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# The Influence of Environmental Value Orientation and Climate Change Beliefs on Firewise Behaviors of Central Oregon Residents

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## ***Introduction***

In recent years the Western US experienced many of the costliest and most severe wildfires in history. The complexity of the problem is likely to increase as more people move to wildfire-prone areas. This confluence of social and ecological events has necessitated the creation of a coordinated and comprehensive strategy concerning wildfires.

Years of complete fire suppression allowed for the buildup of fuels, combined with hotter and drier conditions caused by climate change. This has contributed to growing concerns about the potential for more frequent and severe wildfires. At the same time, more people are migrating to wildfire-prone areas where urban development meets public wildlands, known as the wildland-urban interface (WUI). Often these new residents have not been exposed to wildfires and will not understand the threats associated with living near a wildland area. In contrast, some people who have lived in these fire-prone areas for an extended period of time have grown accustomed to being protected from wildfires by the government and may no longer perceive any personal responsibilities in regards to wildfire mitigation (Brenkert-Smith et al., 2006). The costs associated with fighting wildfires in the WUI have also increased substantially in recent years and are predicted to double or even quadruple by the year 2025 (Gude et al., 2009).

The Firewise Communities program was developed by the National Fire Protection Association (NFPA) as a way to encourage homeowners, property planners and developers, community leaders, and firefighters to develop local solutions to problems caused by wildfire. The goal of this program is to save lives and property by educating people about ways to live with and adapt to wildfires. Firewise landscape designs stress fuel reduction in the area immediately surrounding the home. The ultimate goal for any Firewise landscaping project is creating a defensible space. Defensible space is defined as “the area around a building that has been significantly modified to reduce a wildfire’s intensity just enough to prevent the fire from igniting the house” (Brenkert-Smith et al., 2006). However, despite the obvious risks, many homeowners do not participate in Firewise or other recommended mitigation behaviors.

### ***Firewise study***

This study is based on data collected via a mail survey sent to a random sample of 1506 residents between March and May 2011. Respondents were given a number of Firewise behaviors and asked which of the activities they participated in. They were also asked about their perceived risk of future wildfires, whether they believed in climate change, and their overall attitude toward the environment. The study area for the survey was located in Central Oregon in a fire-prone area covering the entire state from the northern border to the southern border and an area between the crest of the Cascade Range to the west and the edge of the sagebrush steppe to the east. The study area was chosen because of its diverse ecological and social characteristics.

The Firewise Communities program developed by the National Fire Protection Association “teaches people how to adapt to living with wildfire and encourages neighbors to work together and take action to prevent losses” (Firewise Communities, 2011a, para. 3). This program has been successful in encouraging residents in hundreds of communities to think about and participate in a number of wildfire mitigation strategies designed to save lives and property (Firewise Communities, 2011b). However, there are many people who are either

unaware of the threats posed by wildfire or do not know that there are individual behaviors that can help to reduce the threats (Kyle et al., 2010). The study identifies a number of reasons why a person may not participate in wildfire mitigation, or Firewise behaviors, providing valuable information for natural resources managers trying to increase participation. Communities may also need to regulate the amount of expansion into wildland areas, by using urban growth boundaries.

### ***Policy implications***

To develop effective wildfire mitigation policies, it is necessary to understand the reasons why homeowners decide whether to participate in these behaviors. The study determined that *environmental value orientation* significantly influences climate change beliefs. Additionally, the belief that climate change causes wildfires made residents more likely to participate in Firewise behaviors. Beliefs can influence behavior, although it is only when there is a specific connection between the belief and the behavior that the influence will be felt. Residents who recognized that climate change was actually contributing to wildfires were more likely to engage in Firewise behaviors than those who only believed in climate change.

The analysis also revealed the mediating effects of *risk perception* on the relationship between beliefs and behaviors. The strong correlation between specific climate change beliefs and risk perception suggests that an increased understanding of how climate change might personally affect them through wildfires might increase the perception of risk. Of course, this would only work on people who already believe in climate change. People who do not believe in climate change are unlikely to be motivated by that relationship, so managers would not want to target any connection to climate change with this group of residents, and may want to avoid the issue of climate change entirely with some.

Because people ultimately make *decisions based on their underlying values*, which are formed early in a person's life, wildland managers might have better success trying to encourage Firewise behaviors in ways that are consistent with existing values and beliefs. Risk perception was a key factor in influencing Firewise behaviors, so focusing on the potential for larger and more dangerous fires could be a possibility when a person's values and beliefs are unknown. The *effects* of wildfire may offer more motivation than the *cause* of wildfire. Pointing out past examples of large wildfire might increase a person's perception of risk without conflicting with their underlying values.

Finally, people are more likely to participate in Firewise behaviors if they understand the *connection between climate change and wildfires*. Of those surveyed, only 29% believed climate change was one of the factors that contributed to wildfires, and of the people who believed in climate change, 60% believed that it contributed to wildfires. With the effects of climate change on forests already being observed and greater impacts being predicted in the near future, there

would appear to be a gap in understanding between scientists and the public. If the goal for natural resource managers is to get more people to engage in Firewise behaviors, more engagement to explain and discuss the relationship between climate change and forest fires may help accomplish that goal.