

Major Trump administration climate report says damages are ‘intensifying across the country’

Scientists are more certain than ever that climate change is already affecting the United States — and that it is going to be very expensive.

By [Brady Dennis](#) and [Chris Mooney](#)

November 23 at 4:49 PM

The federal government on Friday released a [long-awaited report](#) with an unmistakable message: The effects of climate change, including deadly wildfires, increasingly debilitating hurricanes and heat waves, are already battering the United States, and the danger of more such catastrophes is worsening.

The report’s authors, who represent numerous federal agencies, say they are more certain than ever that climate change poses a severe threat to Americans’ health and pocketbooks, as well as to the country’s infrastructure and natural resources. And while it avoids policy recommendations, the report’s sense of urgency and alarm stand in stark contrast to the lack of any apparent plan from President Trump to tackle the problems, which, according to the government he runs, are increasingly dire.

The congressionally mandated document — the first of its kind issued during the Trump administration — details how climate-fueled disasters and other types of worrisome changes are becoming more commonplace throughout the country and how much worse they could become in the absence of efforts to combat global warming.

Already, [western mountain ranges are retaining much less snow throughout the year](#), threatening water supplies below them. Coral reefs in the Caribbean, Hawaii, Florida and the United States’ Pacific territories are experiencing severe bleaching events. Wildfires are devouring ever-larger areas during longer fire seasons. And the country’s sole Arctic state, Alaska, is seeing a staggering rate of warming that has upended its ecosystems, from once ice-clogged coastlines to increasingly thawing permafrost tundras.

From deadly wildfires to debilitating hurricanes: White House releases major climate report

The Trump administration released on Nov. 23 a long-awaited report outlining that climate change impacts “are intensifying across the country.” (Luis Velarde /The Washington Post)

The National Climate Assessment’s publication marks the government’s fourth comprehensive look at climate-change impacts on the United States since 2000. The last came in 2014. Produced by 13 federal departments and agencies and overseen by the [U.S. Global Change Research Program](#), the report stretches well over 1,000 pages and draws more definitive, and in some cases more startling, conclusions than earlier versions.

The authors argue that global warming “is transforming where and how we live and presents growing challenges to human health and quality of life, the economy, and the natural systems that support us.” And they conclude that humans must act aggressively to adapt to current impacts and mitigate future catastrophes “to avoid substantial damages to the U.S. economy, environment, and human health and well-being over the coming decades.”

“The impacts we’ve seen the last 15 years have continued to get stronger, and that will only continue,” said Gary Yohe, a professor of economics and environmental studies at Wesleyan University who served on a National Academy of Sciences panel that reviewed the report. “We have wasted 15 years of response time. If we waste another five years of response time, the story gets worse. The longer you wait, the faster you have to respond and the more expensive it will be.”

That urgency is at odds with the stance of the Trump administration, which has rolled back several Obama-era environmental regulations and incentivized the production of fossil fuels. Trump also has said he plans to withdraw the nation from the Paris climate accord and questioned the science of climate change just last month, [saying on CBS’s “60 Minutes”](#) that “I don’t know that it’s man-made” and that the warming trend “could very well go back.”

[Who’s in and who’s out of the Paris agreement, by total greenhouse-gas emissions]

Furthermore, as the Northeast faced a cold spell this week, Trump [tweeted](#), “Whatever happened to Global Warming?” This shows a misunderstanding that climate scientists have repeatedly tried to correct — a confusion between daily weather fluctuations and long-term climate trends.

The White House did not immediately respond to a request for comment on Friday’s report. However, the administration last year downplayed a [separate government report](#) calling human activity the dominant driver of global warming, saying in a statement that “the climate has changed and is always changing.”

Given that history, some of the hundreds of scientists and federal officials who spent months working on the detailed document were frustrated, but not surprised, that the administration chose to release it on the day after Thanksgiving — typically one of the slowest news days of the year. Several people involved in the report said its release originally had been planned for early December, but after a behind-the-scenes debate in recent weeks about when to make it public, administration officials settled on Black Friday.

Several federal experts who participated in a media call after the release of the report on Friday were repeatedly asked about the timing of its release on a day when the country’s attention is likely elsewhere.

For the most part, they demurred, saying that in part the report was finished early and that they wanted to make sure it was out ahead of both an American Geophysical Union gathering next month, as well as a major international climate conference in Poland around the same time. Rather, they implored reporters to focus instead on the contents of the report, which they said had not been tinkered with by administration officials.

