

Five ways the second Trump term is reshaping climate science and policy

A review of federal actions on science, data, and policy in the administration's first eight months shows far-reaching consequences.

The Environmental Protection Agency announced plans this summer to rescind its 16-year-old finding that carbon dioxide and other greenhouse gases harm public welfare. The potential revocation of the finding, which provides the legal basis for much of the agency's authority over climate pollution, is a prominent example of how the state of US climate science has not been business as usual since President Trump regained power in January. Administrative actions have broadly affected climate science in immediate, personal ways like layoffs and in wider-sweeping ways through policy.

It can be easy to lose sight of the big picture. What follows is a nonexhaustive list of the trends that are shaping climate science during the first eight months of Trump's second term. This list mostly excludes the budget fight going on in Congress, which could either cut or maintain science funding in the next fiscal year.

1. Tracking greenhouse gas emissions is becoming more difficult

The US has published a tally of its greenhouse gas emissions each year since 1997 as part of its responsibilities to the United Nations Framework Convention on Climate Change. The annual report is a highly used resource because it summarizes carbon sinks and emissions in economic sectors like agriculture and transportation. But this year, the EPA hasn't published the report, despite a draft of it being completed. The nonprofit advocacy group Environmental Defense Fund filed a Freedom of Information Act request for the report in April and published it online the following month. As



PRESIDENT TRUMP SIGNS AN EXECUTIVE ORDER in the Oval Office during his second term. (Photo by the White House.)

of September, the final report is still not available on the EPA website.

The Trump administration also proposed in September to end the mandatory requirement, in place for at least 15 years, that polluters report greenhouse gas emissions to the EPA. Typically, around 8000 facilities submit emissions numbers each year, according to ProPublica. Those numbers are useful for tracking sectors' carbon footprints and efforts to curb emissions.

Separately, the *New York Times* reported in August that the EPA may stop updating a widely used database for calculating greenhouse gas emissions along supply chains. The Supply Chain Greenhouse Gas Emission Factors database is one of the top three resources used on Data.gov, the federal government's repository of hundreds of thousands of datasets.

Proposed budget changes would affect the monitoring of greenhouse gases. NASA may terminate two greenhouse gas-tracking missions ahead of schedule, according to NPR in August. The

Orbiting Carbon Observatories monitor carbon dioxide on Earth from instruments on a stand-alone satellite and on the International Space Station. The data are used by farmers, oil and gas companies, and scientists to monitor pollution and crop health. If decommissioned, the satellite would be purposely burned in the atmosphere, and the space station's device would no longer be supported. A 2023 NASA review had praised the satellite's "exceptionally high quality" data.

Budget cuts could also halt atmospheric measurements of greenhouse gases at the Mauna Loa Observatory in Hawaii (famous for the Keeling curve) and at dozens of other NOAA sites around the world.

2. The government is shrinking its climate workforce

The nonprofit Partnership for Public Service is tracking departures of federal employees; as of 23 September, the number is at more than 201 000. Scientists



AN ARTIST'S CONCEPTION of the *Orbiting Carbon Observatory-2* launched into space in 2014 to quantify, among other things, how forests and the ocean can offset carbon dioxide emissions. (Image by NASA/JPL-Caltech.)

have left federal positions across diverse agencies, including the Department of Energy, the EPA, NASA, NSF, NOAA, and the Department of Agriculture. Some had been probationary employees, some took the deferred-resignation offers, and others were laid off as part of the administration's downsizing of

the federal workforce. Others have been placed on administrative leave or fired after signing open letters to the EPA and the Federal Emergency Management Agency.

It's hard to know how many scientists have left the agencies—data reporting has been scattered and inconsistent. One

