

Forestry's Underground Benefits Deserve Mainstream Consideration

LOW-CARBON ENERGY ADDS TO FORESTRY'S CLIMATE BENEFITS

California is under-investing in forest management.

✚ Reducing fuel loads can reduce greenhouse gas emissions and lower firefighting costs.

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Forest management can lead to cleaner air, safer communities and lower firefighting costs, yet its greatest value may lie in addressing climate change and what it keeps hidden underground.

Managing forests helps reduce greenhouse gas emissions in numerous ways. It reduces the threat and severity of wildfire, a significant source of avoidable emissions in California and produces a sustainable supply of low-energy building products. Less well known is its role in keeping fossil fuels underground.

Research at Blodgett State Demonstration Forest and elsewhere has shown that active forest management can provide significantly greater carbon benefits than management strategies that set forests aside in reserves.

While relatively young reserved and managed forests sequester, or remove from the atmosphere and store, roughly the same amount of carbon in standing trees, actively managed forests can provide the additional benefits of reduced fossil-fuel use by using wood rather than cement and steel in buildings, and producing low-carbon energy from forest and sawmill residues.

Managing forests to reduce fuel-loads provides immediate wildfire-related dividends. Fewer fuels means less-intense wildfire, greater firefighter safety, lesser environmental consequence and fewer greenhouse gas emissions. There's great carbon benefit right there – emissions avoided and standing carbon protected – but capturing the thinnings that might otherwise have gone up in smoke and using them to generate low-carbon energy can be an added plus.

Additional carbon benefits

When forests are thinned, the harvested biomass or branches, brush and small trees can be chipped and used to produce energy. Biomass energy takes carbon that is above ground – wood chips – and keeps it above ground by burning it in power plants to produce heat and electricity. Biomass energy is carbon neutral because no more carbon is released producing energy than would be if the vegetation were to simply decay.





Burning fossil fuels, conversely, takes carbon that was stored safely underground and releases it to the atmosphere. Burning fossil fuels to produce energy results in a net increase in carbon emissions every time.

Forest management can reduce emissions from wildfire and emissions from burning fossil fuels because every megawatt generated from woody biomass can replace a megawatt generated from emission-spewing fossil fuels. Substituting biomass energy, a by-product of sustainable forest management, for coal-fired energy could make a significant impact on California's carbon footprint.

But California is under-investing in forest management. California taxpayers spend more than \$1 billion annually to fight wildfire and next to nothing to reduce fuels at the source. More than 400 trees per acre stand in many Sierra forests where about 70 stood before the Gold Rush, tree mortality is extremely high and elevated fuel accumulations clutter millions of acres of forestlands. Continuing down a path of increasing wildfire severity, firefighting costs and emissions has serious long-term consequences.

Forest management offers wildfire relief and a sustainable clean-energy source close to millions of Californians. Yet California's forestry infrastructure is in decline and forest management has been brought to a virtual halt. Harvest on public forestlands is down 90 percent over the last 25 years, the same timeframe during which firefighting costs have skyrocketed.

Storing carbon and creating jobs

The most effective way to sequester more carbon in forests is to use the goal of reducing

greenhouse gas emissions to focus on restoring resilient forests to California's landscape. Californians would benefit from forest management policies that reward performance over time and create investment opportunities that put people back to work, leverage renewable energy benefits and reduce the incidence of severe wildfire. This is rapidly becoming the norm in Europe where forest residues increasingly are used to replace coal to generate heat and electricity.

Unfortunately, forestry's climate benefits aren't worth much in terms of cold hard cash. Carbon policy should address that. Stewardship contracts that leverage lumber and biomass energy production to reduce fuels across greater areas could be extended. Forestry regulations that create longer-term investment windows are needed to justify the capital expenses required to achieve sustainable climate benefits. Tax policy should level the playing field for biomass energy, which receives a fraction of the incentives that wind, solar and geothermal garner.

We must back up our words and skeletal structure of facilities that can produce low-carbon building materials and energy with actions that encourage innovation, create family wage jobs and conserve California's forest resources.

We can't export our greenhouse gas emissions and wildfire problems but we can invest in a locally grown, clean-energy producing solution. Until a realistic investment environment is established forest health will continue to deteriorate, wildfire severity will likely increase and carbon benefits will go unattained. ■

« Active management can restore resilient forests to the landscape and provide a renewable source of clean energy – biomass from thinning operations that otherwise could go up in smoke.

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