



HOT ENOUGH FOR YA?

–by Peter Veals



WITH FOLKS IN ALL PARTS of the state asking that question, Oklahoma is proving itself once again to be the land of extreme and deadly weather. The sweltering temperatures observed in July were a continuation of a heat wave that began in June and has been unrelenting since then.

As of August 3rd in Oklahoma, 13 deaths have been attributed to our 2011 heat wave, emphasizing the need to take appropriate precautions when working outdoors. With our extreme heat, it's important to take frequent breaks in the shade or air conditioning, drink lots of water, and avoid the hottest part of the day when possible.

The effects of the sun this summer have been akin to a blast furnace on many of the state's highways. The Oklahoma Department of Transportation has had to repair numerous roads that have cracked and buckled due to expansion in the extreme heat.

July 9th of this year holds the distinction of being the first day in the history of the Oklahoma Mesonet that all 120 stations reported highs at or above 100 degrees.

Oklahomans are no strangers to heat waves, but what's behind the intensity and duration of this one? According to Gary McManus at the Oklahoma Climatological Survey, "the drought has strengthened the intensity of the heat dome and actually got Oklahoma off to an early start this summer. The lack of soil moisture and green vegetation across Oklahoma allows the sun's energy to be used almost entirely to heat the surface." In other words, the exceptional heat and exceptional drought are working together, continuing to worsen one another.

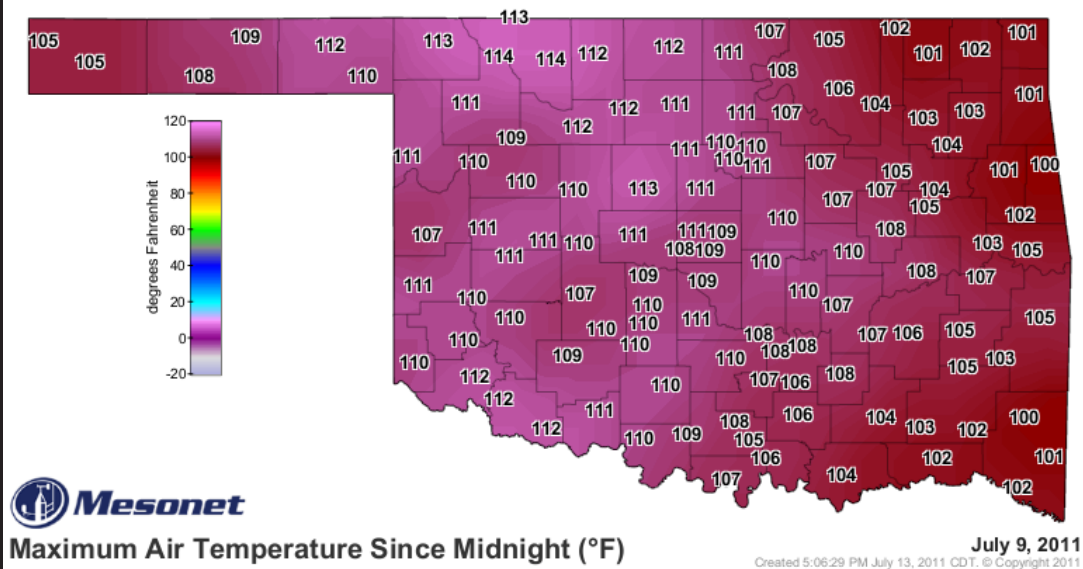
Many are also wondering what it will take to break the heat and drought. The short answer is lots of rain, and "that is not a good bet during the summer. It would take a major pattern shift and a large upper-level low to camp over us for a week or so, generating showers and storms," McManus said.

