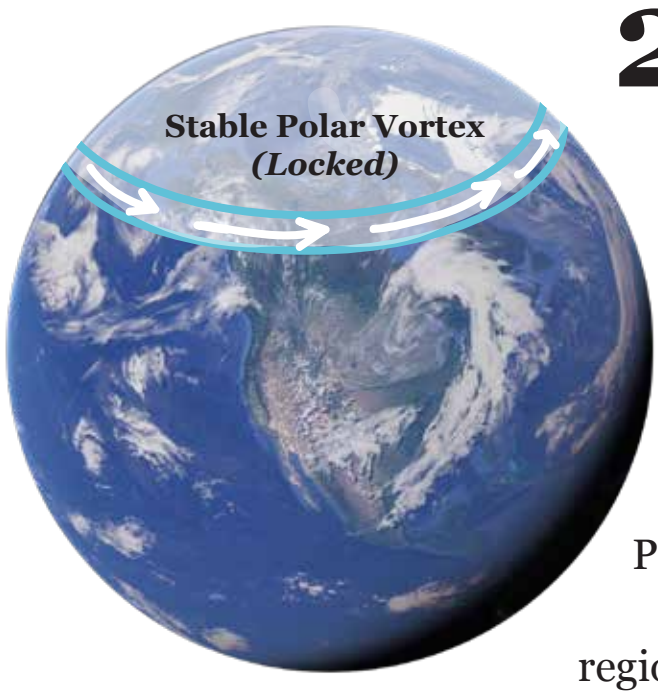
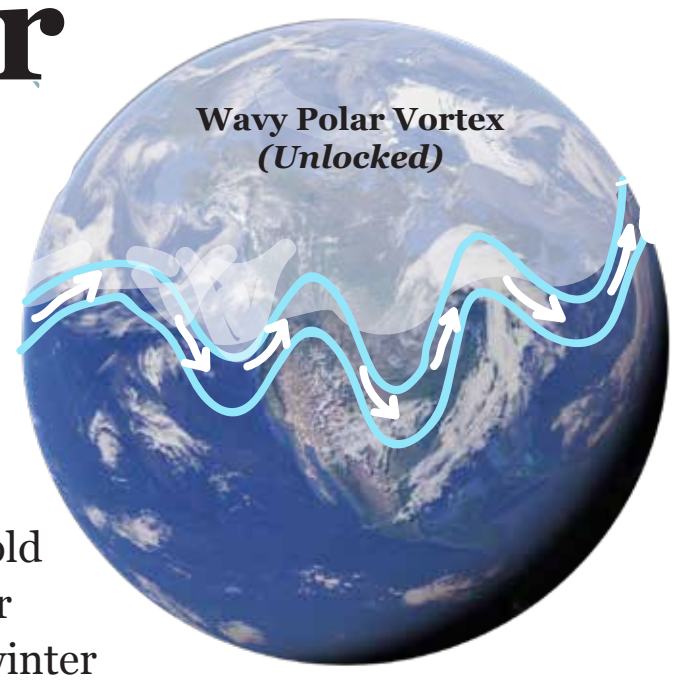
Revisiting the 2019 Polar Vortex



