

# Conflicts and Issues Related to Mountain Biking in the National Forests: A Multimethodological Approach<sup>1</sup>

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**Abstract:** One of the key reasons for the tremendous increase in mountain biking on the National Forests is the myriad of opportunities available for off-road cycling enthusiasts. The issues of land access, trail maintenance and conflict are reinforced as complex problems that will need to be resolved through the cooperation of land managers, user groups and clubs/organizations. Quantitative and qualitative methods for sampling, data collection, and data analysis were used to explore issues and problems related to mountain biking on the National Forests. The problems and issues uncovered in this study should not be allowed to develop into “win or lose” situations, but should be pursued through a community decision approach.

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Increased participation by mountain bikes on multiple use trails and off-road areas is an issue that has seen continued attention (Hollenhorst and others 1993). Concerns about increased participation have resulted in much controversy surrounding the problem of conflict affecting users and land managers. Contention on trails among various users (e.g. equestrians and hikers) have led to concerns about participation dissatisfaction, displacement, resource impacts, and safety (Chase 1987, Jacoby 1990, Watson and others 1991, Viehman 1990). The issues and problems involving the use of mountain bikes on public lands needs to be studied.

According to the Sporting Goods Manufacturing Association (SGMA), participation levels for mountain biking have increased by 114 percent between 1987 and 1989, from 1.5 million to 3.2 million total days (SGMA 1991). Frequent participation (52+ days a year) rose by 153 percent between 1987 and 1989 from 216,000 to 546,000. The core of participation has been centered in the western United States where 59.7 percent of all participants live. California has the highest rate (25 percent) of all participants, and Colorado had a high rate as well (8.1 percent) (SGMA 1991). Sales of mountain bikes has experienced considerable increases in the last 10 years. The number of mountain bikes have increased from 200,000 in 1983 to over 11 million in 1989 (Keller 1990).

The heightened popularity of this activity is of considerable concern to land managers because of the increased interest of off-road uses of mountain bikes on multiple use trails and roads on public lands, especially those on state and National Forests. Considering the attractiveness of the National Forests for mountain biking and current participation rates, the potential for increased use of public lands could reach high levels, resulting in greater demands on resource managers.

Increased participation in off-road areas is an issue that has seen continued attention. Concerns about increased participation have led to much controversy. Potential conflicts on trails with other users (equestrians and hikers, for example) have led to concerns about participant dissatisfaction, displacement, resource impacts and safety for other user groups (Chase 1987, Jacoby 1990, Watson and others 1991, Viehman 1990). Watson and others (1990) found that conflict existed between hikers and mountain bikers at the Rattlesnake Recreation Area in Montana. More than one quarter of the bicyclists thought hikers were a problem compared to almost two-thirds of the hikers who thought cyclists were a problem. This lack of acceptance of hikers towards mountain bikers was unclear because the reasons for this objection to the bikers was not specified. In a related study of readers of Backpacker magazine, Viehman (1990) found that over two thirds of magazine readers thought that the use of mountain bikes on trails was objectionable. Similarly, Chase admits “... many people will piously declare that mountain bikers are bad for trails, when they really just don’t like them” (Knize and Chase 1987).

Additional concerns of land managers have involved resource impacts of mountain bikes on trails and enforcement of rules (Keller 1990). The studies on environmental impacts show that “minimal” if any observable differences were reported when comparing the results of resource impacts of mountain bikes and hikers (Santa Clara County Parks and Recreation 1986, Seney 1990). In examining the impacts of mountain bikes on trails, this issue will continue to be debatable until more research is done, “...on a variety of soils and under different conditions” (Keller 1990).

Because mountain biking is one of the fastest growing outdoor activities on public lands, the issues of conflict should be examined so that potential areas of concern can be identified for our land managing agencies. This participation trend is likely to continue and further investigation is needed about educational material, conflict with other user groups, and guidelines for land managers and users in determining how to effectively manage federal lands. Therefore, the

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purpose of this study was to identify issues, conflicts, and problems related to mountain biking in the national forests.

## Method

This study used quantitative and qualitative methods for sampling, data collection, and data analysis. The project was conducted over a 9-month period from the summer of 1992 through the spring of 1993. The method section is detailed in terms of data sampling, data collection and analyses.

### Data Sampling and Collection

Questionnaires were collected on-site from a sample of 750 mountain bikers. The survey was administered in National Forests in California, West Virginia and Texas to both mountain bikers on informal rides and to participants and spectators at mountain bike competitions. The information collected assessed the demographic characteristics, patterns of participation of mountain bikers on selected National Forests, information and communication opportunities and barriers, and an analysis of conflict issues involving mountain bikes. The format of the questionnaire included both scaled items and open-ended items.

Focus groups were used to obtain a more thorough perspective about the phenomenon of mountain biking. Focus groups consisted of 6 to 10 persons who were interviewed by a group moderator. As a data collection technique the value of this approach lies in the researcher's ability to explore information more thoroughly and examine individual insights (Morgan 1991).

Three focus groups were conducted for this study. Two were done in Texas, one in Houston (N=9) and one in Austin (N=8), and the third in Morgantown, West Virginia (N=8). The focus groups consisted of willing participants made up of mountain bike riders, retailers, employees, and general enthusiasts from the mountain bike community. The age of the group members ranged from 17 to 18 years to the late 40's with levels of formal education varying from no college to those with several years of graduate school. Interviews were tape recorded and transcribed verbatim.

