

RECREATION CONFLICTS ON MT. EVANS

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This study examines recreation conflict at Mt. Evans, Colorado; a high visibility area that attracts both hunters and non-hunters. Two types of conflict were distinguished: goal interference and conflict in values. Data were obtained from a series of on-site and mailed surveys. For *hunting related events* (e.g., seeing an animal being shot, hearing guns being fired), 70% or more of both hunters and non-hunters experienced no conflict. Among non-hunters, conflicts in values (between 24 and 27%) were more evident than goal interference problems (1 to 5%). For the hunters, less than 15% reported either goal interference or conflict in values. For *human/wildlife interaction events* (e.g., people disturbing wildlife, people feeding wildlife), between 40 and 68% of the non-hunters experienced no conflict, compared to 24 to 57% of the hunters. Twenty-one to 36% of both groups expressed a conflict in values. Hunters were more likely to report goal interference conflicts (19 to 55%) than non-hunters (6 to 36%). The management implications of these findings are discussed.

Introduction

Mt. Evans is a 14,150' mountain located 70 miles west of Denver, Colorado. The mountain is unique in that it has the highest paved road in North America, climbing almost 7,000 feet to the summit. The road offers visitors a variety of scenic landscapes, ranging from lakes and pine forests, to alpine tundra and snowcapped mountains. Mt. Evans also supports one of the most accessible mountain goat and bighorn sheep populations in North America, providing excellent opportunities for both wildlife viewing and hunting.

Because Mt. Evans accommodates a variety of user groups, conflicts can occur. Management strategies to mitigate the potential for these conflicts requires an initial understanding of the causes of conflict. At least two sources of conflict are noted in the recreation literature. Conflict may occur when the behavior or physical presence of an individual (or group) interferes with the recreation goals of another individual (or group). For example, a person attempting to photograph wildlife is likely to experience conflict if the animal is scared away by the arrival of other visitors at the site. This type of conflict is labeled "goal interference" because the goal of the recreation activity is inhibited in some way (Jacob and Schreyer 1980). A second type of conflict occurs when people holding disparate values about how an area should be managed share the same resource. These situations are labeled "value conflicts" (Williams 1993). Such conflicts in values are likely to result independently of actual contact between the groups.

Understanding these sources of conflict is important for wildlife managers because the solution to conflict depends on the cause of the problem. Zoning, for example, may reduce conflicts stemming from goal interference because the user groups are

physically separated. On the other hand, zoning is likely to be ineffective when conflicting values are involved (Ivy et al. 1992, Owens 1985). Because social contact is not necessary for this type of conflict to occur, physically separating users will have little influence. In these situations, education may be more effective.

Recognizing the potential for conflict on Mt. Evans, the Colorado Division of Wildlife (CDOW) initiated a series of actions to elicit public opinion regarding acceptable management strategies. The first step was to recognize that there is no single public. Rather, the public can be segregated into a number of groups or publics; for example:

- (1) recreationists [e.g., wildlife viewers, wildlife photographers, campers, hikers, hunters, anglers],
- (2) regional residents,
- (3) special interest groups, and
- (4) agency personnel.

Separating the general public into homogeneous groups promotes a more systematic evaluation of the management alternatives preferred by different segments of society. The fundamental cause of today's contentious natural resource issues is the clash among incompatible values held by different publics (Vaske et al. In press, Manfredo et al. In press).

Once the publics were identified, mechanisms which facilitated input from diverse interests were established. Just as there is no single public, no single public involvement format can reach all potentially affected individuals. Consequently, a range of alternative techniques was used, including open houses in a variety of locations, stakeholder meetings, and letters to interested individuals soliciting their input. Individuals who attend public hearings or respond to direct mailings, however, may not be representative. To increase the range of contact with other interested parties, a series of scientific surveys were conducted: 1) an on-site survey and 2) three mailed surveys. One of the goals of these surveys was to systematically examine the frequency and magnitude of the occurrence of the two types of conflict on Mt. Evans. This paper summarizes findings from this investigation.

Methods

The On-Site Surveys

The objective of the on-site survey was to gather information from individuals who currently use Mt. Evans. The one-page survey included questions on the reasons for visiting, perceptions of problem conditions, if any, and reactions to alternative management scenarios. Data were collected on 11 randomly selected days between June and September, 1993. The sampling strategy included 4 days during hunting season to allow examination of potential goal interference conflicts.