“This report has not been altered or revised in any way because of political considerations,” Monica Allen, a spokeswoman for the National Oceanic and Atmospheric Administration (NOAA), told reporters. She said the decision on when to release it had been made during the past week, but added, “It’s not as significant as the content of what’s in the report.”

Sen. Sheldon Whitehouse, a Democrat from Rhode Island, said the report shows how climate change will affect all Americans.

“No matter how hard they try, the Trump administration can’t bury the effects of climate change in a Black

Friday news dump – effects their own federal government scientists have uncovered," he said in a statement. "The president says outrageous things like climate change is a hoax engineered by the Chinese and raking forests will prevent catastrophic wildfires, but serious consequences like collapsing coastal housing prices and trillions of dollars in stranded fossil fuel assets await us if we don't act."

That report is striking in its clear statement that climate change is not only already affecting the U.S., but that the effects are getting worse.

"This report draws a direct connection between the warming atmosphere and the resulting changes that affect Americans' lives, communities, and livelihoods, now and in the future," the document reads, concluding that "the evidence of human-caused climate change is overwhelming and continues to strengthen, that the impacts of climate change are intensifying across the country, and that climate-related threats to Americans' physical, social, and economic well-being are rising."

The report finds that the continental United States already is 1.8 degrees Fahrenheit warmer than it was 100 years ago, surrounded by seas that are on average nine inches higher and being racked by far worse heat waves than the nation experienced only 50 years ago.

But those figures offer only the prelude to even more potentially severe impacts. The report suggests that by 2050, the country could see as much as 2.3 additional degrees of warming in the continental United States. By that same year, in a high-end global-warming scenario, coral reefs in Hawaii and the U.S. Pacific territories could be bleaching every single year – conditions in which their survival would be in severe doubt. A record-warm year like 2016 would become routine.

Key crops, including corn, wheat and soybeans, would see declining yields as temperatures rise during the growing season. The city of Phoenix, which experienced about 80 days per year over 100 degrees around the turn of the century, could see between 120 and 150 such days per year by the end of the century, depending on the pace of emissions.

[As temperatures keep trending up, 'heat belt' cities maneuver to stay livable]

And those who face the most suffering? Society's most vulnerable, including "lower-income and other marginalized communities," researchers found.

In another major step, the authors of the new report have begun to put dollar signs next to projected climate damage, specifically within the United States.

In a worst-case climate-change scenario, the document finds, labor-related losses by the year 2090 as a result of extreme heat – the sort that makes it difficult to work outdoors or seriously lowers productivity – could amount to an estimated \$155 billion annually. Deaths from temperature extremes could take an economic toll of \$141 billion per year in the same year, while coastal property damage could total \$118 billion yearly, researchers found.

Of course, mitigating climate change would also mitigate this damage, by as much as 58 percent in the case of high-temperature related deaths, the report finds.

The categorical tone of the new assessments reflects scientists' growing confidence in the ability to detect

the role of a changing climate in individual extreme events, such as heat waves and droughts. At the same time, increasingly sophisticated computer simulations now allow them to project future changes in highly specific regions of the country.

For many Americans, however, no simulations are necessary. The effects of climate change are already playing out daily.

“We don’t debate who caused it. You go outside, the streets are flooded. What are you going to do about it? It’s our reality nowadays,” said Susanne Torriente, who also reviewed the report. She is chief resilience officer for Miami Beach, which is spending hundreds of millions of dollars to adapt to rising sea levels. “We need to use this best available data so we can start making decisions to start investing in our future. ... It shouldn’t be that complicated or that partisan.”

The report is being released at the same time as another major federal climate study that, in contrast, reaches a more positive conclusion — at least with respect to what can be done about climate change.

The [Second State of the Carbon Cycle Report](#), which examines all of North America (not just the United States), finds that over a decade, greenhouse-gas emissions from fossil fuels declined by 1 percent per year. The result is that while North America emitted 24 percent of the world’s emissions in 2004, that was down to 17 percent in 2013. This occurred in part thanks to improvements in vehicle fuel efficiency, the growth of renewable energy and the swapping of coal-burning for natural gas.

“For the globe, we’re still going up, but regionally, there have been these changes in how humans have been acting that have caused our emissions to go down,” said Ted Schuur, a Northern Arizona University expert on permafrost carbon who contributed to the report, the follow-up to an initial effort released in 2007.

The report concludes that it appears possible to for economies to grow — at least in the United States, Mexico and Canada — without increasing overall emissions of greenhouse gases. That would be an important signal for the ability of the world to slow climate change over the course of the century. However, it does not mean any lessening of climate-change impacts within the United States. As long as global emissions continue, the risk of impacts here continue, because carbon dioxide circulates around the globe.

