http://agweather.mesonet.org/ · Volume 2, Issue 10, October 07

agweather connection

Autumn on its way

With temperatures falling and days getting shorter, it is evident that autumn is here. Autumn marks the transition from summer into winter and, in Oklahoma, the onset of autumn is generally considered to be about the middle of September.

Around autumn, leaves change from lively green to brilliant reds, yellows and oranges. Such colored leaves have come to be colloquially called "fall foliage." Toward the middle and latter part of autumn, trees begin to shed their leaves. It is also the season during which days get shorter and cooler, the nights get longer, and precipitation gradually increases.

Meteorologists count the entire months of September, October and November as autumn. Although the days begin to shorten after the summer solstice, it is usually in September and October when twilight becomes noticeably shorter and the change more abrupt in comparison with the more lingering ones of summer. ▪

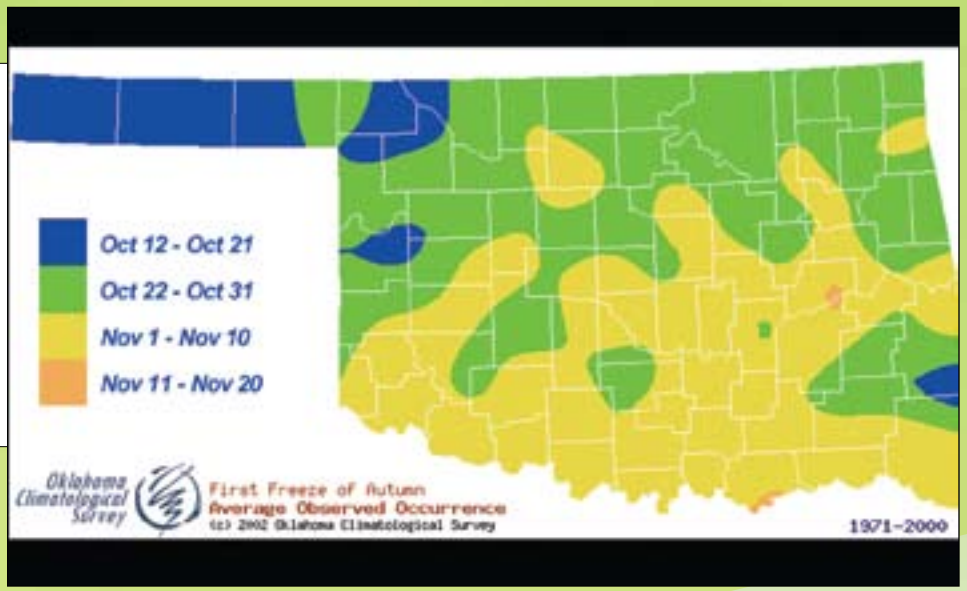
Fall Features

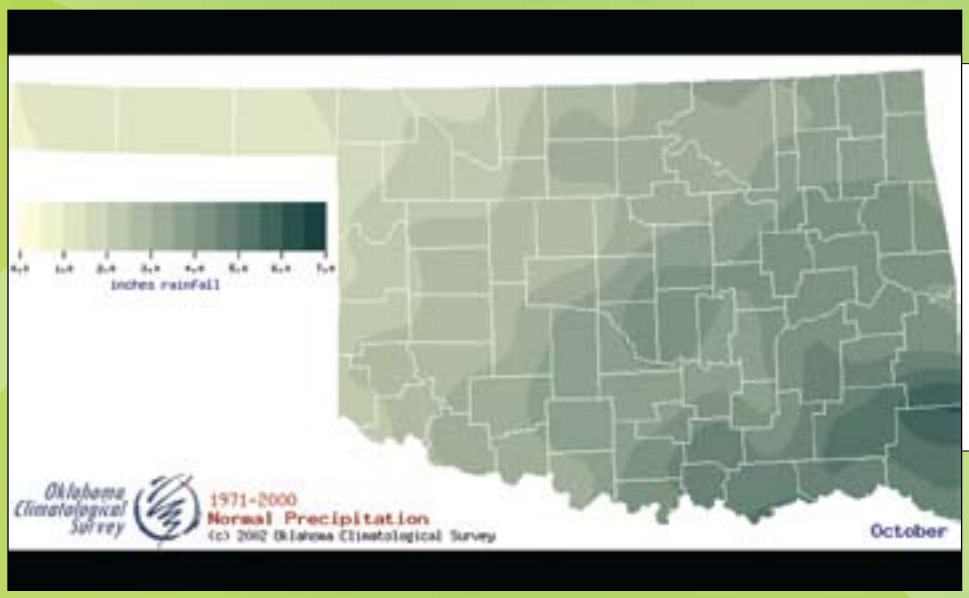
Free download

- Go to http://agweather.mesonet.org/
- Download the WxScope Plugin
- For slow Internet connections, call (405) 325-3126 for a free CD
- Click here for the Windows software.
- Click here for the Macintosh software.