Surveys were distributed by a team of interviewers to visitors at Echo Lake, Mt. Goliath Research Natural Area, and Summit Lake. An attempt was made to survey all visitors in the area during the data collection periods. Ninety-six percent of the visitors contacted (n = 986) completed the survey. Individuals who were willing to participate further were mailed a follow-up survey.

The Mailed Surveys

A 12-page questionnaire was mailed to all 600 Mt. Evans visitors who had provided their names and addresses on the on-site survey. Three separate mailings were used, with a reminder postcard after the first mailing. Of the 600 surveys in the initial mailing, 13 were undeliverable due to incorrect address information. A total of 401 completed surveys were returned (response rate: $401/587 = 68\%$).

Surveys were also mailed to Mt. Evans hunters and individuals who reside in the Mt. Evans region. The sample of hunters included those individuals who had applied for a 1993 permit to hunt elk on Mt. Evans and those who had applied for a sheep, goat, or ptarmigan hunting permit between 1988-1993. The range of years was used to ensure a sufficient sample of the different types of hunters. Mailing procedures paralleled those for the

visitor sample. Of the 600 hunter surveys initially mailed, 569 were deliverable and 389 were returned (response rate = 68%). The sample of regional residents (n = 600) was identified through local telephone directories. Of the 542 deliverable regional surveys, 199 were returned (response rate = 37%).

Combining the completed returns from all three samples resulted in a total sample of 989 individuals. Of these, 135 respondents had never visited Mt. Evans. Because this paper is concerned with conflict perceptions reported by Mt. Evans visitors, the 135 non-visitors were excluded from the analyses presented here.

Independent Variable

Respondents to all three surveys were classified as either hunters (n = 434) or non-hunters (n = 420). Hunters included those who currently hunt; non-hunters were individuals who have never hunted or who no longer hunt.

Dependent Variables

Respondents were asked to answer two sets of questions regarding 6 events. In the first set of questions, individuals indicated how frequently each event had happened to them personally during all of their visits to Mt. Evans. The events included three non-hunting situations (seeing people feed wildlife, people disturbing / harassing wildlife, and dogs chasing wildlife), and three hunting associated incidents (seeing hunters, hearing guns being fired, and seeing an animal being shot). Response categories were "never," "once," "twice," "3-5 times," and "> 5 times". For the purposes of this analysis, responses were recoded

as either "observed" or "did not observe" the event. In the second set of questions respondents evaluated the extent to which they perceived each of the 6 events to be a problem at Mt. Evans. Responses were initially coded on a 4-point scale, ranging from "not a problem" to "extreme problem." These variables were recoded into two categories ("no problem" and "problem"). Problem situations included "slight," "moderate," and "extreme" problems.

Results

Combining the frequency of occurrence (observed versus not observed) variables with the corresponding perceived problem (no problem versus problem) variables for each individual produced a series of new variables; each with four possible attributes. Individuals who had either observed or did not observe a given event, yet did not perceive it to be a problem were considered a no conflict group (either in values or goals). Those who had never seen a particular event at Mt. Evans, but believed a problem existed for that event were expressing a conflict in values. Conversely, those who had witnessed a particular situation and believed that the event had caused a problem were indicating a goal interference conflict.

Columns 1 and 2 of Table 1 represent a "no conflict" group for hunting associated activities. These individuals, independent of whether they observed or did not observe an event, did not feel a problem existed. At least 70% of the non-hunters and 85% of the hunters were included in this no conflict category.

Table 1. Hunting associated conflicts on Mt. Evans.

Event ¹	Not at all a Problem ²		Problem ³	
	Did not Observe	Observed ⁴	Did not Observe	Observed ⁵
Seeing an animal being shot				
Non-hunters	71%	1%	27%	1%
Hunters	49	38	7	6
Seeing people hunting				
Non-hunters	70	3	24	3
Hunters	24	61	1	14
Hearing guns being fired				
Non-hunters	65	5	25	5
Hunters	28	59	3	10

¹ All comparisons between hunters and non-hunters are statistically significant (p < .001).