The release of the National Climate Assessment comes on the heels of other recent global warnings, most notably a [report](#) by the United Nations' Intergovernmental Panel on Climate Change finding that the world would have to make unprecedented changes in the next decade to remain below 2.7 degrees Fahrenheit (1.5 degrees Celsius) of total warming above preindustrial levels.

The last time a U.S. National Climate Assessment was published, in 2014, Obama administration officials took the document seriously, with top policymakers heralding its release and embracing its findings.

“These tailored findings help translate scientific insights into practical, usable knowledge that can help decision-makers and citizens anticipate and prepare for specific climate-change impacts,” White House science adviser John Holdren and NOAA head Kathryn Sullivan [wrote](#) at the time.

On the other side of the country from Washington, at least one well-known atmospheric scientist this week was wrestling not with the contents of a climate report but with the changing view from his window.

“Normally, I can see San Francisco Bay from my home,” said Ken Caldeira, a senior researcher at the Carnegie Institution for Science. “Today and for the past few days, I could not see the bay for all the smoke from the Paradise fire. Fires that approach the size of the Paradise fire are most common in the hot dry

years — the kind of years that we are likely to see many more of.”

“We are trained to be skeptical and resist jumping to quick conclusions,” he said. “But looking at the smoke, I could not help but think: ‘This is climate change. This is what climate change looks like.’”

Climate change will shrink US economy and kill thousands, government report warns

By [Jen Christensen](#) and [Michael Nedelman](#), CNN

Updated 2053 GMT (0453 HKT) November 23, 2018

(CNN) A new [US government report](#) delivers a dire warning about climate change and its devastating impacts, saying the economy could lose hundreds of billions of dollars -- or, in the worst-case scenario, more than 10% of its GDP -- by the end of the century.

The federally mandated study was supposed to come out in December but was released by the Trump administration on Friday, at a time when many Americans are on a long holiday weekend, distracted by family and shopping.

[David Easterling](#), director of the Technical Support Unit at the NOAA National Centers for Environmental Information, emphasized that there was "no external interference in the report's development." He added that the climate change the Earth is experiencing is unlike any other.

"The global average temperature is much higher and is rising more rapidly than anything modern civilization has experienced, and this warming trend can only be explained by human activities," Easterling said.

Coming from the [US Global Change Research Program](#), a team of 13 federal agencies, the [Fourth National Climate Assessment](#) was put together with the help of 1,000 people, including 300 leading scientists, roughly half from outside the government.

It's the second of two volumes. [The first](#), released in November 2017, concluded that there is "no convincing alternative explanation" for the changing climate other than "human activities, especially emissions of greenhouse gases."

The report's findings run counter to President Donald Trump's consistent message that climate [change is a hoax](#).

On Wednesday, Trump tweeted, "[Whatever happened to Global Warming?](#)" as some Americans faced the coldest Thanksgiving [in over a century](#).

But the science explained in these and other federal government reports is clear: Climate change is not disproved by the extreme weather of one day or a week; it's demonstrated by long-term trends. Humans are living with the warmest temperatures [in modern history](#). Even if the best-case scenario were to happen and greenhouse gas emissions were to drop to nothing, the world is on track to warm 1.1 degrees Fahrenheit.

[As of now](#), not a single G20 country is meeting climate targets, [research shows](#).

Without significant reductions in greenhouse emissions, the annual average global temperature could increase 9 degrees Fahrenheit (5 Celsius) or more by the end of this century, compared with preindustrial temperatures, the report says.

The expense

The costs of climate change could reach hundreds of billions of dollars annually, according to the report. The Southeast alone will probably lose over a half a billion labor hours by 2100 due to extreme heat.

Farmers will face extremely tough times. The quality and quantity of their crops will decline across the country due to higher temperatures, drought and flooding. In parts of the Midwest, farms will be able to produce less than 75% of the corn they produce today, and the southern part of the region could lose more than 25% of its soybean yield.

Heat stress could cause average dairy production to fall between 0.60% and 1.35% over the next 12 years -- having already cost the industry \$1.2 billion from heat stress in 2010.

When it comes to shellfish there will be a \$230 million loss by the end of the century due to ocean acidification, which is already killing off shellfish and corals. [Red tides](#), or algae bloom that deplete oxygen in the water and can kill sea life -- like those that triggered a state of emergency in Florida in August -- will become more frequent.

Impacts on our health

Higher temperatures will also kill more people, the report says. The Midwest alone, [which is predicted](#) to have the largest increase in extreme

temperature, will see an additional 2,000 premature deaths per year by 2090.

