

**Nation must adapt to greater wildfire risk
from the November 01, 2007 edition -
<http://www.csmonitor.com/2007/1101/p13s02-usgn.html>**

Climate change means people must prepare for more fire danger, including – surprise – US East.

By Peter N. Spotts | Staff writer of The Christian Science Monitor

Droughts, floods, severe storms, and sea-level rise often get the lion's share of attention in the litany of projected effects from global warming.

But October's disastrous wildfires in California – part of one of the most intense fire seasons in the United States in nearly 50 years – are likely to raise the profile of such events, even if a firm link between the state's fires and climate change has yet to be made.

Planning for how to adapt to larger and more frequent wildfires is under way. It includes building homes with fire-resistant roofs and windows, and landscaping with fire-resistant plants. It also means planning new communities with streets wide enough to handle evacuation traffic even when the curbs are lined with fire trucks.

It also means changing the way people think about their homes and surrounding property. And it means maintaining homes and property over time: Adapting to new wildfire risks is not a one-time event, experts say.

People who live in flood plains or hurricane zones generally "understand the need to adapt and to build differently," says James Smalley, who heads the -wildfire-protection program at the National Fire Prevention Association in Quincy, Mass. "But people who live in natural settings don't quite get it yet – that you can adapt, that you can still have a natural, beautiful setting. You have to understand that fire is part of the natural landscape. So you have to adapt."

Global warming is expected to increase fire hazards in the western United States under a range of global-warming scenarios. But the greatest increase in risk, some researchers say, is likely to come in the East and Southeast. There, snowmelt and rainfall are unlikely to slake the increasing thirst of trees and shrubs as CO₂ spurs their growth during longer, warmer growing seasons. This could leave more of the eastern woodlands drier and more vulnerable to wildfires by summer's end. Meanwhile, some of the most dense mingling of homes and woods – what experts call the wildland-urban interface – can be found in the eastern US.

Money and manpower to deal with wildfires today is limited. That sometimes can mean firefighters must use a kind of triage to decide what to do. Not only are homes and communities that prepare to resist wildfires more likely to survive with less damage, they also are more likely to attract attention from firefighters.

"Your first mind-set is to save them all," says Michael Long, director of Florida's state forest service. "But then when you get limited resources, you look at [the homes] and say, 'This is a winner; this is a loser.' When your resources get low, you've got to make decisions as to which ones you stand the best chance of saving."

Well-prepared homes in one neighborhood can also free up firefighters to work on other parts of a blaze. According to press reports, for instance, the Witch fire in northern San Diego County swept right across one large housing development. Yet no home burned. Firefighters attributed the good news to the consistent use of fire-resistant landscaping throughout the development.

But pinning the blame for southern California's tragedy on global warming at this stage is premature, says Anthony Westerling, an assistant professor at the University of California at Merced and a lead investigator with the California Climate Change Center at the Scripps Institution of Oceanography in La Jolla, Calif.

He and colleagues at the University of Arizona note that so far no research has identified a clear link between rising temperatures and wildfires in southern California's dry chaparral landscape. In a statement, the team notes that "the connection between global warming, Santa Ana winds, and extremely low southern California precipitation last winter are not known with sufficient certainty to conclusively link global warming with this disaster."

"We don't know how much the dice are getting loaded" in favor of such fire outbreaks in southern California, Dr. Westerling says in an interview. Computer models tend to agree that temperatures should warm, he says, but "they are all over the place" on changes in precipitation.

Yet global warming's fingerprints – earlier springs, earlier snowmelts, and warmer temperatures – have been appearing in other forested areas, he adds. In a study he and colleagues published in the journal *Science* in August 2006, the team found a sudden, marked increase in the number and lifetime of fires, as well as a longer fire season in the West generally – especially during the mid-1980s. These trends were particularly noticeable in forests in the northern Rockies at middle elevations. There, the interaction of people with the forest ecosystem – which can have its own powerful effect on fires – is far less pronounced than in other parts of the West.

Indeed, model projections point to similar trends in Canada and Russia's immense reaches of high-latitude forests, according to a research by a team led by Amber Soja, a researcher at the National Aeronautics and Space Administration's Langley Research Center in Hampton, Va.

That global warming might bring a greater fire risk to the already arid Western US might seem obvious. But the big surprise in the future may come farther east, says Ronald Neilson, a bioclimatologist at the US Forest Service's Pacific Northwest Research Station in Portland, Ore. It's in the east and southeast where global-warming-related wildfire risks will grow the most dramatically, his research suggests, even though the western US remains the country's wildfire hot spot.

Two out of 5 US homes are on the front lines

Why? As temperatures warm, the growing season will get longer. Woodlands will grow faster – at least for a few decades – fertilized by more atmospheric CO₂. But annual precipitation amounts are expected to remain relatively constant.

Today, forests usually dry out just as the trees are going dormant for winter. In the future, however, eastern forests may dry long before the trees have a chance to shut down. Combined with bark beetle infestations (themselves a product of warming temperatures; they have occurred in the southern and western US and recently moved east), an increasing number of eastern woodlands could become prime wildfire fuel.

On a related front, two years ago, a team led by Volker Radeloff, a forest ecologist at the University of Wisconsin at Madison, pulled together the first national assessment of the collision between development and wild lands. The effort was driven by increased concerns about wildfire risks, Dr. Radeloff says.

The team looked at 2000 census data and found that 44,348,628 homes – nearly 39 percent of all the housing units in the lower 48 states – were built along the wildland-urban interface. In some cases, these were single

homes built on large tracts of forest or grassland. In other cases, they represented dense developments that bordered extended wild areas, such as national forests.

Agencies pool efforts to identify 'fire-wise' practices

The results were amazing, Radeloff says. "Because the West has the drought, most of the discussions about the wildland-urban interface focused on those states," he says. "But when we look at absolute numbers, there is much more wildland-urban interface in the East than in the West. That came as a major surprise to us."

Combined with the projected effects of global warming on the eastern forests, this came as potentially troubling news. Little wonder, then, that several federal agencies and national associations have pooled their efforts to support "fire-wise" communities, spreading the word on what works and what doesn't to make homes and communities more resistant to fires.

The solutions, experts says, don't require rocket science. Good approaches are already out there. They just need to be applied more widely and consistently.

Mr. Smalley of the National Fire Prevention Association recalls a recent query he received from the US Government Accountability Office inquiring about new ways to reduce the risk of wildfires.

"They asked: 'What new technology can we look forward to?' I said there is no new technology that will help. It comes down to good building [techniques] and good clearance around each home."