

Drought Monitoring: a system for tracking plant available water based on the Oklahoma Mesonet

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As 2010 and 2011 have shown, water monitoring is critical to Oklahomans. Monitoring water above ground is being addressed by a number of agencies. What hasn't been monitored is the water stored in Oklahoma's soil profile for plant growth and as a factor in water runoff. A soil survey project was conducted to provide the data needed to calculate plant available water from the Oklahoma Mesonet's network of soil moisture sensors. Sensors at 2, 10 and 24 inches will be used to estimate the plant available water in the soil profile from the surface to a 30-inch depth. Determining plant available water for each Mesonet site and sensor depth can be used to create daily statewide plant available water maps and tables. Plant available water can be monitored over time for a single site on time series graphs. This is critical for monitoring the onset of drought and how drought recovery is progressing.