There will be more mosquito- and tickborne diseases like Zika, dengue and chikungunya. [West Nile cases](#) are expected to more than double by 2050 due to increasing temperatures.

Expect asthma and allergies to be worse due to [climate change](#).

[No one's health is immune](#) from climate change, the report concludes. People will be exposed to more foodborne and waterborne diseases. Particularly vulnerable to higher temperatures in the summer, children, the elderly, the poor and communities of color will be at a much greater risk for illness and death.

Heat and flooding

Wildfire seasons -- already longer and more destructive than before -- could burn up to six times more forest area annually by 2050 in parts of the United States. Burned areas in Southwestern California alone could double by 2050.

Dependable and safe water for the Hawaii, the Caribbean and others are threatened by these rising temperatures.

Along the US coasts, public infrastructure and \$1 trillion in national wealth held in real estate are threatened by rising sea levels, flooding and storm surges.

Energy systems will be taxed, meaning more blackouts and power failures, and the potential loss in some sectors could reach hundreds of billions of dollars per year by the end of the century, the report said.

The number of days over 100 degrees Fahrenheit will multiply; Chicago, where these days are rare, could start to resemble Phoenix or Las Vegas, with up to two months worth of these scorching-hot days.

Sea levels have already gone up 7 to 8 inches since 1900. Almost half that rise has been since 1993, a rate of rise greater than during any century in the past 2,800 years. Some countries are already seeing land underwater.

By midcentury, it's likely that the Arctic will lose all sea ice in late summer, and that could lead to more permafrost thaw, according to the report. As the permafrost thaws, more carbon dioxide and methane would be released, amplifying human-induced warming, "possibly significantly."

What can be done

The report was created to inform policy-makers and makes no specific recommendations on how to remedy the problem. However, it suggests that if the United States immediately reduced its fossil fuel use and greenhouse gas emissions, it could save thousands of lives and generate billions of dollars in benefits for the country.

The Defense Department is trying to understand what risk climate change poses to security. But the [Trump administration](#) has signaled that the country will pull out of international initiatives like the Paris climate accord, aimed at lowering global temperatures, claiming that these treaties have been unfair for the US economy.

A report from the [UN in October](#) urged all governments to take "rapid, far-reaching and unprecedented changes in all aspects of society" to avoid disaster from climate change. That report predicted that the Earth will reach the crucial threshold of 1.5 degrees Celsius (2.7 degrees Fahrenheit) above pre-industrial levels by as early as 2030. It also suggested the world faces a risk of extreme drought, wildfires, floods and food shortages for hundreds of millions of people.

Time for action

Reactions to the new report have been strong across the scientific community.

"If we're going to run this country like a business, it's time to address climate as the threat multiplier we know it is before more lives are lost," said Robert Bullard, [an environmental scientist](#) at Texas Southern University.

"In Houston, communities of color have endured back to back major weather events without the acknowledgment from Washington that climate change is the cause. We've known for years that it's true and it's important to our organizing and our local policy efforts that information like this is not only considered, but believed and acted upon."

Scientists who have been raising the alarm about the negative consequences of climate change for years welcomed the findings.

"The findings in the Trump administration's NCA report show how the health and daily lives of Americans are becoming more and more interrupted because of climate change," said [Beverly Wright](#), founding director of the Deep South Center for Environmental Justice and a professor at Dillard University. "We challenge the administration to finally begin using this information to rebuild and strengthen the communities in the direct path of the atrocities wrought by the fossil fuel industry and decades of poor policies that have neglected our concerns. The science is undeniable, let's fix it."

CNN's Brandon Miller, Gregory Wallace, Kevin Flower and Rene Marsh contributed to this report.

Climate change: Report warns of growing impact on US life

2 hours ago

[Climate change: How 1.5C could change the world](#)

Unchecked climate change will cost the US hundreds of billions of dollars and damage human health and quality of life, a US government report warns. "Future risks from climate change depend... on decisions made today," the 4th National Climate Assessment says. The report says **climate change is "presenting growing challenges** to human health and safety, quality of life, and the rate of economic growth". The warning is at odds with the Trump administration's fossil fuels agenda.

Sounding an alarm

By James Cook, Los Angeles correspondent, BBC News

During a blast of icy weather in Washington this week, **Donald Trump tweeted, "whatever happened to global warming?"**

Now, without mentioning the president, his own scientists have answered their boss's question in comprehensive detail.

