COMMUNICATION UNDER FIRE
COMMUNICATION EFFICACY DURING WILDFIRE INCIDENTS

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Frequent and effective communication between response organizations and individuals is critical to ensuring the most effective response during wildfire incidents. A wide variety of organizations – including federal agencies, county-level organizations, and fire departments – are responsible for responding to wildfire incidents, and communication often occurs between individuals holding diverse positions within responding organizations. Understanding factors that lead to effectiveness or failure of communication between individual disaster responders is important to ensuring the best possible outcomes during wildfire incidents.

In this study, researchers analyzed the influence of pre-incident familiarity, stakeholder affiliation, and primary wildfire response/functional role on communication frequency and efficacy during three western U.S. wildfires ignited on U.S. Forest Service land. All fires occurred in wildland/urban interface areas, and involved a range of parties including Type 1 Incident Management Team response teams, local forest leaders, and responding agencies.

Photo: Coconino National Forest

Photo: Fremont-Winema National Forest

KEY FINDINGS

• The least problematic communication during the wildfire incidents were among responders who a) communicated frequently during the incident and b) were more familiar with each other prior to the incident.

• How well individuals knew each other prior to an incident had a greater effect on communication frequency during the incident than their affiliation with similar stakeholder groups or similar functional roles did. This finding supports the importance of pre-fire season relationships building as an important exercise for enhancing communication capacity during incidents.

• The most problematic communication during an incident was reported among individuals with similar functional roles or stakeholder affiliations but who had limited familiarity with each other. This finding suggests that responders may be less careful or may make assumptions in their communications with others that share similar affiliations, which can lead to problematic communication outcomes.

The Northwest Fire Science Consortium is a regional fire science delivery system for disseminating knowledge and tools, and a venue for increasing researcher understanding of the needs of practitioners.

RESULTS

Familiarity between communicators

How well individuals knew each other before a wildfire incident affected communication during these events. Overall, individuals who were more familiar with each other before a wildfire incident reported more frequent and less problematic communication. This suggests that social ties that are established before an event will decrease the risk of problematic communication during the event, and provides support for discussions in the natural disaster literature that advocate for pre-incident relationship building as a resilience strategy.

Shared institutional roles

Shared institutional roles such as similar stakeholder affiliations (district forest, incident command, local governance, etc.) and functional roles (fire management, incident command, infrastructure/utilities, etc.) during wildfire incidents also influenced the efficacy of communication between individuals during the incidents. However, familiarity prior to an incident had a greater effect on communication efficacy than similarity in institutional roles did, and mediated whether shared institutional roles had a positive or negative effect on communication efficacy. Individuals who had both prior familiarity and similarity in institutional roles reported the least problematic communication. The greatest room for improvement in communication, however, was reported by groups of individuals that had similar institutional roles, but who did not know each other before the wildfire incident. This group reported even more problematic communication than individuals who were both dissimilar in their institutional roles and unfamiliar to each other prior to the incident.

IMPLICATIONS

Since wildfires are one of the most common disasters faced by communities in the U.S., understanding factors contributing to effective disaster response is key to improving response efforts. Effectiveness of disaster response is strongly impacted by the effectiveness of communication between individual responders during the incident. This research shows that mechanisms that establish relationships between disaster responders prior to wildfire incidents may increase communication between responders during wildfire incidents, and thus, reduce problematic communication and increase the effectiveness of disaster response. Pre-incident relationship building may serve to strengthen understanding and in-

crease mutual trust between responders. This suggests that community efforts to increase social contact between responders prior to incident can lead to benefits during disaster events by increasing the frequency and effectiveness of communication between individual responders.

This research also suggests that it can be problematic to assume that individuals with shared institutional roles will have more effective communication. The least effective communication reported in this study was between individuals with similar institutional roles but no pre-incident familiarity. A potential explanation for this trend is that individuals that share similar roles and/or stakeholder groups may be more likely to make assumptions about the other person's approach to, or understanding of, a given situation, leading to false expectations and misunderstandings. This suggests that to reduce problematic communication, responders who lack familiarity with each other must emphasize clear communication and refrain from making assumptions about the other person's knowledge or strategy, regardless of how similar their institutional roles are.

Photo: Coconino National Forest

MORE INFORMATION

This brief is based on the following article :
Nowell, B., & Steelman, T. 2015. Communication under Fire: The Role of Embeddedness in the Emergence and Efficacy of Disaster Response Communication Networks. Journal of Public Administration Research and Theory 25 (3): 929-952. doi: 10.1093/jopart/muu021.

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