

Recreational Mountain Biking: A Management Perspective

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ABSTRACT: Mountain biking activity presents a new set of management challenges related to multiple use in recreation areas. To determine the potential issues associated with mountain bike management, a telephone survey of 40 recreation managers from two federal agencies (USDA Forest Service and USDI Bureau of Land Management) was conducted. Exploratory in nature, the study sets the groundwork for more comprehensive future investigations. Many of the respondents characterized mountain bike use in their resource areas as moderate to extensive. Most did not have designated mountain bike areas, and few reported having a specific management plan related to mountain biking. About one-third reported resource degradation related to mountain bike use, while over half reported conflicts between bikers and other user groups—hiker, equestrian, off-road vehicle, and all-terrain vehicle user groups.

KEYWORDS: Mountain biking, conflict, resource degradation, management strategies

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Mountain biking is a popular and rapidly growing outdoor recreation activity. In 1983 mountain bike users numbered about 200,000 and in 1990, 15 million (Keller, 1990). The total number of mountain bike riders may soon outnumber hikers (Viehman, 1990). While only about 30% of mountain bike owners go off road (Brown, 1988), the potential trail use by this group is much greater. As use has grown, mountain bike riders as a group have become politically active. After being banned from trails in parts of California and Colorado in the early 1980s (Baker, 1990; Kelly, 1990), mountain bike riders

have become organized and involved in land-management-agency decision making regarding trail use. Mountain bike riders now encourage each other to play an active role to ensure they get their “fair share” of trail riding opportunities (Blumenthal, 1990).

This growing activity presents a challenge to public land managers. They must balance a variety of ongoing recreational activities that sometimes conflict with each other, especially on federal lands.

Mountain bike use presents a potential problem for recreation managers for several reasons. One reason is the technological advances in mountain bikes that have occurred in the last decade. Improvements in gearing (such as seven-gear rear sprockets and a wider range of gears), easier shifting (“index” shifting), and shock absorbers have allowed mountain bikes to venture into areas that would not have been possible 10 years ago.

A second reason for concern is trail maintenance, the need for which has increased while budgets have continued to be limited. If resource degradation results from mountain biking directly, or indirectly from increased trail use, maintenance will become a larger problem in the future. The extent of resource degradation attributable to mountain bikes is a matter of debate. Seney’s master’s thesis (1990) examined the erosion caused by various users including hikers, equestrians, motorcycles, and mountain bikes on mountain trails. He concluded that the trail damage caused by mountain bikes was not significant, and was difficult to distinguish from the impact that other uses had. On the other hand, Hain (1986) found damage that had occurred on the Deschutes National Forest in places where bike riders had gone around log-style water bars, leading to water by-pass, unwanted erosion, and widening of the trail.

A third reason for concern, related to the increased ability of mountain bike riders to venture into more remote areas, is the potential for wilderness trespass on USDA Forest Service lands. Entry into National Wilderness areas by mountain bikes is presently illegal. Also, some scenic and interpretive trails in several National Forests are off limits to mountain bikes. Managers face the problem of how to provide information about access to mountain bike riders, and how to prevent intentional trespass with limited personnel for enforcement.

A fourth reason managing mountain biking presents a challenge is safety. Unlike traditional trail uses, mountain bikes have the ability to attain high speeds without making much noise. Bikes can present safety problems when sharing trails with horseback riders and hikers (Pettit & Pontes, 1987; Jacoby, 1990; Stiverson, personal communication, 1991). Safety issues are affected by user mix on a trail, as well as by the type of trail involved and the number of actual users. The Kepner-Trego analysis (Pettit & Pontes, 1987) showed that, although safety was a primary concern of users surveyed, actual safety problems were minimal. The authors hypothesized that, as use increased, safety and resource problems would both become more of an issue. This is a common assumption made related to mountain biking. The follow-up (Ford, 1989) showed that, although mountain biking had risen from 7% to 24.4% of all trail use in the area, users did not perceive cyclists to be any more of a problem than in 1987, and the level of safety problems remained minimal.

Sharing trails leads to conflict between recreationists about "turf" as well. Pettit and Pontes (1987) uncovered concerns held by more traditional trail users on the Los Padres National Forest in California. The mountain bike riders apparently were not accepted by other users because they were so new. The origin of conflicts between mountain bike riders and other users may stem from such origins as: diverging recreational technologies (Goldstein, 1987); a minority of inconsiderate riders (Hain, 1986); competition for limited recreation resources in heavily used urban areas (Hain, 1986), and incorrect perceptions about lack of similarities between riders and hikers (Watson, Williams, & Daigle, 1991).