² No conflict groups

³ Problem condition = slight, moderate, or extreme

⁴ Conflict in values

⁵ Goal interference conflicts

Columns 3 and 4 of Table 1 illustrate the two types of conflict. Responses in column 3 represent those individuals who did not observe the event but evaluated the situation as a problem (i.e., conflict in values). About one quarter (24 to 27%) of the non-hunters expressed this type of conflict for the three hunting associated variables. Only between 1 and 7% of the hunters indicated a conflict in values. Respondents in column 4 (Table 1) observed the event and thought it was a problem. These goal interference conflicts rarely occurred on Mt. Evans. Five percent or less of the non-hunters experienced these types of goal interference, while 6 to 14% of the hunters noted these problems.

Table 2 examines the same types of conflict for non-hunting human/wildlife interactions. In general, the non-hunters were more likely to have observed these events as opposed to hunting related situations. Twenty-one percent had seen people disturbing wildlife and 47% had seen others feeding wildlife (columns 2 and 4). For these variables, between 40 and 68% of the non-hunters fall into the no conflict category (columns 1 and 2). Between 24 and 57% of the hunters were represented in this no problem group.

Table 2. Human/wildlife interaction conflicts on Mt. Evans.

Event ¹	Not at all a Problem ²		Problem ³	
	Did not Observe	Observed	Did not Observe ⁴	Observed ⁵
Dogs chasing wildlife				
Non-hunters	67%	1%	26%	6%
Hunters	55	2	24	19
People disturbing/harassing wildlife				
Non-hunters	43	1	36	20
Hunters	28	2	35	35
People feeding wildlife				
Non-hunters	29	11	24	36
Hunters	17	7	21	55

¹ All comparisons between hunters and non-hunters are statistically significant ($p < .001$).

² No conflict groups

³ Problem condition = slight, moderate, or extreme

⁴ Conflict in values

⁵ Goal interference conflicts

With respect to conflict in values (column 3, Table 2), about a quarter of the non-hunters felt that dogs chasing wildlife and people feeding wildlife were problems even though they did not observe the events. Thirty-six percent of the non-hunters expressed a value conflict with people disturbing or harassing wildlife. Among the hunters expressing conflict in values, the comparable percentages were 21% (feeding wildlife), 24% (dogs chasing wildlife) and 35% (people disturbing / harassing wildlife).

For non-hunting human/wildlife interactions, goal interference conflicts were more pronounced for hunters than non-hunters (column 4, Table 2). Between 19 and 55% of the hunters, compared to between 6 and 36% of the non-hunters reported goal interference problems. For both groups, people feeding wildlife presented the most serious problem.

Discussion

For hunting related events, conflicts in values were more evident for non-hunters than hunters. Goal interference for these events was noted by fewer than 15% of either group. For human/wildlife interaction events, between 21 and 36% of both groups experienced conflicts in values. Goal interference for these non-hunting situations were more likely to be judged problems by the hunters than the non-hunters.

Two general strategies have been recognized for dealing with conflict: zoning and education. When the conflict stems from differences in values, zoning is not likely to be very effective. For hunting events at Mt. Evans, physically separating hunters from non-hunters will not resolve the conflict in values expressed by the non-hunting group. Just knowing that people hunt in the area results in the perception of conflict. In this situation, education efforts designed to inform non-hunters about wildlife population management may be more effective.

Most research on goal interference conflicts has focused on the asymmetrical relationships between different activity groups, particularly between participants using motorized versus non-motorized equipment. Several studies conducted in the Boundary Waters Canoe Area, for example, have documented the presence of a one-way conflict between paddling canoeists and motorboaters (Lucas 1964, Lime 1975, Adelman et al. 1982). Paddling canoeists disliked motorized visitors, but the people

using motor-powered craft were not bothered by the other group. Schreyer and Nielsen (1978) found similar results among western river floaters. Asymmetrical antipathy has been shown between hikers and trailbikers (Lucas 1964), oar-powered and motor-powered whitewater rafters (Shelby 1980), cross-country skiers and snowmobilers (Knopp and Tyger 1973), and backpackers and horsemen (Stankey 1973, Watson et al. 1993). In these situations, zoning is likely to be effective.

The non-hunting goal interference conflicts noted in this study represent reactions to inappropriate behaviors (e.g., feeding or harassing wildlife) as opposed to differences in types of use. Because these behaviors are not managerially acceptable, zoning is not a viable option. Resolution of these conflicts will require a combination of efforts, including: increased law enforcement, expanded education programs and the posting of signs.