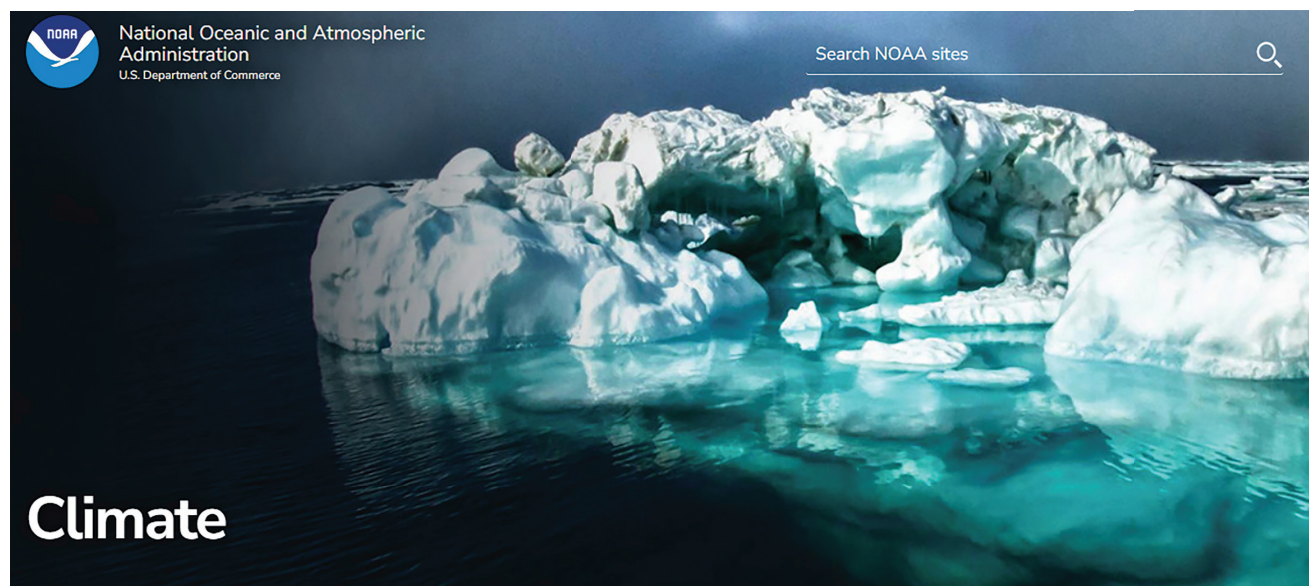
data point is from NASA, whose work includes collaborating with NOAA and other federal agencies to study Earth's climate. According to documents obtained by *Politico* and reported on in July, of the 2694 employees who accepted NASA's offer to retire or resign, more than half held positions in mission areas in science or human spaceflight. In August, NASA acting administrator Sean Duffy said in a *Fox Business* interview that the agency will move away from climate and Earth science.

Some agencies are folding research offices and relocating research jobs. The EPA announced in July that it is dissolving its Office of Research and Development. The office conducts research on climate change's effects on air and water quality, among other topics. The agency said it will create a new research group in the policy-focused office of the administrator. *Politico* reported in September that Senate appropriators may require the EPA to keep the Office of Research and Development intact.

Although many jobs have been eliminated, some may come back: The National Weather Service wants to hire some 450 meteorologists, hydrologists,



FORMER NOAA DIRECTOR RICK SPINRAD (in blue hat and coat) addresses a crowd protesting NOAA layoffs outside the agency's headquarters in March. (Photo by Clare Zhang/AIP)



NOAA experts provide data, tools and information to help people understand, prepare for and adapt to our changing climate.

UPDATED: June 24, 2025. In compliance with Executive Order 14303 ("Restoring Gold Standard Science"), the White House Office of Science and Technology Policy's June 23, 2025 Memorandum ("Agency Guidance for Implementing Gold Standard Science in the Conduct & Management of Scientific Activities"), 15 USC § 2904 ("National Climate Program"), 15 USC § 2934 ("National Global Change Research Plan"), and 33 USC § 893a ("NOAA Ocean and Atmospheric Science Education Programs"), you have been redirected to NOAA.gov. Future research products previously housed under Climate.gov will be available at NOAA.gov/climate and its affiliate websites.

CLIMATE.GOV NOW REDIRECTS to a NOAA.gov webpage, as seen in this screenshot. The US government climate change information website was shuttered in June. The highlights were added by PHYSICS TODAY for emphasis. (Image by PHYSICS TODAY.)

and radar technicians to partially replace the more than 500 employees lost to lay-offs and retirements earlier this year, CNN reported in August. The service provides weather, water, and climate data for the public and runs the National Centers for Environmental Prediction.

3. Climate information and advisory panels are disappearing

In the first 100 days of Trump's second term, 310 changes were made to federal webpages about climate change, according to the Environmental Data and Governance Initiative. The changes totaled 847 by the end of June.

NOAA's premier climate change information website, Climate.gov, was shut down in June, weeks after the *Guardian* reported that NOAA had fired most of the site's staff. Nearly a million users had visited the site per month, according to NPR. The website now redirects

to a different NOAA webpage. Most Climate.gov information is available at the new location, but navigation is more difficult and there are no staff to maintain the resources, says Izzy Pacenza, coauthor of the analysis published by the Environmental Data and Governance Initiative. Some members of the former Climate.gov team launched a public fundraiser in late August to start a nonprofit version of Climate.gov called Climate.us. The platform would provide resources for climate science, communication, and education, according to Climate.us.

