Researchers find carbon offsets aren't justified for removing understory

Dina Fine Maron, E&E reporter

Reducing forest fire risk by thinning thickets of understory can have many benefits for communities, but in the short term, providing carbon offsets for this does not appear to be justified, according to government-funded research to be published this fall.

During the past four years, a team of researchers tried to quantify how removing smaller fuels from forests and conducting prescribed burns helps stave off intense wildfires and reduces greenhouse gas emissions. If carbon were valued that way, they said, then landowners could receive carbon credits to help fund their management practices. But the researchers concluded that they can't make that case.

"The take-home message is we could not find a greenhouse gas benefit from treating forests to reduce the risk of fire," said John Kadyszewski, the principal investigator for the terrestrial sequestration projects of the West Coast Regional Carbon Sequestration Partnership. WESTCARB, established in 2003, is one of seven government-industry research partnerships co-funded by the U.S. Department of Energy looking at regional carbon sequestration opportunities.

As part of Kadyszewski's work, his team directly compared the carbon stocks in about 6,000 acres of forests in Shasta County, Calif., and Lake County, Ore., before and after applying forest management treatments to reduce the risk of severe wildfires, such as prescribed burns and thinning. Then, based on modeled projections, they found that if a wildfire ignited on treated lands rather than untreated lands, there would generally be lower emissions. That was the good news.

But there was a catch: knowing where fires might happen.

Since there is a relatively low risk of fire at any one site, large areas need to be treated -- which release their own emissions in the treatment process. The researchers have concluded that the expected emissions from treatments to reduce fire risk exceed the projected emissions benefits of treatment for individual projects.

"If you could know where a future fire would occur, then a project might make sense. Instead, you have to cause emissions over a wide area for a relatively low risk of fire actually occurring," explained Timothy Pearson, a plant ecologist who handled this portion of WESTCARB's upcoming report.

Kadyszewski said the group's findings on this carbon offset question were "disappointing." He cautioned, however, that good forest management practices to avoid fires still make sense, since they help tamp down the costs of putting out catastrophic forest fires, help avoid property damage and can lower insurance rates for communities.

More research may be needed

The group believes its findings are applicable beyond Shasta and Lake counties to the West Coast and perhaps nationally. It worked more broadly with regional and national fire experts to gauge if their findings were consistent with other areas, and there was a consensus that they were, said Kadyszewski. His group is finalizing its report on this and other findings and plans to publish them on the WESTCARB website in October.

Steve Running, an ecologist at the University of Montana, said the findings ring true to him. "I think these are pretty fundamental principles that would apply to any forest. If you remove fuel to reduce wildfire risk, the question is, what are you going to do with it?" he asked. If that slash is just piled up somewhere and burned anyway, that would cause immediate emissions, he said. "The whole attempt to package this as a carbon credit is something I don't think would hold up to scrutiny," he said.

The WESTCARB work did not answer questions about how using excess woody waste instead of fossil fuels to run power plants could fit into these equations.

While the removed slash at the Shasta County sites was brought to a co-fired plant, it was replacing natural gas, and woody biomass actually has higher emissions, said Katie Goslee, a forester who worked as the program manager on the project. There was not an available biomass plant for the Lake County fuels, she said.

Still, David Cooley, a research associate specializing in carbon offsets at Duke University's Nicholas Institute for Environmental Policy Solutions, said that the jury may still be out on the regional applicability of this kind of data. Neither Cooley nor ClimateWire was able to see a draft of the WESTCARB report, but Cooley said that in general, "There needs to be more research done on this. I think basically the state of the debate is that there are studies on either side."

Wanted: a revenue stream for fuel management

While the WESTCARB group could not find a clear greenhouse gas benefit from these forest practices for individual projects, consistent management that clears out years of dead wood and other accumulated fuels could help lower greenhouse gas emissions on a larger scale over time, said Kadyszewski.

Though no forest management projects were counting on the future revenue stream from these carbon offsets, to the researchers' knowledge, the concept had been talked about in the forestry community for years in the hopes that carbon credits could shore up strong management practices.

"I think people very much want to see reduced fuel management in a lot of the dry West, and they are searching for answers about how to pay for it," said Laurie Wayburn, the president of the Pacific Forest Trust. "It's a little bit like the logic of mass transit, since that is never quite adequately funded, so people have looked at that for its a climate benefit, but there is really no money to pay for it that way," she said.

Just because these wildfire risk management strategies will not be getting their own carve-out on the carbon market does not mean there is no incentive for smart forest management, she said. Under California's climate law, A.B. 32, projects that reduce greenhouse gas emissions through forest stewardship are eligible for credits, she said.