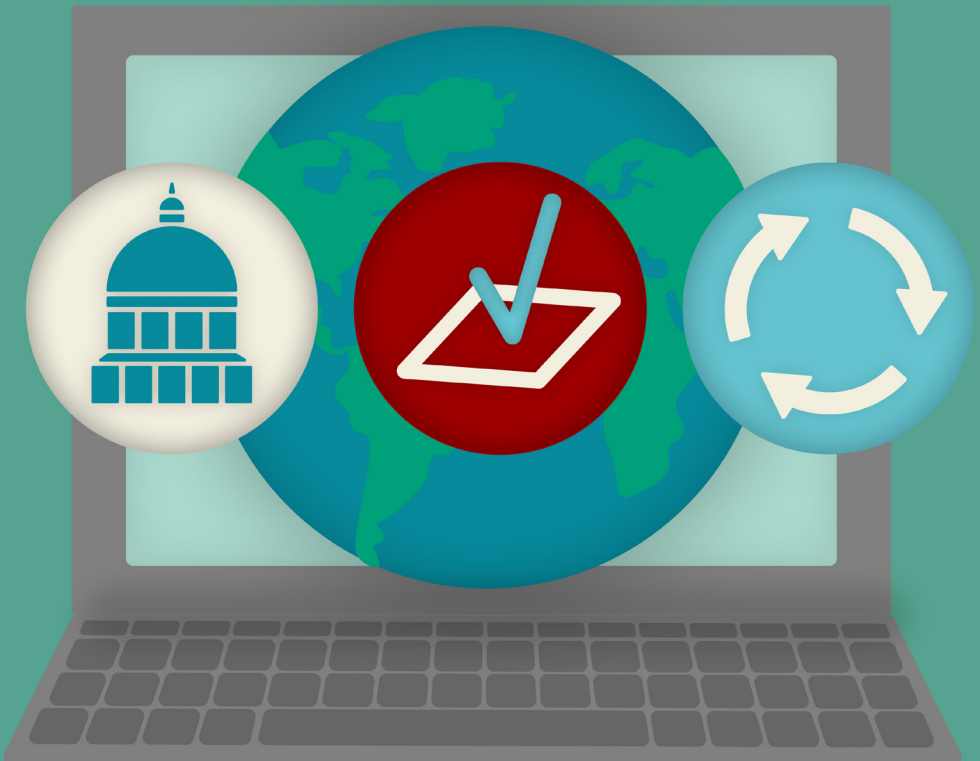


FACT SHEET

THE FIGHT FOR OUR FUTURE: ADDRESSING CLIMATE CHANGE POLICY AND INDIVIDUAL RESPONSIBILITY



WEDNESDAY APRIL 22, 2020

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1. CLIMATE CHANGE BROADLY

Q: What is the Greenhouse effect?

A: Greenhouse effect: the warming that happens when certain gases in Earth's atmosphere trap heat. These gases let in light but keep heat from escaping, like the glass walls of a greenhouse, hence the name. <https://www.nationalgeographic.com/environment/global-warming/global-warming-overview/>

Q: What is the difference between Climate Change and Global Warming?

A: Difference between climate change and global warming refers to the long-term warming of the planet, and climate change encompasses global warming, but refers to the broader range of changes that are happening to our planet. <https://climate.nasa.gov/faq/12/whats-the-difference-between-climate-change-and-global-warming/>

Quick Climate Stats

1. The concentration of Carbon Dioxide in the atmosphere was estimated to be around 408 parts per million in 2018, which is the highest it has been in 3 million years.
2. 2016 was the warmest year on record. "NASA and NOAA data show that global averages in 2016 were 1.78 degrees F (0.99 degrees C) warmer than the mid-20th century average. Seventeen of the 18 warmest years have occurred since 2000".
3. 11 percent of all global greenhouse emissions are caused by humans are caused by deforestation.
4. 800 million people – 11 percent of the entire global population – find themselves "vulnerable to climate change impacts such as droughts, floods, heat waves, extreme weather events, and sea-level rise". <https://www.conservation.org/stories/11-climate-change-facts-you-need-to-know>

5. In dozens of major cities across the United States, low-income areas are likely to be much hotter than wealthier areas. This means that those who are often forced to endure extra heat "are often a city's most vulnerable: the poorest and, our data show, disproportionately people of color." This same study done by NPR showed there to be a slight correlation between income and heat in Kansas City (<https://www.npr.org/2019/09/03/754044732/as-rising-heat-bakes-u-s-cities-the-poor-often-feel-it-most>).

