



## Presenter

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### Climate in Your Neck of the Woods: A Real-Time, Interactive GIS Product to Assess Historical and Current Trends in Temperature and Precipitation

The National Centers for Environmental Information provide monthly monitoring reports of temperature and precipitation trends for the United States, including Alaska, Hawaii, and Puerto Rico. While national reports provide useful information, most people really want to know what the weather was like in their own area, usually in daily increments, and from a nearby weather station. Luckily enough, the data used to compile the national reports originate from weather stations in the Global Historical Climatology Network - Daily (GHCN-D) dataset. Every day, stations around the world report information such as temperature, precipitation, and snowfall. These values are then sent to NCEI for processing, quality control, and archiving for public dissemination. More than 15,000 of these stations are located in the United States, and we can use that data to understand what the current year looks like so far on the local scale.

To that end, scientists at the North Carolina Institute for Climate Studies have developed an interactive GIS tool to help users see how current conditions stack up against previous years, and assess how far from normal conditions really are. The spatial map built in ESRI's ArcGIS online platform depicts temperature and precipitation values color-coded by their difference from the 1981–2010 mean. Only stations with 50 or more years of complete data are used in this analysis, and any data flagged by quality control were not included. Users can then inquire about a particular station, and load up a time series of the year-to-date conditions, including days that were considered extreme in the record. Using a few simple statistical routines, weather stations across the United States can tell a climate story. We hope these visualizations help better understand the data and answer questions of how warm, cold, wet, or dry it really has been in your neck of the woods.