

# Climate change being felt across the United States, new report says

**Seth Borenstein, Associated Press, 5-6-14**

Climate change is rapidly turning America the beautiful into America the stormy, sneezy, costly and dangerous, according to a comprehensive federal scientific report released Tuesday.

Climate change's assorted harms "are expected to become increasingly disruptive across the nation throughout this century and beyond," the National Climate Assessment concluded Tuesday. The report emphasizes that warming and all-too-wild weather are changing daily lives, using the phrase "climate disruption" as another way of saying global warming.

In California, the effects of climate change are already being felt through the ongoing drought and more severe wildfires. State officials have noted that the state is experiencing more rain than snow, and earlier snow melts are putting increased pressure on the state's critical levee system. There are a higher number of extreme heat days, while cold extremes have become more rare. The excessive heat reduces air quality and aggravates health conditions for the state's most vulnerable residents, including those who suffer from asthma or heart disease.

California's 1,100-mile long coastline is also at risk.

"In California, an estimated 260,000 people are currently exposed to a 100-year flood; this number could increase to 480,000 by 2100 as a result of a 4.6 foot sea level rise alone," said the 840-page report.

"Approximately 18 percent of those exposed to high flood risk by the end of this century also are those who currently fall into the "high social vulnerability" category. This means that while many coastal property owners at the storefront tend to be less socially vulnerable, adjacent populations just inland are often highly vulnerable."

A region-specific memo distributed by the White House Tuesday pointed to the toll climate change is taking on agriculture.

"California produces about 95 percent of U.S. apricots, almonds, artichokes, figs, kiwis, raisins, olives, cling peaches, dried plums, persimmons, pistachios, olives, and walnuts, in addition to other high-value crops," said the memo. "Drought and extreme weather affect the market value of fruits and vegetables more than other crops because they have high water content and because sales depend on good visual appearance. The combination of a longer frost-free season, less frequent cold air outbreaks, and more frequent heat waves accelerates crop ripening and maturity, reduces yields of corn, tree fruit, and wine grapes, stresses livestock, and increases agricultural water consumption. This combination of climate changes is projected to continue and intensify, possibly requiring a northward shift in crop production, displacing existing growers and affecting farming communities."

The White House is highlighting the report as it tries to jump-start often-stalled efforts to curb heat-trapping gases. President Obama will meet with popular weather forecasters in an effort to highlight the report's significance.

White House science adviser John Holdren called the report, the third edition of a congressionally mandated study, "the loudest and clearest alarm bell to date signaling the need to take urgent action." Later this summer, the Obama administration plans to propose new and controversial regulations restricting gases that come from existing coal-fired power plants.

California activists seized on the report as a wake-up call for Gov. Jerry Brown, who has come under fire from environmentalists for his support of hydraulic fracturing, the controversial drilling technique that is used by both the oil and natural gas industry.

"Fracking for oil in California's Monterey Shale formation would significantly increase greenhouse gas emissions by dumping more carbon dioxide and methane into our atmosphere, making climate change worse," said Adam Scow of Californians Against Fracking. "Governor Brown should pay attention to this report and stop fracking in California and accelerate our transition to renewable energy now."

Some fossil fuel energy groups, conservative think tanks and Republican senators immediately assailed the report as "alarmist." Senate Republican leader Mitch McConnell of Kentucky said President Barack Obama was likely to "use the platform to renew his call for a national energy tax. And I'm sure he'll get loud cheers from liberal elites -- from the kind of people who leave a giant carbon footprint and then lecture everybody else about low-flow toilets."

The report -- which is full of figures, charts and other research-generated graphics -- includes 3,096 footnotes to other mostly peer-reviewed research. It was written by more than 250 scientists and government officials, starting in 2012. A draft was released in January 2013, but this version has been reviewed by more scientists, including twice by the National Academy of Science which called it "reasonable," and has had public comment. It is written in a bit more simple language so people can realize "that there's a new source of risk in their lives," said lead author Gary Yohe of Wesleyan University in Connecticut.

Environmental groups praised the report. "If we don't slam the brakes on the carbon pollution driving climate change, we're dooming ourselves and our children to more intense heat waves, destructive floods and storms and surging sea levels," said Frances Beinecke, president of the Natural Resources Defense Council.

Scientists and the White House called it the most detailed and U.S.-focused scientific report on global warming.

"Climate change, once considered an issue for a distant future, has moved firmly into the present," the report says. "Corn producers in Iowa, oyster growers in Washington state and maple syrup producers in Vermont are all observing climate-related changes that are outside of recent experience."

The report looks at regional and state-level effects of global warming, compared with recent reports from the United Nations that lumped all of North America together.

"All Americans will find things that matter to them in this report," said scientist Jerry Melillo of the Marine Biological Laboratory, who chaired the science committee that wrote the report. "For decades we've been collecting the dots about climate change, now we're connecting those dots."

In a White House conference call with reporters, National Climatic Data Center Director Tom Karl said his two biggest concerns were flooding from sea level rise on the U.S. coastlines -- especially for the low-lying cities of Miami, Norfolk, Virginia, and Portsmouth, New Hampshire -- and drought, heat waves and prolonged fire seasons in the Southwest.

Even though the nation's average temperature has risen by as much as 1.9 degrees since record keeping began in 1895, it's in the big, wild weather where the average person feels climate change the most, said co-author Katharine Hayhoe, a Texas Tech University climate scientist. Extreme weather like droughts, storms and heat waves hit us in the pocketbooks and can be seen by our own eyes, she said.

The report says the intensity, frequency and duration of the strongest Atlantic hurricanes have increased since the early 1980s, but it is still uncertain how much of that is from man-made warming. Winter storms have increased in frequency and intensity and have shifted northward since the 1950s, it says. Also, heavy downpours are increasing -- by 71 percent in the Northeast. Heat waves, such as those in Texas in 2011 and the Midwest in 2012, are projected to intensify nationwide. Droughts in the Southwest are expected to get stronger. Sea level has risen 8 inches since 1880 and is projected to rise between 1 foot and 4 feet by 2100.

Climate data center chief Karl highlighted the increase in downpours, which are jumping by 30 percent to 60 percent elsewhere in the country besides the Northeast. He said last week's drenching, when Pensacola, Florida, got up to two feet of rain in one storm and parts of the East had three inches in one day, is what he's talking about.

"The projections for these kinds of changes are to continue as the globe continues to warm and the atmosphere is able to hold more water vapor," Karl said.

Since January 2010, 43 of the lower forty-eight states have set at least one monthly record for heat, such as California having its warmest January on record this year. In the past 51 months, states have set 80 monthly records for heat, 33 records for being too wet, 12 for lack of rain and just three for cold, according to an Associated Press analysis of federal weather records.

The report also says "climate change threatens human health and well-being in many ways." Those include smoke-filled air from wildfires, smoggy air from pollution, and more diseases from tainted food, water, mosquitoes and ticks. And ragweed pollen season has lengthened.

Flooding alone may cost \$325 billion by the year 2100 in one of the worst-case scenarios, with \$130 billion of that in Florida, the report says. Already the droughts and heat waves of 2011 and 2012 added about \$10 billion to farm costs, the report says.