Globalchange.gov, the website of the US Global Change Research Program that housed the country's five National Climate Assessments, was also deleted this summer. Despite initially saying that it would publish the assessments on NASA's website, the Trump administration said in a July email to the Associated Press that it has no legal obligation to

post them. Some are still available as of September in NOAA's repository.

Nearly 400 scientists and other experts working on the sixth US National Climate Assessment, which is due by 2028, were dismissed by the administration in April. The congressionally mandated report is written by both federal and outside scientists, who were told that the process was being evaluated by the administration, according to Reuters. "What's at risk with this dismissal is not only the report itself, but its credibility if it moves forward without the experts that ensure its scientific integrity," climate scientist Meade Krosby at the University of Washington told CNN in April.

Through an executive order earlier this year, the administration disbanded dozens of federal advisory committees of scientists, including those advising on climate change for NOAA and the US Geological Survey, according to *FYI*. And databases geared toward scien-



EPA ADMINISTRATOR LEE ZELDIN at a truck dealership in Indiana on 29 July announces the proposed end of the 2009 endangerment finding that enables the agency to regulate carbon dioxide emissions. DOE Secretary Chris Wright stands at the far left. (Image from the EPA.)

tists, including many hosted by NOAA that *PHYSICS TODAY* reported on in June, have been taken offline or ceased to be updated.

4. Climate-science doubters are placed in positions of power

DOE hired three scientists known as prominent climate-science doubters, reported the *New York Times* in July. The three—physicist Steven Koonin, atmospheric scientist John Christy, and meteorologist Roy Spencer—and two others formed the agency's new Climate Working Group. They authored a DOE report criticizing many established scientific findings in climate science. The group completed the 150-page report in about two months.

Energy Secretary Chris Wright writes in the foreword that the report's conclusions differ from the mainstream narrative and media coverage of climate change, which he claims distort science. For example, the authors write that the attribution of climate change to human carbon dioxide emissions "is challenged by natural climate variability, data limitations, and inherent model deficiencies."

The Intergovernmental Panel on Climate Change's sixth assessment report, released in parts between 2021 and 2023, involved hundreds of scientists from around the globe and took around six years to complete. Its conclusion: "Human activities, principally through emissions of greenhouse gases, have unequivocally caused global warming."

Several of the scientists whose work is cited in the DOE report told AFP (Agence France-Presse) for an August article that their research was misused or misrepresented. Retired atmospheric scientist Benjamin Santer, who worked at Lawrence Livermore National Laboratory for 29 years, said that the DOE report "completely misrepresents my work" on climate fingerprinting, a technique to separate human-caused climate change signals from naturally occurring signals.

Previously released National Climate Assessments may be updated by the administration as well, Wright said in an interview with CNN in August. He said that those reports were politically driven and are being reviewed. Each of the five assessments released since 2000 took years to complete and was reviewed by the 13 federal agencies responsible for

climate research. The first Trump administration signed off on the fourth National Climate Assessment in 2018.

5. Policy shifts toward deregulation

There have been more than 250 steps taken by the administration to "scale back or wholly eliminate federal climate mitigation and adaptation measures," according to a tracker by Columbia University's Sabin Center for Climate Change Law.

A major such change came in late July when the EPA announced plans to rescind its previous finding that carbon dioxide and other greenhouse gases harm public welfare. The 2009 endangerment finding allows for widespread federal regulation of greenhouse gas emissions from cars, power plants, and other sources. The EPA cited the recent DOE Climate Working Group report as justification for a policy change.

In response, the National Academies of Sciences, Engineering, and Medicine launched a self-funded, fast-track study to summarize findings in climate science gathered since 2009. Although the National Academies carry out many activities requested by Congress and federal agencies, they are independent, nonprofit institutions that do not receive appropriations directly from the government. The report was published on 17 September, five days before the end of the EPA's public comment period on the rescindment proposal for the endangerment finding.

Separately, some 85 climate scientists coordinated by Andrew Dessler, director of Texas A&M University's Texas Center for Extreme Weather, penned a more than 400-page response to the DOE report. In announcing the review in September, they write that DOE's key assertions are "either misleading or fundamentally incorrect."

Environmental groups also filed a lawsuit in August against the administration for violating a law that governs advisory committees. The Environmental Defense Fund and the Union of Concerned Scientists allege that the administration secretly recruited climate-science doubters to write the DOE report and used it to pursue repealing the EPA's endangerment finding. Wright dissolved the Climate Working Group in September, according to CNN.

Jenessa Duncombe