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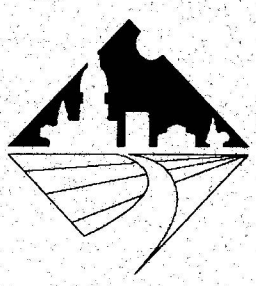
Mountain Biking in the Chequamegon Area of Northern Wisconsin and Implications for Regional Development



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Mountain Biking in the Chequamegon Area of Northern Wisconsin and Implications for Regional Development

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Executive Summary

Although mountain biking is a rapidly growing activity within Wisconsin and the nation, little research has been conducted on its impact. This study profiles mountain biking user characteristics from the Chequemegon Area Mountain Bike Association (CAMBA) trail system located in northwestern Wisconsin.

Mountain Biker Characteristics

- Approximately 45% of mountain bikers on the trail system classify themselves as having advanced or expert skill levels while about 44% classify themselves as possessing average skills.
- More than 86% of the respondents indicated that mountain biking was an important or extremely important activity to them.
- Approximately 92% of respondents possess some post-secondary education.
- While survey respondents were of all ages, about 60% were between 25 and 40.

Trip Characteristics

- Almost 63% of the trail users are repeat visitors.
- The average length of stay in the Cable Area is 3.6 days.

Trail Information

- Ninety-four percent of trail user expressed satisfaction with the CAMBA trails.
- Namakagon and Cable were the most used trail clusters, followed by Seeley, Hayward, Drummond, and Delta. Trail count estimates account for 23,630 bikers using these clusters during the 1996 season.
- Respondents identified problems related to logging activity, lack of drinking water, and lack of restrooms.

Marketing Information

- More than 44% of respondents were from the Twin Cities area, while other major market areas include Chicago and Madison.
- Word of mouth was the primary avenue for information about the trail system.

Economic Impact

- Based on trail counts of 22,630 and reported daily expenditures of about $27, direct expenditures within a 30 mile radius of Cable are $630,245. An additional $163,391 was spent outside the 30 mile radius by trail users.
- Total economic impact including direct expenditures, employment, property income, and value added from the CAMBA trail users is calculated as $1,174,100.

Introduction

The importance of outdoor recreation on public lands is a well established fact. There is growing interest in various traditional land based outdoor recreation activities such as hiking, bird watching, hunting, and mountain biking. With growing interest and participation in mountain biking, there are demands placed on resource managers regarding management decisions in the use of available land resources. Although this activity has grown in popularity, information on user profiles is still sporadic and undocumented. More information is needed on descriptive aspects of the activity, particularly with respect to user characteristics, resource preferences, and patterns of participation.

In an effort to understand mountain biking as a recreational activity, a group representing the U.S. Forest Service, Chequamegon Area Mountain Bike Association (CAMBA), Northwest Regional Planning Commission, and the University of Wisconsin-Extension embarked on a research project to gather more information about mountain bikers in the Chequamegon National Forest area of northwest Wisconsin.

The intent of the study was to identify attitudinal and behavioral characteristics of bikers visiting the CAMBA trails. Characteristics including trail attributes, motivations to bike in the area, trail preferences, and local economic impacts were of interest. Specifically, the objectives of the research included:

1. To characterize bikers with regard to demographic makeup.
2. To describe patterns of participation, particularly with respect to participation rates and trail preferences.
3. To identify areas of existing or potential conflict between mountain bikers and other forest resource users.
4. To determine the current economic impact of bikers to the region and establish baseline information.

The objectives were addressed through a two-stage survey that included an initial short survey and a subsequent mail survey.

Research methods

After reviewing other mountain biking research, the study team determined that a two stage sampling design was the most appropriate data collection technique. As a first step, a short survey printed on a card was placed at key points including bike shops, area restaurants, lodging establishments, and trail heads. Bikers were encouraged by the various business establishments to fill out the survey. The short surveys that were completed were dropped off at one of the sites administering the survey.

Of the 319 respondents that completed the short survey, 21.9 percent were filled out by participants of the Chequamegon Fat Tire Festival. Of the 319 respondents, 280 had agreed to answer a longer survey and were sent a four-page survey instrument that dealt with attitudes, preferences, trail management, marketing, and economic impact. The packet consisted of a survey, envelope, cover letter and a postage-paid return envelope. Of the 280 that received the longer survey, a total of 212 returned completed surveys, yielding a response rate of 75.7%.