It would be wise to keep a hat and cold drink handy in the days ahead, as little relief from the heat is expected through August and on into September. ■

MESONET IN PICTURES

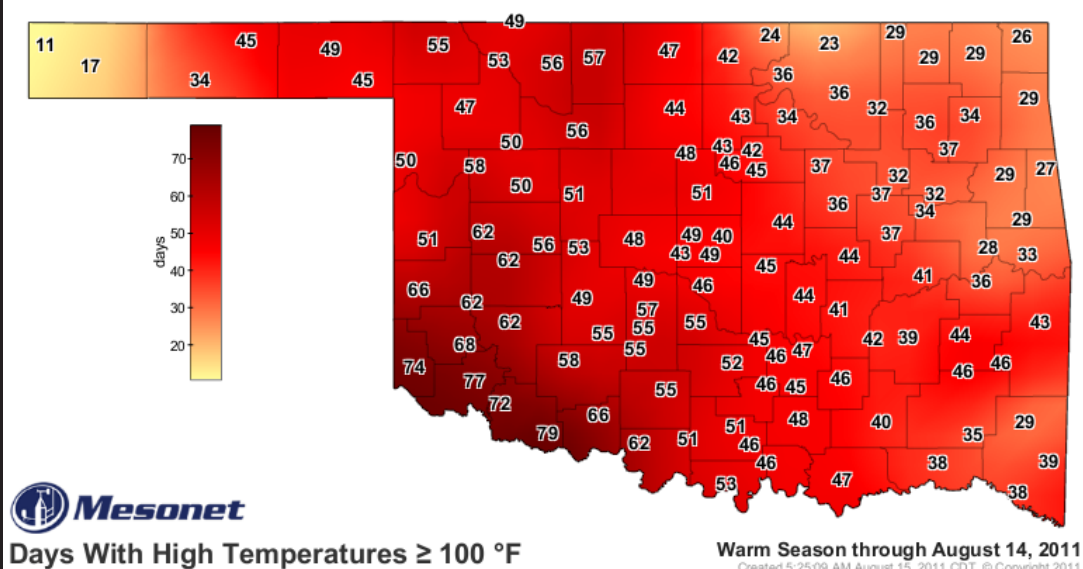
Maximum Air Temperature

- This is a map of the maximum air temperatures for July 9, 2011. This was the first day all Mesonet sites recorded a maximum air temperature above 100°F.



Days with Highs Above 100°F

- To access the map of “Days with Highs Above 100°F,” select “Weather” in the top Mesonet menu tab. On the next page from the left menu, click on “Air Temperature.” Scroll down the page to the “Seasonal Statistics” group and click on “Days with Highs Above 100°F” map to see an enlarged view.

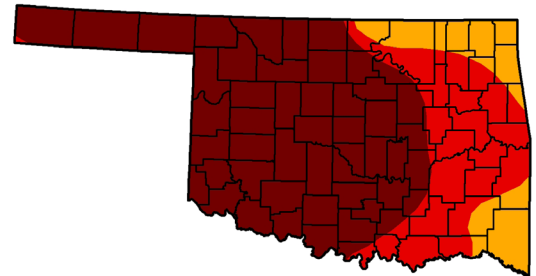


Oklahoma Drought Map

- This map shows the U.S. Drought Monitor drought ratings for August 2, 2011. The latest version of this map can be accessed by selecting "Climate" from the top Mesonet menu. Then click on the "U.S. Drought Monitor – Oklahoma" map to see an enlarged view.

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.00	100.00	100.00	100.00	88.10	64.30
Last Week (07/26/2011 map)	0.00	100.00	100.00	95.45	67.69	52.20
3 Months Ago (05/03/2011 map)	24.44	75.56	69.37	55.77	37.52	5.39
Start of Calendar Year (12/28/2010 map)	13.82	86.18	47.90	1.50	0.00	0.00
Start of Water Year (09/28/2010 map)	66.28	33.72	4.21	0.00	0.00	0.00
One Year Ago (07/27/2010 map)	85.61	14.39	3.60	0.00	0.00	0.00



Intensity:

