

Organizational Characteristics that Contribute to Success in Engaging the Public to Accomplish Fuels Management at the Wilderness/Non-Wilderness Interface

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Abstract—In the fall of 2003, the Rocky Mountain Ranger District of the Lewis and Clark National Forest initiated a multi-year, large-scale prescribed burn in the Scapegoat Wilderness. The objectives of this burn were to make the non-wilderness side of the wilderness boundary more defensible from wildfire and to establish conditions that will allow fire to play a more natural role within the wilderness in the future. Using this prescribed burn as a case study, qualitative research was conducted in 2005 to understand the local ranger district's public outreach efforts and its subsequent influence on public attitudes towards the burn. A series of in-depth interviews with agency personnel involved in the burn, and representatives from local communities who were aware of and/or participated in public outreach efforts for the burn, were the primary sources of data for this research. A framework of mindfulness processes exhibited by high reliability organizations was used in analysis for identification and understanding of organizational characteristics that contribute to success in engaging the public in Forest Service efforts to treat hazardous fuels and manage risk from wildfire. As a case study, the methods and results provide a means of comparison to additional cases on other management units.

Introduction

Fire suppression policy on public lands over the past century has resulted in hazardous accumulations of fuel in forest and grass lands. In many places, fire is a naturally occurring process, and fire exclusion has spurred greater incidents of large-scale, uncharacteristic wildfire impacting both ecological and social values across the wilderness/non-wilderness interface. The urgency, complexity, and oftentimes contentious nature of fire and fuels management operations have signaled the need for increased public outreach (public information and involvement efforts) by wildland fire management organizations. The public must be informed about and engaged in decisions concerning appropriate fuels management techniques to reduce the risk of catastrophic fire and restore the health of our wild lands (HFI 2002; USDA/USDI 2000).

Along the Rocky Mountain Front in northwestern Montana, public land protected under federal designation as the Bob Marshall Wilderness Complex (includes the Bob Marshall, Scapegoat, and Great Bear Wilderness areas) interfaces with public and private lands comprising roadless areas, ranches, outfitter/guide operations, recreational residences and other human uses. There is a rich history of naturally occurring fires in the Bob Marshall Wilderness Complex, although years of fire suppression has reduced the number of acres burned by these fires and created conditions for uncharacteristic fire behavior. In an effort to allow fire to play a more natural role within the

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wilderness and to make the non-wilderness side of the wilderness boundary more defensible from wildfire, the Rocky Mountain Ranger District of the Lewis and Clark National Forest initiated, in the fall of 2003, the first phase of a multi-year prescribed burn inside and along the boundary of the Scapegoat Wilderness. The complex ownership and human uses surrounding this area exemplifies the importance and need for mindful management of public outreach concerning such a large-scale fuels management project.

In their book, *Managing the Unexpected: Assuring High Performance in an Age of Complexity*, Weick and Sutcliffe (2001) outline a theory of managing high-risk operations with mindfulness. Their research on managing mindfully draws upon the concept of high reliability organizations (HROs). They suggest businesses or other organizations “benchmark on the experts in reliability” in managing for unexpected events, offering “techniques that are worth copying because they ensure faster learning, more alert sensing, and better relationships with customers” (p. xv).

It may be appropriate to apply concepts of high reliability to an organization’s management of public outreach, because managing the interaction between an organization and the public also involves managing the unexpected. Many unexpected events can occur when managing public outreach: contentious public meetings; withdrawal of key publics from participation; harassment of personnel within the organization; negative editorial or opinion pieces in reference to the organization; and litigation. To reduce the likelihood of such events occurring, an organization needs some framework to guide their management of public outreach.

Using the South Fork of the Sun River Prescribed Burn as a case study, we applied Weick and Sutcliffe’s theory on managing with mindfulness to the USDA Forest Service’s (USFS) management of public outreach for the prescribed burn. A framework of mindfulness processes was used as a guide to document and analyze the organization’s public outreach during the planning and implementation stages of the prescribed burn and how it influenced local community attitudes. This research can increase understanding of organizational characteristics that contribute to success or failure in engaging the public to accomplish fuels management at the wilderness/non-wilderness interface.

