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Wildfire Experts Advocate More Fire Use to Protect Carbon Stocks and Prepare Forests for Climate Change

Hundreds of Wildfire Scientists Gathered at the Fourth International Fire Ecology and Management Congress in Savannah Debate the Role of Fire Management in Developing Climate Change and Carbon Accounting Policies

Scientists from the Association for Fire Ecology meeting at the Fourth International Fire Ecology and Management Congress in Savannah, Georgia on December 1, 2009 issued a call for the increased use of fire and fuels management to prepare forests for future wildfires and droughts associated with climate change, and to protect long-term carbon stocks held in larger trees and older forests. On the eve of the international climate change talks in Copenhagen where it is anticipated that forests will have a prominent role in developing carbon sequestration strategies, the scientists speaking from the International Fire Congress point to the latest research findings that managing forest fuels with fire is the key to reducing net carbon emissions, protecting long-term carbon storage, and maintaining the ecological health of fire-adapted forests, especially in forests that once burned frequently under low-to-moderate intensity fire regimes.

“Forests can be either an important sink or source of carbon that contributes to global warming. Severe wildfires can cause overly dense forests to lose carbon, but fuels treatments such as prescribed burning that reduce smaller trees and downed dead branches can help reduce wildfire severity, protect the carbon accumulated in larger trees, and help forests sequester 30-40% more carbon than current untreated forests,” said Dr. Malcolm North, research ecologist for the U.S. Forest Service at the Pacific Southwest Research Station in Davis, California.

“Storing carbon by using fire-suppressed forests that are thick with small trees is tantamount to placing your whole retirement fund in high risk stocks--the yield is high, but so is the risk,” said Dr Matthew Hurteau, research fellow at the Merriam-Powell Center for Environmental Research at Northern Arizona University in Flagstaff, Arizona. “In contrast, storing carbon in larger trees with a forest structure that is more resistant to high severity wildfire is like investing in bonds--the yield is lower, but your savings won’t evaporate if the market crashes.”

“Current forest management policies focused on aggressive fire suppression and high tree stocking in an attempt to increase forest carbon sequestration fails to account for potential carbon losses from future severe wildfires. Policies that help increase the resistance of large trees to future droughts and wildfires have the best prospects of protecting the most amount of forest carbon over the long-term. Allowing more wildland fires to burn in remote areas within prescription will also increase forest resiliency and carbon sequestration,” said Scott Stephens, Associate Professor of Fire Science at the University of California at Berkeley and the current President of the Association for Fire Ecology, the lead host for the International Fire Congress.

“As appealing as it may sound to protect every living stick of carbon on the ground by aggressively fighting all wildfires to protect forests from fire, a better strategy is to protect forests *with* fire. In this strategy, wildland firefighters will play a critical role in managing forest carbon stocks through their skills in working with fire.” said Dr. Timothy Ingalsbee, executive director of Firefighters United for Safety, Ethics, and Ecology. **“Firefighters will continue to stop wildfires from spreading into communities, but they will also start prescribed fires and steer wildfires into backcountry forest areas that need more frequent low-intensity fire.”**

“This is the largest congregation of fire ecologists in the world this year, with over 550 scientists from 38 different countries across six continents coming to Savannah to attend the Association for Fire Ecology’s Fourth International Fire Ecology and Management Congress,” said Dr. Sandra Rideout-Hanzak, assistant professor at Texas Tech University in Lubbock, Texas, and the Steering Committee Chair for the Fire Congress. “The effects of fire management on forest carbon sequestration is a major topic we are emphasizing, but with over 460 presentations on the latest research findings, management practices, and policy changes in the world of fire, there’s a whole lot more happening at the Fire Congress.”

Forests annually sequester 10-15% of carbon released in human-caused fossil fuel emissions, but severe wildfires can produce large carbon emissions. Fuels reduction treatments such as controlled burning, and

managing low-intensity wildfires rather than suppressing them, can help forests develop resistance to prolonged droughts and severe wildfires associated with climate change. These treatments can also promote large tree growth, sequestering 30-40% more carbon than current fire-suppressed forests contain.

Forest managers and climate policymakers are debating whether carbon stocks in fire-suppressed forests should be maximized at current levels to ensure the greatest short-term carbon storage benefit and potential carbon-related revenue (e.g. from a cap-and-trade system of carbon accounting), or should some of that current carbon be removed in fuel thinning treatments to increase resistance to severe wildfires and protect remaining carbon stocks over the long-term. Over the long-term, the maximum amount of above-ground forest carbon is held in larger, fire-resistant trees than smaller, fire-vulnerable trees.

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For more information on the Fourth International Fire Ecology and Management Congress:
<http://www.fireecology.net/Congress09/Home>

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