

PERSPECTIVES FROM THE
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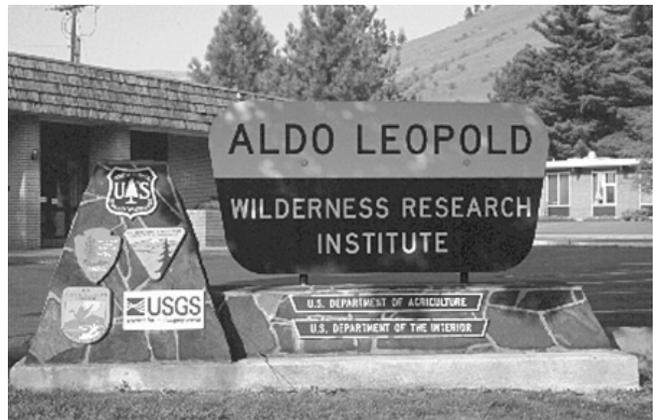
Learning From Wilderness

The Social Dimension of Fire Management

BY ANNE E. BLACK

In 2008, the U.S. Forest Service (USFS) began piloting a “new” concept in fire management: managing “fire as fire” on the landscape; no more black-and-white distinctions between “good” fire and “bad” fire. Instead, under the new direction, the USFS manages the fire based on what the land, the long-term objectives, the land management plan, the social-political situation, and the weather suggest. For example, the USFS staff may attack a flank of the fire that has a high probability of moving aggressively into a housing subdivision, but may only monitor the flank of a fire moving through public lands (wilderness or nonwilderness) that are ecologically in need of a fire. Interestingly, this intuitively straightforward way to manage fire represents a profound shift in organizational structure and culture, with implications for how to receive and allocate budgets that manage natural ignitions, how to coordinate and communicate with internal and external partners, how to understand and predict fire behavior, and how to weigh competing priorities and objectives in the decision-making process. Success hinges on the ability of a manager to safely, effectively, and efficiently manage a dynamic, high-stakes fire situation. The shift takes the fire manager out of the safe terrain of heroic figure doing battle with nature’s forces to the trickier territory of shepherding a complex system.

Where does the knowledge to guide us come from? One place is wilderness, both ecological knowledge (e.g., fire processes, return intervals, and resulting pattern) and social knowledge (e.g., how to organize and manage a long-duration event successfully). As managers and researchers, we gained experience in the art of fire management through the courage and passion of managers willing to push unconventional ideas about fire management—their



laboratory: wilderness and prescribed fire. Now, Aldo Leopold Wilderness Research Institute (ALWRI) staff are capturing, grounding, and extending that knowledge through an ongoing series of applied research projects among a community of academics, researchers, managers, and contractors.

Since 2000, staff at the ALWRI have been working to understand how to integrate the potential benefits of fire and lessons from the 30 years of federal experience and expertise in wilderness fire into all fire decision making. The idea is to capture the general issues and patterns and use these consistently to identify how, when, and where we can most effectively use fire to meet ecological and management goals. However, this knowledge tends to be distributed and anecdotal. Although there is a wealth of knowledge gained from expertise and experience in many places, those lessons tend to be shared only with others close by. Because of this, the keys to the most significant barriers and facilitators to fire management were not readily available to the entire system. With the assistance of two master’s students, the ALWRI obtained an initial

objective understanding of key influences (Black et al. 2008; Doane et al. 2006). These key influences range from national policies and planning documents that do or do not allow fire use, to the presence or absence of agreements between adjacent land managers that provide for the natural scale of fire and to the critical working relationship between local line officers and their fire staff. Based on ALWRI research experience, the fundamental issues of individual and group dynamics were identified as the levels of trust, comfort level with fire, and experience with fire and local political realities.