The surveys were coded. Valid and complete surveys were then entered into a database and were prepared for statistical analysis. SPSS (Statistical Package for Social Scientists) was used to perform data analysis and generate frequency tables.

Results

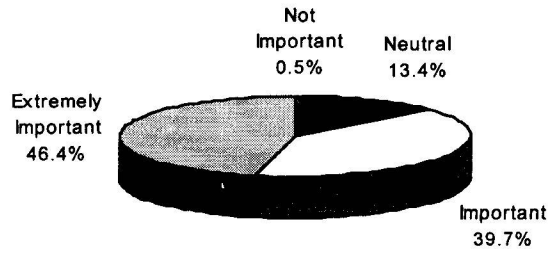
This section will describe the results of the survey specific to mountain biker characteristics. including general characteristics, demographics, trip characteristics, and specific biker behavior.

General Mountain Biker Characteristics

With respect to skill level, bikers were asked to categorize themselves from novice to

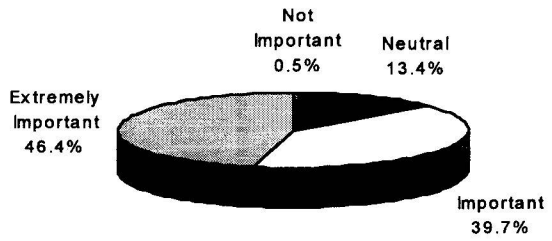
expert at mountain biking. More than one-third (36.2 percent) characterized themselves as possessing "advanced" skills. Only 2.5 percent of the respondents associated their skill level as "novice." Responses regarding biker skill levels can be found in Figure 1.

Figure 1. Skill Level of Bikers



When asked about mountain biking in general, the importance of the sport was apparent. Approximately 46.4 percent of the respondents indicated that this activity was 'extremely important' to them. Another 39.7 percent of the respondents claimed this activity was 'important' to them (See Figure 2).

Figure 2. Importance of Mountain Biking

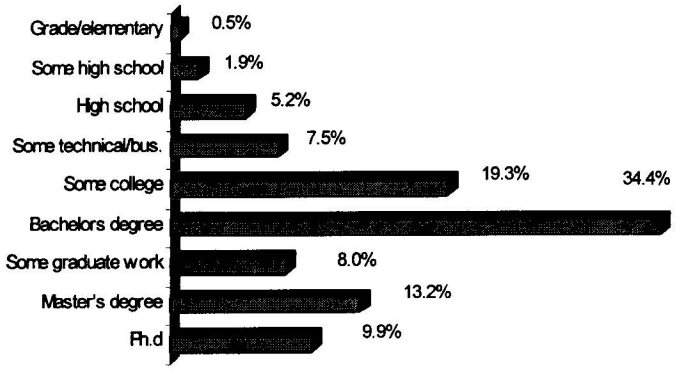


Another indication of respondents' level of interest in mountain biking can be inferred from responses to a question about the number of days that respondents spent biking during the previous twelve months. Findings indicate that bikers spent 65 days in a year on mountain biking activities.

Survey respondents were of all ages. The age distribution suggested that there were a large number of bikers in the lower to middle age group. For example, the age classes between 25-40 made up roughly 60 percent of the survey respondents.

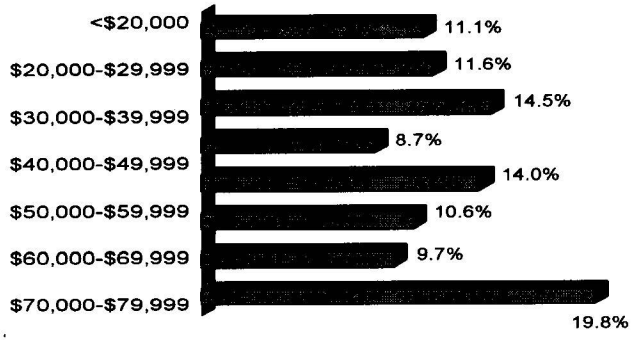
Survey respondents, in general, had high educational levels. Approximately 31 percent of the respondents had an advanced degree and approximately one-third (34.4 percent) had a bachelor's degree. The distribution of educational qualifications can be seen in figure 3.