Research Framework

Research on high reliability indicates there are five central processes that produce mindful behavior within high-risk organizations, including: 1) recognizing potential barriers to accomplishment of management objectives (preoccupation with failure), 2) resisting simplification of information or interpretations (reluctance to simplify interpretations), 3) ensuring situational awareness of events as they occur (sensitivity to operations), 4) being prepared to respond to and recover from unexpected events (commitment to resilience), and 5) calling upon appropriate expertise in decision-making and management efforts (deference to expertise) (adapted from Weick and Sutcliffe 2001). These five attributes are believed to be the hallmarks of HROs and managing with mindfulness.

Research on managing with mindfulness has typically focused on interaction within an organization (i.e., wildland firefighting, nuclear aircraft carriers, air traffic control systems, and emergency medical treatment) without necessarily considering interaction that occurs external to an organization such as public outreach. It is important to understand how mindfulness can be applied to the management of external, as well as internal interaction,

because it is often this interaction that people use to evaluate and respond to a particular organization and their management capabilities. Using a framework of mindfulness processes to analyze the USFS's management of external interaction (public outreach) should provide new insight into the value of managing with mindfulness.

Methods

A case study research design and qualitative methods (in-depth interviews) were used to facilitate the research and provide a deeper understanding of the contribution of the USFS's mindfulness in managing public outreach for the South Fork of the Sun River Prescribed Burn. Interviews were conducted with a sample of agency representatives on the Lewis and Clark National Forest and non-agency public representatives from local communities surrounding the Rocky Mountain Ranger District.

Interviews were guided by a pre-arranged set of themes and suggested lead-in questions, using a semi-structured interview guide, but they did not follow a fixed question format (Patterson and Williams 2002). All interviews were tape-recorded in their entirety, transcribed verbatim, and kept anonymous. Analysis began, following completion of the transcriptions. Each transcript was edited by simultaneously listening to the associated tape-recording and reading the text. The final edited transcripts were the empirical data that were analyzed using a qualitative data analysis software program, QSR Nvivo version 2.0.

In a case study research design, a previously developed theory is used as a template for analysis of the study findings (Yin 1989). A framework of mindfulness processes was used to guide analysis of agency and public representatives' perceptions of public outreach for the prescribed burn. Analysis emphasized objective description and personal interpretation by the researcher with a focus on organizing data to best document the phenomenon of interest within the specific case (Denzin and Lincoln 1998).

Results

A total of 14 agency representatives (both past and present) from the Lewis and Clark National Forest were individually interviewed. Interviews were conducted with personnel who had, in some way, been involved with the planning and implementation (including public outreach) of the South Fork of the Sun River Prescribed Burn. In order to get a diversity of perspectives, the intent was to conduct interviews with personnel representing different functional positions within the agency. Thus, interviews were conducted with personnel in the following positions: decision-making (line officers); planning; public affairs; information; fire; recreation; and wilderness.

A total of 24 non-agency public representatives from local communities surrounding the Rocky Mountain Ranger District were interviewed. Interviews were conducted with people who were aware of and/or participated in public outreach activities (i.e., attended public meetings, submitted public comment, read newspaper articles, received informational mailings, etc.) for the prescribed burn. To obtain a diversity of perspectives, interviews were conducted with people with varied social resources and interests. Thus, interviews

were conducted with private landowners, outfitter/guides, representatives from cooperating city, county and state organizations, representatives from non-governmental organizations, media personnel, local recreationists, and recreation residence owners.

The database of interview transcripts serves as empirical evidence for claims or conclusions drawn in this Results section, which contains excerpts of raw text from interviews that correspond to specific subject headings. Detailed below are a select set of these interview excerpts, which serve as examples of public outreach efforts by the agency that seemed to be indicative of the five central processes of mindfulness.

