

# Carbon Opportunity Lost in Unmanaged Forests

ACTIVE FOREST MANAGEMENT CAN REDUCE GREENHOUSE GAS EMISSIONS

The state's regulatory environment offers no incentive to invest in the forestry that could reduce emissions and firefighting costs.

By Robert F. Powers, Ph.D.

If Californians were truly concerned about reducing greenhouse gas emissions they'd take a long, hard look at the state's forests and forestry regulations.

Wildfires account for one-fifth of global carbon dioxide emissions, and California contributes more than its share. According to recent findings, one week of Southern California wildfires in October 2007 spewed emissions equal to half of the state's coal-fired power plants operating for a year. Clearly we would benefit from reducing the amount of forest carbon that goes up in smoke.

There is a firm and growing body of science that shows that active forest management can lower the threat and severity of wildfire and reduce the amount of forest carbon returned to the atmosphere. Such forest management provides jobs, a renewable clean-energy source, and even some budget relief while reducing greenhouse gas emissions.

But most Californians live in cities, far removed from forests now overcrowded with stressed trees and choked with unprecedented fuels. Apart from vacations and fire-season newscasts, most urbanites rarely give forestlands a second thought.

Yet they vote in far greater numbers than those who live among forests. Therefore, urban voters largely control the forests' destiny.

### Forest health degraded

Following nearly a century of wildfire suppression, recent forestry policies have backed away from active management on many public lands. Five times more trees per acre often stand in Sierra Nevada forests than during the Gold Rush, and what seems a good thing is not. Overcrowding

Photos courtesy the USDA Forest Service



Untreated



Treated

>> As these images taken less than a year after the Angora Fire show, reducing fuel loads can reduce wildfire severity, protect soils and minimize environmental impacts. After a wildfire, treated forestlands have a greater capacity to recapture carbon lost during the blaze.

leads to stressed trees. Beetle infestations have decimated nearly 2 million acres, and high-intensity wildfire is on the rise. Severe wildfires carry greater environmental consequence than low-intensity fire, spew more greenhouse gases skyward and leave moonscapes in their wake.

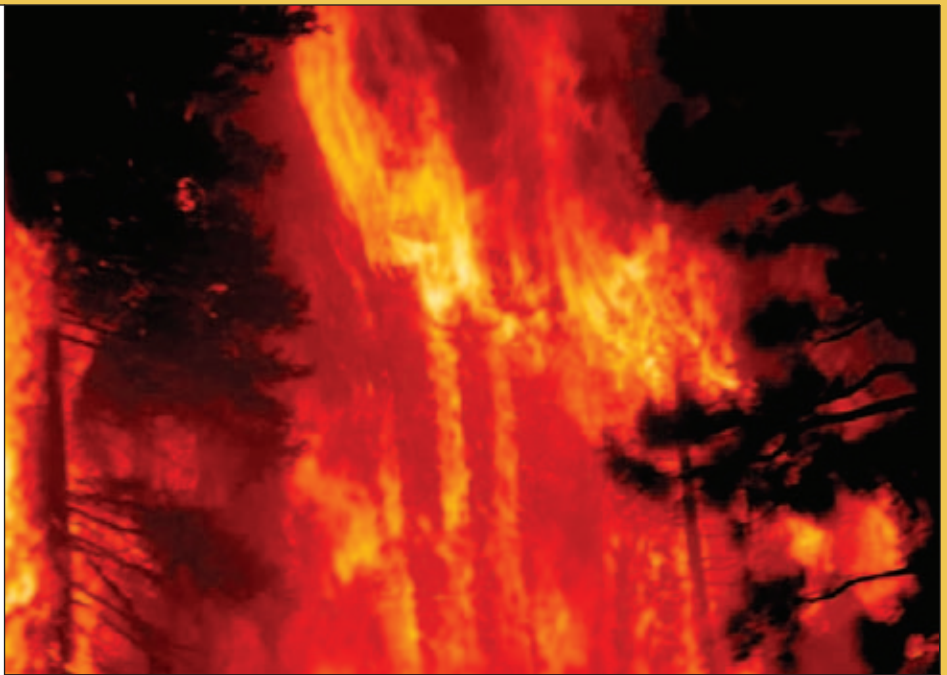
Carbon should give Californians cause to replace well-meant but failed attempts at forest preservation with scientifically guided forest conservation.

Forests are tremendous carbon sinks, second only to oceans as Earth's largest repositories of atmospheric carbon. As forests grow, trees and plants absorb carbon dioxide from the atmosphere, release oxygen, and store carbon in roots, branches, needles, leaves and soils. Younger forests, because they grow faster than older forests, excel at removing carbon from the air. Older forests may hold vast carbon reserves dating from the Civil War, but they don't scrub much carbon from today's air. They act like a stagnant carbon "bank account," holding a steady amount but with little coming in.

Active management can keep forests growing rapidly so they remove carbon efficiently. Thinning the understory to remove undergrowth and ladder fuels that can carry low-level ground fires into tree crowns can help contain wildfires and protect carbon in stored trees. Crown fires release carbon in huge pulses and burn so fiercely that they cannot be suppressed.

Wildfire burns more than 500,000 California acres on average annually, and between 2001 and 2008, released the equivalent emissions of 30 million cars on the road for a year. Driven by fuels allowed to accumulate during 100 years of fire suppression, wildfire is increasingly severe. California has experienced three of its worst fire seasons on record in the past seven years and endured increases in severe wildfire of more than 300 percent in 2007 and 2008, compared to the previous five year average. More than 8 million acres and 3 million homes stand at high risk.

Californians spend more than \$1 billion annually to fight wildfire and too often firefighter lives are lost. Yet Californians spend next to nothing to treat fuels and the state's regulatory environment offers no incentive to invest in the sustainable forestry that could reduce emissions, firefighting costs and fire-related losses.



### Long-term benefits from immediate action

Research shows that active forest management provides preventative medicine. Thinning forests can reduce wildfire severity by up to 60 percent and remove up to 400 percent more carbon from the air than leaving forests alone. The same active management can enhance biodiversity, create jobs more efficiently than any other sector and help offset emissions from fossil fuels by utilizing forest residues to generate electricity.

Californians now and in the future would benefit from forest management policies that reduce the risk of wildfire and their emissions.

Instead, California's forestry infrastructure is in decline. Regulations on private lands have gotten so complex that taxpayer costs to review and enforce regulations more than doubled between 1997 and 2007, and costs to California forestry companies are often 10 times greater than those of forestry companies in neighboring states. More than 40 percent of the state's sawmills have closed this decade.

On public lands, the Forest Service is hamstrung by appeals and litigation that constantly drain resources. The Forest Service wins the majority of lawsuits filed against it, but the process diverts funds and delays or displaces action on the ground. Meanwhile, forest stress builds and fuels accumulate.

Severe wildfire leads to greater emissions and higher firefighting costs. A glimpse of that future surely makes now the time to encourage long-term investment in forestry and create a better environment for our forests and California's future. ■

⤴ High-intensity wildfire releases more greenhouse gas emission than low-intensity fire. Thinning can reduce wildfire severity by up to 60 percent.

**F**orest management can provide jobs, a renewable energy source and even some budget relief while reducing emissions.