Figure 3. Educational Attainment of Mountain Bikers



Compared to local income levels, household incomes of mountain bikers generally tended to be higher. Over 54 percent of the respondents had annual household incomes greater than $50,000. The income distribution of mountain bikers is illustrated in Figure 4.

Figure 4. Annual Household Income of Bikers



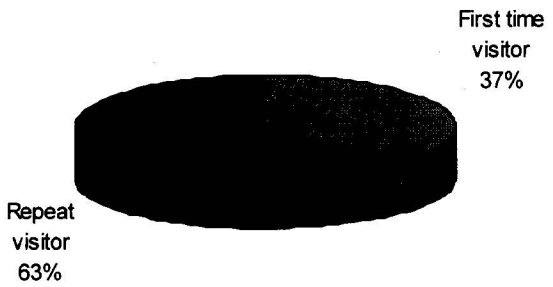
In summary, we can conclude that mountain bikers tend to be serious about the sport and take part in the activity on a regular basis throughout the season. Compared to local demographic characteristics, bikers generally tended to have higher incomes, educational attainment levels, and held more managerial-type occupations.

Trip Characteristics

This section reports on results of the survey focused on a specific trip taken by the respondent (trip taken when they filled out the short survey) when they participated in mountain biking activities on the CAMBA trails.

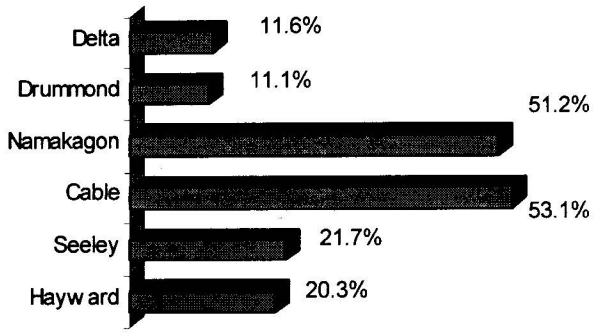
Of the survey respondents, roughly two-thirds (62.7 percent) had biked on the CAMBA trails previously. In other words, 37.3 percent of the bikers were using the CAMBA trails for the first time.

Figure 5. First Time vs. Repeat Visitors



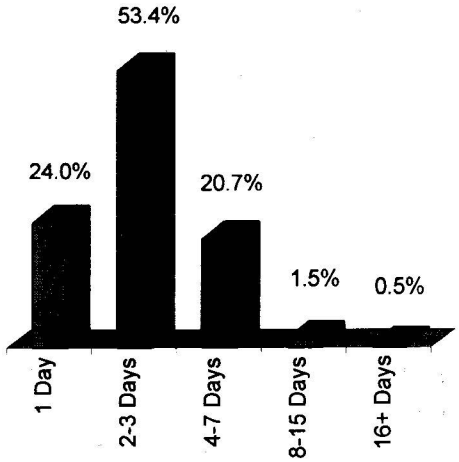
While over half of the respondents rode on the Cable (53.1 percent) and Namakagon clusters (51.2 percent), approximately one-fifth of the respondents rode on the Hayward (20.3 percent) and Seeley (21.7 percent) clusters.

Figure 6. Use of Trail Clusters



On an average, bikers spent 3.6 days within a 30-mile radius of Cable (referred to as the Cable area in this report). Of this, the average respondent spent 2.7 days on the bike trails. This ranged from a high of 30 days for one respondent to 1 day for 50 respondents. On an average, respondents biked for 3.6 hours daily.

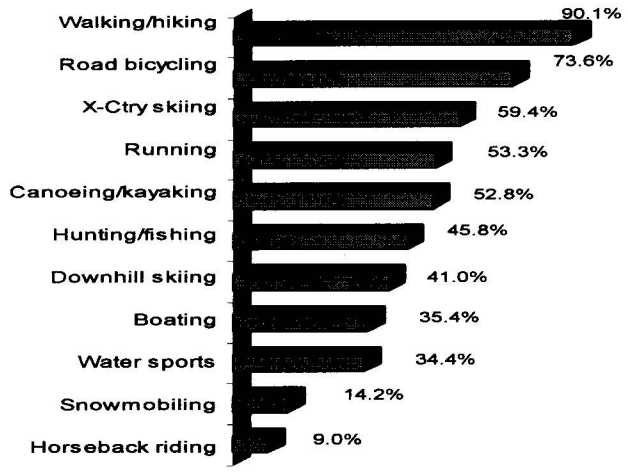
Figure 7. Number of Days Spent in the Cable Area



Specific Biker Behavior

In an effort to focus on specific attributes of biker behavior, questions were developed to provide baseline data on how, where, and when people bike in northern Wisconsin and what other activities they engaged in. The other main activities that bikers participated in during the previous twelve months were walking/hiking, road bicycling, cross country skiing and running and canoeing.