Case Study

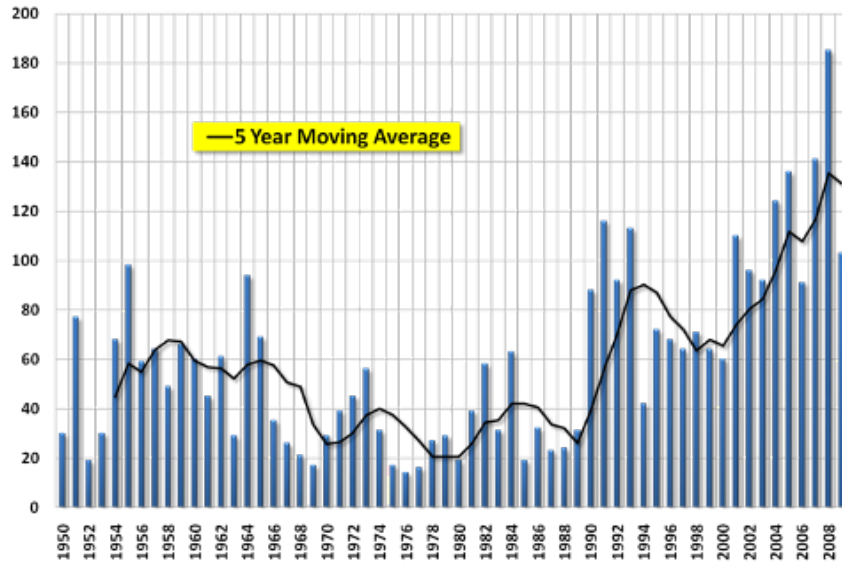
"With current global emission rates of 35 to 40 billion metric tons of CO2 each year, we may get our first glimpses of ice-free Septembers in the next 20 to 25 years, when we will have added another 800 billion metric tons to the atmosphere," Scientific American explains: <https://www.scientificamerican.com/article/when-will-all-the-ice-in-the-arctic-be-gone/>

"Elsewhere, hotter temperatures create the perfect conditions for wildfires that release GHGs and shrink the forests that absorb CO2 from the atmosphere, ultimately leading to even hotter temperatures and – you guessed it – even more wildfires." : <https://insideclimatenews.org/news/23082018/extreme-wildfires-climate-change-global-warming-air-pollution-fire-management-black-carbon-co2>

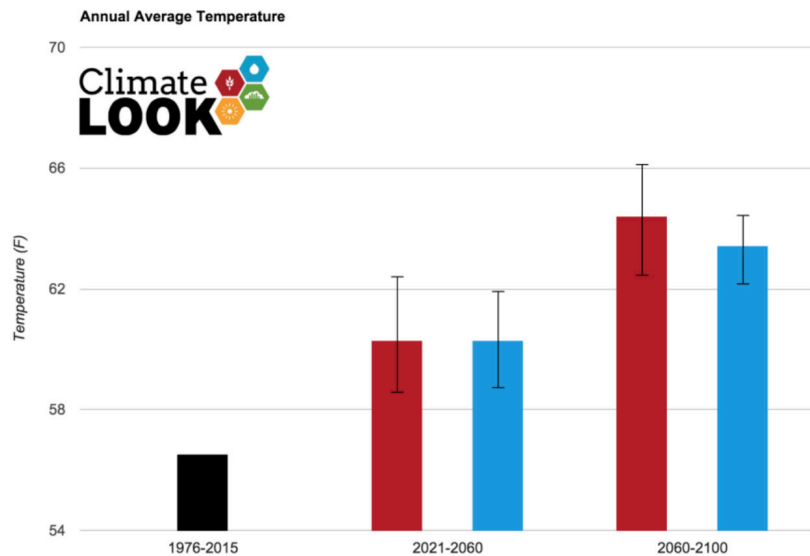
Ice cover is being lost on the seas in the arctic which means that the ice is no longer reflecting rays from the sun away from the earth, instead the darker nature of the sea water, as it becomes more exposed, absorbs more of the sun's energy warming the surface of the earth: <https://www.scientificamerican.com/article/when-will-all-the-ice-in-the-arctic-be-gone/> & <https://insideclimatenews.org/news/23082018/extreme-wildfires-climate-change-global-warming-air-pollution-fire-management-black-carbon-co2>

