

Wet Bulb Globe Temperature: An Overview

Wet Bulb Globe Temperature, or WBGT, is a way to measure heat stress on the body. To calculate WBGT outdoors, you need three measurements:

Natural Wet Bulb Temperature is the temperature of the air cooled by evaporation. Think of it as your body cooling when sweat is on your skin.



Globe Temperature is measured as the air temperature inside a black sphere. It represents the feel of solar radiation on your body.



Air Temperature is the temperature of the air in its current state. To improve data quality, it is measured in a solar radiation shield.

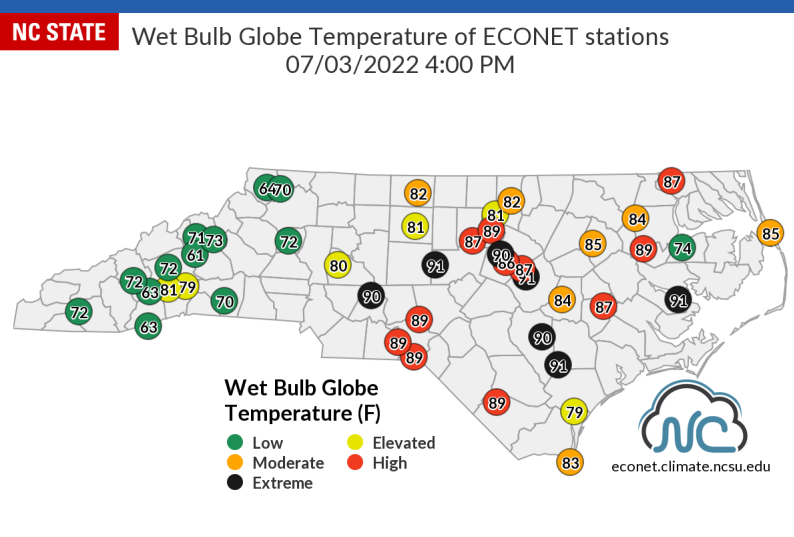


Categories of WBGT

Much like air quality alerts, WBGT values are color coded to signify their severity. WBGT values are categorized for low (green) to extreme (black). Extreme WBGT conditions typically happen during high air temperatures, high relative humidities, low wind speeds, and clear skies with little-to-no cloud cover. The Korey Stringer Institute provides details on precautions needed for high WBGT categories. Visit <https://ksi.uconn.edu/prevention/wet-bulb-globe-temperature-monitoring/> for more information.

Category	Time Until Heat Stress Occurs	Break Time Per Hour
Low	No Time Limit, Low Risk of Heat Stress	As Needed
Elevated	45 Minutes	15 Minutes
Moderate	30 Minutes	30 Minutes
High	20 Minutes	40 Minutes
Extreme	15 Minutes	45 Minutes OR Cancel Activity

Where can I find WBGT data?

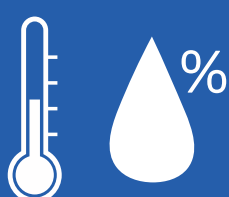


Real-time and historical WBGT values, such as the map on the left, as well as WBGT categories across North Carolina, can be found on our website at <https://econet.climate.ncsu.edu/wbgt>.

Why not just use Heat Index?

Variables Needed to Calculate **Heat Index**

air temperature & relative humidity



Since the majority of outdoor activities take place in sunny areas with little-to-no shade, WBGT provides a more accurate representation of heat stress on the individual.

Variables Needed to Calculate **WBGT**

air temperature, relative humidity, solar radiation, & wind speed