Figure 8. Other Activities of Respondents During Previous Twelve Months

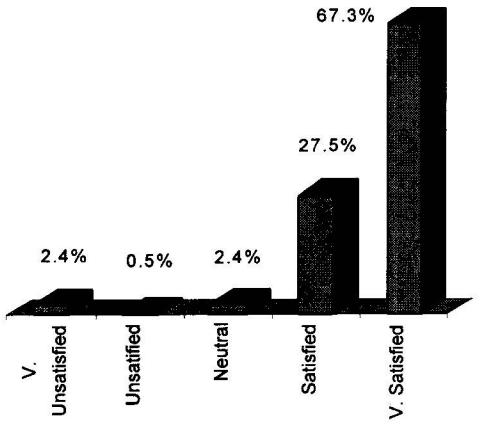


Attitudes

This section summarizes responses of survey participants to questions about how they perceive and prefer certain specific attributes of the mountain biking experience in northern Wisconsin. The attitudes, perceptions and preferences of mountain bikers have implications for trail management, economic development, and outdoor recreation planning.

Mountain bikers were asked to assess their satisfaction level and rate the CAMBA trails on a scale of 1 to 5. While two-thirds (67 percent) of the respondents indicated that they were very satisfied, 27.4 percent were satisfied and a small 2.4 percent were very unsatisfied.

Figure 9. Trail Satisfaction levels



When asked about what they liked about the CAMBA trails, respondents listed well marked trails, specific aspects of trail terrain, trail variety, and scenery. Aspects they disliked included the long travel distances, certain trail terrain aspects, signage, and the need for more single track trails.

Figure 10. What Did You Like Best About the Camba Trails?

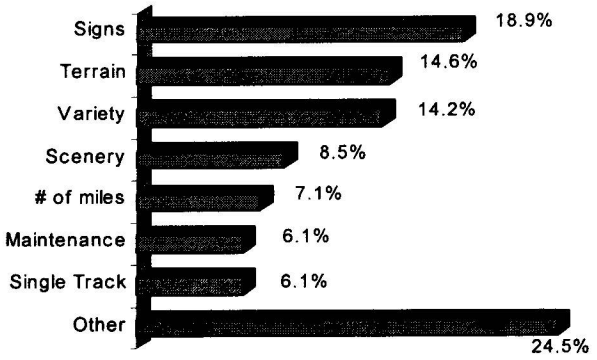
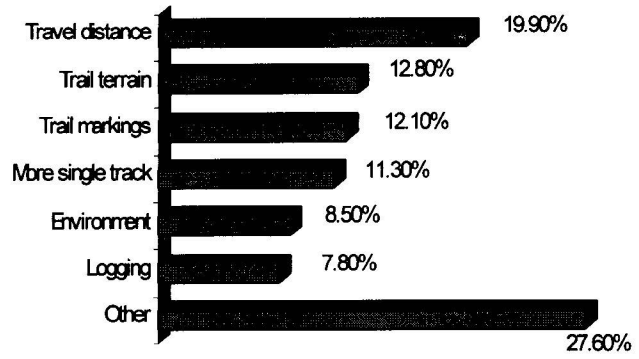


Figure 11. What Did You Like Least About the Camba Trails?



Bikers were also asked about what influenced their decision to bike the trails and the responses included the fat tire festival, various trail characteristics, and the information they received through articles, books and by word of mouth.

Bikers were also asked if there were problems associated with one or more trail characteristics. The ranking was based on a 5 point scale with 1 representing "not a problem" to five representing a "major problem". Compared to other characteristics, bikers identified logging activity, lack of drinking water, and lack of restrooms as the biggest problems. Most of the other factors such as trail maintenance, crowding, litter, and safety were not viewed as problems by the majority of the riders. Table 1 contains detailed information on what riders viewed as problems.

Table 1. To What Extent are These a Problem on the Camba Trail?

