



## ALDO LEOPOLD WILDERNESS RESEARCH INSTITUTE

<http://leopold.wilderness.net/>

### VISITOR ENCOUNTERS AND THE QUALITY OF WILDERNESS EXPERIENCES



Photo by D. Schultz

**Keywords:** carrying capacity, crowding, experience quality, solitude, use limits

**Background & Management Issues:** As the popularity of wildland recreation has increased, recreational carrying capacity and crowding have become some of the most studied topics in outdoor recreation research. An important goal of this research is to seek empirical justification for setting use limits in heavily traveled areas. Any decline in experience quality resulting from crowding must be weighed against the value of a user's freedom to engage in a recreational activity. Nevertheless, most studies have not found a relationship between increasing numbers of encounters and declining experience quality because there was either a true absence of a relationship or problems with the methods employed.

#### **Project Objectives:**

To improve understanding of the effect of backcountry encounters on experience quality, perceived crowding, and solitude/privacy achieved.

To evaluate the implications of these findings as they relate to decisions regarding use limits.

**Project Description:** Researchers invited a random sample of backpackers who made advance reservations during Fall 1994 and Spring 1995 for trips of four or more nights to Grand Canyon National Park to participate in this study. Those who agreed were sent a pre-trip questionnaire and a diary to complete during their trip. Due to the possible methodological problems with prior research on this topic, the study was designed to *maximize the chances of finding a relationship* between encounters and experience quality. Based on these methods, the lack of a strong relationship in this study would provide evidence that there truly is not a strong relationship, rather than reflect methodological problems. Each participant completed a questionnaire and a diary entry for each day of their trip to report on encounters and experience quality for that day. This design minimized problems with recall and memory. Overall, the approach allowed for a greater understanding of intra-subject variation and of the relationship between use density and experience quality.

#### **Results:**

The number of encounters reported was highly variable: on 10% of days respondents saw more than 40 other groups, but 25% of days participants reported one other group or less encountered.



Evidence from 80% of participants indicated that perceived crowding increased as encounters increased, and evidence from 77% of participants indicated decreased solitude/privacy achieved with increased encounter numbers. Evidence from a slightly smaller percentage (60%) of participants also indicated a decrease in experience quality due to increased encounters.

There are some visitors whose experience quality is "strongly affected" by encounters and crowding, but the analysis suggests that this population is very small, between 2-6% of backpackers in the park.

- ✓ The number of encounters experienced had a substantial effect on perceived crowding and solitude/privacy achieved. However, for most visitors, even those who place a high value prior to their trip on their motivation to seek solitude/privacy, the number of encounters had only a small effect on overall experience quality.
- ✓ Despite evidence showing that for most participants increased encounters lead to perceived crowding, decreased experience quality, and decreased solitude/privacy achieved, the decrease in experience quality was not substantial to necessarily warrant further limitations on use.

### **Management Implications:**

- ❖ Most of those sampled met more groups or felt more crowded than preferable in the backcountry, yet they still had high-quality experiences, suggesting that a very large number of users must be present to substantially affect experience quality.
- ❖ This does not mean that feeling crowded is unimportant or that limiting use is inappropriate. However, the authors suggest that managers should be cautious about setting use limits that require some visitors to forego all the benefits of a recreational experience so others may experience a relatively small increase in quality.
- ❖ A better justification for use-limits than the preferences of current users might be provided by an assessment of the regional context for recreational opportunities.
- ❖ These results neither support nor invalidate current use restrictions in place at Grand Canyon. Rather, they emphasize the value-laden nature of decisions about use limitation.

### **Publications / Products:**

- ❖ Stewart, William P.; Cole, David N. 1997. Truths about solitude at Grand Canyon. In: Harmon, David. Making Protection Work. Proceedings of the Ninth Conference on Research and Resource Management in Parks and on Public Lands; 1997 March 17-21; Albuquerque, New Mexico. The George Wright Society Biennial Conference: 21-24. **Leopold Publication Number 363.**
- ❖ Stewart, William P.; Cole, David N. 1999. In search of situational effects in outdoor recreation: Different methods, different results. Leisure Sciences. 21:269-286. **Leopold Publication Number 368.** [Read the abstract here.](#)
- ❖ Stewart, William P.; Cole, David N. 2001. Number of encounters and experience quality in Grand Canyon backcountry: Consistently negative and weak relationships. Journal of Leisure Research. 33(1): 106-120. **Leopold Publication Number 432.** [Read the abstract here.](#)



Photo by D. Cole

*For additional information...*

**William P. Stewart, Principle Investigator**  
 phone: 217-333-4410  
 email: [wstewart@uiuc.edu](mailto:wstewart@uiuc.edu)

**David N. Cole, Leopold Institute Investigator**  
 phone: 406-542-4199  
 email: [dcole@fs.fed.us](mailto:dcole@fs.fed.us)