

Seeking remedies for the 'socioecological pathology' of wildfire risk

June 2 2016, by Jim Erickson



Credit: University of Michigan

The nearly intractable problem of wildfire risk in temperate forests of the western U.S. and elsewhere can be seen as a disease stemming from complex and problematic interactions between society and ecological systems.

Current forest management policies continue to prioritize fire suppression over using fire as a tool to reduce future [wildfire risk](#). To

cure this "socioecological pathology," what's needed is a new approach that allows society to break out of "a destabilizing feedback loop in which wildfire risk increases despite policies and practices designed to reduce it," said University of Michigan researcher Paige Fischer.

"As wildfires become larger and less controllable, and forested areas become more vulnerable, society demands more fire protection, pushing agencies toward suppression rather than using fire as a tool," said Fischer, a social scientist and an assistant professor at U-M's School of Natural Resources and Environment.

"Expanding state and federal fire-suppression budgets create a disincentive for agencies to shift toward forest thinning and the use of fire as a management tool. Moreover, land-use policies and property insurance practices can subsidize the risk of settling in hazardous areas."

Fischer is the first author of a new paper that characterizes the main social and ecological dimensions of the wildfire-risk pathology and suggests strategies to mitigate it through the use of innovative planning approaches, analytical tools and policies. The paper was published online June 1 in the journal *Frontiers in Ecology and the Environment*.

Two of the potentially useful tools discussed in the paper are social [network analysis](#) and scenario planning.

Social network analysis looks at the patterns of interaction within a network of actors. In a 2015 paper, Fischer and colleagues used the network analysis approach to map the relationships among organizations involved in wildfire management in Oregon. Their analysis revealed a strong tendency of people "to associate with those who possess similar management goals, geographic emphases and attitudes toward wildfires."

In the new *Frontiers* paper, Fischer and her co-authors suggest that

communications, coordination and joint problem-solving related to wildfires could be improved if land-management agencies expanded their social networks to include greater interaction with conservation groups and scientists from academic institutions.

Scenario planning, also known as alternative futures modeling, is a tool that can be used to look at the possible outcomes of various management policies. In central Oregon, scenario planning has been used to look at how different fuel-treatment designs might affect the extent of area burned by high- and mixed-severity wildfires.

Model scenarios allow land managers, planners and others to test alternative futures that could include "using fire to a greater degree as a management tool on public and private lands, shifting responsibility for fire protection from agencies to homeowners, or zoning land use and development based on fire risk," the authors wrote.

"Scenario planning can be used to explore the limits of human adaptation—for instance, to investigate at what point increasing wildfire risk might compel WUI [wildland-urban interface] residents to move to less fire-prone areas or, alternatively, take wildfire [management](#) into their own hands," they wrote.

Provided by University of Michigan

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