Over the same time period, the fire use management community began seeking to build skills in organizational learning and a “high reliability” organization because of their acknowledgment that management disasters and organizational errors can kill people and jeopardize fire-use programs. Organizational learning (e.g., Garvin 2000) focuses on the behavioral and structural processes necessary to identify, capture, and transmit lessons and adapt behavior as a consequence of those lessons. High reliability theory (e.g., Weick and Sutcliffe 2007) was developed to explain why certain organizations are able to operate in unpredictable, high stakes environments with minimal errors, such as air traffic control and nuclear aircraft carrier operation. These concepts and those of other researchers trying to understand how organizations can better detect, manage, and bounce back from error (e.g., Dekker 2007; Reason 1997) form the foundation for current applied research efforts.

The Wildland Fire Lessons Learned Center in partnership with the USFS Rocky Mountain Research Station, the four U.S. federal land

management agencies, and The Nature Conservancy sponsored four annual workshops on high reliability theory for the management community. This has led to smaller regional and local workshops to help fire managers become better risk managers by paying more attention to small failures and to differences between what was planned and what actually happened, listening for subtle changes in environment on the fire line, and quickly reassessing and responding to these changes. As with concepts of organizational learning, these management actions require a leadership

however, if the end result is finding someone to blame, few will be willing to speak up, and fewer yet will be willing to look objectively at their own actions (Lewis 2008). As recent reviews of unwanted fire outcomes indicate (Nasiatka et al. 2008; Dether and Black 2006), there are unique circumstances to every event, but there are also few new patterns. Despite our best intentions, we may underestimate weather or fire behavior, fail to notice or act on accumulating deviations from our plan, or communications were less than desired. Are these individual errors?

Fire use, most notably in wilderness, requires a quite different mind-set, one in which success means choosing *not* to do everything possible.

and group culture that does not simply accept diverse perspectives and views, but requires them. The speed and complexity of any fire environment cannot be known, seen, or understood completely by any one person—thus, the key to safe and effective operations is cultivating a group climate in which partial knowledge and competing explanations can be respectfully voiced and integrated into group understanding. Because wilderness fires often do not pose immediate threats to property, the tempo on managed wilderness fires is often slower and the stakes lower. These seem to be one of the best places in which to develop and practice new skills.

Few things dampen a fire-use program like unwanted outcomes; for example, think of the national attention on post-1988 fires in places such as Yellowstone National Park. Improvement depends on learning;

Organizational research, such as referenced in this article, suggests that the actions *causing* the patterns in the outcomes are likely institutional as opposed to individual. That is, although individuals make decisions and take action, they do so from within institutional and cultural frameworks and rationales that direct their attention and guide how they weigh the information received. To produce *different* outcomes, we must be able to see this system in action—in ourselves, in our groups, in our organizations—and understand the rationale for the existing frameworks. For example, we need to be able to clearly see and critically discuss:

- what our intentions and behaviors are,
- what we notice and pay attention to in our environment,
- what we consider in our deliberations of what actions to take,
- what constitutes appropriate action, and

- what would need to change in order to allow for a different path to develop.

In a sense, our individual experiences are a window into organizational structure and culture.

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The ALWRI, in collaboration with the research and management community, is engaged in several projects designed to build a system perspective and extend our understanding of effective practices. One project is a national survey of high reliability practices in the federal fire community that asks questions such as: How broadly and how deeply have these concepts spread, and are they having an impact on performance? Another project is working on development of a “key decision log”

to capture the decision-making process during fires to build an understanding of organization-wide patterns and contribute to organizational learning. A third project is working on a series of pre-season “dialogue simulations” to assist line officers and fire managers in becoming more aware of critical organizational dynamics and how they contribute to performance and outcomes. Within each project is the awareness that success in the new fire management era means understanding and integrating different organizational cultures of suppression and fire use.

In most places, the United States included, humans seek to dominate fire—fight it, suppress it. Success has been defined as persevering even in the face of overwhelming odds. Fire use, most notably in wilderness, requires a quite different mind-set, one in which success means choosing *not* to do everything possible. Learning to manage “fire as fire” requires understanding: what it takes to refrain from doing everything possible, how to transition between aggressive action and monitoring, how to communicate intent, what to pay attention to, and how to determine appropriate action in each landscape. Combining fire management practice with structured reflection, such as through the ALWRI collaborative applied and

action research projects, offers a powerful way to learn. **IJW**

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