Some mountain bike groups, such as International Mountain Biking Association (IMBA) and Concerned Off-Road Bicyclists Association (CORBA), are aware of the conflict created by their activity. These groups have been proactive in resolving conflict with federal land management agencies. The Bicycle Federation of America (BFA) has published a handbook outlining the growth of the sport, key management issues, and suggested trail design guidelines (Keller, 1990). Other mountain bike groups have tried to assist federal land managers by establishing trail etiquette guidelines (IMBA, 1990; NORBA, 1991).

In addition to developing educational and informational materials, biking groups and managers have broadly examined mountain bike use on federal lands as well as held discussions at the local level. In spring 1991, the mountain bike groups IMBA and LAW (League of American Wheelmen) met with Bureau of Land Management staff in Durango, Colorado, and identified key management issues pertaining to the sport (Sprung, 1991). These included establishing mountain bike rider ethics, education programs, and trail standards and identifying trail opportunities for mountain bike riders. On the Lolo National Forest, near Missoula, Montana, a partnership has been formed between the Forest Service and local mountain bike groups to identify and resolve issues. These interactions suggest that biking organizations and land managers can work as partners to address issues of mutual interest. Nevertheless, managers must allocate a portion of their energies to understanding and minimizing potential conflicts. Many times this must be done independently of land-management or recreation-management plans, which may not specifically include mountain biking use.

Mountain bike use of trails has grown rapidly and has been accompanied by technological advances of the bikes. This trend is likely to continue, and rapid growth of the sport has resulted in some conflict between traditional trail users and mountain bike riders. Management challenges related to this increased use involve the issues of trail management, wilderness trespass, conflicts between users, and decision making, independent of specific land management or recreation area plans.

It is during such times of rapid change that the opinions and insights of recreation managers are of special interest. Their perceptions of level of use, conflicts observed, scope of the mountain biking issue, and managerial strategies can reveal much about managerial practices regarding mountain bike policy. Their opinions are also helpful in assessing the current status of mountain biking and how it will impact the future.

To examine recreation managers' perspective on mountain biking on public lands we contacted managers at two major agencies, the USDA Forest Service and the USDI Bureau of Land Management. Their perspectives were needed to provide us with a better understanding of the magnitude of the impact that mountain biking is having on federal lands, as well as the potential conflicts arising from rapidly increasing use. This exploratory study also serves as the impetus of a much larger study on mountain biking. Expectations were that managers would report some conflict between bikers and other user groups and that most would view mountain biking as a national issue (an issue that is not site-specific and affects resource management throughout the nation) due to the growing popularity of the sport. These expectations were supported. In addition, some valuable information about the nature of conflicts and other mountain biking issues were also gained.

Method

Respondents

Study participants were 40 recreation (25), trail (6), and planning (4) managers employed by the Forest Service (n=34) and the Bureau of Land Management (n=6). Given the short time frame in which telephone surveys were completed, a convenience sample was employed. Respondents worked at either the regional (8%), state (15%), forest (70%), or ranger district level (7%). Forest Service respondents were selected based upon job title, or upon recommendation from other respondents as an individual who would have direct knowledge of mountain biking. Recreation and trail managers were contacted across the United States using the Forest Service Organizational Directory as a starting point. Bureau of Land Management respondents were selected based upon recommendations of contacts within the organization. Persons listed in the directory were first requested, then other contacts were sought if that individual had moved or was not available. Participants represented all regions of the National Forest system, with at least one respondent from each region.

Survey

For this survey, the majority of the questions were closed-ended with a maximum of four response categories. Two of the questions were open-ended. The survey items included these: How would you characterize mountain biking use in your area? (No use, minimal use, moderate use, extensive use.) Do you have specific areas designated for mountain biking? (None designated, some designated, several designated.) Have you had any problems with resource degradation? (Yes, no.) Have you had any conflicts between mountain bike riders and other users? If yes, what kind? Do you have a specific management plan related to mountain biking? (Yes, no.) In your opinion, is mountain biking a national issue or site specific? (Respondents were told that selecting the response that mountain biking was a national issue did not have positive or negative connotations, simply that it was a matter of concern on a national level.) Do you have any other issues or concerns related to mountain bike riding?

