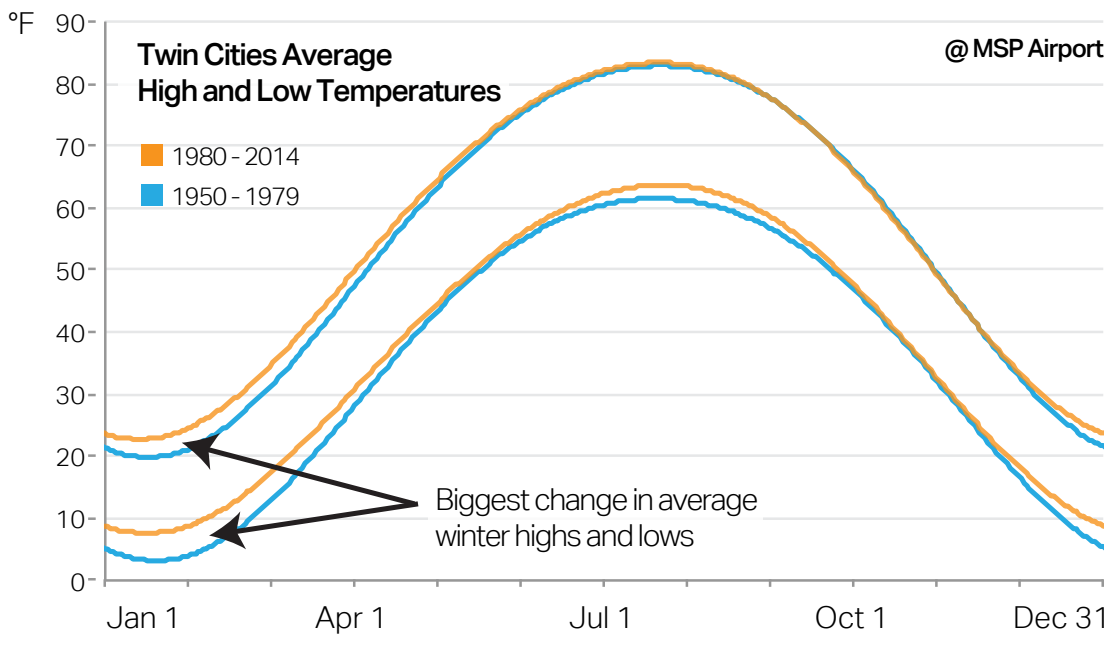
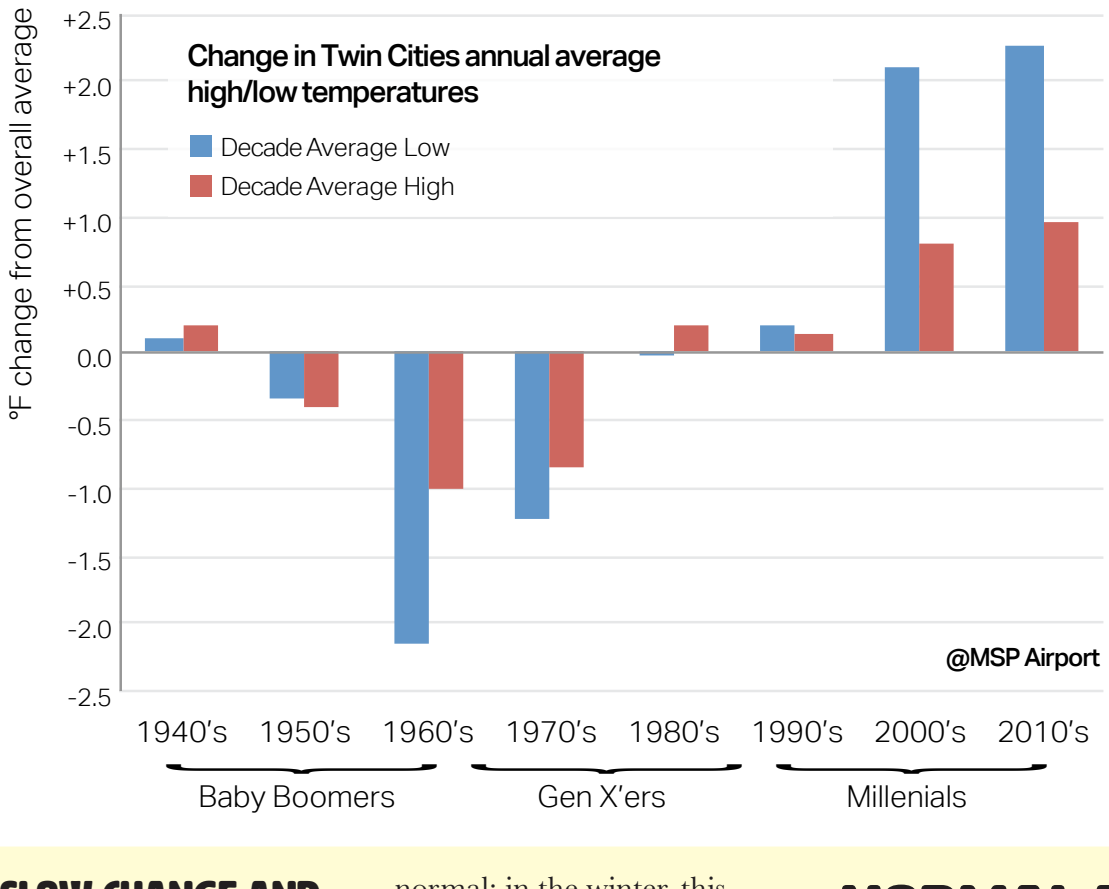
WHY IS IT SO HARD TO RELATE TO CLIMATE CHANGE?

