Presenter

Darrian Bertrand - State Climate Office of North Carolina

Additional Authors

Charles Konrad – Southeast Regional Climate Center, Ashley Ward – State Climate Office of North Carolina

Wet Bulb Globe Temperature Decision Support Tool

Wet bulb globe temperature (WBGT) is a measure of human heat stress that is based on natural wet bulb temperature (evaporative potential), ambient air (dry bulb temperature), and black globe temperature (radiant heat). Unlike heat index, which only uses temperature and relative humidity to assess conditions in the shade, WBGT takes temperature, relative humidity, wind speed, and solar radiation into account in order to assess how the outdoor conditions in direct sunlight will affect the human body. WBGT is directly applicable to numerous situations and populations, such as outdoor sporting events, yard work, those with outdoor jobs, and military personnel. Despite its potential, WBGT monitoring has yet to be made widely available owing to a lack of networks with black globe thermometers installed as well as a complex algorithm to compute WBGT from climate data. To address this, the State Climate Office of North Carolina is developing a tool in a collaborative effort with the Southeast Regional Climate Center (SERCC) and the Carolinas Integrated Sciences and Assessments (CISA) to estimate WBGT across North Carolina, with plans for future expansion to the entire SERCC region following validation and testing. This publicly accessible tool will provide an hourly time series of WBGT for a few days into the past and future. With this information, anyone can identify their recent, current, and future WBGT, helping them to make informed decisions about the potential for heat stress when preparing for outdoor activities.

We will present the prototype of the tool and ask for audience feedback. Some questions that will be asked include: How likely are you or your stakeholders to use this tool? In what ways could this tool be improved for your, or your stakeholders', planning decisions?