Global warming is here in the United States, they say - now. It is already deadly serious and without urgent, dramatic change, it will be catastrophic.



The report warns that the frequency of wildfires could increase if climate change is unchecked

This report is striking for two reasons. First, it is not abstract. It gives many specific examples - overwhelmed dams in South Carolina; failing crops in the parched Great Plains; a rise in insect-borne disease in Florida.

And, secondly, it majors on the economic impact, in effect challenging the White House's insistence on prioritising economic growth over environmental regulation.

With warnings about the effects on crumbling infrastructure, falling crop yields and decreasing labour productivity, the report sounds an alarm that climate change will soon cascade into every corner of American life.

The White House said the report - compiled with help from numerous US government agencies and departments - was inaccurate.

Spokeswoman Lindsay Walters said it was "largely based on the most extreme scenario, which contradicts long-established trends by assuming that... there would be limited technology and innovation, and a rapidly expanding population".

The world's leading scientists agree that climate change is human-induced and warn that natural fluctuations in temperature are being exacerbated by human activity.

What does the report say?

The US climate assessment outlines the prospective impacts of climate change across every sector of American society.

"With continued growth in emissions at historic rates, annual losses in some economic sectors are projected to reach hundreds of billions of dollars by the end of the century - more than the current gross domestic product (GDP) of many US states," the report says.

"Without substantial and sustained global mitigation and regional adaptation efforts, climate change is expected to cause growing losses to American infrastructure and property and impede the rate of economic growth over this century."

The report notes that the effects of climate change are already being felt in communities across the country, including more frequent and intense extreme weather and climate-related events.

But it says that projections of future catastrophe could change if society works to reduce greenhouse gas emissions and "to adapt to the changes that will occur".

What reaction has there been?

Environmental groups said the report underlined their demands for action.

Brenda Ekwurzel, director of climate science at the Union of Concerned Scientists and one of the report's authors, said the report made it clear that climate change was not "some problem in the distant future".

"It's happening right now in every part of the country," she said.



This bar in San Francisco had a climate change message during a summit in the city in September

That view was echoed by Abigail Dillen, president of environmental group Earthjustice.

"While President Trump continues to ignore the threat of climate change, his own administration is sounding the alarm," she said.

What does President Trump say about climate change?

In October, **President Trump accused climate change scientists of having a "political agenda"**, telling Fox News he was unconvinced that humans were responsible for the earth's rising temperatures.

After taking office he announced the US would withdraw from the Paris climate change agreement, which commits another 187 other countries to keeping rising global temperatures "well below" 2C above pre-industrial levels.

At the time, Mr Trump said he wanted to negotiate a new "fair" deal that would not disadvantage US businesses and workers.

During his election campaign in 2016 Mr Trump said climate change was "a hoax". However he has since rowed back on that statement saying in a recent interview: "I don't think it's a hoax, I think there's probably a difference."

How great is the climate threat?

A report released in October by the Intergovernmental Panel on Climate Change (IPCC) - the leading international body evaluating climate change - said it could only be stopped if the world made major, and costly, changes.

That means reducing global emissions of CO2 by 45% from 2010 levels by 2030, and reducing coal use to almost zero and using up to seven million sq km (2.7 million square miles) for land energy crops.

If the world fails to act, the researchers warned, there would be some significant and dangerous changes to our world, including rising sea levels, significant impacts on ocean temperatures and acidity, and the ability to grow crops such as rice, maize and wheat.

U.S. Climate Report Warns of Damaged Environment and Shrinking Economy



Fighting the Camp Fire this month in Magalia, Calif.

Credit

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Justin Sullivan/Getty Images

By Coral Davenport and Kendra Pierre-Louis

Nov. 23, 2018

WASHINGTON — A major scientific report issued by 13 federal agencies on Friday presents the starkest warnings to date of the consequences of climate change for the United States, predicting that if significant steps are not taken to rein in global warming, the damage will knock as much as 10 percent off the size of the American economy by century's end.

The report, which was mandated by Congress and made public by the White House, is notable not only for the precision of its calculations and bluntness of its conclusions, but also because its findings are directly at odds with President Trump's [agenda of environmental deregulation](#), which he asserts will spur economic growth.

Mr. Trump has taken aggressive steps to allow more planet-warming pollution from [vehicle tailpipes](#) and [power plant smokestacks](#), and has [vowed to pull the United States out of the Paris Agreement](#), under which nearly every country in the world pledged to cut carbon emissions. Just this week, he mocked the science of climate change [because of a cold snap](#) in the Northeast, [tweeting](#), "Whatever happened to Global Warming?"