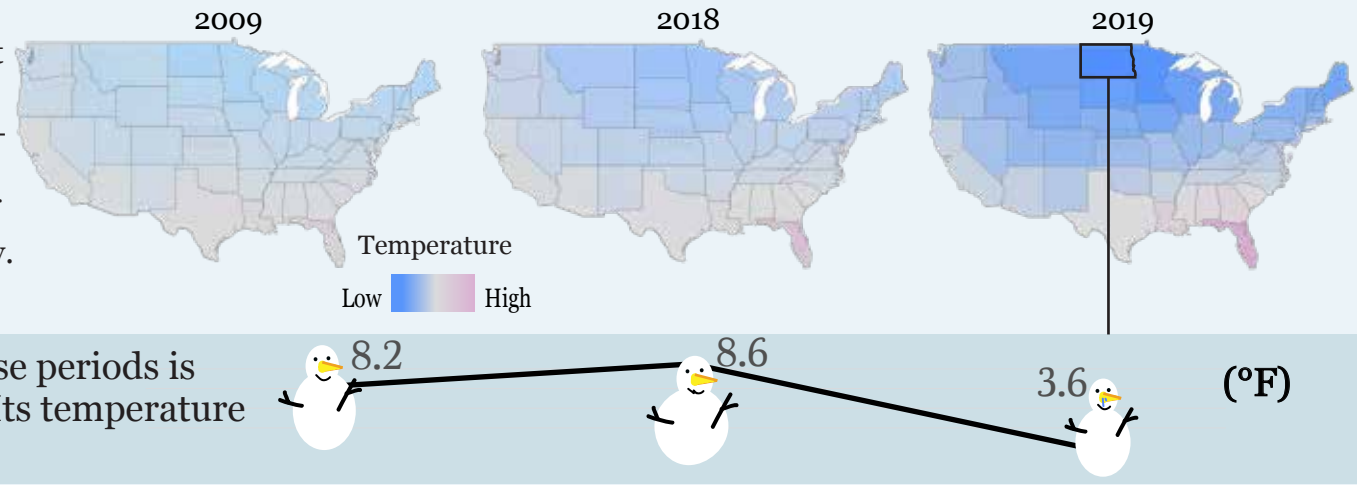


REN YUHUA/Missourian

It may feel like a distant memory now, but last winter we endured a Polar Vortex. The swirling mass of cold air is usually locked inside the polar regions by a strong jet stream. During winter in the Northern Hemisphere, the jet stream becomes less strong, forming a wavy pattern, and the vortex expands, sending cold air southward.

Winter seemed extreme across the northern U.S. in 2019

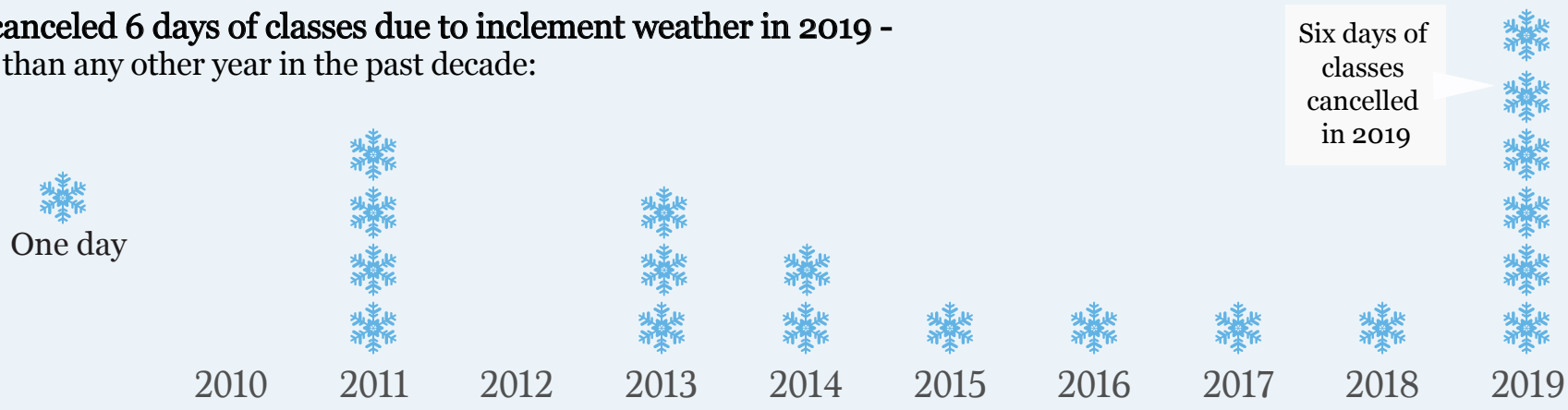
In the winter, the Polar Vortex effect is causing the United States to experience more extreme — and colder — temperatures. The maps at right compare the average temperature of the months of January and February.



The coldest state during these periods is consistently North Dakota. Its temperature also dropped this year.

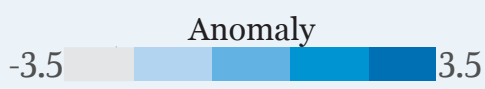
Missouri felt the chill as well

MU canceled 6 days of classes due to inclement weather in 2019 - more than any other year in the past decade:



Did this year stand out?

