

Hot topic: Improving communications to fight wildfires

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The researchers demonstrated how they were able to use methodological protocols to assess, and provide feedback to, agencies involved in wildfire management. Credit: Dr. Branda Nowell, North Carolina State University

Wildfires can be deadly, as well as causing millions of dollars worth of damage to homes, businesses and natural resources. Efforts to control wildfires often include a staggering array of federal, state and local government agencies. New research from North Carolina State University is shedding light on how these agencies can better communicate with each other in order to respond more efficiently and effectively to wildfire disasters.

"The effective flow of information between groups is important to manage a wildfire," says Dr. Branda Nowell, an assistant professor of public administration at NC State and co-author of a study examining communication during wildfires. "Sharing information is essential to avoid injury or loss of life, protect personal and community assets, maintain vital services, connect key participants involved in managing the fire, and build relationships and trust among those involved with the fire."

Sharing information can be complex in the event of a major wildfire, because organizations involved in responding to the fire can include [law enforcement](#), the American Red Cross, local fire departments, and federal Incident Management Teams (IMTs) - which themselves are made up of experts from multiple local, state and federal agencies that are called in to take over efforts to control the fire.

"Little empirical research exists to document how information flows during a fire," Nowell says. But now researchers have developed methodological protocols - research guidelines - that can be used to: identify what information is needed (and who needs it); who has access to the relevant information; how the information can be shared; and how to map the overall "market" for information exchange.

"The inability to exchange information can lead to problems for all parties during a wildfire," Nowell says. "For instance, if homeowners do not have full information about a disaster that is headed their way, they may behave differently than if they had that information. Likewise, if the [IMT] managing the wildfire had better information about local features such as local trail systems, cultural sites or endangered species, they might behave differently to mitigate risks during an event."

The researchers demonstrated how they were able to use these methodological protocols to assess, and provide feedback to, agencies

involved in the management of a wildfire that occurred in northern California in the summer of 2009. "This approach can help identify strengths and weaknesses," Nowell says, "and is important both practically and theoretically. Practically, fire management and emergency response agencies need tools to help them assess and improve upon their communication networks during a [wildfire](#) event in order to accomplish disaster management goals. Theoretically, these tools help scholars to better understand the dynamics of information flows."

More information: The paper, "Understanding Information Flows during Disasters: Methodological Insights from Social Network Analysis," was co-authored by Nowell, NC State forestry professor Dr. Toddi Steelman, NC State Ph.D. student Deena Bayoumi and Sarah McCaffrey of the U.S. Forest Service (USFS). The paper will be presented Aug. 9 at the Academy of Management Annual Meeting, in Montreal.

Provided by North Carolina State University

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