But in direct language, [the 1,656-page assessment](#) lays out the devastating effects of a changing climate on the economy, health and environment, including [record wildfires in California](#), crop failures in the Midwest and crumbling infrastructure in the South. Going forward, American exports and supply chains could be disrupted, agricultural yields could fall to 1980s levels by midcentury and fire season could spread to the Southeast, the report finds.

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“There is a bizarre contrast between this report, which is being released by this administration, and this administration’s own policies,” said Philip B. Duffy, president of the Woods Hole Research Center.

All told, the report says, climate change could slash up to a tenth of gross domestic product by 2100, more than double the losses of the Great Recession a decade ago.

Scientists who worked on the report said it did not appear that administration officials had tried to alter or suppress its findings. However, several noted that the timing of its release, at 2 p.m. the day after Thanksgiving, appeared designed to minimize its public impact.

Still, the report could become a powerful legal tool for opponents of Mr. Trump’s efforts to dismantle climate change policy, experts said.

“This report will weaken the Trump administration’s legal case for undoing climate change regulations, and it strengthens the hands of those who go to court to fight them,” said Michael Oppenheimer, a professor of geosciences and international affairs at Princeton.

The report is the second volume of the National Climate Assessment, which the federal government is required by law to produce every four years. The first volume [was issued by the White House last year](#).

The [previous report, issued in May 2014](#), concluded with nearly as much scientific certainty, but not as much precision on the economic costs, that the tangible impacts of climate change had already started to cause damage across the country. It cited increasing water scarcity in dry regions, torrential downpours in wet regions and more severe heat waves and wildfires.

The results of the 2014 report helped inform the Obama administration as it wrote a set of landmark climate change regulations. The following year, the E.P.A. finalized President Barack Obama’s signature climate change policy, known as the Clean Power Plan, which aimed to slash planet-warming emissions from coal-fired power plants. At the end of the 2015, Mr. Obama played a lead role in brokering the Paris Agreement.

But in 2016, Republicans in general and Mr. Trump in particular campaigned against those regulations. In rallies before cheering coal miners, Mr. Trump vowed to end what he called Mr. Obama’s “war on coal” and to withdraw from the Paris deal. Since winning the election, his administration has move decisively to roll back environmental regulations.

What on Earth Is Going On?



An oil refinery in Port Arthur, Tex. President Trump has pushed to roll back regulations on carbon emissions.

Credit

Brandon Thibodeaux for The New York Times

The report puts the most precise price tags to date on the cost to the United States economy of projected climate impacts: \$141 billion from heat-related deaths, \$118 billion from sea level rise and \$32 billion from infrastructure damage by the end of the century, among others.

The findings come a month after the Intergovernmental Panel on Climate Change, a group of scientists convened by the United Nations, [issued its most alarming and specific report](#) to date about the severe economic and humanitarian crises expected to hit the world by 2040.

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But the new report also emphasizes that the outcomes depend on how swiftly and decisively the United States and other countries take action to mitigate global warming. The authors put forth three main solutions: putting a price on greenhouse gas emissions, which usually means imposing taxes or fees on companies that release carbon dioxide into the atmosphere; establishing government regulations on how much greenhouse pollution can be emitted; and spending public money on clean-energy research.

A White House statement said the report, which was started under the Obama administration, was “largely based on the most extreme scenario” of global warming and that the next assessment would provide an opportunity for greater balance.

The report covers every region of the United States and asserts that recent climate-related events are signs of things to come. No area of the country will be untouched, from the Southwest, where droughts will curb hydropower and tax already limited water supplies, to Alaska, where the loss of sea ice will cause coastal flooding and erosion and force communities to relocate, to Puerto Rico and the Virgin Islands, where saltwater will taint drinking water.

More people will die as heat waves become more common, the scientists say, and a hotter climate will also lead to more outbreaks of disease.

Two areas of impact particularly stand out: trade and agriculture.

Trade disruptions

Mr. Trump has put trade issues at the center of his economic agenda, placing new tariffs on imports and renegotiating trade deals such as the North American Free Trade Agreement. But climate change is likely to be a disruptive force in trade and manufacturing, the report says.

Extreme weather events driven by global warming are “virtually certain to increasingly affect U.S. trade and economy, including import and export prices and businesses with overseas operations and supply chains,” the report concludes.

Such disasters will temporarily shutter factories both in the United States and abroad, causing price spikes for products from apples to automotive parts, the scientists predicted. So much of the supply chain for American companies is overseas that almost no industry will be immune from the effects of climate change at home or abroad, the report says.