Characteristic	Not a Problem	Neutral	Major Problem
Too Crowded	97.6	2.0	0.5
Conflicts with other activities	82.4	10.9	6.7
Reckless behavior of trail users	93.1	5.9	1.0
Litter and glass	95.1	4.4	0.5
Dangerous road intersections	92.8	6.8	0.5
Vandalism (signage, trail heads)	89.2	7.4	3.4
Personal safety	93.1	5.9	1.0
Lack of restrooms	61.2	24.8	14.0
Lack of drinking water	48.6	33.2	18.3
Lack of trail directional signs	83.0	9.7	7.3
Not enough access points	91.7	5.4	2.9
Not enough parking at access points	92.7	3.4	3.9
Lack of information to plan visits	88.8	6.8	4.4
Lack of services (food, drink, bike repair, etc.)	84.1	13.5	2.4
Inadequate trail maps	90.8	4.4	4.9
Adequate trail maintenance	94.1	3.4	2.5
Logging activity	59.1	19.2	21.7
Other	29.0	9.7	61.3

When respondents were asked to prioritize the problems faced on the trails by indicating the most severe of all problems, the following results were obtained.

Table 2. Prioritized List of Problems on the CAMBA Trails

Characteristic	Percent
Logging activity	25.0
Lack of drinking water	16.8
Lack of restrooms	9.8
Lack of information to plan visits	5.4

When asked to prioritize characteristics, respondents indicated that they preferred single track trails, natural surroundings, and difficult trails. Respondents were asked to rate trail preferences based on a scale of 1 to 5, and the ratings were summarized (Table 3) by combining 1 and 2 (not a problem) and 4 and 5 (major problem).

Table 3. Trail Preferences

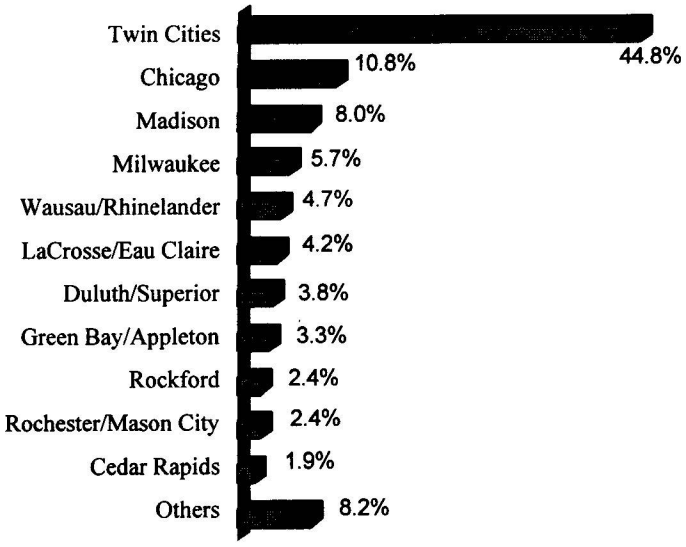
Characteristic	Not Important	Neutral	Important
Single Track Trails	7.1	10.4	82.5
Level of Grades	10.0	25.7	64.4
Natural Surroundings	0.5	5.2	94.3
Quiet Settings	1.4	12.9	85.7
Trees for Shade	7.2	25.2	67.6
Wildlife and Birds	8.1	22.4	69.5
Points of Interest	23.3	34.1	42.6
Safe Crossings at Roads, Streams, etc	19.6	36.4	44.0
No Motorized Vehicles	4.4	10.2	85.4
Smooth Surfaces	52.2	29.7	18.2
Good Maintenance	9.5	25.7	64.7
Places to Buy Food and Drink	48.8	30.1	21.0
Parking Facilities	30.5	36.7	32.9
No Crowds	8.0	24.6	67.3
Wide Enough to Travel Beside Others	56.1	26.7	17.1
Maps, Directional Signs and Trail Information	4.8	15.8	79.4
Conveniently Located	30.3	36.0	33.6
Varied Surroundings	5.6	20.9	73.4
Drinking Water and Toilet Facilities	22.7	29.9	47.4
Signs and Information on Historic and Natural Features	38.9	40.8	20.3
Easy Trails	47.1	30.3	22.6
Moderate Trails	6.2	32.1	61.7
Difficult Trails	5.3	13.3	81.4
Availability of a Number of Trails	1.9	7.6	90.2
Variety of Trail Types	1.0	8.3	89.7

Marketing Information

This section summarizes results of the survey in relation to regional marketing of recreational goods and services. Important components of market analysis include identification of where current visitors are from, which non-biking regional characteristics are important, information sources used in learning about the region, and factors perceived to influence continued use of this region.

