

PERSPECTIVES FROM THE
ALDO LEOPOLD WILDERNESS RESEARCH INSTITUTE

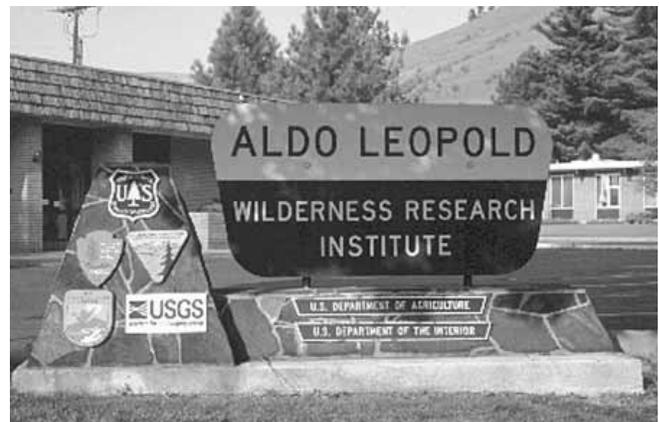
Changing Research Needs in Wilderness Fire

BY CAROL MILLER

Wilderness policies of the four agencies that manage wilderness in the United States recognize the importance of fire as a natural process and federal fire policy supports allowing lightning-caused fires to burn. However, a complex suite of challenges has limited the restoration and maintenance of natural fire regimes in wilderness (Parsons 2000). As a result, fire suppression has been the dominant fire management strategy in wilderness, despite running counter to management goals for lands that are to be “untrammeled by man” and “affected primarily by the forces of nature.”

Recognizing the threat that suppression poses to wilderness stewardship, a major area of research at the Aldo Leopold Wilderness Research Institute (ALWRI) is wilderness fire. Much of ALWRI’s fire research has focused on the fire management strategy known as wildland fire use—a strategy that allows wildland fires to burn for their beneficial effects. Survey research has improved our understanding of the barriers and facilitators to wildland fire use, which include an array of biophysical, social, political, and institutional factors (Black et al. 2008). Other research efforts have resulted in information and tools to support fire management planning and wildland fire use decisions (e.g., Black 2005; Miller and Davis in press), and we have investigated a variety of social issues related to wildland fire use (Knotek 2005). This research focus has been highly relevant, but we live in a rapidly changing world. Wilderness managers are facing new challenges as a result of climate change, biological invasions, and exurban development. Will our wilderness fire research continue to be responsive and relevant? Might we need to adjust our focus?

The fire management and policy arenas are highly dynamic. In the past, the strategy of wildland fire use was primarily restricted to a few large wilderness areas. Today,



the strategy is increasingly being implemented on nonwilderness lands, and the past five years (2003–2007) have seen a fourfold increase in the area burned with the wildland fire use strategy when compared to the previous five years. Although data are not readily available to ascertain how much of the increase in wildland fire use has occurred in wilderness versus nonwilderness, the area burned with the wildland fire use strategy in wilderness has most certainly increased during this time. Another emerging trend is that some wildfires are being fought less aggressively than they might have been in the past. Extreme drought, increased fire activity, and limited availability of suppression resources have caused federal agencies to be more selective in which fires to suppress aggressively. Fires are being prioritized for suppression according to their likelihood of threatening homes or other infrastructure. Because wilderness areas tend to be distant from the built environment, this trend could result in more fire in wilderness. Less aggressive suppression and more fire may be the perfect prescription for wilderness areas with fire-dependent ecosystems.

But more fire is not the right prescription for all wilderness areas. Where the exclusion of fires or the invasion of alien plants has substantially altered conditions, fire may no longer act as a natural process, and instead have unnatural and undesirable effects. In many desert and shrubland ecosystems, a combination of climate trends, alien plant invasions, and increasing human-caused ignitions threaten the persistence of native species that are not adapted to frequent fire. Wildland fire use is not the answer to the management challenges in these ecosystems.

ALWRI's 2005 charter describes the "need for improved information to guide the stewardship of fire as a natural process in wilderness while protecting social and ecological values inside and outside wilderness." Meeting

this need requires an understanding of natural fire regimes, how they are being altered, and the development of feasible restoration and maintenance strategies—all of which are active areas of ALWRI research. However, most of our research has been from the perspective that the problem is fire suppression and the solution is more fire use. Obviously, this is not universally true and we need to broaden our perspective. In the future, I expect we will be taking a more ecoregional approach that addresses the varying and changing role of fire throughout the diverse National Wilderness Preservation System. IJW

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