2. CLIMATE CHANGE IN KANSAS CITY

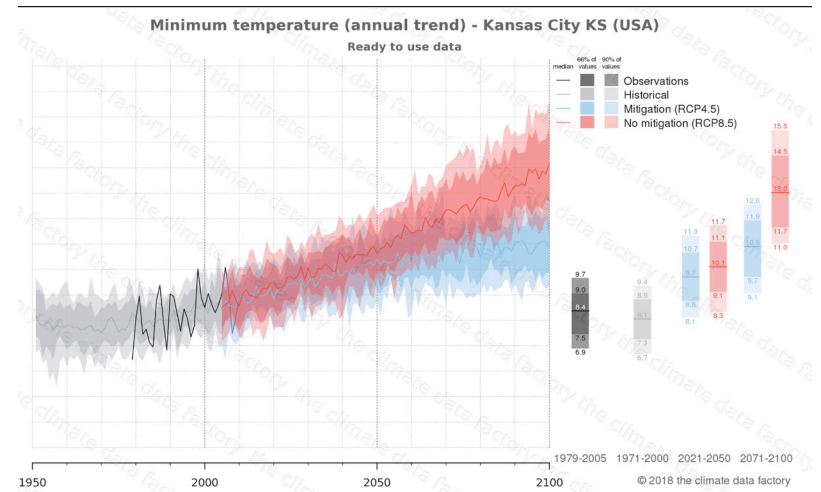
Annual Kansas Tornadoes 1950-2009



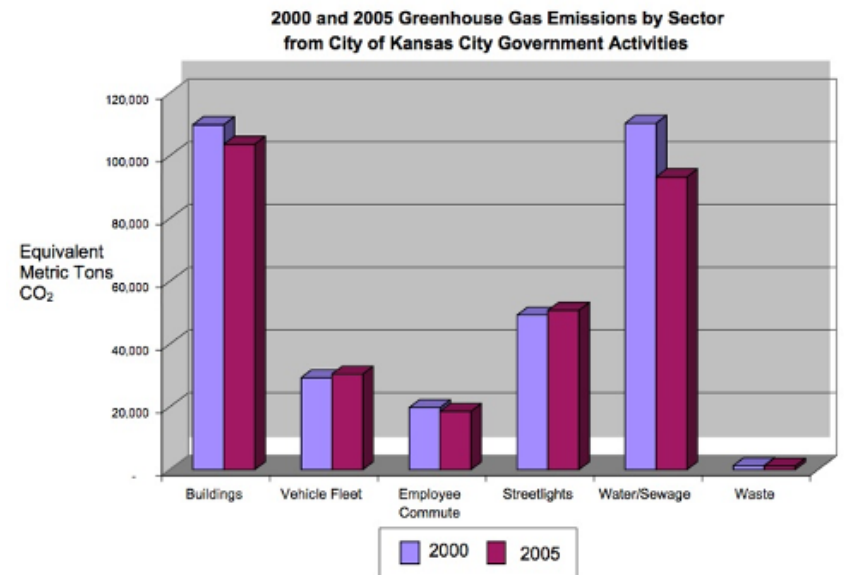
<https://www.weather.gov/ict/kstorfacts>



