WCU professor predicts stunning fall leaf season

Drier-than-usual spring, summer enhance pigment and color development, she says

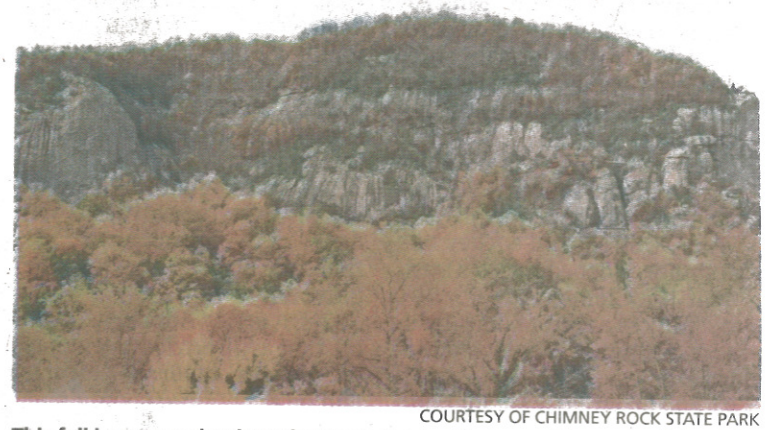
KAREN CHÁVEZ
KCHAVEZ@CITIZEN-TIMES.COM

CULLOWHEE — The fall leaf color in the mountains of Western North Carolina should be putting on a more spectacular show than it has in many years after a drier-than-normal spring and summer, according to Western Carolina University's autumnal season prognosticator Kathy Mathews.

Mathews, an associate professor of biology at WCU, gives her annual prediction of how foliage around the region will perform as the sunlight of summer wanes and days become frosty.

She specializes in plant systematics and bases her color forecast on past and predicted weather conditions. She believes the formation of higher levels of pigments in the leaves correlates with dry weather throughout the year, but especially as fall comes around the bend.

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COURTESY OF CHIMNEY ROCK STATE PARK

This fall is expected to have better leaf color than usual because of the drier than normal spring and summer.

"This fall could be one of the best leaf color seasons in Western North Carolina in recent memory," Mathews said. "Three words explain it — unusually dry weather."

U.S. Geological Survey records indicate the region had been drier than normal for most of the year, but with enough rain, particularly in April and June, to avoid drought and keep the trees healthy, she said.

Rainfall so far this year at Asheville Regional Airport is 25.73 inches, said Doug Outlaw, meteorologist with the National Weather Service in Greer, South Carolina. Normal rainfall through August is typically 30.04 inches, he said, so the region is running a rainfall deficit of 4.31 inches.

In August, Asheville has had 2.4 inches so far, which is only .43 inches below normal of 2.83 inches for the month.

Outlaw said the three-month forecast for precipitation should be just a little above normal, mainly for far southeastern mountains around Franklin, Robbinsville and Murphy, but for most of the WNC mountains, it's equal chances for above or below normal.

Through August 2014, the region had 29.99 inches of rain, which was very close to being normal. The total rainfall for 2014 was 46.91 inches. A normal average rainfall is 45.57.

Sugar concentrations in the leaves increase during dry weather because the trees are not taking up as much water through their roots, Mathews said. The abundance of sugars leads to the production of more anthocyanins, the red pigments that appear when green chlorophyll begins receding.

"That's what causes the leaf colors to really pop, along with the simultaneous appearance of orange and yellow pigments on the same or different tree species," she said.

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ASSOCIATE PROFESSOR OF BIOLOGY

Meteorologists are predicting a light hurricane season in the Atlantic this year, partly because of dry air over the Gulf of Mexico and Caribbean caused by El Niño, and that reduces the chances of heavy rain and big wind storms in the mountains in August and September — good news for the leaf display, Mathews said.

Leaf-peepers always want to know when the "peak color" will happen, but the timing of the color change is highly dependent on the decreasing amount of sunlight that comes with the passing days, plus the elevation of a particular location, she said.

"The peak of fall color often arrives during the first and second week of October in the highest elevations, above 4,000 feet, and during the third week of October in the mid-elevations, 2,500 to 3,500 feet," Mathews said. Visitors can look for leaves to be peaking in color intensity a few days after the first reported frost in any particular area.

Regardless of all factors that affect leaf color, visitors to Western North Carolina always will find a pleasing leaf display somewhere in the mountains from September into November, with a wide range of color made possible by the region's elevations ranging from 1,500 feet to over 6,000 feet and the more than 100 tree species, Mathews said.