The Mt. Evans public involvement process represented one factor which must be weighed in the decision making process. The goal of this public involvement was to reach better decisions by making the manager aware of the range of alternatives. Better decisions can be made by not leaving out or alienating groups who, if ignored, will resort to traditional political and legal mechanisms to make their wishes known. The procedures followed here allowed input from a wide range of publics using 6 different techniques (direct mailings, public meetings, an open house, stakeholder meetings, an on-site survey, and three mailed surveys). Also evident here, however, is the fact that public involvement *does not* make the decision *easier*. If anything, successful public involvement makes decisions more difficult because it alerts managers to the complexities of working with more than one constituent group.

It must be remembered that public involvement is more than public relations (Heberlein 1976). Public involvement is not selling the public on a particular program or plan. It is honestly and openly soliciting public help in the development and selection of alternatives. Public involvement is not a means of achieving a consensus among different groups, but rather a set of procedures to determine what the various preferences are and who holds those preferences.

The data reported here provide a systematic view of the types of conflict existing on Mt. Evans. Resolution of these conflicts in values can only occur through continual discussions with the different interest groups. Periodic contact must be made with these individuals and groups even if there is little new information to communicate. Regularly established meetings and / or newsletters show the relevant publics their ideas are not being dismissed. This feedback to the participants is vital for the success of any public involvement effort.

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Literature Cited

Adelman, B.J.; T.A. Heberlein; and T.M. Bonnicksen. 1982. Social psychological explanations for the persistence of a conflict between paddling canoeists and motorcraft users in the Boundary Waters Canoe Area. *Leisure Sciences*, 5: 45-62.

Heberlein, T.A. 1976. Some observations on alternative mechanisms for public involvement: The hearing, public opinion poll, the workshop and the quasi-experiment. *Natural Resources Journal*, 16: 197-212.

Ivy, M.I.; W.P. Stewart; and C. Lue. 1992. Exploring the role of tolerance in recreational conflict. *Journal of Leisure Research*, 24: 348-360.

Jacob, G.R. and R. Schreyer. 1980. Conflict in outdoor recreation: A theoretical perspective, *Journal of Leisure Research*. 12: 368-380.

Knopp, T.B. and J.D. Tyger. 1973. A study of conflict in recreational land use: Snowmobiling versus ski touring. *Journal of Leisure Research*, 5: 6-17.

Lime, D.W. 1975. Backcountry River Recreation: problems and opportunities. *Naturalist*, 26: 1-6.

Lucas, R.C. 1964. The recreational capacity of the Quetico-Superior Area. Res. Pap. I.S-15. St. Paul, Minnesota: U.S. Department of Agriculture, Forest Service, Lake States Forest Experiment Station.

Manfredo, M.J.; J.J. Vaske; and D.J. Decker. In press. Human dimensions of wildlife management: Basic concepts. In *Wildlife and Recreationists: Coexistence Through Management and Research*. Knight, R. & Gutzwiller, K. (eds.). Washington, D.C.: Island Press.

Owens, P.L. 1985. Conflict as a social interaction process in environmental and behavior research: The example of leisure and recreation research. *Journal of Environmental Psychology*, 5: 241-259.

Schreyer R. and M.L. Nielsen. 1978. Westwater and Desolation Canyons: Whitewater river recreation. Institute for the Study of Outdoor Recreation and Tourism. Logan, Utah: Utah State University.

Shelby, B. 1980. Contrasting recreational experiences: Motors and oars in the Grand Canyon. *Journal of Soil and Water Conservation*, 35: 129-131.

Stankey, G.H. 1973. Visitor perception of wilderness recreation carrying capacity. Res. Pap. INT-142. Ogden, Utah: U.S. Department of Agriculture, Forest Service, Intermountain Research Station.

Vaske, J.J.; D.J. Decker; and M.J. Manfredo. In press. Human dimensions of wildlife management: An integrated framework for coexistence. In *Wildlife and Recreationists: Coexistence Through Management and Research*. Knight, R. & Gutzwiller, K. (eds.). Washington, D.C.: Island Press.

Watson, A.E.; M.J. Niccolucci; and D.R. Williams. 1993. Hikers and recreational stock users: Predicting and managing recreation conflicts in three wildernesses. Res. Pap. INT-468. Ogden, Utah: U.S. Department of Agriculture, Forest Service, Intermountain Research Station. 35 pp.

Williams, D.R. 1993. Conflict in the great outdoors. *Parks and Recreation*, September: 28-34, 122.