Recognizing Barriers to Accomplishment of Management Objectives

Being consistently mindful of potential barriers to accomplishing management objectives, although suggestive of a negative mindset, is actually a positive behavior that can benefit an organization. Being mindful of potential operational failures or mistakes makes it possible for an organization to identify and mitigate small barriers that, if ignored, could complicate or jeopardize their objectives (adapted from Weick and Sutcliffe 2001). Perceptions of both agency and public representatives indicated personnel on the Lewis and Clark National Forest demonstrated this mindfulness process in managing public outreach during the planning and implementation stages of the prescribed burn.

Agency representatives felt that agency personnel made personal one-on-one contacts with landowners who had the greatest potential to be impacted by the prescribed burn should it escape. These landowners happened to also be outfitters in the local area preparing their camps for the upcoming hunting season. The agency's decision to contact these members of the public was symbolic of its ability to manage mindfully, for the agency saw the potential for damage to private property and human resources, and the possible barrier it could create to accomplishment of management objectives before an escaped burn occurred:

Interviewer: *And how come it was those two resorts that you went to?*

Agency Representative: *Because they are the ones in the vicinity that would be the ones that would be the most rapidly impacted if something went wrong with that fire ... it was in the early fall, and so both of those resorts have backcountry camps and they were going in and out of their camps at that time, getting them ready for the hunting season. So they had even more stake in the whole scenario, because they had people actually in the backcountry hauling hay or doing that kind of thing, and so we needed to coordinate with them on those types of things so that we made sure that if their packers were on their way out we weren't going to have a problem.*

There was also evidence from perceptions of public representatives that agency personnel demonstrated an awareness of potential barriers to its management objectives by engaging the public early on in the planning of the prescribed burn. This early outreach, which included contact with the local media, allowed the public to be informed about project details from the very beginning and reduced the likelihood of them being "blindsided" by the agency's intentions:

Public Representative: *But from my perspective, I thought what they did worked well, partly because they did it in advance. A lot of times people say, and this was a big criticism during the Canyon Creek Fire, we just didn't know what was coming. We just didn't really, we underestimated. We didn't know. You didn't tell us, etc. ... I don't think anybody could fault them. Like you said, this started in '97. It happened in 2003. That's a long time and a lot of comment before the actual trees started to burn. So I think they did a good job ... I don't know what else they could have done to get information out to people. And I think Augusta's a relatively small community, I think they probably had close to saturation knowledge of what was going on.*

Resisting Simplification of Information or Interpretations

In the modern world, success is often achieved when a person simplifies work by focusing on key issues or problems; in contrast, managing with mindfulness means resisting simplification of information or interpretations. When practicing this tenet of mindfulness, organizations intentionally simplify less and seek ways to perceive and discern more about their management situation, creating a more holistic, detailed understanding of the context they are working within (adapted from Weick and Sutcliffe 2001). It was evident from perceptions of both agency and public representatives that, during the planning and implementation stages of the prescribed burn, personnel on the Lewis and Clark National Forest demonstrated this mindfulness process in managing public outreach.

There was a perception among agency representatives that agency personnel made an effort to talk about the known risks of the project rather than glaze over them or hide their significance when interacting with the public. This effort to communicate directly with the public about the risks associated with the prescribed burn seemed to be an indicator of the agency's resistance to simplify information or interpretations related to public outreach. Here's what one agency representative said he or she would do in the future when dealing with similar fuels management projects and outreach to local communities:

Agency Representative: *I'd follow the same model, and I would also be, and I believe we did this this time, I would also be frank about the risks ... and by that I mean we have all these checks in process to be as safe as possible. And sometimes things are going to go south on us. And that happens. The fire could get out of our control, and we know that. And put that on the table early on in the process, not in terms of sugar coating. And (the District Ranger) did a good job of that. (The District Ranger) was very real. So, actually that's a good take-home message for other people, other units, other agencies. Sometimes we're not very good about talking about the real risks.*

Perceptions of public representatives indicated the agency resisted simplification of information or interpretations in managing public outreach, also, by addressing public concerns about the Canyon Creek Fire of 1988 (a wildland fire that escaped the Scapegoat Wilderness boundary) and how it related to the prescribed burn. As suggested in the excerpt below, it would have been easy for agency personnel to avoid this issue in order to simplify their communication with the public, but they chose to speak to the issue and to communicate their plans to prevent a similar occurrence:

Public Representative: ... *I keep coming back to '88 ... clearly an event happened there that the Augusta community got exposed to. And, again, superficially that was something that it would have been easy to shy away from, and (the Fire Management Officer) didn't do that. (The Fire Management Officer) says we want to avoid that. And that's to say (the Fire Management Officer) took that experience, took that event, and presented it to the community saying we're with you, we recognize this is something that's not very fun to go through. It can be devastating to go through. And we think we have an idea to, if not prevent it, then potentially minimize it at the very least. And so with using that circumstance, it would have been easy just to stay away from, just to put a big veneer lacquer around it and just say, uh, that was a bad deal and just never go there again. But they didn't do that. They said let's take that and run with it or let's respond to that. And so bringing in that history, I think, was a good part of it.*

Ensuring Situational Awareness of Events as They Occur

There is a tendency for people to be forward thinking, but mindfulness requires personnel within an organization to display intense focus on what is happening in the present. Organizations that manage with mindfulness focus their attention on the front line of an operation, ensuring situational awareness of events (both planned and unexpected) as they occur. By paying attention to events as they unfold, these organizations are more able to reduce uncertainty and make operational adjustments as needed (adapted from Weick and Sutcliffe 2001). Again, there were perceptions of both agency and public representatives that indicated personnel on the Lewis and Clark National Forest demonstrated this mindfulness process in managing public outreach during the planning and implementation stages of the prescribed burn.

Agency representatives perceived that a big part of the USFS's engagement with the public prior to implementation of the burn was through briefings with key segments of the public, such as county commissioners, the governor's staff, and the media. Sensitivity to the information needs of these publics during the planning process and a willingness to engage in public dialogue about the project are an example of organizational efforts to ensure situational awareness in managing public outreach:

Agency Representative: *The District Ranger was very proactive. I must compliment him on that, because he was very proactive in getting community involvement ... he developed a PowerPoint and he went around to various organizations. He talked to his county commissioners. We set up a series of briefings for him. He briefed the governor's staff. He talked to the county commissioners from Lewis and Clark County, which is where Augusta is. He also talked to Teton County commissioners, which is where Choteau is ... He talked to TV stations. He did radio call-in interviews with KGPR and the local station that's in Augusta, KMON. That's the station that most people could hear ... We've only briefed the governor on two or three issues the whole time that I've been here, and this is one that we thought would be critical in case we did lose it.*

Public representatives perceived several other examples, which suggest agency personnel maintained situational awareness in managing public outreach. The agency's use of press releases and newspaper articles, making documents available for public review, providing informational handouts, and holding public meetings, all seemed to have helped keep the public informed and involved in the planning process and the agency aware of public interest and concern related to the project:

Public Representative: *They were putting out press releases. They had obviously done studies, and they had those documents out for public review. And they had, I want to say that they had information available in the Augusta Information Station if people wanted to come in and get fact sheets on it. They had their personnel available at any time for people to call ... They weren't just touching the Choteau Acantha as media, they were also, there were stories being published in the Great Falls Tribune, and I am almost certain that there were stories published in the Helena newspaper, although I didn't ever read any of those. But I think they were trying to reach as many people as they could. Particularly with this project, it seemed to me that they made a really big effort to do a really good job in informing people about what was going on.*

Being Prepared to Respond to and Recover from Unexpected Events

The fourth mindfulness process can be described as being prepared to respond to and recover from unexpected events that occur. Managing with mindfulness means moving beyond a simple anticipation of unexpected events to a greater focus on how, once an unexpected event occurs, an organization and its employees can respond to and/or recover from the event. This resiliency enables organizations to function responsively and facilitate management even when faced with operational obstacles (adapted from Weick and Sutcliffe 2001). In interviews with agency representatives, several examples were identified where it seemed as though personnel on the Lewis and Clark National Forest were prepared to respond to and recover from unexpected events when managing public outreach during the planning and implementation stages of the burn. These examples were easily identifiable in the analysis of the data because agency representatives were giving firsthand accounts of being prepared to respond to and recover from unexpected events that occurred.

