

LEAVE NO TRACE

OUTDOOR SKILLS AND ETHICS:

An Educational Solution for Reducing Visitor Impacts

Figure 1. Leave No Trace hiking practices advise off-trail hikers to avoid creating new trails by traveling on durable surfaces and not walking in single file.

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VISITORS TO NATIONAL parks and wildlands pose an unintentional but very real threat to the naturalness of these protected environments. Opportunities for recreation constitute a primary purpose for the establishment of these national treasures, challenging managers with the difficult task of balancing recreation and resource protection objectives. As visitation continues to increase, the recurring question, "Are we loving our parks to death?," compels managers to search for new and more effective tools to reach that balance.

In fulfilling their mandate, managers have employed a wide array of direct and indirect visitor management actions (see Marion et al. 1993). Direct actions, such as prohibiting campfires, alter visitor behavior through regulations that reduce visitor freedom, an important element of high quality wildland experiences. Indirect actions, such as visitor education, encourage visitors to voluntarily alter their behavior to lessen the environmental impacts of their recreational pursuits. Educational approaches seek to convey information that emphasizes the linkage between visitation and resource degradation. Camping and hiking practices that

reduce visitor impacts are promoted along with outdoor ethics and judgment necessary to guide the selection and application of low-impact skills.

This article describes a new and rapidly growing national *Leave No Trace* (LNT) outdoor skills and ethics program that promotes responsible backcountry recreation (fig. 1). The effort unites four federal agencies—the National Park Service, U.S. Forest Service, Bureau of Land Management, and U.S. Fish and Wildlife Service—and outdoor retailers, manufacturers, user groups, educators, and individuals who share a commitment to maintain and protect our public lands. The primary goal of the program is to develop an educational system that instills the desire and understanding, and demonstrates the necessary skills, to enjoy outdoor recreation in a low-impact manner. The program makes *Leave No Trace* a household name for many Americans, similar to other federal campaigns such as Smokey the Bear and Woodsy Owl.

HISTORY AND DESCRIPTION OF THE LEAVE NO TRACE PROGRAM

The *Leave No Trace* program was formalized in 1993 with a memorandum of understanding between the federal partner agencies and the National Outdoor Leadership School (NOLS). NOLS is a nonprofit wilderness school, with inter-

national headquarters in Lander, Wyoming. Over the past 30 years, NOLS has taught wilderness and leadership skills to 40,000 individuals on its expedition-based courses around the world. The *Leave No Trace* program had its origins in the 1970s in the U.S. Forest Service, when use of wildlands soared, and education became imperative for wildlands to retain their pristine qualities. However, lack of funding limited efforts until 1991, when the Forest Service approached NOLS to serve as a partner in the program. Further, *Leave No Trace, Inc.*, a nonprofit corporation in Boulder, Colorado, was formed in 1994 to oversee marketing efforts and industry fundraising for the program. They function in cooperation with the original partners, representatives of the outdoor products industry, conservation organizations, and major recreational user groups.

The current LNT programs build upon previous educational efforts but are distinguished from their predecessors in three fundamental aspects. First, they are more thoroughly grounded in scientific knowledge from the discipline of recreation ecology. Knowledge from this discipline describes relationships between resource degradation and different types and amounts of recreational use, as modified by environmental factors (e.g., vegetation or soil types) and managerial factors (e.g., visitor management actions).

For example, LNT literature instructs visitors to apply different practices depending upon whether they are in high-use areas or less visited pristine areas. Selecting durable vegetation types and surfaces for travel and camping is also emphasized.

Second, current efforts place substantial emphasis on hands-on training, both of LNT trainers and backcountry visitors. The heart of the program is the Master of *Leave No Trace* Course, a 5- to 6-day field course with three components: 1) low-impact camping and travel skills, 2) wildland ethics, and 3) teaching techniques. Successful graduates teach agency personnel, their constituents, and the public about *Leave No Trace*. Diverse participants in each course enhance the educational experience. Some of the nonfederal participants include members of scouting groups, numerous colleges, private outfitters, and outdoor product industry representatives. Inherent in the LNT training philosophy is the obligation of "masters" to teach and encourage others in *Leave No Trace* skills and ethics. Masters train trainers that can assist them in reaching the public with as much hands-on instruction as possible.

