

# Climate-change research dies on funding vine

*Federal agencies generate weather data, but little on how changes will affect us*

By **RANDOLPH E. SCHMID**

The Associated Press

WASHINGTON — The government's climate change research is threatened by spending cuts that will reduce scientists' observations from space and on the ground, a study says.

A major problem, the National Research Council said Thursday, is the program director's lack of authority to organize spending and research among the 13 different agencies that study the impacts of climate.

Nonetheless, the report said, the U.S. Climate Change Research Program has made good progress "in documenting the climate changes of the past few decades and in unraveling the (human) influences on the observed climate changes."

In contrast, the report said progress in combining research results and supporting decision-making and risk management "has been inadequate."

The climate research program is "an important initiative that has broadened our knowledge of climate change, needs to package more of that knowledge for policymakers from the national to local level, and place more emphasis on understanding how people will be affected by climate change and how they might react," said committee

chairman Veerabhadran Ramanathan, professor of atmospheric and climate sciences at the Scripps Institution of Oceanography, University of California, San Diego.

The world has moved into an era when climate change is accepted as real, he said, and it is accepted that human activities are the major drivers for many of these changes.

But progress has been inadequate in determining how climate change will affect people, Ramanathan said in a briefing Thursday.

In its report the research council, an arm of the National Academy of Sciences, did not make recommendations on how to improve the program. That is expected to be included in a follow-up report next year.

William J. Brennan, deputy assistant secretary of Commerce and director of the climate change program, welcomed the report as helpful.

"I don't take any issue with their recommendations," Brennan said.

The study expressed concern about delays, cutbacks and cancellations of programs that would maintain or add to climate change research.

"Knowledge of climate variability and change rests on consistent long-term observations that are broadly disseminated and archived for future generations of scientists," the report said.

However, it said, several planned satellite sensors critical to the long-term data gathering have been canceled or seriously delayed. It cited cancellation of the Hydros mission to answer questions about the water cycle.

The Global Precipitation Measurement mission has been delayed, the report added, and it is unclear whether foreign initiatives can fill in.

"A major potential red light is the decline in observing capability," Ramanathan said.

For example, he said, critical measuring instruments in space are expected to decline from more than 120 instruments last year to 80 by 2010.

In June, The Associated Press reported that the Bush administration was drastically scaling back efforts to measure global warming from space, even while the president was trying to convince the world the U.S. is ready to take the lead in reducing greenhouse gases.

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# GAO claims USFS, BLM fail to react to warming

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By **JULIET EILPERIN**

The Washington Post

WASHINGTON — The federal government needs to do a better job addressing how climate change is transforming the hundreds of millions of acres under its watch, according to a Government Accountability Office report to be released this week.

The 184-page report, which Sens. John F. Kerry, D-Mass., and John McCain, R-Ariz., requested in 2004, highlights the extent to which global warming is already affecting the nation's parks, forests, marine sanctuaries and monuments.

Looking at agencies ranging from the U.S. Forest Service to the National Oceanic and Atmospheric Administration, GAO officials gathered reports of dramatic changes across the nearly 30 percent of U.S. land that lies under federal control. Since 1850, the glaciers in Glacier National Park have declined from 150 to 26; climate-triggered coral bleaching in the Florida Keys National Marine Sanctuary is eroding the area's tourist appeal.

For the most part, the men and women overseeing these 600 million acres of land and 150,000 square miles of protected waters have little direction on how to respond to these shifts, according to the report. It states that these managers "have limited guidance about whether or how to address climate change and therefore, are uncertain about what action, if any, they should take. ... Without such guidance, their ability to address climate change and effectively manage resources is constrained."

In addition to NOAA and the Forest Service, the GAO examined the U.S. Fish and Wildlife Service, the Bureau of Land Management and the National Park Service.

Interior Department spokesman Chris Paolino said he could not comment on the GAO report because he had not read it, but he noted that Interior Secretary Dirk Kempthorne established "a department-wide task force" on climate change this spring and is awaiting a final report from the panel next month.

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# Scientists tie upsurge in forest fires to climate change

*From Siberia to Alaska, trees are in peril as temperatures warm*

By CHARLES J. HANLEY  
The Associated Press

Scientists worldwide are watching temperatures rise, the land turn dry and vast forests go up in flames.

In the Siberian taiga and Canadian Rockies, in southern California and Australia, researchers find growing evidence tying an upsurge in wildfires to climate change, an impact long predicted by global-warming forecasters.

