Climate Change online resources

by Ken Lassman www.kawvalleyalmanac.com where you can find updated versions of this page. Also, click on Ken's "Climate change essay" at: https://konzajournaldotcom.files.wordpress.com/2017/09/cli...

In an age where A.I. is scraping the internet and presenting information according to privately owned, inaccessible algorithms, the age of misinformation has worsened in an era already characterized by the muddying efforts of paid extremists who have a history of flooding the internet with distortions, lies and half truths designed not for understanding, but to mislead and reinforce and strengthen people's biases.

It is with this in mind that I offer this list of online resources where individuals and groups can explore the data online for themselves, develop and use critical thinking to determine what science and policies based on science has to say about one of the most complex --and important-- topics of our time: climate change. These online resources are provided for you to be able to look at the ever improving, continuously accumulating body of scientific data and analyses on the topic.

Our current US Administration has been in the habit of pulling government sites designed to inform the public about climate change science, and where possible, I have provided links using the Internet Archive Wayback machine in order to access the deleted website if it still provides important information and will do this as needed in future updates. What is included and excluded is entirely a reflection of my own interests and biases; if you have a resource you run across that you recommend including in this compilation, please email it to me at wilddouglascounty@protonmail.com. Enjoy!

Weather and climate basics

Weather is what happens in the atmosphere every day: clouds, rain, droughts, hurricanes, fair weather —all of it. Climate is weather over time: an averaged abstraction created from measuring weather events over time for a given place or over the entire earth. By collecting and analyzing statistically valid and physically relevant weather data over time, we can tease out subtle trends and better understand what causes the weather. Measurable weather data include temperature, humidity, wind, precipitation, cloud cover and chemical composition of the atmosphere. 30 year averages are the most common climate averages used;. In addition, comparing 3-5 year weather averages against the previous 100 year averages can highlight changing probabilities or "anomalies", such as the increasing probability of more frequent and severe extreme events. Here are a couple of useful video overviews that explain the dynamics of the earth's climate: https://www.youtube.com/watch?v=dpvd9FensT8 and https://www.youtube.com/watch?v=VHgyOa70Q7Y

Evidence for climate change

There are many, many reliable web resources that summarize our changing climate. Some of my favorites: https://climatereanalyzer.org/
https://www.ipcc.ch/report/ar6/syr/
https://web.archive.org/web/20250630055042/https://nca2023.globalchange.gov/
https://climate.metoffice.cloud/
https://wmo.int/publication-series/state-of-global-climate
https://dashboard.theclimatebrink.com/
https://www.climate.gov/
https://climate.nasa.gov/

https://www.climatecentral.org/ https://skepticalscience.com/argument.php https://showyourstripes.info/
Plus an excellent, readable 2020 overview by the National Academy of Sciences and the Royal Society: https://www.nationalacademies.org/read/25733/chapter/1 For a deep dive on the latest emissions and forcing numbers produced annually by the global climatological community of scientists: https://essd.copernicus.org/preprints/essd-2025-250/essd-2025-250.pdf

Human and natural forcings of climate
The science is in: humanity has changed the chemistry of the atmosphere and those changes are driving the current climate changes we are seeing. That doesn't mean that the sun, volcanoes, our orbit around the sun, cosmic rays and other factors don't contribute. Explore this more with these resources: https://www.bloomberg.com/graphics/2015-whats-warming-the-world/ https://science.nasa.gov/climate-change/faq/what-do-volcanoes-have-to-do-with-climate-change/
Human emissions of carbon
Annual updates, country by country, economic sector by sector: https://www.globalcarbonproject.org/
CO2 and greenhouse gas amounts in the atmosphere
https://scrippsco2.ucsd.edu/. Fascinating time lapse showing carbon composition over the past 800,000 years: https://www.esrl.noaa.gov/gmd/ccgg/trends/history.html. 3D visualization of carbon emissions https://www.youtube.com/watch?v=-aSBfn6_
Physical consequences for changing the chemical composition of the atmosphere and oceans: https://www.ipcc.ch/sr15/
Arctic sea ice levels: https://nsidc.org/arcticseaicenews/
Combined global land and sea surface temps: There are many graphs, datasets and animations available here https://data.giss.nasa.gov/gistemp/ and a cool spiral animation of rising temps: https://www.climate-lab-book.ac.uk/spirals/
Ocean heat content: incl. graphs of various depths https://www.nodc.noaa.gov /OC5/3M_HEAT_CONTENT/ and an excellent several part series by NASA why one degree of warming is significant: https://climate.nasa.gov/news/2878/a-degree-of-concern-why-global-temperatures-matter/
Polar ice mass: WAY more complicated than you might think, with some parts of Antarctic ice shrinking, other parts expanding for a whole bunch of reasons. How these pieces fit together: https://nsidc.org/cryosphere/sotc/ice_sheets.html Includes cumulative data for the extent of ice mass loss and how much they have contributed to the sea level rise–see the Merging Methods section for details.
Glacier ice mass: Integrates satellite monitoring and on-the-ground calibration: https://wgms.ch/
Sea level rise: https://sealevel.nasa.gov/news/282/nasa-analysis-shows-unexpected-amount-of-sea-level-rise-in-2024/ and https://ed-hawkins.github.io/climate-visuals/sea-level-rise.html
Ocean acidification: https://www.pmel.noaa.gov/co2/story/OA+Observations+and+Data
Extreme weather events: The IPCC comprehensive overview of the issue: https://www.ipcc.ch/report/ar6/wg2/downloads/report/IPCC_AR6_WGII_SummaryForPolicymakers.pdf. Flooding events are predicted to double by the end of the century: https://www.nature.com/articles/s41467-..