First freeze

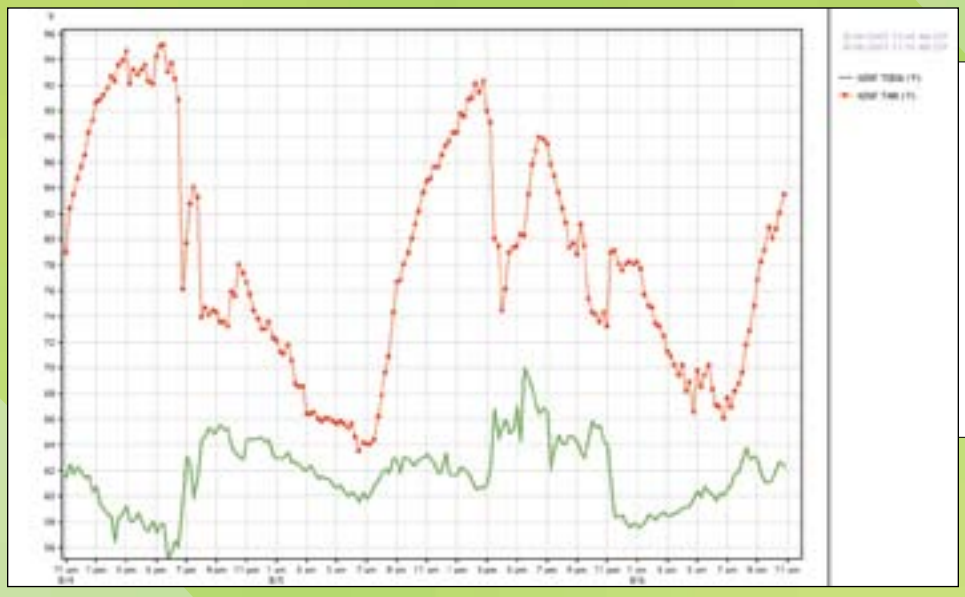
- Go to http://agweather.mesonet.org/
- Click on "Weather"
- Select "Monthly and Climate"
- Click "Oklahoma Climate Data"
- Choose "Normal & Extremes"
- Click on "First/Last Freeze Days"
- Select "Avg Date of First Freeze"





October precipitation

- Go to http://agweather.mesonet.org/
- Click on "Weather"
- Select "Monthly and Climate"
- Click "Oklahoma Climate Data"
- Choose "Normal & Extremes"
- Click on "State Precipitation Maps"
- Select "October Precipitation"



Falling temperatures?