When summarized by Areas of Dominant Influence (ADI), it was apparent that a large number of bikers were from the Twin Cities ADI (44.8 percent). An ADI (defined by the Arbitron Ratings Company) is a television viewing region based on measurable viewing patterns of individuals making up the area. Each county in the U.S. is allocated exclusively to one ADI. Approximately 10.8 percent were from the Chicago ADI and the remaining were mostly from different parts of Wisconsin - mainly the Madison and Milwaukee ADI's. The category 'Others' includes Mankato, Des Moines, Champaign, Columbus, Flint, Cincinnati, Cleveland, Fargo, Omaha, Columbia, and Minot.

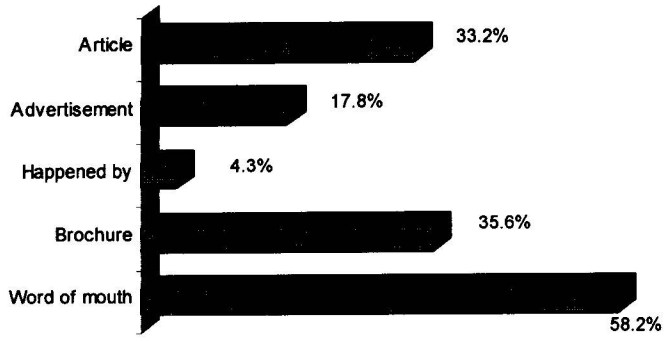
Figure 12. Origin of Bikers by ADI

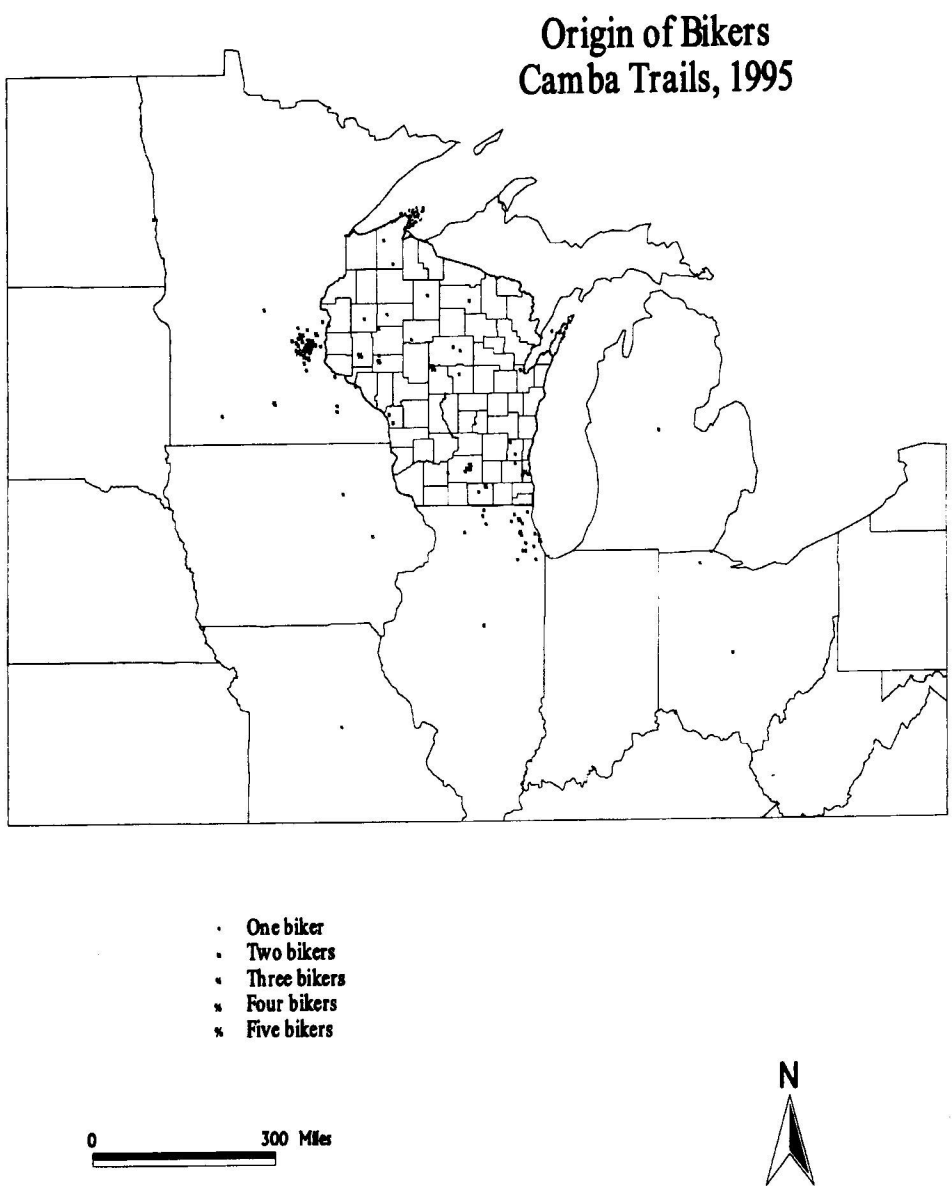


An important piece of information for future marketing efforts deals with how current visitors learn about mountain biking in the region.

Respondents obtained information from a variety of sources. Well over half of the respondents (58.2 percent) reported that "word-of-mouth" provided them with valuable information about the area. Over 35.6 percent of the respondents obtained information through brochures that were distributed at information centers, trade shows, and bike shops. One-third of the respondents saw an article in the newspaper or magazine.

Figure 13. Information sources Used by Bikers




Origin of Bikers
Camba Trails, 1995
One biker
Two bikers
Three bikers
Four bikers
Five bikers
0
300 Miles
N

Economic Impact

One of the main purposes of this study was to determine the economic impact of mountain biking to the region. Expenditures by bikers provide for local economic impact. They increase the total receipts of businesses which operate in and around the local area. Economic impact describes the consequences of increased receipts by identifying how these businesses react. The primary focus in economic impact analysis is identifying how income is generated understanding that economic activity within a region is linked