Here are some of the ecological consequences of climate changes
Science, having accepted the reality of climate change, has been incredibly busy around the world documenting its affect everywhere. Skeptical Science provides weekly updates of this torrent of

publications here: https://skepticalscience.com (just look for the weekly update called "New Research"). You can also use the following seminal article to do your own Scholar Search on ecosystem changes: Parmesan, C. (2006). “Ecological and Evolutionary Responses to Recent Climate Change.” https://scholar.google.com/scholar?hl=en&as_sdt=5,24&sciodt=0,24&cites=82201951231...

Coral reefs: with 2^{o} C increase in global temps, most of the planet’s coral reefs are lost--here's the latest: https://www.nature.com/articles/s41598-023-28489-0 and https://eprints.whiterose.ac.uk/150339/1/Social-environmental%20drivers%20inform%20strategic%20management%20of%20coral%20reefs.pdf

Possible changes in Central Great Plains area:
https://advances.sciencemag.org/content/1/1/e1400082.full

Tracking changes in the human environment: Heat waves kill more people than any other kind of extreme weather. Heat waves are predicted to become much more frequent and severe in coming years, which has prompted the quick creation of the Global Heat Health Information Network, which is pooling global efforts to help cope with this quickly growing crisis: https://ghhin.org/resource-library/

Global efforts to adapt and good sources for initiative updates
Humans are part of the planet’s ecosystem and here’s how different countries are being affected/planning for mitigating/adapting: https://www.iied.org/climate-change

Mitigation efforts to minimize climate change
While the Inflation Reduction Act includes funding for many climate related initiatives, local and regional efforts are taking off across the planet to continue to reduce emissions to meet the Paris Agreement target, including: https://www.ipcc.ch/report/ar6/wg3/
https://www.globalcovenantofmayors.org/ https://climatemayors.org/
https://nap.nationalacademies.org/catalog/25931/accelerating-decarbonization-in-the-united-states-technology-policy-and-societal

Motivation: how best to move ahead?
Here’s one of Greta Thunberg’s first excellent videos on the topic: https://www.youtube.com/watch?v=EAmmUIEsN9A
A powerful video/poem written by two women from Greenland and Marshall Islands: https://350.org/rise-from-one-island-to-another-copy/

For Kansas, we have the privilege of having an excellent grassroots organization devoted to educating the public on a wide range of climate issues as they affect Kansans as well as the opportunities to make a difference: check out these folks and support them: https://climateandenergy.org/index.php

Carbon fee and dividend, energy efficiency and good news updates source
A grassroots, citizens’ based effort to implement a carbon fee, refunded to taxpayers as the most efficient, market-driven method to reduce emissions: https://citizensclimatelobby.org/carbon-fee-and-dividend/ .
Energy efficiency is always the cheapest way to increase our energy supply: this site keeps track of state and federal policies, initiatives: https://aceee.org/.

Adaptation to climate change
Changing insurance industry: https://www.munichre.com/en/group/focus/climate-change/index.html

Efforts to protect biodiversity, ecosystems, which is threatened worldwide by the changes in our climate: https://www.cbd.int/climate/

Agricultural adaptation: The USDA regional Climate Hubs have sadly has been put on hold. Check out the website anyway to see the work they did before being suspended, in hopes that these represent solid foundation for future efforts once climate change is again taken seriously: https://www.climatehubs.oce.usda.gov/

Local impacts and efforts to adapt/mitigate–In addition to the Climate and Energy Project (see link above), keep track of what's happening locally by visiting these sites (for the Lawrence, KS area):

https://www.lawrencebirdalliance.org/ https://www.grasslandheritage.org/
https://www.sierraclub.org/kansas https://kansasruralcenter.org/
https://www.kawcouncil.com https://www.facebook.com/sustainabilityactionnetwork/

Free courses to go into more in-depth understanding of our climate, climate change, and the science behind it

https://www.youtube.com/channel/UCmxzubbVw6jXA7Ak08StYug
https://www.coursera.org/learn/global-warming last update: 11/6/2026