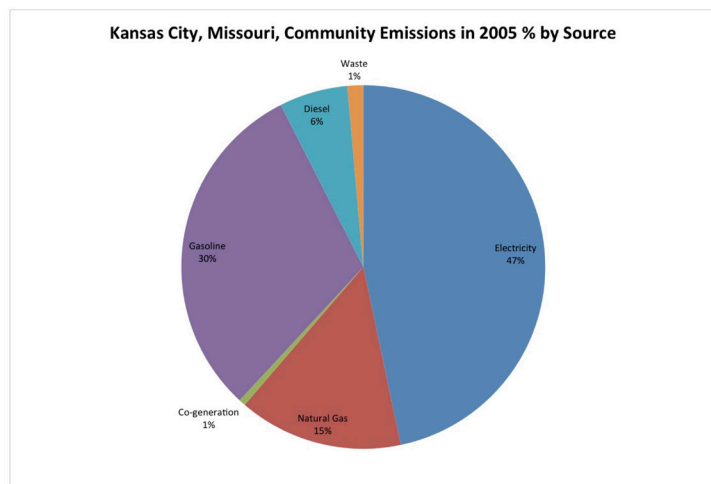
<https://www.kcwaterservices.org/wp-content/uploads/2016/05/ClimateLOOK-for-Kansas-City-Missouri-033116.pdf>



<https://theclimatedatafactory.com/product/minimum-temperature-kansas-city-ks-usa/>



<https://mogreenstats.com/2013/01/18/kansas-city-ghg-emissions-top-9-9-million-metric-tons-in-2000/>



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BASIC INFO ABOUT KC METRO & CLIMATE CHANGE

- As of 2020, Kansas City, Missouri's population is estimated to be 491,918. (<https://worldpopulationreview.com/us-cities/kansas-city-population/>)
- 60 percent of Missourians understand global warming is already happening. A strong 76 percent support funding research into renewable energy and 64 percent favor setting strict CO2 limits on existing coal-fired power plants. <https://climatenexus.org/climate-change-us/state-impacts/#missouri>
- 1) "Historically, Kansas City lies in a humid continental climate zone, described as temperate with extremes of heat, cold, and precipitation."
2) Since record keeping began at the Kansas City climate station in 1893, the city "has experienced high and low average annual temperatures of 65.1°F and 45.8°F. Annual rainfall is 34.8" and snowfall is 16.2". Monthly temperature reaches peak value in July with average high temperature of 89.2°F. The annual low occurs in January with average minimum of 20.3°F. Rainfall is largest in June with an average of 4.9". The least precipitation occurs in February with an average of 1.3." 3) During the time period from 1976-2015, there have been serious regional changes in both temperature and precipitation:

"Annual temperature has increased in Missouri by 0.3°F per decade, with the average annual statewide temperature increasing from 53.6°F to 55.8°F" and "Annual precipitation has increased in Missouri by 0.54" per decade. Based upon the trend, the average annual statewide precipitation has increased from 40.1" to 44.5." 4) (<https://www.kcwaterservices.org/wp-content/uploads/2016/05/ClimateLOOK-for-Kansas-City-Missouri-033116.pdf>)

Q: I always thought of climate change as more of a global or national issue. Why does it matter in Kansas City?

A: Kansas City ranks fifth of the top 25 cities in the entire country most likely to be impacted by climate change. <https://greenabilitymagazine.com/blog/2015/07/kc-ranks-5th-of-cities-to-be-most-impacted-by-climate-change/>

A study done by the Union of Concerned Scientists predicts by the end of the century Kansas City could experience as many as 62 days a year with temperatures over 105 degrees Fahrenheit if it continues on its current emissions trajectory. This is up from 4 days per year, which is the current average. <https://www.flatlandkc.org/curiouskc/question-everything/questions-answered/climate-changes-serious-effects-on-kansas-citians-disproportionately-affect-the-poor/>

The impacts of rising energy costs as the result of climate change and temperature changes in Kansas City could hit low-income communities the hardest: "In some of the more affluent KC neighborhoods, energy costs account for as little as 1% of household income. But for the worst off in the KC metro area, energy costs account for 8% of household income, according to data from the U.S. Department of Energy." This puts some families and individuals in a position where they are forced to choose between keeping your lights on and buying medicine and buying food" <https://www.flatlandkc.org/curiouskc/question-everything/questions-answered/climate-changes-serious-effects-on-kansas-citians-disproportionately-affect-the-poor/>

Over the next 25 years, extreme heat will cause average commodity crop losses up to 18 to 24 percent in some Missouri counties: <https://climatenexus.org/climate-change-us/state-impacts/#missouri>

Q: What are Kansas City's current policies towards climate change? What about Missouri's?

