An obvious question about the raging wildfire in Santa Barbara is whether climate change is the cause. While it's impossible to blame any individual fire on increasing temperatures, we know that climate change is responsible for more frequent and more intense wildfires in the southwest. But less obvious and at least as troubling is that wildfires *cause* climate change by burning vegetation that acts as a carbon sink. So wildfires are related to climate change in two important and related ways: they cause and are caused by increases in greenhouse gas emissions.

Here's the evidence about more frequent and more intense fires. Scripps Institute scientists have found that the principal reason wildfires have increased dramatically over the past thirty years is because warm temperatures cause earlier snowpack melting and resulting drier summers. Over the past twenty years fires in the southwest United States have consumed six times more land than in previous decades. California is expectedto see temperatures rise by as much as 10 to 12 degrees F by the end of the 21st century, to face large declines in Sierra snowpack and to experience more frequent and more prolonged drought. Thus the trend we're already witnessing will intensify. The only question will be by how much, which depends in large measure on whether we can slow the accumulation of greenhouse gases in the atmosphere.

Here's the evidence about how wildfires cause climate change. A team of 22 scientists from around the world just published a report assessing the global impact of wildfires. The combination of intentional and unintentional fires — by burning carbon-storing vegetation — has contributed a whopping 20 percent of all human-caused greenhouse gas emissions since the industrial revolution. Moreover fires create black carbon soot, which then absorbs the sun's energy and heats the ground, adding to climate change. Much of the burning is done intentionally, as fire is a cheap and easy way to clear forests for agriculture and other development. But unintended wildfires, though part of a natural process, have now increased in magnitude and frequency because of human contributions to climate change. The combination means that fires are increasingly contributing to greenhouse gas emissions.

What to do about the increase in fires is a complicated question. Communities prone to wild fire will need to consider controversial policies like banning building in particularly vulnerable areas. They'll also need to be vigilant about vegetation maintenance and will need to ensure that their building codes require the most fire resistant materials. But at the heart of the problem is our need to reduce greenhouse gas emissions dramatically from virtually every source. As the world's leaders prepare to convene in Copenhagenin December to negotiate over a new climate agreement to replace the Kyoto Protocal, the topic of widespread deforestation needs to be at the top of the list.