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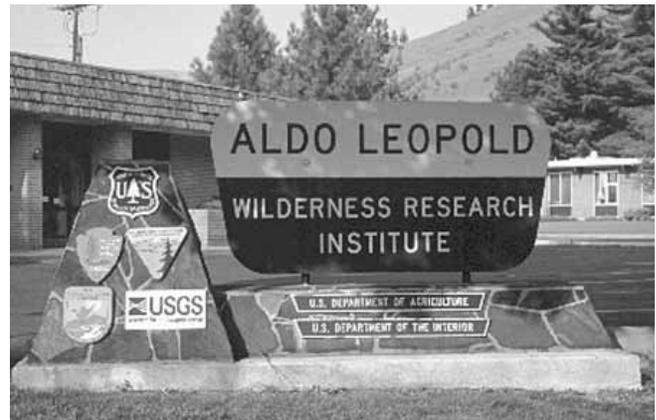
A New Tool to Evaluate Proposals for Climate Change Research in U.S. Wilderness

BY PETER LANDRES

The effects of climate change are increasingly apparent and scientists from nearly every discipline are calling for more monitoring and research. Many have suggested that wilderness would be an excellent place to conduct such work because it has escaped many of the smaller-scale anthropogenic environmental insults that occur in other areas. Also, change in the distribution of species that live in the more extreme environments of wilderness might serve as an early warning of the effects from climate change. In short, climate change research is an opportunity to use wilderness as a benchmark and as a place to understand ecological change, helping fulfill the scientific value and purpose of wilderness as stated in the 1964 Wilderness Act.

Although agreeing with the value of wilderness as a place for climate change research, others argue that these activities may not be appropriate inside wilderness because (1) they don't produce information that management agencies can practically use to preserve wilderness character; (2) there are areas outside wilderness that offer the same research opportunities; and (3) they typically require installing meteorological stations and other equipment for long periods of time, and such installations are prohibited by the 1964 Wilderness Act. In short, although there is nothing inherently incompatible about any research being conducted inside wilderness, the importance and urgency of understanding the effects of climate change do not exempt scientists from adhering to the legal requirements of 1964 Wilderness Act.

Every year the four U.S. federal agencies that manage wilderness receive hundreds of proposals for science activities inside wilderness, and the need for basic science to understand the effects of climate change will only increase this demand.



Climate change research epitomizes the acrimony that can develop between people with disparate viewpoints about conducting research in wilderness: Should scientific activities that degrade wilderness character be allowed in wilderness? How can such decisions, which often entail subjective judgments, be made in a way that is fair, transparent, and fosters better communication between managers and scientists?

To answer these questions, Leopold Institute staff worked with a team of managers to develop a framework to evaluate proposals for science activities inside wilderness (Landres et al. 2009). This framework is essentially a tool for thinking through and documenting the answers to these questions in a consistent and comprehensive way. This tool sets the stage for active discussion between managers and scientists (both inside and outside the agencies) about scientific activities that are appropriate inside wilderness when a research plan is first being developed. This framework is based on the premise that every permitted action in wilderness has both impacts and benefits—the decision to approve or deny a proposed

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scientific activity depends on whether the benefits are sufficiently important to justify accepting the impacts. To balance the need for consistency with local relevance, the evaluation framework provides a logical structure within which local staffs apply specific modifications to fit local circumstances and policy requirements.

The evaluation framework is composed of four sequential filters:

- *Initial Review Filter.* This filter identifies potential red flags that could substantially influence how the proposal will be evaluated and how much time and effort will be needed. For every wilderness there will likely be a different set of red flags that need to be identified as early and as quickly as possible, such as:
 - Whether the proposal includes any activities or uses such as motorized equipment or installations that are legally prohibited by Section 4(c) of the Wilderness Act.
 - Whether the proposal degrades wilderness character even if no prohibited uses are proposed.
 - Whether the proposal poses consultation issues about listed species or cultural and heritage resources.
- *Quality of Proposal Filter.* This filter evaluates whether the proposal is sufficiently well-designed to accomplish its stated purpose and provide the intended benefits

to management or science. For proposals that require activities or uses prohibited by Section 4(c) of the Wilderness Act, or otherwise degrade wilderness character, this evaluation is imperative to assess whether the purported benefits would be sufficient to justify accepting the impacts.

- *Legal and Policy Filter.* This filter evaluates whether the proposal conforms to existing legislation and applicable agency policies in a step-by-step flow chart. The first step is whether the proposed activity is prohibited by the Wilderness Act. If so, then the filter works through the nuances and complexities of determining whether the activity may be allowed under the “necessary to meet minimum requirements for the administration of the area for the purpose of this Act” clause in the 1964 Wilderness Act.
- *Impacts and Benefits Filter.* This filter evaluates the benefits and impacts of the proposal. Impacts are described in terms of effects on wilderness character, and benefits are described in terms of benefit to management and science. Impacts and benefits are numerically assessed using a worksheet, and the results weighed against one another in a decision matrix to derive a provisional recommendation about the proposal. Finally, the proposal is evaluated for its potential cumulative impact in the context of all

the other activities that are occurring or planned within that portion of the wilderness.

Some scientists have called for redesignating wilderness because of the constraints wilderness poses on climate change and other research. Such hostility toward wilderness only adds to the many tragedies caused by rapid climate change. Scientists and wilderness managers share many values and goals centered on understanding and preserving the natural world. Scientists may feel that wilderness is the best place to conduct their research, whereas wilderness managers and advocates may feel that wilderness protection, precisely because of the pervasiveness of environmental threats, should not be compromised. Indeed, the primary mandate in the Wilderness Act to “preserve wilderness character” demands that the standard for approving scientific activities inside wilderness is higher than in other areas. One purpose of this evaluation framework is to push both scientists and managers toward upfront communication and mutual understanding—doing so should decrease impacts to wilderness character while allowing the use of wilderness as a source of inspiration and scientific understanding.

Reference

Landres, P., M. Fincher, L. Sharman, J. Alderson, C. Barns, T. Carlson, R. L. Anderson, S. Boudreau, D. J. Parsons, L. Boyers, and K. Hood. 2009. *A Framework to Evaluate Proposals for Scientific Activities in Wilderness*. USDA Forest Service Rocky Mountain Research Station General Technical Report GTR234. Available online at www.fs.fed.us/rm/pubs/rmrs_gtr234.html.

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