A: The City Council of Kansas City, MO passed a resolution in July of 2017 reaffirming the city's commitment to support the Paris Climate Agreement. <https://www.kshb.com/news/local-news/kansas-city-council-expects-to-reaffirm-commitment-to-paris-climate-agreement>

On May 23rd, 2019, the City Council of Kansas City, MO officially endorsed a national revenue-neutral carbon fee and dividend system aimed at reducing US carbon emissions. <http://climategkc.org/kansas-city-missouri-endorses-carbon-fee-and-dividend/>

In 2018 and 2019, the city of Kansas City passed resolutions 180938 and 190967 in consecutive years, which both establish a Carbon Fee and Dividend program as a Federal Legislative Priority. <http://cityclerk.kcmo.org/LiveWeb/Documents/Document.aspx?q=HjLXAmXmped9oRIBoXYNDuhxRHk4PKRCQqhWiezJT3Ej8UXJYq13vAL6bwG%2Bgmw7Bik%2B1C%2BCaXsKDEV6mPQ8sw%3D%3D>

Currently, Missouri has yet to implement a statewide adaptation plan for climate change. (<https://www.georgetownclimate.org/adaptation/state-information/missouri/overview.html>)

At the Kansas Renewable Energy Conference in Manhattan in October of 2019, Governor of Kansas Laura Kelly announced a new statewide energy plan. She claimed the objectives of the plan were to help Kansans save money and help to protect the environment (http://www.kansan.com/news/laura-kelly-works-to-lower-energy-costs-and-make-kansas/article_fa2619d8-eac6-11e9-9403-7f4b6ebab4a3.html)

As of April 2016, the State of Missouri had joined in on lawsuits against the Environmental Protection Agency (EPA) for a number of its rules and regulations, including its Clean Power Plan, water rule, and mercury standards (https://ballotpedia.org/Environmental_policy_in_Missouri)

Climate Action KC has come up with a climate action playbook for the use of current and future local policymakers: https://www.marc.org/Environment/Climate-Action/pdf/Climate_Action_Playbook.aspx.

In 2014 Governor Jay Nixon established an executive order to create new pathways for clean, affordable, and abundant energy in the state of Missouri: https://energy.mo.gov/sites/energy/files/DE_Overview_Presentation_102214.pptx (Link Address)

Smart Energy plan from Ameren Missouri - <http://ameren.mediaroom.com/2019-02-15-Ameren-Missouri-releases-plan-to-transform-states-energy-grid-to-benefit-customers-and-communities>

- This energy provider created this plan in response to Missouri Senate energy regulations Bill 564 - <https://www.house.mo.gov/billtracking/bills181/sumpdf/SB0564t.pdf>

3.NATIONAL RESPONSE TO CLIMATE CHANGE

Most recently, the United States Federal Government has withdrawn from the Paris Climate Accords as of November 2019. There is a one year waiting period before we can officially exit the deal, but as of now we are the only country to back out. Almost 200 countries signed on and set their own goals to reduce national Co2 emissions. The US planned to reduce emissions by a quarter by 2025 and we were and are not on track to complete that goal. (NPR)

What is the Paris Climate Agreement?

- A landmark environmental agreement adopted in 2015 that aims to strengthen the global response to the threats posed by climate change and keep the global temperature rise below 2.0 degrees Celsius from industrial levels. All ratifying nations are to report regularly on the status of Green-House Gas emissions and on their efforts to achieve their climate goals. It also includes support of developing nations to achieve climate goals and establishes a "global stocktake" every five years to determine where the world is at in achieving climate goals and keeping 'well below' the 2-degree threshold. It has been ratified by 189 out of 197 parties. <https://unfccc.int/process-and-meetings/the-paris-agreement/what-is-the-paris-agreement>

What is the EPA and What Does it Do?