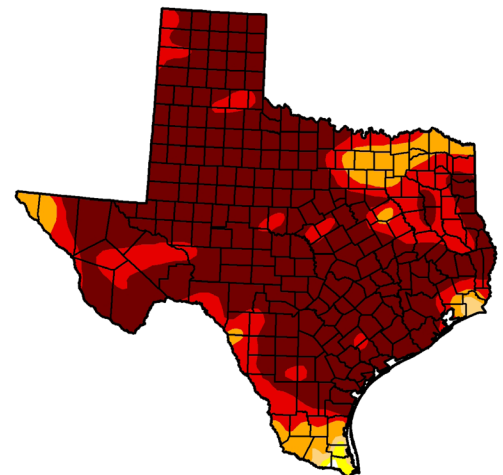


Texas Drought Map

- This map shows the U.S. Drought Monitor drought ratings for August 2, 2011. The most recent regional map, that includes Texas, can be accessed by selecting "Climate" from the top Mesonet menu. Then click on the "U.S. Drought Monitor – South Central U.S." map to see an enlarged view.

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.07	99.93	99.48	98.67	91.73	73.49
Last Week (07/26/2011 map)	0.00	100.00	99.85	96.88	91.65	75.23
3 Months Ago (05/03/2011 map)	0.00	100.00	98.86	93.99	73.73	25.96
Start of Calendar Year (12/28/2010 map)	7.89	92.11	69.43	37.46	9.59	0.00
Start of Water Year (09/28/2010 map)	75.57	24.43	2.43	0.99	0.00	0.00
One Year Ago (07/27/2010 map)	89.01	10.99	2.74	0.44	0.00	0.00



Intensity:



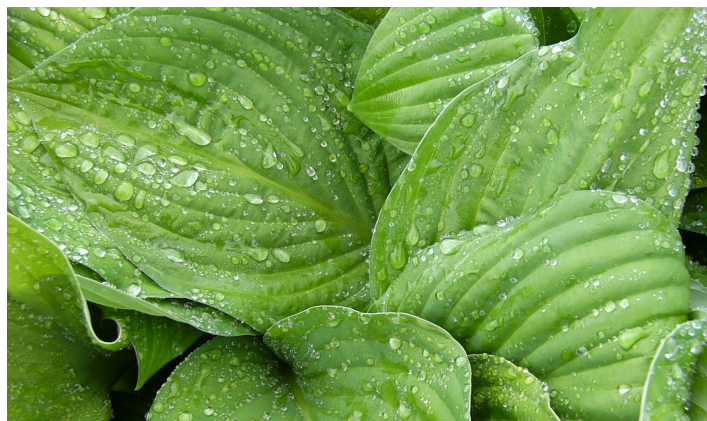
Drought Maker, Drought Breaker

—by Al Sutherland

DROUGHT MAKER – For a state surrounded by land, one would think oceans have little impact on Oklahoma. But the reality is that Pacific Ocean water temperatures can have a major impact on Oklahoma weather patterns. As a La Niña intensified in the Pacific Ocean in late 2010, rain went north and passed by Oklahoma and Texas. Now towards the end of a very dry summer, folks find themselves looking to the Atlantic, hoping for a tropical storm that would collect moisture from the Gulf of Mexico and deliver it to Texas and Oklahoma.

Because the oceans impact land areas, meteorologists and climatologists have studied ocean water temperatures and wind patterns. This has yielded insights on how what happens in the Pacific sets the stage for weather patterns over land. A La Niña pattern, characterized by cooler water temperatures near the Pacific Equator, creates a warmer and dryer weather pattern for Oklahoma. An El Niño, with its warmer Pacific water temperatures, typically brings wetter and cooler weather to our state.

La Niña and El Niño are dynamic weather patterns that vary in intensity. This variation in intensity leads to differences in how much impact they have on US weather patterns. In the last half of 2010 and first half of 2011, the La Niña impacts have been severe with Oklahoma's driest water year since 1921.