together. For this study, Sawyer and Bayfield counties were included in the study area. Specifically, the analysis captured the direct economic impact, (i.e., the change in employment and income resulting from non-resident biker expenditures), indirect economic impact (i.e., the purchase of goods and services by businesses involved in supporting riders) and the induced impact (i.e., the increase in consumption by area residents due to increases in household incomes resulting from the jobs created directly and indirectly by the sport).The key element to identifying the economic impact of a recreational activity is determining the impact resulting from an inflow of dollars from outside the region.

Table 4. Trip Expenditures in the Cable Area (30 Mile Radius)

Spending Category	Individual Per Trip, Daily Expenditures (1995 dollars)	Total Expenditures (1995 dollars)
Lodging	$8.53	$219,221
Groceries	2.84	72,988
Automobile related	3.29	84,553
Eating/Drinking	5.28	135,696
Souvenirs/Gifts	3.06	78,642
Entertainment	0.65	16,705
Miscellaneous	4.20	107,940
TOTAL	$27.85	$715,745

Table 5. Income Effects of Biker Expenditures (1992 dollars)

Source	Direct	Indirect	Induced
Agriculture	$0	$600	$2,700
Mining	0	0	100
Construction	0	5,400	5,600
Manufacturing	0	1,500	2,800
Transportation/Utilities	0	6,300	16,100
Trade	233,800	4,500	8,130
F.I.R.E	0	7,600	58,600
Services	113,500	14,300	110,900
Government	0	1,700	3,400
TOTAL	$347,300	$41,900	$281,600

Aggregated to standard 1 digit SIC categories
Finance, Insurance, and Real Estate
Columns may not sum to total due to rounding

Table 6. Employment Effects of Biker Expenditures (Number of Jobs)

Source	Direct	Indirect	Induced
Agriculture	0	0.03	0.12
Mining	0	0	0
Construction	0	0.12	0.13
Manufacturing	0	0.04	0.07
Transportation/Utilities	0	0.12	0.91
Trade	13.24	0.25	4.61
F.I.R.E	0	0.12	0.91
Services	5.28	0.66	5.15
Government	0	0.05	0.11
TOTAL	18.52	1.39	11.39

Aggregated to standard 1 digit SIC categories
Finance, Insurance, and Real Estate
Columns may not sum due to rounding.