Procedure

Respondents were contacted by telephone and asked if they had a few minutes to answer questions about mountain biking. The questions were asked in the same order for each individual. All respondents were contacted by the same investigator to maintain continuity. Everyone who was contacted participated in the survey.

Results

All respondents indicated at least some mountain bike use in their areas. About a third (33%) of the respondents reported minimal use of mountain bikes in their resource area, almost half (45%) reported moderate use, and about one-fifth (22%) reported extensive use. Those who reported minimal or moderate use also stated that popularity of the sport was growing. Many expected dramatic increases in use over the next few years. With this use comes the possibility of resource degradation from mountain bikes. While about one-third (35%) of the respondents reported resource degradation from mountain biking in the areas they managed, further comments were offered which revealed that damage was confined many times to only one trail, or was due to the unsuitability of a specific trail for mountain biking. A few respondents also qualified their responses by saying that the degradation was no worse from mountain biking than it was from equestrian or off-road vehicle (ORV) use.

An additional byproduct of increased bike use, particularly in multiple-use areas, is the potential for conflict between users. Almost two-thirds (60%) of respondents were aware of conflict between mountain bike riders and other users. Conflicts described included equestrian groups, hiker groups, ORV or all-terrain vehicle (ATV) groups, and wilderness trespass. Only one known case had resulted in injury and litigation. Most of the conflicts appear focused on social concerns about "turf"—meaning that some groups felt that having a history of use in an area meant they should be the only users of that area, while new users felt that they were also entitled to use the area. A few of the managers reported success in getting councils, or groups of users, together to resolve conflicts at the local level. One Forest Service respondent from the Pacific Northwest described a series of clinics meant to bring groups together to discuss etiquette for multiple use of trails. Another Forest Service respondent from the Southern Region described trail councils consisting of multiple user groups. Some respondents cited the need for users tolerating each other, rather than trying to keep particular groups out of an area.

Respondents were given the opportunity to describe other issues or concerns they had related to mountain bike use on their resource areas. Categories of concern mentioned most frequently included a need to focus on multiple use, how to handle wilderness trespass, need for signage/maps/brochures, how to handle increasing conflict, how to encourage user group cooperation, and how to handle the fast growth of the sport.

Almost all (94%) of the resource managers described mountain biking as a national issue rather than a site-specific issue. A little over 7 in 10 (74%) resource

managers reported having no area designated for mountain biking. About 2 in 10 (26%) managed for bike use by designating an official bike use area or areas. Only 8% of the resource managers reported having a management plan which specifically included the sport of mountain biking.

Discussion and Conclusions

The management of public lands can be a challenging task, particularly in the face of rapid change. Mountain biking has been an activity linked to rapid change and has resulted in new management concerns and challenges. This study was an investigation into the management issues associated with the rapid growth of mountain bike riding. The questions were exploratory in nature and directed respondents to consider the extent of use, conflicts created as a result of mountain bike riding, degree of resource degradation, management procedures related to mountain bike use, and perceptions of the scope of the issue of mountain bike riding. Forty recreation managers in various positions were contacted within two federal land management agencies. Their responses provide insight into the issues from a management perspective.

Exploratory in nature, the study has certain limits. Only a small number of recreation managers were contacted within the two agencies, particularly for the BLM where the sample size was six. In addition, the sample was one of convenience rather than at random. The results should be interpreted as an initial attempt at identifying some of the issues associated with mountain bike management. While the generalizability of this study is weak, some insight may still be provided.

While mountain bike use was characterized as moderate to extensive, it was expected to continue to increase in popularity. This perception was shared by managers from various sites and was not limited to one regional area, suggesting a nationwide growth pattern. While we agree that growth of the sport of mountain biking will occur in many areas, we suspect that areas near large urban populations will experience the most growth—mostly because of sheer numbers of people taking advantage of local trails.

Conflict created by mountain bike riding was cited. There appears to be some similar issues regarding conflict between mountain bike riders and various user groups, such as the speed that mountain bikers can attain and the ability to approach with little noise, which can cause accidents or scare animals on the trails. And while the degree of conflict has remained manageable thus far, the degree of potential conflict might be controlled by having multiple user groups participate both in trail planning and trail decisions. This type of activity worked well for resolving conflict, as described by respondents from the Pacific Northwest and the Southern Regions.

