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**Federal Forecast for Climate Change: It’s Getting Hot in Here**

By [Bryan Walsh](http://science.time.com/author/bryanrwalsh/)Jan. 15, 2013

Despite the warm weather and a lack of snow, skiers and snowboarders were making their way down the slopes at Blue Hill Ski Area in Canton, Mass., on Jan. 2, 2012.

Spring came early to Walden Pond in 2012. Scientists — both amateur and professional — have kept records of flowering times for plants in Walden Pond, near the Massachusetts town of Concord, since Henry David Thoreau began doing it in 1852. The result is one of the best continuous datasets of nature in the U.S, which has made Thoreau’s retreat an excellent lab for testing the effects of manmade [climate change](http://topics.time.com/climate-change/) on the environment. In a new paper published in the *Proceedings of the National Academy of Sciences* on Jan. 14, researchers reported that the unusually warm winter and spring of 2012 and 2010 resulted in the earliest known flowering times for dozens of species of plants around Walden Pond, sometimes nearly a month earlier than they had back in Thoreau’s cooler times.

Of course, you don’t need to pore through the records at Walden Pond to know that the climate is changing. Last week the National Oceanic and Atmospheric Administration (NOAA) announced that average annual temperatures for the continental U.S. were hotter in 2012 than in any year in U.S. recorded history. Extreme weather was the second-worst on record, with severe wildfires, major storms and a crippling [drought](http://topics.time.com/drought/) causing billions of dollars in damage to the American economy. Really, all you need to do to notice climate change is to walk outside. Yesterday in [New York](http://topics.time.com/new-york/) City the high temperature was a misty 57° F (14° C) — yet another unseasonably warm January day when the temperature has barely dipped below freezing. Nor is it just the U.S.: a new study published in *Climatic Change* has found that global warming has increased monthly heat records by a [factor of five](http://www.pik-potsdam.de/news/press-releases/monatliche-hitzerekorde-haben-sich-durch-die-erderwaermung-verfuenffacht). And while a burst of cold air has led to sub-freezing temperatures throughout much of the West over the past few days, I’m willing to bet my salary that average temperatures for the country this month will be higher than the 20th century mean for January. Why? One reason is that the last time the U.S. had a colder than average month was all the way back in December — of 1983.

But the warming and weather disruption we’ve seen so far will just be the beginning. Late last week a team of more than 300 federal scientists released a draft of the National Climate Assessment, which gathers the latest research on how climate change is likely to affect the U.S. The semi-regular report — the third such published — is a product of the Global Change Research Act of 1990, which required a national climate assessment to be conducted every four years.

This is the point at which you’re probably wondering why, if a 1990 law mandated that a national climate assessment be produced every four years, we’re only getting around to releasing the third one in 2013, or 23 years after the original legislation was passed. That’s in part because of the usual slow workings of the federal bureaucracy — complicated by the fact that the report is complied by an inter-governmental body involving 13 separate federal agencies and departments — but also because conservatives have repeatedly attacked the assessment for supposedly exaggerating the effects of climate change. No climate assessment was published during former President George W. Bush’s administration, and though the schedule is back in order under President Obama, the difficult history of the U.S. Global Change Research Program is another reminder of just how politicized this subject has become.

But while some politicians might prefer to simply stop studying climate change in hopes that it would go away, the results in the draft report show us that things are will only get worse. The findings include some sobering numbers:

* U.S. average temperature has increased by about 1.5° F (0.8°C) since 1895—and notably, more than 80% of this increase has occurred since 1980. The most recent decade was the nation’s hottest on record, and the warming will continue—the report estimates that U.S. temperatures will rise by 2° to 4° F (1.1°C to 2.2° C) over the next few decades.
* Of course, the amount of warming will depend on the sensitivity of the climate system — something that remains up for debate — and the rise or fall in carbon emissions we’ll see in the future. Under a high emissions scenario — if the world isn’t able to curb the use of fossil fuels — we could see warming as high as 10° F (5.5° C) by the end of the century.
* Climate change will increase the likelihood of water shortages and competition for water, especially in arid but growing areas like the U.S. Southwest. Spring snowpack is on the decline in the mountain West, and we’ll see more seasonal water shortages throughout the country — even in areas where total rainfall will increase.
* Some good news: over the next 25 years, the agricultural sector is predicted to be relatively resilient to changes in the climate, including rising temperatures and more sporadic rainfall. That’s important to remember. U.S. farmers have always been the best in the world at getting the most out of their land, but it’s also true that there’s a ceiling to adaptation, and by mid-century, yields of major U.S. crops are expected to decline — seriously bad new for the U.S. and those who depend on American farmers.

There’s more where that came from. This is a 1,000-plus page report, and what was released last week was only a draft put out for public comment. The final version will be released later this spring. Will one more report make a difference? I’m doubtful, though more-precise climate projections for regions or even cities will be invaluable for adaptation. (Of course, mayors and governors will actually have to *read* those reports — a New York climate panel’s prediction that a major storm and sea level rise could swamp parts of the city wasn’t enough to prepare the Big Apple for Sandy.) At best, these reports might offer a roadmap that shows how best to survive in a hot and crowded age.

When President Barack Obama and a Democratic Congress couldn’t push through cap and trade legislation in 2010 — see Harvard’s Theda Skocpol [on the green movement’s political failures](http://www.scholarsstrategynetwork.org/node/2612) — we may have squandered the best chance in a decade to take comprehensive action against climate change. Now we can’t even agree to pay the country’s bills. It’d be nice to feel some optimism, but that’s vanishing faster than the remains of an increasingly rare snowfall in New York. Still,  I suppose there’s a silver lining. Spring is just around the corner — and it’s getting closer every year.