



# Desert Fire, Mammal and Plant Studies

## Social Barriers to Landscape Restoration after Fire

By Hilary Whitcomb

Public land agencies devote countless hours and millions of dollars to restoring landscapes after wildfires. Yet too often these efforts don't succeed as well as we'd like. As part of an effort to improve post-fire recovery in the Great Basin, we asked managers what *they* perceived as barriers to effective restoration. It turns out the issue is as much about people as it is about the land.

In a series of interviews with land managers who make decisions about post-fire rehabilitation and restoration, we explored barriers to improving post-fire recovery that included: policies and funding cycles that constrain managers' ability to monitor and re-treat effectively, pressure and legal action from interest groups, pressure from concerned public/neighbors, climate change, and ecological debates such as native vs. non-native species use. These identified barriers provide a social-political-ecological framework that may influence on-the-ground manager decisions after wildfires in the Great Basin.

### The Decisions:

When large fires burn across public lands, managers face a number of decisions about the best way to rehabilitate and restore those lands. And they have to make them fast – as soon as one week after a fire is declared contained. Often managers must choose between locally adapted native species, for which seed is often scarce and expensive, and generalist non-native species that tend to be easier to establish after a disturbance. They have to decide what type of range drill to use, or if they will use a drill at all. Perhaps they would like to try a new seed-coating technique that might increase the germination percentage of seeds, but would also increase the cost of the project. What factors influence these choices? Do choices change when more than one interest group is involved? Does personal wildfire risk (the risk of a wildfire affecting a manager's personal home or property) change a manager's preference for native or non-native species use? To explore these questions we surveyed both land managers and members of the general

public, as well as reviewed interest group appeals for proposed restoration actions.

**Policy:** Managers are not convinced current funding policies, which allow for three-year monitoring cycles, are long enough to ensure successful ecological recovery. Indeed, approximately 15% of managers felt that projects were so ineffective under current standard operating procedures that we would be better off just letting the ecosystem heal on its own. Many veteran managers suggested they would prefer money spent on smaller five-year projects rather than on larger areas for shorter times, while newer managers tended to feel short funding cycles were sufficient. Policy also influenced manager preference for native or non-native species. For example, managers working for the Bureau of Land Management preferred non-native species, compared to U.S. Forest Service and National Park Service managers. This is likely a result of institutional norms, policies, and mission statements in addition to funding constraints and the amount of land for which each agency is responsible.

**Public & Interest Groups:** Managers tended to perceive interest groups as being opposed to ANY management actions post-wildfire. Indeed, interest groups that comment most on

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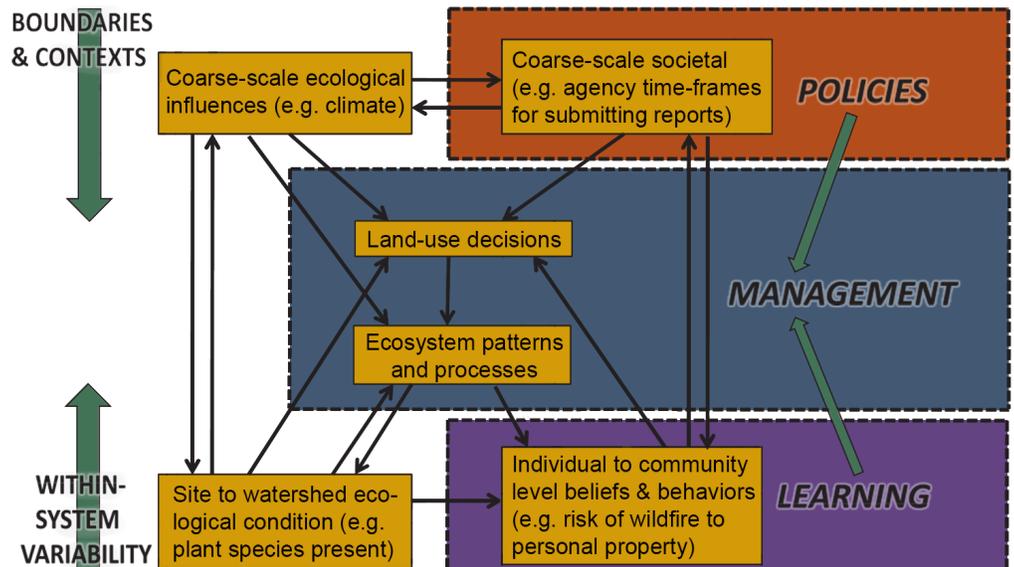
pre-emptive restoration projects tended to prefer the ecosystem to heal without management intervention. However, the interested public that responded to our survey generally felt post-wildfire projects were crucial to site rehabilitation (almost 70%), especially those living in the Great Basin and those that felt the greatest personal wildfire risk. The public also tended to prefer that seeding contain only native species (63%), to believe temperatures in their area are changing (43% versus 25% not changing - only 7% strongly held belief that they are not changing), and that droughts and/or floods are an increasing concern (74% - only 9% disagree, 2% strongly so).

**Ecological Processes:** As found in previous research (Whitcomb 2011), managers remain split about specific environmental factors that may have important ecological consequences (e.g. native vs. non-native species, reality of local climate change). Some of their differences in opinion are linked to the agencies they work for (agency policy and/or norms). For example, while slightly more managers across the region preferred to use non-native species, Forest Service and National Park Service employees typically preferred to seed native species. Some of our survey respondents did not agree that the Great Basin climate is changing, but no one in the National Park Service expressed that belief. National Park Service employees were also the most supportive of experimental research.

## The Results:

These results suggest agency policies regarding time frames and reward systems for post-wildfire decisions could be reassessed to determine whether they achieve desired restoration goals. Typically, agency reports evaluating “success” reference acres treated and pounds of seed planted. Thus managers tend to be rewarded and encouraged to simply get seed on the ground. Agencies could consider more meaningful ways to translate success of projects to the public and to their staff.

Our results also suggest agencies could encourage greater interactions between managers and the public. Only 42% of managers thought neighbors agreed with their post-wildfire decisions. But members of the public who took our survey were much more supportive of post-wildfire projects and native species use than managers supposed.



*On-the-ground management decisions are typically based on coarse- and fine-scale ecological and social variables as illustrated in this chart developed by Mark Brunson at USU. We investigated how these different categories influenced specific management preferences.*

Encouraging citizen engagement (perhaps by encouraging local participation in monitoring or citizen science) could help managers understand public opinions of their actions. Citizen engagement could also help alleviate some of the financial and personnel constraints associated with increasing project lengths past three years of monitoring.

Scientists interested in implementing experimental research on larger projects, especially those that relate to climate change or native species use in restoration, may gain the most support and enthusiasm from National Park Service managers. BLM and USFS managers could consider mechanisms that encourage the use of new science and technology as part of post-fire reporting..

Ecological conditions vary spatially and temporally. So do political and social pressures. Wildfires and sage grouse don't concern themselves with social-political factors, so we often ignore the importance of these factors as well. Yet social and political influences drive on-the-ground restoration decisions more than we sometimes realize, affecting ecosystem resilience, continuity, and hydrology. By identifying issues within a social-political-ecological framework that act as impediments to restoration success, especially issues that managers themselves have identified, we can begin to breach these barriers to help land heal after a wildland fire.

Whitcomb, H.L. 2011. Temperature increase effects on sagebrush ecosystem forbs: experimental evidence and range manager perspectives. M.S. Thesis, Utah State University, available [here](#).

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