Of the survey respondents, 84 percent reported that their primary purpose was biking on the CAMBA trails. Only expenditures associated with these bikers were included in the analysis. Based on trail count data, it was estimated that approximately 22,630 bikers rode the CAMBA trails during the 1996 season. This count was arrived at after factoring out local riders and riders who were in the area for the Chequamegon Fat Tire Festival. Using this data with the 1995 expenditure patterns, it was calculated that these bikers and their parties spent $630,245 within a 30-mile radius of Cable. An additional $163,931 was spent outside this 30-mile radius.

Trail counters were installed by the U.S. Forest Service at all the entry points of the different trail clusters. According to the trail counter data, there were a total of 22,630 riders on the trails between mid-May and early November. The distribution of riders by cluster was as follows:

Table 7. Trail Count Data, 1996

Namakagon	6,202
Cable	6,202
Seeley	4,485
Hayward	2,152
Drummond	1,882
Delta	1,707

The trail count data from 1996 was used in conjunction with the expenditure information from 1995 since trail use for 1995 was unavailable.

The economic impact of mountain biking was conducted by developing a regional economic model of Sawyer and Bayfield counties using micro-IMPLAN, a standard input-output system. The model measured the number of jobs created and all forms of private and public income (i.e., employee compensation, property income, and indirect business taxes) generated by the sport.

Users of the bike trails created an economic impact on the region. A total of 31.3 annual jobs, both full-and part-time, were created. As can be seen from Table 8, almost $1.2 million of total gross output was attributed to biker spending. About $461,000 in employee compensation and $209,800 in property income was generated.

There are some caveats that need to be kept in mind as the results in this section are interpreted. Assumptions regarding expenditure patterns, assumptions of input-output analysis and accuracy of trail count data are all factors. However, there is no doubt that the trails are a draw to the area and result in an inflow of outside dollars thereby causing a positive impact on the local economy. The economic impact results are based on the trail count data and estimates provided on the total ridership. It is assumed that each rider did not trip the trail count equipment more than once a day. Since the trail counters captured the data from mid May to early November, any bikers that rode the trails outside these months were not captured.

Table 8. Economic Impact of Biker Expenditures in the Regional Area

Source of Effect	Total Gross Output	Employee Compensation	Property Income	Total Income	Total Value Added	Employment (#jobs)
Direct Effect	586,700	264,300	83,000	347,300	389,300	18.52
Indirect Effect	79,400	24,500	17,300	41,900	47,000	1.39
Induced Effect	508,000	172,100	109,500	281,600	323,700	11.39
TOTAL EFFECT	1,174,100	461,000	209,800	670,800	760,000	31.3

Columns may not sum to total due to rounding

In terms of spending during the previous twelve months on mountain biking related items, an average of $362 was spent within a 30-mile radius of Cable and an average of $1480 was spent outside this area. Breakdown of expenditure patterns were as follows.

Table 9. Mountain Biking Related Expenditures During the Previous Twelve Months

Spending Category	Within a 30 mile radius of Cable	Outside the 30 mile radius of Cable
Clothing	$27.3	$124.1
Equipment	37.2	665.6
Accessories	21.4	203.8
Books/guides	4.2	15.9
Memberships	5.5	24.7
Tribs	177.0	334.0
Miscellaneous	89.7	111.9
TOTAL	$362.4	$1480.0

It is evident that bikers create a significant economic impact on the local economy. Users of these recreational trails, through their expenditures in the local area, generate numerous opportunities for business development.

Discussion and Implications

The research reported here provides baseline information to policy questions dealing with the regional development potential of mountain biking in northern Wisconsin. Specifically, characteristics of mountain bikers in the CAMBA trails were presented. Information on demographic makeup, the attitudes and perceptions of bikers in general, were explored. The economic impact of mountain biking as a recreational activity was also presented.

Since a significant number of bikers obtained information about the trails through word-of-mouth, it is important that visitors to the region have positive experiences. It is therefore important for area businesses to ensure that bikers leave with positive memories of their recreational experience.

While northern Wisconsin is rich in natural amenities, communites are exploring strategies to increase economic vitality in the region. One such strategy is tourism development, and mountain biking represents a positive tourism activity that contributes to the economic base of the local economy.