- The Environmental Protection Agency (EPA) is a governmental agency founded by President Richard Nixon in 1970. Its mission is to protect human health and the environment. With this in mind, the agency develops regulations (on safe disposal practices for chemical waste, for example), awards grants, researches environmental issues, sponsors partnerships, and educates citizens on the environment.
- The EPA does not handle wildlife concerns, product safety, food safety, products for human consumption, farming, disease, nuclear waste, or local landfill waste. <https://www.epa.gov/aboutepa/our-mission-and-what-we-do>

What are some of the regulations we have in place at the national level to address climate change?

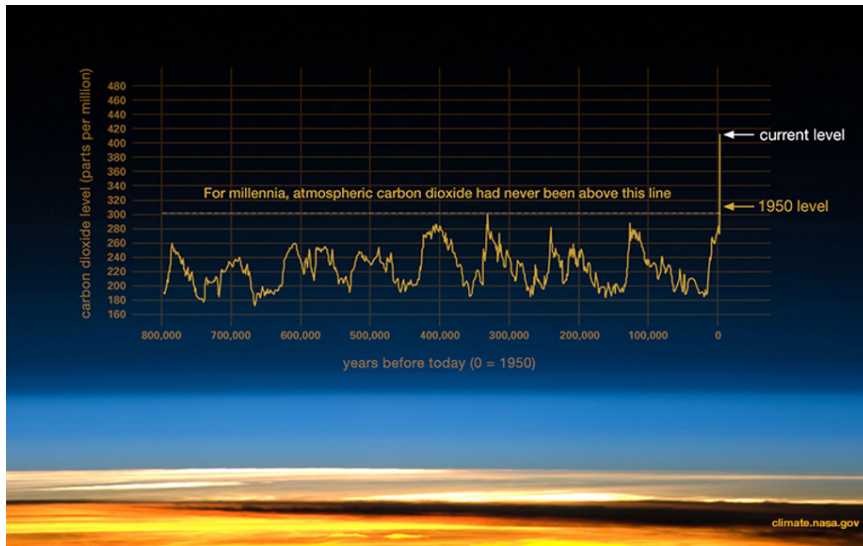
- Affordable Clean Energy Rule (ACE) - on June 19, 2019 the EPA issued the finalized version of a regulation that had been in the works for a few years. The ACE develops guidelines on Green House Gas emissions from existing coal-fueled power plants and suggests technologies to reduce emissions for states, but gives states control of specific goals and implementation. The EPA estimated that ACE will reduce 2030 CO2 emissions from EGUs by 11 million short tons from projected levels absent the rule. This regulation replaced the Clean Power Plan, which gave control of goals and implementation to the federal government. <https://www.epa.gov/stationary-sources-air-pollution/affordable-clean-energy-rule>
<https://www.epa.gov/stationary-sources-air-pollution/affordable-clean-energy-rule> & https://www.epa.gov/sites/production/files/2019-06/documents/ace_ria_fact_sheet_6.18.19_final.pdf & <https://www.epa.gov/stationary-sources-air-pollution/affordable-clean-energy-rule>
- Clean Air Act (CAA) - The Clean Air Act (CAA) is the comprehensive federal law that regulates air emissions from stationary and mobile sources. Among other things, this law authorizes EPA to establish National Ambient Air Quality Standards (NAAQS) to protect public

health and public welfare and to regulate emissions of hazardous air pollutants. It establishes maximum achievable control technology (MACT) standards which require the maximum possible reduction of hazardous air pollutants. It was created in 1970, then amended in 1977 and in 1990. <https://www.epa.gov/laws-regulations/summary-clean-air-act>