For example, when the agency decided it was time to implement the prescribed burn, they realized that the Public Affairs Officer for the Forest was scheduled to be on a business trip to Washington, DC. As perceived by agency representatives, knowing that this position was crucial to public outreach during the burn, the agency seemed prepared to respond to this unexpected event by finding a qualified replacement to fill this position, an employee within the region with experience in both public relations and fire:

Agency Representative: *And then when it came actually time to burn it, it was so frustrating because we didn't think we were going to have a window in the fall. And when the burning window opened up it was the same week we had scheduled, they were going to burn on whatever day they ignited the burn, I don't remember if it was Monday or Tuesday, but the Forest*

Supervisor and the Forest Planner and (the Forest Public Affairs Officer) were flying out to Washington, DC, because we had briefings with our senators and congressmen ... so we had to call in other people. And (an employee) from the Regional Office came over and actually took the media out, because we had planned field trips for the media to be on a lookout to see the actual ignition of the burn and to watch the progress of it the first day.

In the analysis of data from interviews with public representatives, examples in which the agency appeared prepared to respond to and recover from unexpected events were not as easily identifiable. Thus, there were no obvious interview excerpts from public representatives that can be used to demonstrate that the agency was prepared to respond to and recover from unexpected events when managing public outreach during the planning and implementation of the burn. There are a couple of possible explanations for this occurrence.

First, it might be possible that the public didn't perceive the unexpected events the agency was challenged with during planning and implementation and their resiliency in responding to them. This may be especially true in this case where several unexpected events occurred and were dealt with internally rather than publicly (i.e., having to fill in for the Public Affairs Officer while in Washington, DC). Also, the fact that agency personnel *were* resilient in responding to these unexpected events, may itself have made it more difficult for the public to perceive such behavior.

Calling Upon Expertise in Decision-Making and Management Efforts

The final mindfulness process is calling upon appropriate expertise in decision-making and management efforts. Unlike a rigid hierarchy where decisions are imposed from the top down, when incorporating mindfulness into decisions and operations, personnel with the most expertise, regardless of their position within the organization, are utilized. This does not preclude the fact that certain decisions must be made and operations led by personnel in specific positions (adapted from Weick and Sutcliffe 2001). As indicated from perceptions of both agency and public representatives, it seemed evident that personnel on the Lewis and Clark National Forest often called upon appropriate expertise in decision-making and management efforts related to public outreach for the prescribed burn.

One key indicator that the agency called upon appropriate expertise in decision-making and management efforts was the fact that local agency personnel were charged with the planning and implementation of the burn, including public outreach. Even though an Incident Management Team was brought in to assist in burn operations, agency representatives perceived that local personnel on the District were largely in charge of leading the multi-faceted operation:

Agency Representative: *... we identified that at the beginning that we're going to help reduce risk by having a (Incident Management) team involved. But one of the major points, debates about that with the public was that we want you guys involved. You're not going to hand this over to a team, right? Oh, no, no. You know, our Burn Boss was still (a District employee), who's right here out of Choteau. Our ignition specialist in the air was*

(a District employee), our FMO (Fire Management Officer). Our ground ignition specialist was (a District employee), our AFMO (Assistant Fire Management Officer). And then (the District Ranger would) be there as the line officer making the calls for the Forest Supervisor in terms of whether we would ignite that day or not. And (he'd) be the one dealing with the people, heading up public meetings, talking to the media ...

It was also evident from public representatives that the agency called upon appropriate expertise (in this case local expertise) in their management efforts, including the Fire Management Officer, District Ranger, and Burn Boss, who are all employees of the Rocky Mountain Ranger District and members of the local communities, Augusta and Choteau. Public representatives, similar to agency representatives, talked about the importance of the agency utilizing the local expertise of these individuals, people well known in the local communities, in planning and implementing this specific project:

Public Representative: *I think that they demonstrated to people that the local Forest Service personnel, like (the Fire Management Officer), (the Burn Boss), (the District Ranger), that they were local faces that were well-known that were going to be connected to this burn and that they were very credible and responsible and accountable. And I think people sensed that, that there was going to be an enormous amount of local accountability for this burn. And I think because of that some people probably felt that their concerns were expressed or reduced because it wasn't going to be some nameless face for a federal project. It was going to be the responsibility of people that you could look in the eye and talk with ... You're my neighbor and I know you.*