A team at California's Scripps Institution, in a headline-making report this month, found that warmer temperatures, causing earlier snow runoff and consequently drier summers, were the key factor in an explosion of big wildfires in the U.S. West over three decades.

Researchers previously reached similar conclusions in Canada, where fire is destroying an average 6.4 million acres a year, compared with 2.5 million in the early 1970s. And an upcoming U.S.-Russian-Canadian scientific paper points to links between warming and wildfires in Siberia, where 2006 already qualifies as an extreme fire season, sixth in the past eight years. Far to the south in drought-stricken Australia, meanwhile, 2005 was the hottest year on record, and the dangerous bushfire season is growing longer.

"Temperature increases are intimately linked with increases in area burned in Canada, and I would expect the same worldwide," said

Mike Flannigan, a veteran Canadian Forest Service researcher.

Nadezda M. Tchebakova, a climatologist at Russia's Sukachev Institute of Forestry, said southern Siberia's average winter temperatures in the 1980-2000 period were 2 to 4 degrees Celsius (3.6 to 7.2 degrees Fahrenheit) warmer than the pre-1960 norm.

"Snowmelt starts much earlier in the spring," she said by telephone from the Siberian city of Krasnoyarsk. "Precipitation is decreasing. This combination of elevated temperatures and decreased precipitation should provide conditions for greater fire occurrence."

As she spoke, newly ignited blazes raced through the conifer forests of Evenkiya, a summer fishing and hunting region north of Krasnoyarsk.

The Sukachev institute's satellite data show that more than 29 million acres — an area the size of Pennsylvania — have been burned in Russia already this year. Orbiting cameras see a red-and-green checkerboard in Siberia, of "hotspots" among endless evergreens.

The Intergovernmental Panel on Climate Change, an authoritative U.N.-sponsored network of scientists, has long predicted that summer drying and droughts would worsen forest fires, which in many regions are primarily set by humans.

Global temperatures rose an average 1 degree Fahrenheit in the 20th century, and warming will continue as long as manmade "greenhouse gases," mostly carbon dioxide from fossil-fuel burning, accumulate in the atmosphere, the panel says.

"The change is much more rapid than initially forecast 10 or 15 years ago," Brian

Stocks, a retired Canadian Forest Service scientist, said of the fires. "It seems people are finally beginning to take a look at it."

The Scripps study, in the journal *Science*, was unique in collating detailed data from 34 years of U.S. western wildfires with temperature, snowmelt and streamflow records. Wildfire frequency varies widely from year to year, but the California researchers found a clear trend: The average number of large fires almost quadrupled between the first and second halves of that period.

They also looked at land-use changes and forest management practices, but concluded they were secondary factors in the upsurge of fires. There were "many more wildfires burning in hotter than in cooler years," they reported.

Such detailed data don't exist on a global scale. Doing a similar study in Russia would be difficult because Soviet-era records are unreliable. And specialists caution that wildfires remain complex phenomena. In many regions, slash-and-burn farmers, arsonists and others start most fires, and fire professionals say modifying human behavior is key.

But although humans are the prime cause, "coupled with climate change, things are becoming worse," said Johann Goldammer, director of the Global Fire Monitoring Center at Germany's Freiburg University.

A nonhuman cause, meanwhile, may be on the rise. Warming in high northern latitudes is expected to generate more lightning, igniting more forest fires, notes the report by NASA's Amber J. Soja, Tchebakova and other U.S., Russian and

Canadian scientists.

Their paper, upcoming in the U.S. journal *Global and Planetary Change*, looks at how current reality compares with still other effects of

climate change previously foreseen for northern, boreal regions — Siberia, Canada, Alaska.

"The forest in Siberia is shifting northward, and the forest-steppe (mixed forest and plain) is replacing it in the south," Tchebakova said. "Those were the predictions."

In Alaska, the international team found a decline in growth of white spruce trees and a spread of forest insect infestation — also both predicted in computerized climate-change scenarios.

Goldammer pointed out that boreal forests may be crucially linked to the fate of the global environment, since the forests and their peat soils hold about one-third of Earth's stored carbon.

Forest and peat fires release carbon dioxide into the atmosphere, adding to climate warming, which in turn will intensify forest fires, further worsening warming in a planetary feedback loop.

"This is a carbon bomb," Goldammer said of the northern forest. "It's sitting there waiting to be ignited, and there is already ignition going on."

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