- Clean Water Act (CWA) - Originally the Federal Water Pollution Control Amendments of 1972, this law establishes the basic structure of regulations on pollutants that can be discharged into the water of the US. It also sets quality standards for surface waters. The CWA made it unlawful to discharge any pollutant from a point source into navigable waters, unless a permit was obtained. <https://www.epa.gov/laws-regulations/summary-clean-air-act>
- There are few other comprehensive national laws to put in place programs or standards to limit climate change contributions or adapt to climate change: "It remains difficult, however, to tally the extent of adaptation implementation in the United States because there are no common reporting systems, and many actions that reduce climate risk are not labeled as climate adaptation.¹⁴ Enough is known, however, to conclude that adaptation implementation is not uniform nor yet common across the United States." <https://nca2018.globalchange.gov/chapter/28/>

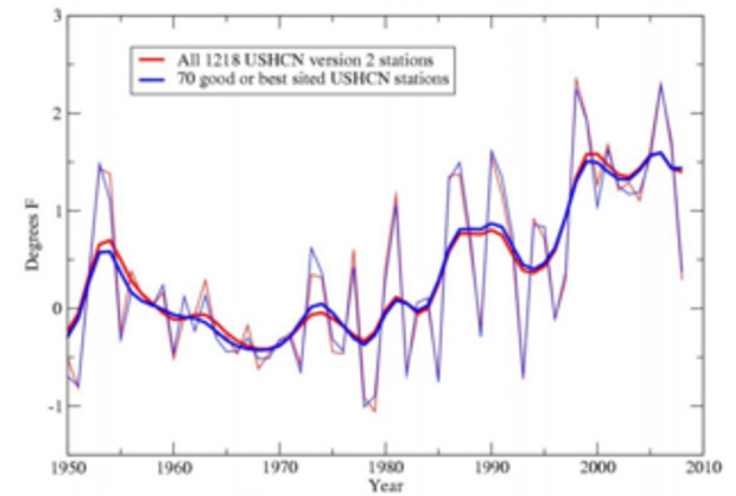
National facts on recent repeal of Climate Change Policy and recently implemented Policy

- Under the current (April 2020) Administration, 58 environmental regulations have been repealed and 37 are in the process of being repealed. <https://www.nytimes.com/interactive/2019/climate/trump-environment-rollbacks.html>
- Congress also passed a bill last year to protect over 2 million acres of public land across the country. Source: <https://www.congress.gov/116/bills/s47/BILLS-116s47pcs.pdf>



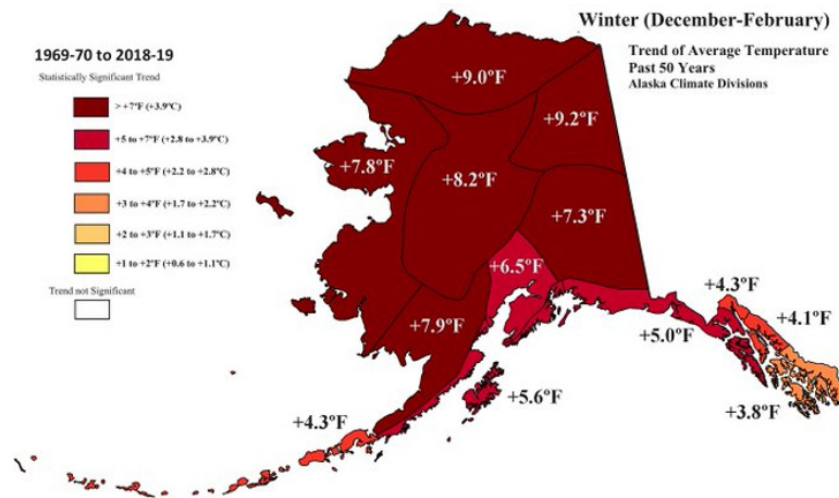
https://climate.nasa.gov/climate_resources/24/graphic-the-relentless-rise-of-carbon-dioxide/

U.S. Historical Climatology Network (USHCN) Temperature Record



Source: National Oceanic and Atmospheric Administration's National Climatic Data Center (NCDC) at <http://www.ncdc.noaa.gov/about/response-v2.pdf>

National Oceanic and Atmospheric Association (NOAA)



<https://twitter.com/AlaskaWx/status/1203808439480119296>