED crazy Oklahoma weather. It is typical to enjoy a sunny 75°F day in Oklahoma, and the next day, it is 30°F outside. The Oklahoma Mesonet provides useful maps for you to track cold fronts and wind shifts moving across the state.

The 24-hr Temperature Change map displays deviations in air temperature from the day before. If a cold front has moved across the state, this map displays negative numbers to show the temperature has dropped in the past 24 hours.

If you are looking at the current Air Temperature map as a cold front is moving in, you can often see a dramatic color change where the front is moving across the state. In a common winter scenario when a cold front moves in from the northwest, the panhandle would be colored blue while the rest of the state is green or yellow.

Another handy tool is the Gradient-Filled Wind map. The gradient displays a color range with blue for calm winds to red for high winds. The arrows on the map display where wind is coming from and going toward. For example, a north wind has an arrow with the arrow head pointing south. Often when a cold front is moving across the state, you see winds coming from two different directions.

To view these maps, click on the weather tab on the Mesonet home page. The 24-hr Temperature Change map and the Air Temperature map are both available when you click Air Temperature in the sidebar on the left. The Gradient-Filled Wind map is available when you click Wind in the sidebar on the left. ■



January Sees Mild Winter Continue in Oklahoma

By Gary McManus, Associate State Climatologist

JANUARY WRAP-UP

Snow was mostly a no-show during January as Oklahoma's mild winter weather continued for a second month. The average temperature across the state soared to nearly 7 degrees above normal to rank as the eighth warmest January since records began in 1895. Combine that with a mild December and the first two months of the winter season finished at more than 3 degrees above normal and ranked as the 16th warmest such period on record. That story is not confined to Oklahoma. Temperatures in the Northern Plains states of the Dakotas and Minnesota were 8-11 degrees above normal during January. By January 31, only 19 percent of the United States was covered by snow. The blizzard that struck the Oklahoma Panhandle in mid-December remains the only significant snowstorm to strike the state this season.

While the snowflakes were few and far between in January, there was plentiful, drought-quenching rainfall to be had for parts of the state. Southeastern and south central Oklahoma saw totals range from 4-7 inches according to data from the Oklahoma Mesonet. South central's average total of 3.62 inches ranked as the ninth wettest January for that area since 1895. Those generous totals were enough to propel the statewide average rainfall during January to more than a quarter of an inch above normal and a ranking of 38th wettest. Other parts of the state were not so fortunate. Much of western and northern Oklahoma totaled less than half of an inch of precipitation. The Mesonet site at Boise City received no measurable precipitation for the month. Northeastern Oklahoma's average January total of a little more than a half of an inch was the 15th lowest on record while the Panhandle averaged just over a tenth of an inch. The Mesonet site at Lane led the state with 7.11 inches of rainfall.

Drought was eliminated in the southeastern quarter of the state thanks to abundant rainfall since last October. Rainfall totals of 15-25 inches were recorded since October 1, 2011, in south central and southeastern Oklahoma. Unfortunately, much of western and northern Oklahoma remains in severe to extreme drought according to the latest Drought Monitor report. In those areas, precipitation amounts of less than 10 inches – and in some cases less than 5 inches – have made small strides against the dry weather, but long-term deficits of more than 15 inches since the beginning of the drought continue to dominate. Levels at some state reservoirs were also quite low. Skiatook Lake in northeastern Oklahoma was at 62 percent of capacity as of January 31 and Canton Lake in the northwest was at 29 percent of capacity. The low level at Lake Altus in the southwest remains a concern for area cotton farmers. The lake, which is at 18 percent capacity, is vital to the area's cotton growers due to its use as an irrigation source.

8th WARMEST

January since records began in 1895

7°F above normal

Average temperature across the state for January

7.11" RAINFALL

Recorded at the Mesonet site at Lane for January

38th WETTEST

January since records began in 1895

CALENDAR

FEBRUARY

- ▶ 2nd: EarthStorm Job Shadow Day
- ▶ 4th: Weather and Climate, OK Native Plant Society, OKC
- ▶ 7th: Weather Update, Grady County Marketing Meeting, Chickasha
- ▶ 10th: Agrometeorology Update, Grady County Marketing Meeting, Chickasha
- ▶ 10th: EarthStorm , Judge at Bethel Science Fair
- ▶ 11th: Drift Risk and Mesonet, Western Farmers Seminar, OKC
- ▶ 14th: EarthStorm Job Shadow Day
- ▶ 17-18th: American Farmers & Ranchers Annual Convention, Norman
- ▶ 18th: OK-FIRE workshop, Fort Sill
- ▶ 21st: Mesonet Update, OK Ag-Tourism Conference, Sulfur
- ▶ 21st: OK-First Re-certification class, Ada
- ▶ 23rd: OK-First Re-certification class, Newcastle
- ▶ 25th: Ardmore Severe Weather Day
- ▶ 28th: OK-First Re-certification class, Muskogee

MARCH

- ▶ 1st-3rd: National Severe Weather Workshop
- ▶ 6th: EarthStorm Fieldtrip, Cooper Middle School, OKC
- ▶ 7-8th: OK-First Assistant's Class, Norman
- ▶ 9th: Mesonet Steering Committee Meeting, Stillwater
- ▶ 12-15th: OK-First Certification Class, Norman
- ▶ 16th: OK-Fire workshop, Norman

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 FEBRUARY

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