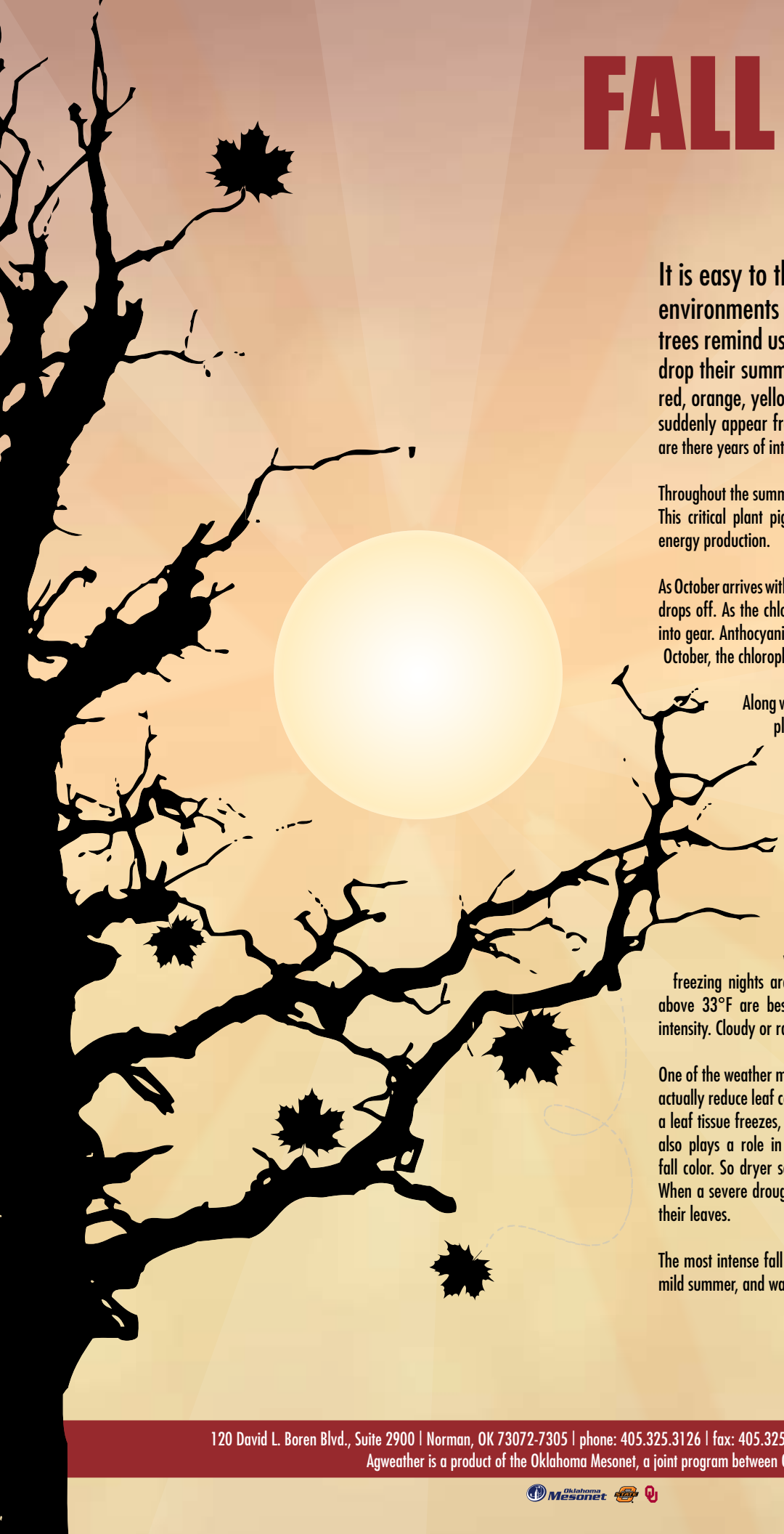
- Go to http://agweather.mesonet.org/
- Click on "Weather"
- Select "Current Weather"
- Choose "Meteograms & Graphs"
- Click "Custom Graph"
- Select your closest Mesonet tower, the desired time frame and choose the product "Temp & Dew Point"

Clouds headed your way?

- Go to http://agweather.mesonet.org/
- Click on "Weather"
- Select "Radar and Satellite"
- Choose "Visible" Satellite Images

FALL LEAVES

By Albert Sutherland, Oklahoma State University



It is easy to think of forests as timeless, constant environments of greenery. Yet each fall, deciduous trees remind us that they are part of a great cycle. They drop their summer greenery and take on exquisite hues of red, orange, yellow, purple and brown. How does all of this color suddenly appear from leaves that have been green all summer? Why are there years of intense color and years when the color show is so drab?

Throughout the summer, leaves are green from the high levels of chlorophyll. This critical plant pigment captures sunlight to begin the process of plant energy production.

As October arrives with shorter days and longer nights, production of chlorophyll drops off. As the chlorophyll production declines, anthocyanin pigments kick into gear. Anthocyanin pigments can be red or purple in color. By mid to late October, the chlorophyll is gone and other pigments color each leaf.

Along with anthocyanin, there are two other pigment groups that play a vital part in leaf color: the carotenoids and tannins. Carotenoid and tannin pigments are in the leaf the entire growing season, but are not evident due to the high levels of green chlorophyll present through the summer. In the fall, we finally get to see these overshadowed pigments. Carotenoid pigments create the yellow and orange colors. Tannins are responsible for the brown hues.

Leaf color varies in intensity with changes in the weather. Bright sunny days followed by cool, but not freezing nights are ideal. Nights with air temperatures below 45°F and above 33°F are best. A prolonged fall warm spell greatly reduces color intensity. Cloudy or rainy weather in October will also lead to poor color.

One of the weather myths is that frosty weather makes fall color better. Frosts actually reduce leaf coloring and an early freeze will eliminate fall color. Once a leaf tissue freezes, it quickly dries up and falls from the tree. Soil moisture also plays a role in leaf coloring. Dryer soils in the fall lead to brighter fall color. So dryer soils are better for fall color, but not severely dry soils. When a severe drought sets in, trees may respond by prematurely dropping their leaves.

The most intense fall color comes from a combination of a warm wet spring, mild summer, and warm sunny fall days, followed by cool nights.

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