Respondents also cited examples of resource degradation believed to be caused by mountain bike use. And some respondents expressed concern that trails newly opened to mountain bike use might incur significant resource damage. It is difficult to tell how much trail degradation is due to mountain bike

use, as it is difficult to identify damage caused only by one group when multiple groups use a trail.

For the most part, there are no areas set aside for mountain bike riding, nor do mountain bike issues appear to be addressed in management plans. This has led to some management plans being challenged. Resource managers may want to incorporate mountain bike use into their future area management plans.

The agreement among those polled that mountain biking was a national issue reveals the magnitude of the impact that this sport has—particularly for managing public lands. This does not mean that national policy needs to be formulated. In fact, management issues probably differ in the various areas of the United States because of proximity to urban areas, the soils in the areas, the climate, and other specific factors too numerous to mention here. We are suggesting instead a national exchange of strategies among managers. What has worked in one area may be an appropriate solution in another. At this point we have little information about what has been successful and propose research to meet this goal.

Some areas have experienced success in coordinating meetings between different user groups and public land managers. Such examples of coordination can serve as models for use in the future. These meetings incorporated mountain bike groups (such as IMBA and CORBA) along with resource managers to discuss the resolution of conflicts, and have resulted in establishing trail etiquette guidelines. These groups may also want to work together to establish education programs or trail standards or other issues of mutual interest.

Communication between managers and users can help assess which trails may be appropriate for mountain biking and which may need to remain closed due to safety or resource concerns. We believe that such communication may help prevent trail closures or ensure a greater willingness to comply with necessary limits on the part of mountain bike riders. This sharing of information may also reduce resource damage as users become more aware of sensitive areas, and it may result in decreased conflicts between user groups as groups come to know one another. Open communication on appropriate trail use could reduce concerns that managers, users, and other groups may have.

Finally, this study offers direction for future studies on mountain bike riding, including: characteristics of mountain bike riders and their use patterns, identification of resource degradation problems, identification and resolution of conflict issues, wilderness trespass issues, partnership issues, communication issues, and testing of management strategies related to mountain bike use.

References

- Baker, N. (1990). Mountain bike management: A tale of three cities. *Western Wildlands*, 16(3), pp. 36-39.
- Blumenthal, T. (1990). S.O.S. Save our sport through activism and education. *Bicycling*, 31 (May), p. 98.
- Brown, K. (1988). Wheels of fortune: Bicycle marketers shift into high gear to meet demand. *Adweek's Marketing Week*, 29(3), p. 2.

- Ford, R. (1989). *Mountain bike survey update*. Unpublished report, Santa Barbara Ranger District, Los Padres National Forest, USDA Forest Service.
- Goldstein, S. (1987). Mountain bikes and the parks: Mitigation of safety and user conflict problems. Unpublished paper in partial fulfillment of the requirements for the Bachelor of Arts degree, University of California, Santa Cruz.
- Hain, G. (1986). Developing mountain biking opportunities on the Ochoco National Forest. Unpublished paper in partial fulfillment of the requirements for the Clemson University Recreation Manager's Shortcourse.
- International Mountain Biking Association. (1990). Rules of the trail. Bishop, CA: Author.
- Jacoby, J. (1990). Mountain bikes: A new dilemma for wildland recreation managers? *Western Wildlands*, 16(1), pp. 25-28.
- Keller, K. D. (1990). *Mountain bikes on public land: A manager's guide to the state of the practice*. Washington, DC.: Bicycle Federation of America.
- Kelly, C. (1990). Evolution of an issue. *Bicycling*, 31 (May), p. 104.
- National Off-Road Bicycle Association. (1991). Off-road cyclist's code. *NORBA News*, 8(7), p. 34.
- Pettit, B., & Pontes, P. (1987). "Kepner-Trego analysis": Mountain bicycle situation on Santa Barbara front trails managed by the U.S. Forest Service. Unpublished report, Santa Barbara Ranger District, Los Padres National Forest, USDA Forest Service.
- Seney, J. (1990). Research report on master's thesis. Cited in *IMBA Educational Package*. Bishop, CA: IMBA.
- Sprung, G. (1991). BLM will promote mountain biking on millions of acres. *Land Access Alert*, 4(6), pp. 3 & 6.
- Viehman, J. (1990). Let's build trails, not walls. *Backpacker*, (August), p. 3.
- Watson, A., Williams, D., & Daigle, J. (1991). Sources of conflict between hikers and mountain bike riders in the Rattlesnake NRA. *Journal of Park and Recreation Administration*, 9(3), pp. 58-71.