

# Research ties winter burn bans to climate change

## *The fires of global warming*

**By Peter Jones**  
*Staff Writer*

When Arapahoe County Sheriff Grayson Robinson imposed an open-burning ban in January, no one could have been more surprised than Undersheriff Mark Campbell.

“Having one in the winter and having these types of conditions in the winter time is very unusual,” he said.

Campbell, a 24-year department veteran, cannot

remember the sheriff ever calling a fire ban that early. Even now, a ban would have been considered a stretch. Press releases about fireworks and cook-outs usually come closer to July 4 than New Year’s Eve.

Colorado’s fire season typically begins in the summer — as late as August, in fact — and has traditionally ended in November, at the latest. The county’s first ban of 2006 was lifted Feb. 16.

“Our big concern is, farmers have to burn their ditches in the spring so they can get

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PHOTO BY ANDY LYON. COURTESY OF SOUTH METRO FIRE RESCUE

**Climate experts say the wages of global warming will include twice as many forest fires in fire-prone states. In the summer of 2002, the Hayman fire, the largest in Colorado’s history, burned nearly 138,000 acres and cost more than \$39 million to extinguish.**

# CLIMATE: uneven distribution of precipitation creates fire danger

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water flow and drainage," Campbell said.

Rural residents are known to burn trash and use fire for land-clearing purposes. Bans also prohibit the prescribed burning of fence lines, campfires, wood-burning stove use, and fireworks.

"I think we wonder, just like everybody else, what the weather patterns are going to be," Campbell said. "We also look at what the long-term predictions are."

The forecast for 2075 calls for high temperatures, ultra-dry conditions and more frequent catastrophic forest fires, according to researchers at the Lawrence Berkeley National Laboratory in California. According to a study released two years ago, fire-prone states will need more than their local rescue districts to put out the blazes of global warming in the next half-century.

"In Colorado, the weather is predicted to get warmer. Snow melt would begin earlier and be faster, and that will ultimately lead to dryer conditions," predicted Margaret Torn, co-author of "The Impact of Climate Change on Wildfire Severity," published in the May 2004 issue of *Climatic Change*, a scientific journal.

"Climate change, also called global warming, is in large part attributable to human activity, a vast majority of researchers believe. In short, fossil fuel emissions and deforestation, coupled with growing populations and other factors, have fostered a "greenhouse effect," trapping heat in the Earth's atmos-

phere.

Researchers see winter fire bans as part of a growing — and disturbing environmental trend of recent years.

"One of the effects of climate change is we get unexpected, unseasonable events," study co-author Evan Mills said. "The tornadoes they just had in the heartland are consistent with what's expected under climate change. You have events that might be normal for July, but they're not normal for January. That's something we're seeing again and again, whether it's with wind or precipitation or hurricanes — we're having longer hurricane seasons."

Some have attributed the intensity of last year's hurricanes to warming temperatures in the ocean. According to the Berkeley study, it is not just coastal residents who should be concerned, though.

The research team, including a U.S. Forest Service investigator, looked at how global warming would eventually affect wildfire intensity and, in turn, firefighting efforts in Northern California.

The grim data suggest that the state's "runaway fires," those that ravage large areas after initial containment fails, will double in the next 70 years, in close proportion to the continued increase of carbon dioxide in the Earth's atmosphere, a figure that scientists expect to double by the time today's preschoolers are grandparents.

The study says more than 100 additional blazes each year in California's already fire-prone forests will cause more deaths, destroy wildlife habitat and property, harm air

and water quality, flood unstable hillsides and send firefighting and insurance costs into the ozone layer. Increased fires would also alter the state's ecosystems, as grasslands fill-in the barren forests.

The grasses would contribute to climate change in an ironic way, according to Mills. Increased annual precipitation is in the long-term forecast, but oddly enough, that is part of the bad news.

"One would think that's good for fires," he explained, "but the distribution through the year is not even. The summers tend to be dryer and the winters tend to be wetter. You have dryer conditions when the fires are burning and you have wetter conditions during the season the grasses and brush are growing."

In the vernacular of global warming, such grasses are known as "fuel." When burned, they pollute. All fires — forest, grass or otherwise — send carbon dioxide into the atmosphere, contributing to the "greenhouse effect" that causes climate change.

"Virtually all of the reasons that we expect to see more wildfire loss in California can apply to Colorado," Mills added.

As gloomy as the assessments are, the prognosis could be even worse. These predictions are conservative, Mills said, because the research did not consider such variables as lightning strikes, beetle infestations in trees, or even those fire-prone grasslands.

The changing climate's effects on wildlife are already being seen, according to Jane Bock, a retired biology professor and researcher at the

University of Colorado in Boulder.

"Some birds are going now to a higher elevation," she said. "Some grasshoppers are at higher places than they used to be. A lot of things are not very common anymore at the lower end."

The situation will get worse, Berkeley researchers maintain.

"The animals are retreating and the mountain butterflies are retreating and we're seeing bigger and bigger fires," Torn said.

Although the California study is sobering, its authors are cautiously optimistic that government, industry and consumers will soon take the steps necessary to forestall the slash-and-burn forecast.

"We have already committed ourselves to a low level of climate change," Torn conceded, "but if we have the political will to change, then we do have technological solutions. Pursuing them can also have a lot of benefits for the economy and public health, but we do have to act now. Every year, we invest more in the current energy system, and it makes it harder and more costly to change."

Mills stresses, too, that simply adjusting to a changing climate will not be possible, much less affordable.

"Even with the full deployment of existing fire-suppression infrastructure, if we want to keep the wildfire loss at current levels under climate change, we will have to spend a lot more money fortifying the infrastructure," he said. "And, in these days of stripped budgets, that's not a minor point."

He adds that even if the



PHOTO BY BRIAN SHAKLEY

**County burning bans have taken much of the fire out of summer cook-outs — and lately, even out of winter activities. Experts believe global warming is responsible for climate change.**

world were to cease production of all greenhouse gases next week, the sea level would continue to rise for a couple of centuries and some degree of increased wildfire danger in Colorado would be virtually inevitable.

As the world's global warming discussion ebbs and flows, the most difficult fires to extinguish may be more political than literal.

In 2001, President Bush

declined support for the United Nations' Kyoto Protocol on climate change — a significant decision, as the United States is the world's largest producer of greenhouse gases.

Such moves have been frustrating to environmental scientists.

"I don't believe we can adapt our way out of this," Mills said.