The growing cadre of LNT masters (currently 333 individuals in 32 states, Mexico, and Chile) is supported by follow-up and curriculum assistance from NOLS and participating agencies. The masters are networked through the thrice-yearly Master Network newsletter and the LNT World Wide Web site on the Internet (<http://www.nols.edu/LNT/LNTHome>). NPS staff who are interested in the Master of LNT training or in receiving the LNT newsletter should contact the NOLS LNT office (1-800-332-4100; e-mail "Int@nols.edu").

Finally, the current program is developing and distributing a comprehensive set of LNT literature targeted to a wide variety of audiences. The NOLS LNT office distributes 12 different publications and three videos, including a definitive

book, "Soft Paths: How to Enjoy the Wilderness Without Harming It" (Hampton and Cole 1995), several national LNT pamphlets and posters, a regional series of LNT outdoor skills and ethics booklets, an activity-specific series (*Leave No Trace* for horseback riders and climbers),

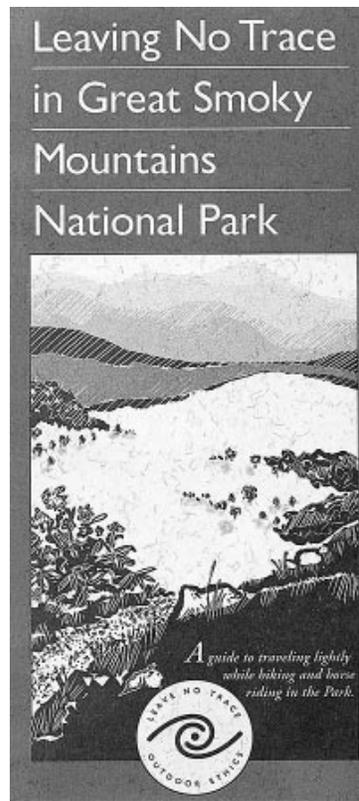


Figure 2. Brochures, like the one for Great Smoky Mountains National Park, are one means to publicize the program.

and most recently, a LNT booklet developed specifically for Great Smoky Mountains National Park. The program also has a toll-free number (1-800-332-4100) for requesting LNT literature. In the last four months of 1995, NOLS staff received an average of 22 phone calls a day, and sent out 434 LNT mailings. Additionally, LNT literature is posted on and may be requested over the World Wide Web.

LEAVE NO TRACE PAMPHLET FOR GREAT SMOKY MOUNTAINS

The need and opportunities for developing specific LNT literature are highlighted in the remainder of this paper. Existing national, regional, and activity-specific LNT literature conveys skills and practices that are widely applicable. However, specific practices, such as selecting and using a pristine campsite, may not be applicable in parks that restrict camping to designated sites. Visitor management

regulations adopted by different parks to limit visitor impacts may appear to conflict and may confuse park visitors. For example, Shenandoah National Park minimizes backcountry camping impacts by dispersing camping while their southern neighbor, Great Smoky Mountains, has adopted designated site camping regulations to limit impacts. Camping impacts can be effectively minimized under both impact reduction strategies, but educational efforts must be tailored for each to maximize its effectiveness.

Developing park-specific LNT literature (fig. 2) enables managers to include only those practices that are applicable to their unique environments, activities, and management practices. *Leave No Trace* practices that address particularly troublesome impact problems, such as firewood collection and fire building, can be emphasized. Different LNT practices can be targeted to different user groups (e.g., hikers or horseback riders) or for different park environments (e.g., river or desert). Additionally, LNT information can explain the rationale for visitor regulations and describe low-impact camping and hiking practices that increase the effectiveness of those regulations.

