

Already feeling the heat

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U.S. report acknowledges widespread climate effects

***FAST BUT FRAGILE** Grain crops will likely grow through their life cycles faster, but higher temperatures will raise the chances of crop failures. USDA*

The United States is already feeling the effects of climate change that's mostly caused by humans, says a long-awaited U.S. summary of climate science released May 29.

The report is "a one-stop-shop" for what's known about causes and effects of climate change in the United States, said Sharon Hays of the White House Office of Science and Technology Policy as she introduced the document at a press conference the morning of May 29. Issued by the National Science and Technology Council and the U.S. Climate Change Science Program, the report draws on scientific papers from researchers around the globe.

The previous science assessment, required by the Global Change Research Act, came out in 2000. The required follow-up assessment has lagged, though. Today's assessment is two days ahead of a May 31 deadline set by a federal court after environmental groups sued to demand its release.

The new report is "a wonderful example of what happens when federal scientists are given the freedom to actually do their jobs," says Kassie Siegel of the Center for Biological Diversity. The Center joined two other groups in the suit that prompted the deadline from the U.S. District Court of the Northern District California Oakland Division in August, 2007.

"I think it's quite a thorough and comprehensive summary of the science that's out there," says Mike Brklacich of Carleton University in Canada after a quick look at the report. "I didn't read it and say 'Oh my God, thousands of voices have been suppressed again in the science community.'"

***WILDER FIRES** As temperatures warm, wildfires will very likely intensify. Already recent years have brought increases in both their extent and severity. Courtesy of National Park Service*

Brklacich does say he'd like to see more consideration of the interconnected effects of climate issues, but says that report's approach is common in the field.

The assessment starts with the question of cause: "Studies that rigorously quantify the effect of different external influences on observed changes (attribution studies) conclude that most of the recent global warming is very likely due to human-generated increases in greenhouse gas concentrations," stated the report.

Hays jousted a bit with reporters during the press conference over whether the report signals a change of heart in the administration. "It's simply not correct to say that this is the first time we've recognized the link between greenhouse gases and climate change," she said. She cited a speech in 2002 in which President Bush referred to a National Academy of Sciences report making the link. Asked about later statements that there's debate over the cause, she said, "There has been a debate."

The report, after dealing with the cause, lists changes already observed within the United States. Average temperatures have risen in both this and the last century. Increasingly more of the annual precipitation fell as rain rather than snow during the past five decades. Several droughts

have been severe but the last 50 years overall saw a tendency toward decreasing severity and duration of droughts. Sea level has been rising 0.08 to 0.12 inches per year along most of the U.S Atlantic and Gulf coasts.

For the future, the report notes that most of the models used in the Intergovernmental Panel on Climate Change reports predict average warming in the United States this century topping 3.6 degrees Fahrenheit. Changes in five out of the 21 models used in the IPCC report shot above 7.2 degrees Fahrenheit. The report also draws on IPCC projections of global sea level rise between 7 and 23 inches this century.

In determining what all this means to Americans, the assessment pulls work from topical reports called SAPs, some of which are still to be published. Most discussion of energy to date has focused on how to reduce emissions, the report says, but climate changes will affect these industries. In places, hydropower or nuclear plants will have less water.

Transportation will feel the difference too. Railroad tracks may buckle and highways more easily soften into ruts with hotter, more frequent and longer lasting heat spells. Coastal flooding and landslides will slam roads and rails as well as ports.

For farmers and resource managers, the new report also draws a SAP summary about agriculture released earlier in the week by the Climate Change Science Program. “We’re seeing effects happening rapidly, more rapidly than some of us expected,” says Anthony Janetos, one of the lead authors and director of the Joint Global Change Research Institute in College Park, Md.

“An important feature of this report is that it dispels the commonly held notion that the United States and other wealthy nations will be spared the worst impacts of climate change,” says ecosystem biologist Jay Gulledge at the Pew Center on Global Climate Change in Arlington, Va. Having the wealth doesn’t mean having the will to deal the problems, he says. “The Congress and the White House have much work to do to prepare our country to deal successfully with climate change.”