### Data Analyses

The open ended items of the on-site survey and the transcripts of the focus groups were analyzed by triangulating the qualitative data analysis techniques of typological analysis, clustering (Goetz and LeCompte 1984), and enumeration (Miles and Huberman 1984). Typological analysis involves dividing the information into groups or categories on the basis of some criterion for disaggregating some phenomenon (Goetz and LeCompte 1984). Enumeration allows the researcher to tabulate the frequency of key words or phrases which are the units of analysis (Miles and Huberman 1984). Enumerative techniques augment attempts to generate, refine or verify hypotheses (Goetz and LeCompte 1984). Clustering is used when information acquired through data sources does not fit into

previously identified themes or categories (Miles and Huberman 1984).

Validity and reliability were addressed through the use of external reviewers (Goetz and LeCompte 1984, Lincoln and Guba 1985). These external reviewers included researchers familiar with qualitative research techniques, participants within the focus groups, key informants, and mountain bikers. The use of these confederates was planned in order to validate the outcomes of the analysis and verify the concepts in the study as a way to establish consensus and consistency (Glancy 1988, Goetz and LeCompte 1984, Henderson 1991).

## Results

Of the approximately 750 surveys distributed, a total of 696 (92.8 percent) were usable. Most of the survey respondents were male (85 percent). The mean respondent age was 29.8 years, and the mean level of formal education was 15 years.

### Open-Ended Items

After analyzing and interpreting the open-ended items, response categories (Pugach 1985) were created for each question. The responses to the item "Important issues and problems facing mountain biking in the National Forests" included "access" (n=244), "impacts" (n=199), "conflict" (n=189), "education/rules/etiquette/ethics" (n=101), and "trail maintenance" (n=86). Thus, dominant focus for mountain biking was access, impacts, conflict and education of the users.

### Focus Groups

Results from data reduction techniques showed that concerns did exist about the problems and issues facing mountain biking in the National Forests. The responses were very specific and focused on these areas: access, trail maintenance, impacts, conflict, education/ etiquette/rules, information dissemination, management, and practices/policies.

Examples of comments:

"...they should be issued a handbook with their bicycle if they are going to ride it ...like a motor vehicle handbook. They should know the rules."

"The hikers don't interfere with your experience (mountain bikers), the bikers interfere with the hiker's experience."

The comments put forth by these riders are indicative of the information that has been reported by other users in numerous locations. Mountain bikers are very concerned about access, conflict with other users, and impacts (e.g., resource and psychological impacts to other users). According to focus participants, these problems are complex and will be addressed most effectively within the context of a cooperative, "community" approach including users, land managers, club/organizations and policy makers.

## Discussion

From a management perspective, the issues and problems that are facing mountain biking in the National Forests are real and very specific. Mountain bikers are troubled about continued trail access in the National Forests. Mountain bikers are even more concerned by the effect of future increases in usage as it relates to trail access. In the brief history of mountain biking, participants have strongly advocated the use of trails on many tracts of public land. These concerns have been one of the foci of mountain biking clubs. These clubs and other bicycling organizations, i.e., Bicycling Federation of America, have been instrumental in working for continued access on public lands. Both resource managers and riders will also need to become more conscious of the access issue in dealing with other trail other users.

This study showed that mountain bikers are concerned about conflict with other users but are tolerant of other users, such as equestrians or hikers. This conclusion partly supports the findings of Watson and others (1991) showing that mountain bikers are tolerant of hikers. In the focus groups however, it was found that mountain bikers feel that other trail users, e.g., hikers and equestrians, need to change their outlook and maintain a less "possessive" attitude about the trails and become more understanding of increases in trail usage by mountain bikers. The issue of separate trails for various trail users was discussed in the focus groups but was not regarded as a plausible solution by any of the participants.

Additional concerns that surfaced in this study pertained to educational programs and rider etiquette. These types of issues could be resolved through an integrated approach. Rider education by way of a minimum impact trail strategy is essential but may have limitations unless this philosophy is adopted by all users. Inconsiderate behavior by individual users is a possibility, but education is an integral part of minimizing the shortcomings caused by carelessness and ignorance. As suggested by respondents, the mountain bike manufacturers and bicycle retailers are a critical link in educating the user and should take a leadership role.

Lastly, respondents expressed concern about the maintenance and construction of trails. The problem of trail maintenance may be handled differently depending upon the terrain, rate of usage, region, and trail type, but it is one issue that will need to be addressed by land managers. Federal dollars for new trails may be difficult to acquire, but the modification of present trail systems through the assistance of all interested trail users may be a partial answer. More involvement by volunteers from mountain bike clubs may reduce the need for public resources for trail expenditures. Organized networks of volunteers on a state or regional basis should be promoted by clubs. This type of system has been effective for hiking organizations such as the Green Mountain Club, Inc. or Appalachian Mountain Club. In addition, improved communication

between land managers and mountain biking clubs can aid in the development and maintenance of specific trail features that are desired by riders such as trail head information. Multiple use trails, however, may not be modified for mountain bikers because these trails are used by a more diverse group of trail users.

## Conclusions

If mountain biking on the National Forests continues to grow at its current rate, it will require continued investigation and will necessitate that all trail users, club members, and land managers remain in constant communication. All parties connected by mountain biking will need to take a community approach to the development of policy and management guidelines. We recommend a national conference, attended by representatives from all affected user groups, clubs, and land managing agencies, to address the issue of mountain biking and trail use conflicts.

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