

Place of Residence and Hiker-Horse Conflict in the Sierras¹

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Abstract: A mail-back survey of overnight hikers at the John Muir Wilderness suggests that place of residence contributes slightly to our understanding of general desirability of encounters with horses, but not to our understanding of evaluations of specific encounters or of evaluations of potentially conflicting behaviors.

Hikers in the John Muir Wilderness make complaints each year about encounters with horses and impacts caused by horse use. In past research, intergroup conflict commonly has been assessed through a set of forced-choice questions in which respondents were asked to evaluate specific encounters with other types of groups or by obtaining an indication of general desirability of such encounters.

Jacob and Schreyer (1980) presented a theoretical model for recreational conflict that defined conflict as goal interference attributed to the behavior of others. They also proposed four factors that influence likelihood of conflict between recreation visitors: the importance they attach to the recreation resource (*resource specificity*), *activity style* (i.e., activity specialization level), *mode of experience* (or expectations people have for a recreation visit), and *lifestyle tolerance* (willingness to share a place with members of other lifestyle groups).

Another potential contributor to hiker-horse conflict is place of residence. A majority of visitors to most wildernesses are from the State in which a wilderness is located. Therefore, the proportion of urban residents visiting a particular wilderness is likely related to the proportion of urban residents in that State. Wilderness areas in highly urban States such as California (91.3 percent urban in 1980, with 66 percent of the total population in centers of 1 million or more) would expectedly receive a high proportion of urban visitors.

Wildland visitors from urban areas are likely to have had limited contact with the natural environment and, therefore, other resource users. The attitudes and values the urban resident brings to wildlands are likely to be influenced by the environment in which the resident lives.

In a national telephone survey, Kellert (1984) found that residents of population centers of less than 1 million had greater knowledge about animals and the environment than those who lived in places of more than 1 million. Kellert also found some consistency in basic attitudes urban residents held toward animals. The most prevalent attitude toward animals was "humanistic" (primary interest and strong affection for individual animals, principally pets). The second most common attitude, a "moralistic" one, involves a strong focus on right and wrong treatment of animals, leading to a strong opposition to cruelty

toward animals. The third most common attitude, "negativistic," is characterized by avoidance of animals because of indifference, dislike, or fear. Of seven attitude domains, the least common was what Kellert called "dominionistic"—a desire to subordinate animals in the context of sporting and recreational pleasures. Expression of conflict by hikers when encountering horses in wilderness may be influenced by place of residence because of nondominionistic and highly humanistic, moralistic, and negativistic attitudes common to urban residents.

Methods

We obtained a systematic sample of hiking groups who received permits to camp overnight in the John Muir Wilderness during the summer and fall of 1990. After a postcard reminder and two replacement follow-ups, a final usable sample of 341 hikers provided a response rate of 86 percent.

Each hiker indicated feelings of enjoyment, dislike, or neutrality toward having met horses on a specific trip in the John Muir; each indicated the general level of desirability of such an encounter in wilderness; and, more in line with Jacob and Schreyer's definition, each answered whether the behavior of any group had ever interfered with the quality of a wilderness experience at that particular place. Respondents who indicated conflict on this last item were asked to identify the type of group that exhibited the interfering behavior and specify the behavior.

Hikers also indicated the type of community in which they resided at the time of completing the survey and during childhood (to age 18). From a list of several options, three categories were constructed for this analysis: (1) from very rural to a small city of not more than 50,000 population, (2) a medium city (50,000—1 million population), and (3) a major city or metropolitan area (more than 1 million people).

We used chi-square analysis and a stepwise discriminant procedure to examine the contribution of place of residence to understanding conflict. We developed 17 independent variables, largely using summative Likert scales, based on the four factors defined by Jacob and Schreyer. For each conflict measure, analysis consisted of (1) chi-square analysis using the place-of-residence variables, (2) developing a model based on the 17 independent variables suggested from Jacob and Schreyer factors (this forms a basis for comparison), and (3) including the place-of-residence variables with the significant variables found in the initial modeling to statistically test their contributions. All statistical tests were conducted at the $p=.15$ level. We used cross-validation techniques to measure goodness-of-fit and to derive error rate estimates.

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Results and Conclusions

An extremely high proportion of hikers were from California (90 pct). Over 40 percent are considered highly urban, living in population centers of more than 1 million people. About 27 percent lived in places with populations of less than 1 million but at least 50,000, with 31.5 percent living in places of less than 50,000 people. The percentage of those who had lived in population centers of more than 1 million while growing up was much less (27 pct), and many more grew up in places of less than 50,000 population (50.5 pct).

Neither place-of-residence variable was significantly related to the first measure of conflict—an indication of enjoyment or dislike of encounters with stock on a particular trip (table 1). We found five of the 17 theory-based independent variables significant in the discriminant model, with overall classification success of 75.4 percent. When included in the analysis, the current place of residence was not significant, although the place of residence during childhood was ($p=.148$). The childhood residence variable did not increase overall classification success, however.

Table 1—Significance and classification success for place of residence

Conflict measure	Chi-square (p-value)		Jacob/ Schreyer with*			
	Reside now	Grew up	Schreyer*	Reside now	Grew up	
Enjoy/Dislike	3.01 (.222)	.62 (.733)	75.4	N.S.	74.6	
Desirability	6.41 (.093)	.45 (.929)	82.9	83.7	84.5	
Behavior-based	1.03 (.597)	.10 (.952)	75.0	N.S.	N.S.	

* Overall classification success

N.S.= not significant

The current place of residence was significantly related to the desirability conflict measure, but the childhood residence was not (table 1). Discriminant analysis found nine significant variables with overall classification success of 82.9 percent. When each place-of-residence variable was included individually with the nine significant theory-based variables, they were significant in the respective models ($p=.14$ and $.15$). In both cases, overall classification improved slightly to 83.7 and 84.5 percent.

For the final measure (behavioral-based), neither place-of-residence variable was significantly related to conflict (table 1). We found five of the theory-based independent variables significant, providing overall classification success of 75 percent. When added to the five significant theory-based variables, neither place-of-residence variable contributed significantly to resultant models.

Place of residence has some minor effects on expression of conflict by hikers toward horses. Of the three conflict measures, place of residence appears to contribute only to understanding of a hiker's general disposition toward horse encounters, not to understanding evaluations of specific encounters or evaluations of specific behaviors of horse users.

References

- Jacob, G.R.; Schreyer, R. 1980. Conflict in outdoor recreation: a theoretical perspective. *Journal of Leisure Research* 12(4): 368-380.
- Kellert, S. 1984. Urban American perceptions of animals and the natural environment. *Urban Ecology* 8: 209-228.