Global warming, or more generally *climate change*, is a very real phenomenon—right here in our own Twin Cities backyards.

Especially in winter, data from the national weather service shows the average high temperatures have become higher, and the average low temperatures higher still—warming winters, and fewer cool summer nights.



REMEMBER WHEN WE WERE KIDS?



As with so many things in life, we first become aware of climate as a part of life when we are transitioning from childhood to adulthood. But each generation looks back on days playing in the backyard differently, as seen in slightly different childhood climates: Baby Boomers experienced a slight cooling in their childhood before things started getting progressively warmer for them as adults; X'ers might remember more snow as kids; while Millennial's might find what the older generations consider a "historically normal" winter to be quite cold.

SLOW CHANGE AND FAST FLUCTUATIONS?

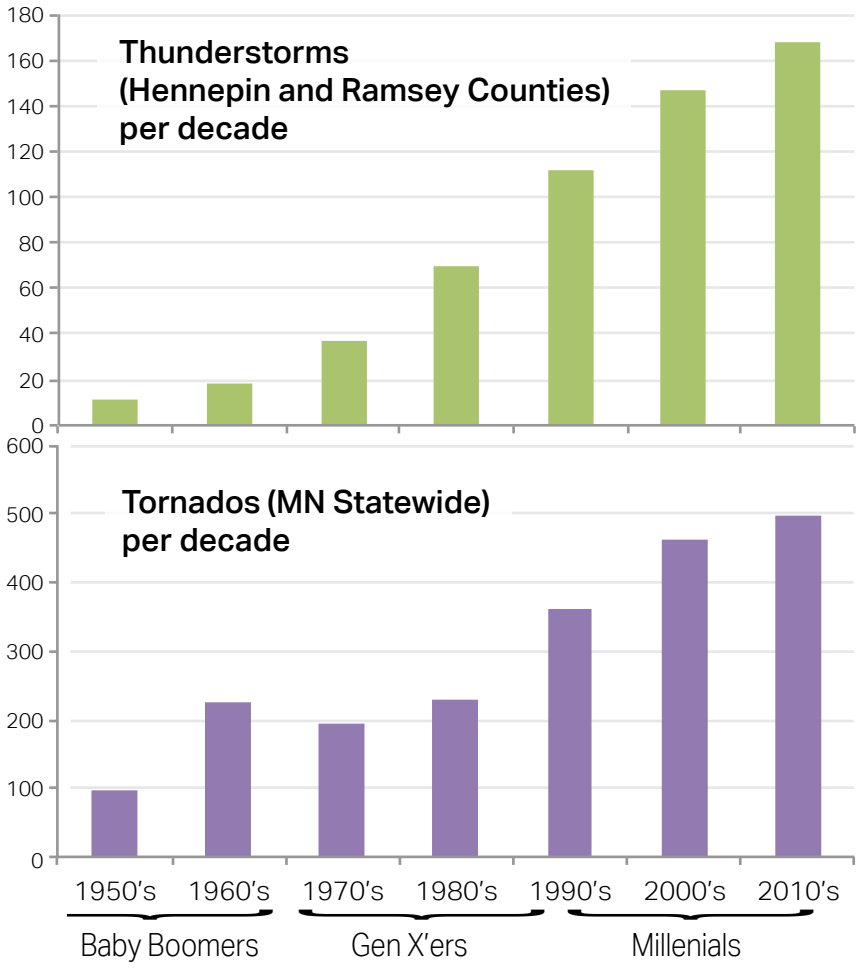
But as anybody who has spent more than one day in Minnesota knows, the weather changes from day to day. A lot. In fact, on any given summer day, the average daily temperature may be 8 °F higher or lower than historical average, and still be considered normal; in the winter, this is ±11.6 °F.

And fluctuations in day-to-day highs or lows are almost as large, making it very hard for us to relate to the comparatively small 1–2 °F change per decade in the average. For the same evolutionary reason it is hard to save for the future, lose weight, or look beyond quarterly earning statements, we as humans have trouble relating to gradual changes in average weather. We're programmed to react to sudden and quick changes, like day-to-day variations, and our survival sense says those fluctuations haven't changed very much.

NORMAL FLUCTUATIONS

± 8.0 °F (SUMMER)

± 11.6 °F (WINTER)



SO, DO SMALL CHANGES TO THE AVERAGE REALLY MATTER?

So, why worry? After all, if the *normal* day-to-day variation is several times larger than the average change over a decade, can this gradual change really matter?

You betcha! Although small, this change is cumulative, slowly but steadily increasing year after year. And since the weather is a global system, the changes here in our backyards are just one sign of a much larger shift.

How large? Even though small changes may not be noticeable to us individually, these changes do matter to Mother Nature: we're seen dramatic increases in thunderstorm level activity and tornado activity over the past few decades.

While warmer winter lows may not interrupt our summer picnic or family reunion, a thunderstorm or tornado certainly can… not to mention causing property damage and potential loss of life.

And this change is just over the past 50–60 years! Change over a system as large as the entire planet has consequences, and so even a couple of degrees can matter to each and every one of us!

All data from the U.S. Government's National Oceanic and Atmospheric Administration's National Climatic Data Center (ncdc.noaa.gov). Data for the temperature graphics based on the MSP airport daily maximum and minimum temperature records, which date back to 1938 (http://www.ncdc.noaa.gov/cdo-web/search?datasetid=GHCND). Average year displays based on a double-sine fit to the temperature data specified. Severe weather events database (http://www.ncdc.noaa.gov/stormevents) includes tornado activity from 1950 - 2014, and thunderstorm activity from 1955 - 2014. partial bins adjusted accordingly.