Managers, visitors, and park backcountry resources all benefit from national visibility and consistency of the LNT program. Visitor compliance and ethical understanding are enhanced when educational tools are reinforced and amplified by outdoor stores, the media, scouting and other groups, and park staff. The national program does not replace local educational efforts; it strengthens them by providing a broader context.

I had an opportunity to pilot test the development of park-specific LNT literature during recent campsite and trail survey research that I conducted at Great Smoky Mountains National Park. Along with NOLS and Great Smokies Resource Management Specialist Carol Schell, we developed and submitted a Challenge Cost-Share proposal for NPS funding to create and publish a Great Smokies *Leave No Trace* brochure. The National Park Service and NOLS funded the proposal in 1994 in the amounts of \$8,500 and \$10,800, respectively.

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National Outdoor Leadership School project writer Susan Brame worked closely with Carroll Schell during the winter of 1994-95 to write the booklet. They gathered and examined existing park information regarding backcountry regulations, rationale for the regulations, and low impact camping and hiking practices. This information was integrated with LNT practices described in the Southeastern States LNT Outdoor Skills and Ethics

pose of the project is to gather information about visitor impacts and develop a recreational strategy with LNT education for the Conservancy's Tensleep Preserve.

These examples illustrate only some of the possibilities for developing tools and strategies to improve visitor education. Less intensive forms of involvement might include the distribution of electronic copies of existing LNT literature, with modifications made by park staff. NOLS can serve in a review role to ensure accuracy and consistency and coordinate approval

exponential rate. Other contributing factors to lowered productivity include: lowered nest attentiveness; higher predation rates of young; harsh spring weather or extensive ice cover; and somewhat elevated levels of PCB and DDT.

IN CLOSING

Eagle research methods and findings in the Great Lakes have been incorporated in the development of a Great Lakes bald eagle biosentinel protocol. The protocol is currently under consideration for adoption under the Great Lakes water quality agreement between the U.S. and Canadian governments. This protocol, if adopted, will standardize methods used by numerous state, provincial, and federal agencies to collect Great Lakes bald eagle habitat, productivity, and contaminant data, allowing the Apostle Islands eagle population to be put into a regional framework. However, the results of this project must be considered carefully when comparing productivity trends between Lake Superior and the other Great Lakes. In the other lakes, contaminants may be the primary factor limiting productivity, whereas food availability appears to be the primary limiting factor in Lake Superior. This knowledge will enable us to better interpret population trends in the Apostle Islands eagles.

Using research to determine relationships between resource degradation and use, the Leave No Trace Program promotes responsible, low-impact backcountry recreation through education

booklet and other sources to produce a LNT booklet that is directly relevant and specific to Great Smoky Mountains. Staff at NOLS, the park, and the Virginia Tech Cooperative Park Studies Unit reviewed two drafts of the text that was then sent out for an external review. After incorporating comments and edits, NOLS arranged for printing. Donations from NOLS alumni in the southeastern United States increased funding available for the initial printing. We completed and mailed the attractive 15-page booklet (3½" x 8") in July, and it has been well received.

Like most parks, Great Smokies faces myriad backcountry recreation management challenges, and they must cope with budget cuts that require constant innovation. Through the generosity of a local donor, managers created a short educational video to cover the basics of minimum-impact backcountry travel. According to Chief Ranger Jason Hock, the brochure was integral to the whole process.

The success of the Great Smokies partnership provides a useful model for other parks. Several ongoing LNT partnerships are pursuing slightly different tactics. The NOLS Leave No Trace staff is currently working with nine western parks to develop a Rocky Mountain LNT video. NOLS is also involved in a grant-funded, 3-year partnership with the Wyoming office of the Nature Conservancy; the pur-

with LNT, Inc., for use of the LNT logo. Every successful partnership, in whatever form, will enhance the next effort.

National Park Service staff interested in exploring partnership opportunities should contact Rich Brame at NOLS. While the level of NOLS involvement is contingent on available funding, they are committed to LNT education and will work with managers to develop strategies that work.



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