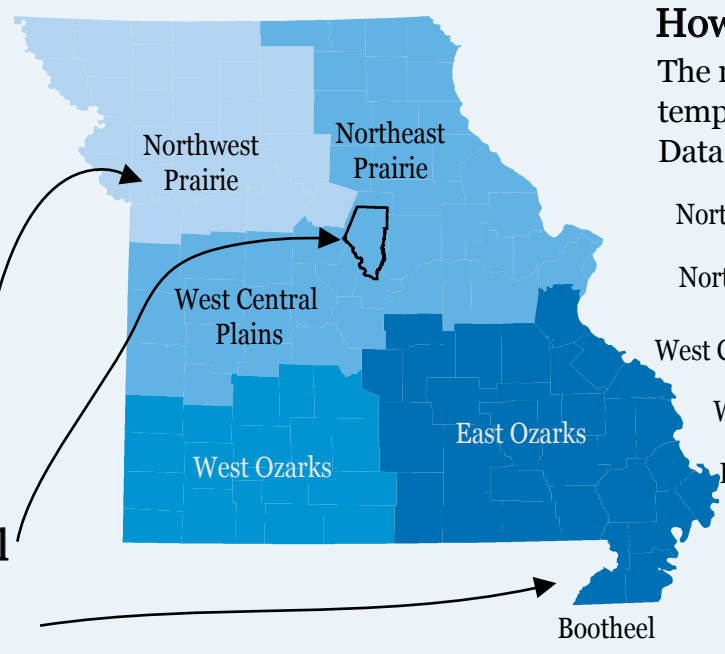
Temperature anomaly means a departure from a reference value or long-term average.



Northwest Prairie was colder than usual

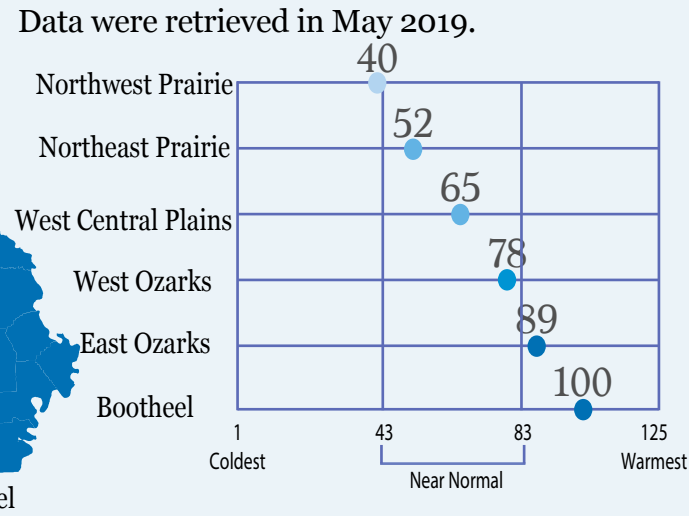
Boone County was fairly typical

Bootheel was warmer than usual



How did temperatures this year rank?

The ranking chart shows how this year's temperature compares to 1895-2019. Data were retrieved in May 2019.

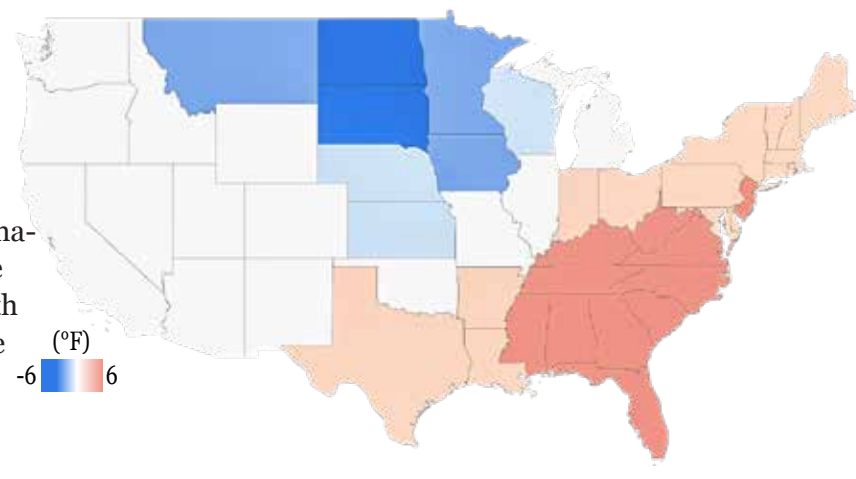


But over time, the polar dome has been shrinking

Temperature anomaly

In climate change studies, temperature anomalies are more important than absolute temperature, according to NOAA.

Seventeen states showed negative anomalies, while 31 states showed the positive ones. At the ends of the spectrum, North Dakota had an anomaly of -5.5°F, while Georgia had 4.7°F. Missouri had 0.5°F overall.



"[It's] continuously every winter that goes by, and it turns out that over the last seven decades, that area has systematically shrunk with each passing year, and the cold dome over the northern hemisphere is getting smaller in the 70 years since 1948...On average, it was not at all disrupt the notion. Hemisphere is warming up."
— Jonathan Martin

Sources: Interviews with Anthony Lupo, Ph.D. and Jonathan Martin, Ph.D; National Oceanic and Atmospheric Administration.
* Data of Alaska and Hawaii are not available.