

Understanding how firefighters make decisions in the field

Timothy Brown^{1*}, Tamara Wall¹, Nicholas Kimutis¹, Tami Parkinson²

ABSTRACT – Extreme weather events can cause increased erratic wildfire behavior, and with this comes a greater likelihood of increased numbers of firefighters required to respond to these events, often in emergent situations. We posit that understanding how firefighters make both good and bad decisions while engaged with an active fire (wildfire and prescribed fire) – the critical drivers and tradeoffs they make between safety, getting the job done, and risk – is central to understanding how perceptions of risk are utilized by firefighters in decision making. Previous related research has suggested that stories with negative outcomes related to extreme fire behavior often involved protecting human life and following orders (rather than responding based on experience or strategy/tactics). The results described here follow up to identify the key drivers of decision making during extremes enabling the identification of patterns across many decision points and potentially identifying points where training could have positive impact on decision making. The study seeks to gather a large number of data points in regards to the factors that influence how firefighters are making decisions daily when working on a fire. These data are collected as real-time as possible over the course of a fire season. The key concept behind our approach is that it asks study participants to “journal” a brief story about a decision they made each day they were working a wildfire or prescribed fire event using an app downloaded to their smartphone or tablet device. The framework is quite short (eight graphical-based questions) and designed to be done in about five minutes or less. It is also not a traditional survey format. Each story can be typed into the app, recorded, or a picture taken and the questions are graphical, rather than a typical survey question format. This presentation will describe identifying pattern’s in firefighter’s perceptions of risk and decision making to better understanding of how context – e.g., fire behavior, following orders/directions, protection human life and experience – may influence decisions made in the field to better tailor training and risk management activities.

Keywords: Firefighter risk; wildfire behavior; decision making

¹Desert Research Institute, Reno, Nevada, USA, ²USDA Forest Service, McCall, Idaho, USA. Corresponding author: tim.brown@dri.edu