

Wilderness Restoration

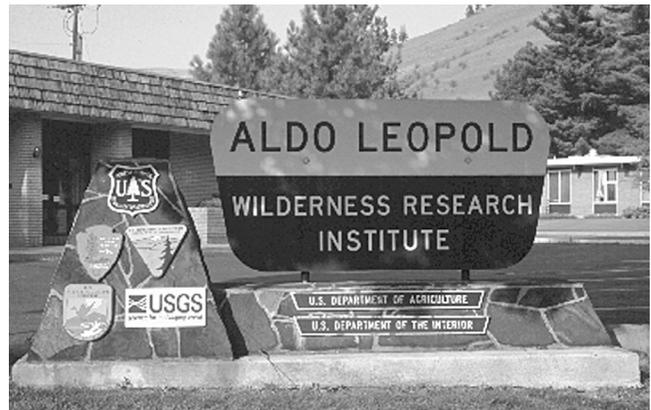
*From Philosophical Questions about Naturalness to
Tests of Practical Techniques*

BY DAVID N. COLE

When crafting the U.S. Wilderness Act, Howard Zahniser selected the word *untrammeled* rather than *undisturbed* to describe wilderness (Harvey 2005). This reflected his belief that places that had been disturbed by humans should be considered for wilderness designation because impaired ecosystems could be restored. Like many others, he hoped that restoration could be accomplished simply by leaving the wilderness alone. This was reflected in his famous declaration that wilderness stewards should be guardians rather than gardeners. In recent decades, it has become increasingly clear that human impact from fire suppression to invasive species and air pollution has affected every acre of wilderness. Wilderness stewards must choose to be gardeners or watch as native biodiversity is assaulted by these agents (Cole 2000).

Although controversial, active management of wilderness to restore ecosystems has been undertaken. Fires have been ignited; lime has been dropped in streams; bioagents have been released. Considerable attention has been given to defining the historic range of variation in ecosystem conditions—to define reference or benchmark conditions—the objectives that define restoration success. The idea is to restore conditions such that conditions in the future are within the bounds set by past wilderness ecosystems (Landres et al. 1999).

Global climate change, however, is making this approach questionable. There is a strong consensus that future climates will be “novel,” unlike those of the past, leading to no-analog communities (communities unlike any found today) and ecological surprises (Williams and



Jackson 2007). If we restore past conditions, those communities are likely to be dysfunctional—no longer appropriate for future climates. If we choose to intervene in wilderness ecosystems we need to draw on something other than the concept of naturalness and the notions of reference and benchmark to set targets and objectives. We need to recognize that we will be redirecting ecosystems more than restoring them. Past conditions, even when employing a range of variability, are no longer a proxy for well-adapted wilderness conditions.

Recognizing this, the Aldo Leopold Wilderness Research Institute co-organized and cohosted a small “Beyond Naturalness” workshop to consider these issues and concerns. There was general agreement by workshop participants that many of the traditional meanings of naturalness no longer provide useful guidance for wilderness stewardship. Beyond that, there was considerable

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Wild Places. Arlington, Virginia; Conservation International. 576 p.

Miko, Ladislav. 2007. *Protecting the Natural Environment*. PAN Parks, European Commission, Director of Directorate B, preface.

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Table 2. Benefits of PAN Parks

The benefits of PAN Parks for the protected areas:

International recognition
Independent audit
Easier access to sponsorship of conservation and tourism project
Expertise exchange through a living network
Tools:

- set priorities for building conservation capacity
- measure progress
- employee adaptive management
- improve nature management standards
- control and monitor tourism, etc.
- support in lobbying decision makers

The benefits of PAN Parks for the local communities:

Increased collaboration in park management
Small business promotion
Showcase for traditional crafts and culture
Improved tourism facilities
Stronger government support
International recognition
New jobs and increased employment, etc.

The benefits of PAN Parks for the local business partners:

Contact with European tourism companies
More nature-based tourism
Effective international marketing
Support in development of tourism package
Training services
Prove responsible businesses
Access experience of other businesses, etc.

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disagreement. At one extreme, we can avoid “playing God” by never intervening in wilderness ecosystems. At the other extreme is the belief that intervention cannot be avoided and that we must decide what we value in wilderness and work to protect it—even if this involves actions as drastic as assisted migration and transformation of ecosystems to ones that are compositionally and structurally different from the present or past. Concepts such as ecological integrity and resilience will need to supplement—if not replace—the traditional concept of naturalness. The ultimate workshop conclusion was that this important issue cannot be ignored but that it is not clear what path to take. It is time for society to reconsider and/or better articulate the purposes and values of wilderness now that we know more than we did in 1964 about the world and how it is changing.

Whereas philosophical issues need to be addressed before undertaking large-scale wilderness restoration, small-scale restorations are less controversial. Success here largely turns on technical issues. In this arena, the Leopold Institute has been working to increase the success of efforts to restore recreation sites. We have been conducting long-term experiments that evaluate the effectiveness of commonly employed site

restoration techniques (Cole and Spildie 2007). We also collaborated in the compilation of both experiential and technical knowledge in a 394-page guide to wilderness site restoration (Therrell et al. 2006). Up-to-date information on the institute’s restoration research is available at <http://leopold.wilderness.net/research/fprojects/F008.htm>. **IJW**

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