

United States Senate

WASHINGTON, DC 20510

July 29, 2024

Ken Graham
Director
National Weather Service
1325 East West Highway
Silver Spring, MD 20910

Dear Director Graham,

We write to request that the National Weather Service (NWS) publish a federal definition for the increasingly frequent weather phenomena known as “heat domes.” Despite heat domes becoming more prevalent and more severe, there is currently no official, standardized federal definition for these events.

Over the past two months, we saw deadly heat domes blanket much of the country, leading to record high temperatures for tens of millions of Americans. The National Weather Service (NWS) issued extreme heat advisories for much of the Southwest, where temperatures reached 113 degrees in Phoenix and 122 degrees in Death Valley. The heat domes then shifted eastward, setting record high temperatures from Texas to Georgia to New England.

During the heat dome in late June, the NWS also recorded two record highs in Maryland just days apart – June 24th in Beltsville and June 26th in Baltimore. Several news outlets have reported that the region’s “second-hottest summer” has led to a surge in heat-related hospitalizations and deaths and may even trigger a drought in Virginia. Coastal states and their major cities, which are often heat islands, experience the compounding impact of heat domes during heat waves due to their proximity to the Atlantic and Pacific Oceans.

We commend the NWS for declaring excessive heat advisories and helping state and local governments stay aware of the threats that these heat domes pose. Tragically, heat-related deaths have been increasing in the U.S., with approximately 2,302 deaths in 2023, according to the Department of Health and Human Services. The grave human threat from heat domes requires a precise definition that can be universally applied across federal agencies.

The American Meteorological Society (AMS) defines a heat dome as “an exceptionally hot air mass that develops when high pressure aloft prevents warm air below from rising, thus trapping the warm air as if it were in a dome. The subsidence associated with the high pressure also causes further warming by compression. Heat domes are often associated with calm upper-level flow directly overhead and/or with blocking patterns.” News outlets have also provided similar definitions for the public to understand this natural weather phenomenon, but an official federal definition is needed for clarity and for coordinating responses.

As the foremost government agency tasked with defining hazardous weather and natural disasters, we believe the NWS has a responsibility to define heat domes. We strongly urge the

NWS to utilize existing scientific definitions, including the definition published by the AMS, to publish a federal definition of heat domes to the NWS Glossary and any other publicly available information database. We believe such a definition will be essential in improving interagency responses to extreme heat and will help save lives.

Thank you for your consideration of this request.

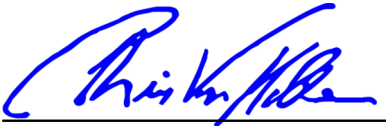
Sincerely,



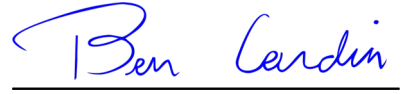
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