DROUGHT BREAKER – The current drought covering Oklahoma and Texas have left soils in these two states bone dry. As of August 2, 2011 the US Drought Monitor had 88.1% of Oklahoma's area in one of the two severest drought categories D3 & D4. In Texas, that percentage in D3 & D4 increased to 91.7%. These drought areas in Oklahoma and Texas cover 307,892 square miles or 197,050,662 acres. To wet just the top two feet of these soils will take 6 to 9 inches of water on every acre. That's 32.5 to 48.8 trillion gallons of rainwater. That's a lot of water and doesn't factor in the runoff from most rains. To break a drought it takes rain over an extended time. Every shower helps, but it takes more than a couple of good showers to break a drought. ■



July Heat Becomes Historic

By Gary McManus, Associate State Climatologist

JULY WRAP-UP

Fueled by exceptional drought and a seemingly impenetrable heat-dome, July roared through Oklahoma's legendary heat waves of the past to become the state's hottest calendar month on record. According to data from the Oklahoma Mesonet, the July statewide average temperature finished 7.5°F above normal at 89.1°F, smashing the previous record of 88.1°F set back in July 1954.

The news was equally grim on the rainfall side of the ledger. The statewide average rainfall total was 0.70 inches, more than 2 inches below normal and the fourth driest July on record. Combined, the 2011 June-July period was the hottest and driest on record statewide.

Oklahoma City's average temperature of 89.2°F topped the previous record of 88.7°F from August 1936 to become its warmest month, since those records began in 1890. Oklahoma City experienced 27 days in July with a high temperature of at least 100 degrees, once again the most for any month in its history. Oklahoma City's average high temperature of 102.5°F beat July 1980's previous mark of 102.4°F to set another milestone.

Similar records were matched at many locations throughout drought-ravaged western Oklahoma. Grandfield was the warmest spot in the state with an average July temperature of 93°F and an average high of 107°F. Grandfield continued to lead the state with 68 days at or above 100 degrees in 2011. The record stands at 86 days, set by Hollis in 1956. Kenton's July average of 81.6°F marked it as the coolest spot in the state. The highest temperature of the month, 114°F, was recorded at Alva and Freedom on July 9.

Of the 120 Oklahoma Mesonet stations, 93 recorded less than an inch of rainfall for the month. Walters and Burneyville recorded no precipitation for the entire month. Newkirk and Kenton led the way with 5.58 inches and 3.66 inches, respectively. Only five stations recorded more than 2 inches of rainfall. Southwestern Oklahoma received less than a quarter-inch of rainfall, on average. An average of 16.41 inches of precipitation has fallen across the state since October 1, 2010, nearly 14 inches below normal and the driest such period on record.

7.5°F
ABOVE
normal July statewide
air temperature

2"
BELOW
normal July
statewide rainfall

68 DAYS
ABOVE 100°F
Grandfield Mesonet
site in 2011

93 SITES
LESS THAN 0.1"
Mesonet sites July rainfall

CALENDAR

AUGUST

- ▶ 16th: Drought Roundtable, McAlester
- ▶ 17th: Mesonet Steering Committee Meeting, Stillwater
- ▶ 18th: Drought Roundtable, Ardmore
- ▶ 22nd: First day of classes, University of Oklahoma and Oklahoma State University
- ▶ 22nd: OK-First Recertification, Oklahoma Emergency Management Conference, Norman
- ▶ 22nd: OK-FIRE Workshop, Oklahoma Emergency Management Conference, Norman
- ▶ 23rd: OK-FIRE Presentations, Oklahoma Emergency Management Conference, Norman
- ▶ 29th-Sept 1: OK-First Certification Course, Norman

SEPTEMBER

- ▶ 7th: OK-First Recertification Course, Bartlesville
- ▶ 13th: Water Utilization Oklahoma County Master Gardener Training, OKC
- ▶ 14th: OK-First Recertification Course, Woodward
- ▶ 16th: OK-First Recertification Course, Ardmore
- ▶ 21-22nd: OK-First Assistant's Course, Norman
- ▶ 24th: OK-FIRE Training Workshop, NW Regional Fire School, Guymon
- ▶ 28th: OK-First Recertification Course, Tulsa
- ▶ 30th: OK-First Recertification Course, Altus

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 AUGUST

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