Perceptions of Changes in Community Attitudes Towards the Burn

Through analysis, agency and public perceptions of changes in local community attitudes towards the burn were identified, as well as perceptions about whether the agency's management of public outreach had influenced these attitudes. Public representatives had mixed thoughts on whether or not local community attitudes had changed during the project. Some thought negative attitudes among local community members hadn't changed and never would change. There was also a perception that, for the most part, community members had become ambivalent towards the burn, knowing the agency was actively moving forward with the project. There was however, some evidence from public representatives that attitudes *were* influenced during project planning and implementation, in particular becoming more positive or accepting and supportive of the burn.

Agency representatives also had mixed thoughts on whether or not community attitudes had changed. Similar to public representatives, some agency representatives thought community attitudes toward the burn had become more positive, while others thought there had been no change. For those who thought community attitudes had changed, there was some indication that the agency's evident mindfulness in managing public outreach had influenced these attitudes. For example, there was some belief that the agency's openness in public meetings and one-on-one contacts, demonstrating situational awareness in managing public outreach, had an influence on community

attitudes towards the burn. Thus, agency representatives provided additional evidence of some attitude change during the project that can be attributed, in part, to the agency's mindful management of public outreach.

Conclusions

This research offers an example of how a framework of mindfulness processes can be appropriately used to describe an organization's management of public outreach. The use of qualitative methods (in-depth interviews) allowed both agency and public representatives to openly talk about the agency's public outreach during the planning and implementation stages of the prescribed burn. Agency and public representatives discussed at length such things as public meetings, newspaper articles, one-on-one contacts with private landowners, briefing to key publics (county commissioners, governor's staff, media), and other such efforts detailed in the Results section, utilized by the agency in public outreach. Through analysis of the interview transcripts it was possible to not only identify but to also categorize and describe these outreach efforts by the agency as being indicative of the five central mindfulness processes (i.e., recognizing potential barriers to accomplishment of management objectives, resisting simplification of information or interpretations, ensuring situational awareness of events as they occur, responding to and recovering from unexpected events, and calling upon appropriate expertise in decision-making and management efforts). There was only one instance (public perceptions of the agency's ability to respond to and recover from unexpected events) where this was not possible.

Because use of the framework made it possible to analyze agency and public perceptions concerning the USFS's management of public outreach for the South Fork of the Sun River Prescribed Burn, this application of Weick and Sutcliffe's management theory seems to be effective at least to guide analysis. The USFS itself will have to determine the usefulness and effectiveness of this theoretical application as a management tool.

It is possible that the USFS and other wildland fire management organizations could use this framework of mindfulness processes as sort of a "checklist" before, during, and following public outreach to evaluate their management efforts. They could use the framework as a brainstorming tool when planning public outreach efforts. For example, they might individually, or as a group, proactively think about how they might be mindful of potential barriers to accomplishment of their management objectives, or how they might help to ensure situational awareness in managing public outreach. They could use the framework while they are actively conducting public outreach activities to incrementally evaluate individual and group behavior as it relates to the management of public outreach. For example, they might critique their efforts to resist simplification of information or interpretations related to public outreach, or their ability to respond to and recover from unexpected events that have or might occur. They could also use the framework following public outreach efforts to evaluate and learn from their efforts in a fashion similar to an After-Action Review. For example, they might discuss examples of where it seemed they had been exhibiting mindfulness processes, or examples of where it seemed they hadn't exhibited mindfulness processes and could improve upon their efforts in the future.

Finally, in using the framework of mindfulness processes to facilitate group discussion about public outreach efforts, it might be possible to identify

where contrasting perceptions about individual or group behavior exist among personnel within a wildland fire management organization. Such uses of this framework of mindfulness processes would likely help to improve understanding and practice of organizational characteristics that contribute to success in engaging the public to accomplish fuels management at the wilderness/non-wilderness interface.

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