# Seeing is Believing: Exploring Public Perspectives in Wildfire Mitigation Techniques after an Interactive SimTable Demonstration

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## Introduction/Need for Research

Throughout the U.S., there is an increase in the frequency of wildfire, which has shown a growing concern surrounding wildfire risks to communities (Margolis et al., 2017; Rasch & McCaffrey, 2019). However, in 2022, the United States Forest Service (USFS) launched a 10-year wildfire mitigation plan that seeks to educate local, fire prone communities about evidence-based strategies to mitigate risk (USFS, 2021). Despite this plan, scholars have suggested there is general lack of trust in government agencies, including the USFS surrounding their ability to provide wildfire mitigation services (Rasch & McCaffrey, 2019 Winters et al., 2004). Advanced communication technologies are emerging as tools to better communicate and educate the public about risks and potential techniques to mitigate risks (Wu et al., 2025). Educational demonstrations and immersive experiences can be provided using tools like a simulation table, which provides overtime demonstrations of how wildfires can spread across forest systems (SimTable, 2026). The purpose of this abstract was to explore participant thoughts of the use of a SimTable demonstration in shaping their perspectives toward wildfire mitigation techniques.

## Conceptual/Theoretical Framework

This study was guided by two concepts: risk perceptions and multimedia learning. Perceptions of risk are impacted and shaped by a variety of items such as values, emotions, trust, and prior experiences (Slovic, 1987). However, scholars have suggested visual and hands-on learning techniques may also help to shape their perspectives (Wu et al., 2025). Immersive, experience-based demonstrations may function as a tool to help learners visualize or 'see' potential outcomes, rather than learning about abstract concepts (Rieber, 2005). In fact, scholars have tied immersive demonstrations to visual and multimedia learning theory (Mayer, 2009). Multimedia learning theory suggests learning is more effective when information is presented through multimedia formats (i.e., words, visuals, demonstrations, and videos), rather than just through words alone (Mayer, 2009). The use of the multimedia format helps learners to listen and hear the information, but to visually see the information as well, which helps to reduce cognitive load. The combination of a project-based simulation allows learners to visualize outcomes while learning about these outcomes (Rieber, 2005).

## Methods

During a series of focus groups, we exposed participants to a simulated demonstration of wildfire mitigation techniques and asked a series of questions to understand their attitudes and perceptions. Focus groups are a common technique to allow for group interaction and discussion, allowing us to derive emergent themes about the participants' views and perceptions (Ary et al., 2018; Morgan, 1997). We conducted five focus groups in three locations in [region], with a purposive sample of 39 participants. This region was selected as it was recently selected as a priority landscape due to high wildfire risks and proximity to prior wildfires (USFS, 2022). During the focus group, the participants viewed two interactive simulations of wildfire spread in a model landscape representing the forest surrounding their broader community. The simulations were demonstrated in 3D on a SimTable, which is a large sand table we shaped to match the study area's fuels and topography. The SimTable has an overhead projector to display dynamic simulations onto the sand (SimTable, 2026). The first simulation portrayed fire spread under moderate fire weather (e.g., 30 mph winds) without any prior mitigation of fuels. Next, a second simulation was ran using the same fire weather conditions, where 'fuels treatments' were implemented, reducing the fuel density by 70%. After, the participants were asked a series of

questions regarding their perspectives following the demonstration. The questions posed to participants were reviewed by the US Forest Service, community members, and research team members prior to dissemination for clarity and accuracy (Lincoln & Guba, 1985). The focus groups were audio recorded, transcribed, and analyzed via the constant comparative method for emergent themes (Glaser, 1965). An audit trail detailed the process, themes, and definitions, which was reviewed by other key researchers, allowing for consistent themes and increasing the findings' confirmability and dependability (MacQueen et al., 1998).

## Results

Following the demonstration, participants' reflections revealed a range of perspectives related to wildfire mitigation, including *increased or unchanged confidence* in the USFS and *the recognition of the SimTable as an effective educational tool,* however, the participants expressed *barriers to its implementation.* Many participants had *increased confidence* due to being able to visualize the mitigation techniques. For example, a participant in FG4 said, "I would say, understanding the decision process, the amount of research and care that goes into mitigation efforts, certainly inspires confidence and content in confidence and intent and the rigor that the Forest Service is bringing to the issue, which I think is true almost any time that you learn about all the thought that goes into an otherwise sort of obscure process." Despite many having increased confidence, some participants explained their *confidence did not change* due to prior knowledge or needing more time. A participant in FG2 said, "It's still the same as it changes only time can build that confidence. But then again, it's just the human nature of reporting on the negative." The participants explained that the SimTable demonstration was a *key educational tool* for learning about mitigation practices as it provided explanation and visuals. A participant said, "It really helped me to understand, like the talking points that were being made, to be able to see how that changes by using those different methods and doing different things, I thought that was extremely interesting (FG4)." However, the participants also recognized barriers associated with implementation such as resources to use the technology effectively. For example, "One of the things we see here is that technology is there and the technology, technological expertise is there, but the will to get the resources to do it is where we see a real lack (FG5)."

## Conclusions, Implications, Recommendations, Impact

Our findings suggest the SimTable helped to increase participant understanding, kept them engaged, and worked as an effective tool to demonstrate the impact of wildfire mitigation. The SimTable provided a multimedia learning tool (Mayer, 2009), which provided an educational bridge between communities and experts, to help the community understand the process and intent behind the decision-making process. Our findings suggest being transparent and utilizing interactive tools to help show competence and can help to reinforce trust within the community (Rasch & McCaffrey, 2019; Wu et al., 2025). Our findings, while descriptive and qualitative in nature, help to support risk perception literature and emphasize the need for immersive learning techniques and demonstrations to share information with the public. Based on our findings, we recommend using immersive visual demonstrations to educate the public about mitigation techniques. We also recommend future research to quantitatively examine knowledge, awareness, and processing of immersive learning experiences toward wildfire mitigation.

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