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It cites as an example the extreme flooding in Thailand in 2011. Western Digital, an American company that produces 60 percent of its hard drives there, sustained \$199 million in losses and halved its hard drive shipments in the last quarter of 2011. The shortages temporarily doubled hard drive prices, affecting other American companies like Apple, HP and Dell.



Workers cleaned up after floodwaters receded from a Western Digital factory in Thailand.

Credit

Rungroj Yongrit/European Pressphoto Agency

American companies should expect many more such disruptions, the report says.

“Climate change is another risk to the strength of the U.S. trade position, and the U.S. ability to export,” said Diana Liverman, a University of Arizona professor and co-author of the report. “It can affect U.S. products, and as it drives poverty abroad we can lose consumer markets.”

Agricultural risks

The nation’s farm belt is likely to be among the hardest-hit regions, and farmers in particular will see their bottom lines threatened.

“Rising temperatures, extreme heat, drought, wildfire on rangelands and heavy downpours are expected to increasingly disrupt agricultural productivity in the U.S.,” the report says. “Expect increases in challenges to livestock health, declines in crop yields and quality

and changes in extreme events in the United States and abroad.”

By 2050, the scientists forecast, changes in rainfall and hotter temperatures will reduce the agricultural productivity of the Midwest to levels last seen in the 1980s.

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The risks, the report noted, depend on the ability of producers to adapt to changes.

During the 2012 Midwestern drought, farmers who incorporated conservation practices fared better, said Robert Bonnie, a Rubenstein Fellow at Duke University who worked in the Agriculture Department during the Obama administration. But federal programs designed to help farmers cope with climate change have stalled because the farm bill, the primary legislation for agricultural subsidies, expired this fall.



Flooding in 2011 forced the Fort Calhoun nuclear power station near Omaha to shut down for years.

Credit

Nati Harnik/Associated Press

The report says the Midwest, as well as the Northeast, will also experience more flooding when it rains, like the 2011 Missouri River flood that inundated a nuclear power plant near Omaha, forcing it to shut down for years.

Other parts of the country, including much of the Southwest, will endure worsening droughts, further taxing limited groundwater supplies. Those droughts can lead to fires, a phenomenon that played out this fall in California as the most destructive wildfire in state history killed dozens of people.

The report predicts that frequent wildfires, long a plague of the Western United States, will also become more common in other regions, including the Southeast. The 2016 Great Smoky Mountains wildfires, which killed 14 people and burned more than 17,000 acres in Tennessee, may have been just the beginning. But unlike in the West, “in the Southeast, they have no experience with an annual dangerous fire season, or at least very little,” said Andrew Light, a co-author of the report and a senior fellow at the World Resources Institute.

Climate change is taking the United States into uncharted territory, the report concludes. “The assumption that current and future climate conditions will resemble the recent past is no longer valid,” it says.

There is always some uncertainty in climate projections, but scientists’ estimates about the effects of global warming to date have largely been borne out. The variable going forward, the report says, is the amount of carbon emissions humans produce.

By **STEVE FRANK** CBS NEWS November 23, 2018, 2:28 PM

New government report reveals staggering economic and health toll of climate change

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NEW YORK -- Earth's climate is now changing faster than at any point in the history of modern civilization, primarily as a result of human activities, according to a long-awaited report released Friday by the federal government. The [National Climate Assessment](#) warns that extreme weather and climate-related events in the U.S. are worsening, and it reveals the economic and health toll of [climate change](#).

The report, which is mandated by law, "concludes that the evidence of human-caused climate change is overwhelming and continues to strengthen, that the impacts of climate change are intensifying across the country, and that climate-related threats to Americans' physical, social, and economic well-being are rising."

"We are seeing the things we said would be happening, happen now in real life," said report co-author Katharine Hayhoe of Texas Tech University. "As a climate scientist it is almost surreal."

The report's authors, who represent more than a dozen federal agencies, detail expected economic impact.

"The continued warming that is projected to occur without substantial and sustained reductions in global greenhouse gas emissions is expected to cause substantial net damage to the U.S. economy throughout this century, especially in the absence of increased adaptation efforts," the report says.

Climate change is expected to hurt the American economy by causing more damage to natural resources and infrastructure, including access to roads, the viability of bridges and the safety of pipelines.

The federal report says the last few years have smashed records for damaging weather in the U.S., costing nearly \$400 billion since 2015.

"The biggest concern regarding climate change is less the change itself, and more the pace of change," said Jeff Berardelli, a CBS News climate and weather contributor. "This is going to cause massive disruptions around the world and threaten national security with mass displacement of climate refugees. In many cases it will exacerbate existing inequality."

