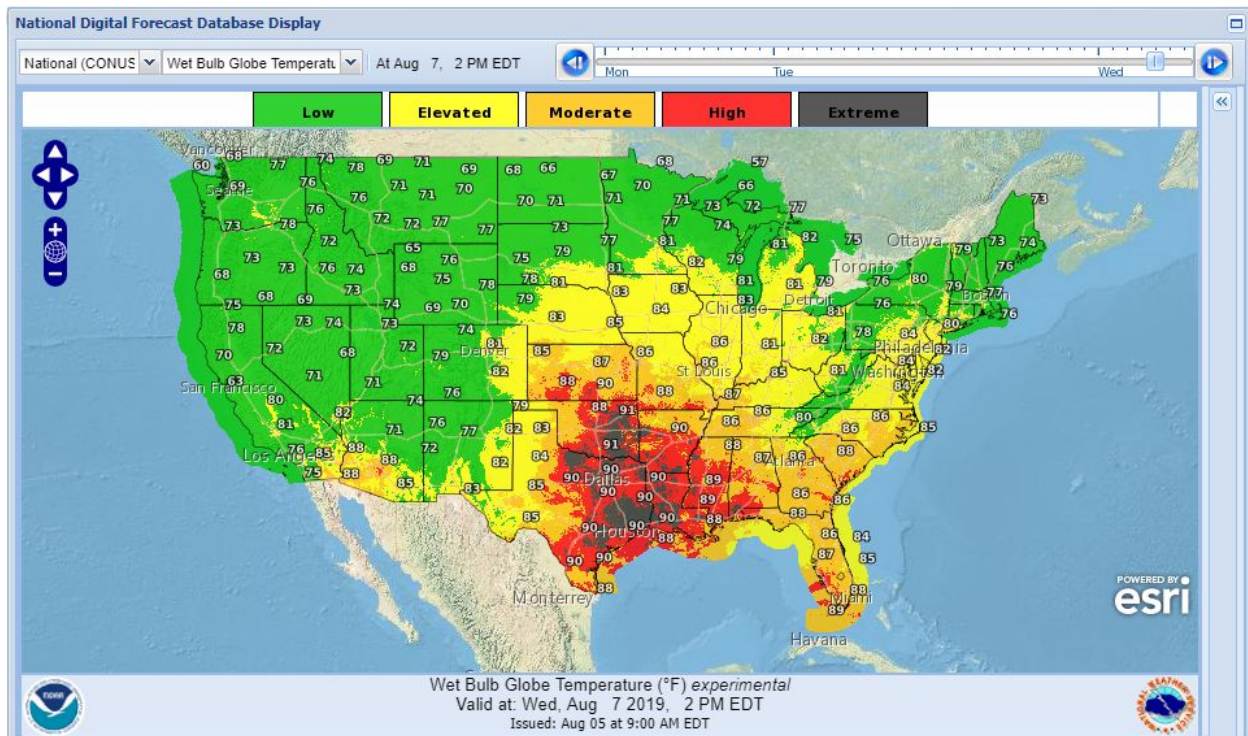


Wet Bulb Globe Temperature provision in the National Digital Forecast Database (NDFD) Product Description Document August 2, 2019

Part I – Mission Connection

a. Description of Product – Under statute, the National Oceanic and Atmospheric Administration (NOAA) National Weather Service (NWS) is charged to provide forecasts and warnings of severe weather in order to protect life and property. Heat is a major weather-related killer, and therefore deserves the utmost attention. According to the Occupational Safety and Health Administration (OSHA), 2,630 workers suffered from heat illness and 18 died from heat stroke and related causes on the job in 2014. The National Center for Catastrophic Sports Injury Research found that 52 football players died over the period 1995 to 2012 from exertional heat stroke (EHS).

While the heat index is useful for sedentary populations, research has shown that the Wet Bulb Globe Temperature (WBGT) is a more effective means of assessing heat risk to persons involved in physical activity. Based upon engagement with core partners, particularly Emergency Management Officials, the NWS has identified the need to provide forecasts of a parameter that will address heat risk to active persons. WBGT is a composite parameter that estimates the effect of temperature, humidity, wind chill, and solar radiation on humans. Below is an example image of WBGT in NDFD, please note, this is an example and subject to change:



These NDFD images are anticipated to be available to the public in the spring/summer of 2020.

b. Purpose – The National Digital Forecast Database (NDFD) is the primary means by which the NWS provides digital information to customers and partners. The NWS is providing gridded forecasts of WBGT to the NDFD on an experimental basis for the contiguous United States (CONUS), Pacific Region Weather Forecast Offices, and Puerto Rico in response to user needs for planning purposes and critical decisions related to heat safety.

c. Intended Audience – The intended audience for the NDFD WBGT grids includes emergency managers, government agencies, military, athletic associations, recreational users, and large volume users of forecast information.

d. Presentation Method – NDFD GRIB2 files can be downloaded and displayed by the user with software available for download at the following URL:

https://www.weather.gov/mdl/degrib_home

e. Feedback Mechanism –

Feedback via the following electronic survey will be accepted through September 30, 2020 at the following link:

<https://www.surveymonkey.com/r/WetBulbGlobeTemp>

In addition, questions related to WBGT can be directed to:

Lisa Schmit
NOAA/National Weather Service Forecast Office
Chanhassen, MN 55317
(952) 361-6671
lisa.schmit@noaa.gov

Policy questions related to WBGT can be directed to:

Andy Horvitz
NOAA/NWS/Analyze, Forecast and Support Office
Silver Spring, MD 20910
(301) 427-9357
andy.horvitz@noaa.gov

For general questions regarding the National Digital Forecast Database, please email:
nws.ndfd@noaa.gov.

Part II - Technical Description

a. Format & Science Basis – The NDFD forecast element definitions and technical information (e.g., temporal and spatial resolution of the graphics, and geographic coverage) may be found on the NDFD technical page at the following URL:

https://www.weather.gov/mdl/ndfd_home.

b. Product Availability – Experimental NDFD WBGT forecasts are available via file transfer protocol (ftp) or via hypertext transfer protocol (https). For further availability and technical information (e.g., temporal and spatial resolutions, forecast projections, and geographic coverage) please visit the following URL:

https://www.weather.gov/mdl/ndfd_data_grid.

c. Additional Information – For more information on the NDFD, please refer to the NDFD Information web site at the following URL:

https://www.weather.gov/mdl/ndfd_home

For more information on the WBGT and how it is calculated, please refer to the following paper:

<https://www.weather.gov/media/tsa/pdf/WBGTpaper2.pdf>