When it comes to health, the report says increasing water and air temperatures and more intense extreme events are expected to heighten exposure "to waterborne and foodborne diseases, affecting food and water safety."

Climate change is also projected to increase the frequency and severity of allergic illnesses, including asthma and hay fever. And it will alter the geographic range and distribution of disease-carrying insects and pests, exposing more people to ticks that carry Lyme disease and mosquitoes that transmit viruses such as Zika, West Nile, and dengue, with "varying impacts" across regions.

In a [statement released](#) Friday, former Vice President Al Gore criticized the timing of the report's release.

"Unbelievably deadly and tragic wildfires rage in the west, hurricanes batter our coasts — and the Trump administration chooses the Friday after Thanksgiving to try and bury this critical U.S. assessment of the climate crisis," he said. "The President may try to hide the truth, but his own scientists and experts have made it as stark and clear as possible."

Climate report warns of grim economic consequences, worsening weather disasters in US

By [Adam Shaw](#) | Fox News

Federal climate change report warns of economic impacts

The fourth National Climate Assessment says that climate change is poised to reduce the U.S. economy by as much as 10 percent over the next 80 years, and warns that the changing climate will produce more extreme weather events, including wildfires and flash flooding.

The White House on Friday released a federal report that found that the impacts of climate change are being felt across the country, and “extreme weather and climate-related events” are going to worsen in the years to come -- with a significant impact on the economy.

The National Climate Assessment finds that extreme weather disasters “have already become more frequent, intense, widespread or of long duration and have cost the the U.S. nearly \$400 billion since 2015.”

The report is mandated every four years and is based on previous research. Its aim is to detail how climate change is affecting the U.S. and how it is impacting the economy. It is written by outside scientists and officials from 13 federal agencies.

“Without more significant global greenhouse gas mitigation and regional adaptation efforts, climate change is expected to cause substantial losses to infrastructure and property and impede the rate of economic growth over this century,” the report says, arguing that sectors that require national resources and favorable climates -- such as agriculture, tourism and fishing, are particularly vulnerable.

The report also finds that the U.S. will be 3-12 degrees hotter by the end of the century, depending on how much greenhouse gas is released into the atmosphere. It also says that more than 90 percent of current warming is caused by humans.

It is unclear how the report will be greeted by the Trump administration, and particularly the White House. President Trump has been vocal in his skepticism about man-made climate change and the effects it is allegedly having both on temperatures and extreme weather events. He also pulled the U.S. out of the Paris climate accord.

Trump seemed to take a knock at those calling for action over climate change this week, when he noted that a cold blast was set to hit the U.S.

“Whatever happened to Global Warming?” he asked.



Donald J. Trump



@realDonaldTrump

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The report was initially set to be released in December. The White House's decision to instead release the report on Black Friday was likely to lead to accusations that the administration was attempting to dump the report on a day many Americans were not engaged in the news cycle.

Study co-author Andrew Light, an international policy expert at the World Resources Institute, told The Associated Press that the release "is a transparent attempt by the Trump administration to bury this report and continue the campaign of not only denying but suppressing the best of climate science."

However, David Reidmiller, the director of the assessment, said the timing was in order to have the report come out ahead of U.N. climate talks, which begin in Poland on December 2, [according to Axios](#).



The report comes just as California has been tackling devastating wildfires that have killed at least 84 people. President Trump has said that better forest management could have helped limit the blaze.

This week [Interior Secretary Ryan Zinke](#) [blamed](#) "radical environmentalists" for making the fires worse, saying that a complicating matter was "lawsuit after lawsuit by, yes, the radical environmental groups that would rather burn down the entire forest than cut a single tree or thin the forest."

But the report issued Friday said that "warmer and drier conditions have contributed to an increase in large forest fires in the western United States and interior Alaska."

Fox News' Paulina Dedaj and The Associated Press contributed to this report.

From the report

Earth's climate is now changing faster than at any point in the history of modern civilization, primarily as a result of human activities. Global **climate change** has already resulted in a wide range of impacts across every region of the country and many sectors of the economy that are expected to grow in the coming decades.

The Fourth National Climate Assessment (NCA4), developed by the U.S. **Global Change** Research Program (USGCRP), is a state-of-the-science synthesis of climate knowledge, impacts, and trends across U.S. regions and sectors to inform decision making and **resilience**-building activities across the country. It is the most comprehensive and authoritative assessment to date on the state of knowledge of current and future impacts of climate change on society in the United States.