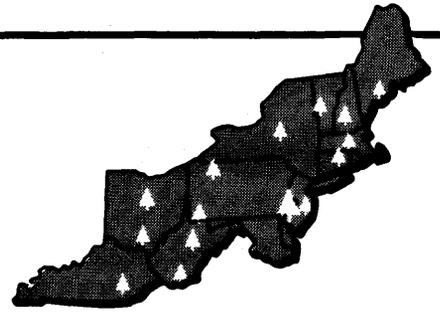


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## Northeastern Forest Experiment Station



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### COMPATIBILITY OF OHIO TRAIL USERS

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*Abstract.*—Compatibility indexes show how Ohio trail users feel about meeting each other on the trail. All four of the major types of trail users—hikers, horseback riders, bicycle riders, and motorcycle riders—enjoy meeting their own kind. But they also feel antagonism toward the faster, more mechanized trail users; e.g., everyone likes hikers, but few like motorcycle riders. Separating the average indexes into their components gives important information for trail planners, builders, and managers attempting to optimize the enjoyment of trails.

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*KEYWORDS:* Recreation, hiking, horseback riding, bicycle riding, motorcycle riding.

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#### Introduction

The trails in Ohio traverse all sections of the state. They extend from urban areas through open farmland, rolling hills, and strip mines, and into the foothills of the Appalachian Mountains. Some of these trails are routed along canals and abandoned railroads. Others lead to pockets of geological formations. Trails in and near metropolitan areas get heavy use from spring through fall. More remote trails are used heavily only during a few peak times—holiday weekends and the fall foliage change. Ohio's trails are highly accessible—few go for more than 3 miles without crossing a road.

People use these trails for many reasons—to go somewhere, to experience nature without being disturbed, to do things with their friends, to be alone. Many times the trails suit the individual user's objectives. But not always. To some trail users, part of the enjoyment of being on a trail is seeing and meeting other people, but to others the very thought of meeting other trail users is revolting. Consequently there can be conflict between trail users.

The conflict between trail users is of major concern to trail planners, builders, and managers. Just what are the needs of trail users? Are these needs compatible? If we are to

optimize users' enjoyment of trails with limited land and dollar resources, we must know more about trail-user compatibility.

We developed compatibility indexes to measure how the four major types of trail users—hikers, horseback riders, bicycle riders, and motorcycle riders—feel about encountering each other on a trail. This information may help trail planners, builders, and managers to provide trails for everyone.

### Approach

The 3,350 miles of trails mapped by the Ohio Department of Natural Resources were separated into categories based on their primary use: 50 miles of motorcycle trails; 500 miles of bicycle trails; 800 miles of horseback riding trails; and 2,000 miles of hiking trails. Trails in each category were divided into 5-mile segments. A stratified random sample of trail segments were selected for study. This insured a broad geographic representation of trails and trail users. All motorcycle trail segments were sampled, as were 15 percent of the bicycle trail segments, 10 percent of the horseback riding trail segments, and 6 percent of the hiking trail segments. In total, trail users were interviewed on 10 percent of the 3,350 miles of trails.

One interviewer conducted all the interviews in 56 days—40 weekdays, 6 weekend days, and 10 holiday weekend days—between June 1, 1974 and November 1, 1974. Most of the interviews were conducted between 10:00 A.M. and 5:00 P.M., but 15 percent of the time the interviewer stayed until dark. Only two bicycle riders refused to be interviewed.

The interviewer chose a convenient sampling location within each 5-mile trail segment, following, when possible, two guidelines: (1) locate at trail crossings, and (2) locate between trailheads and a natural or scenic attraction. All trail users 10 years old or older who passed the sampling location were interviewed.

The interviewer gave a brief explanation of the purpose of the study and a self-administered questionnaire that was returned on the spot.

Trail travel preference was determined by asking respondents how they preferred to travel on trails. Four categories of travel were listed: hiking, horseback, bicycle, and motorcycle. When more than one activity was checked, we assumed an equal preference for those checked:

| <i>Expressed trail use preference</i> | <i>Number of respondents</i> |
|---------------------------------------|------------------------------|
| Hiking                                | 252                          |
| Horseback riding                      | 110                          |
| Bicycle riding                        | 108                          |
| Motorcycle riding                     | 29                           |

Respondents were asked how desirable it would be for them to encounter other types of trail users on the trail. Five degrees of compatibility were suggested:

| <i>Expressed feelings about encounters</i> | <i>Index value</i> |
|--|--------------------|
| Very desirable                             | 5                  |
| Desirable                                  | 4                  |
| Neutral                                    | 3                  |
| Undesirable                                | 2                  |
| Very undesirable                           | 1                  |

Thus an average compatibility index (ACI) of 5.0 would indicate perfect compatibility; conversely an ACI of 1.0 would indicate absolute incompatibility.

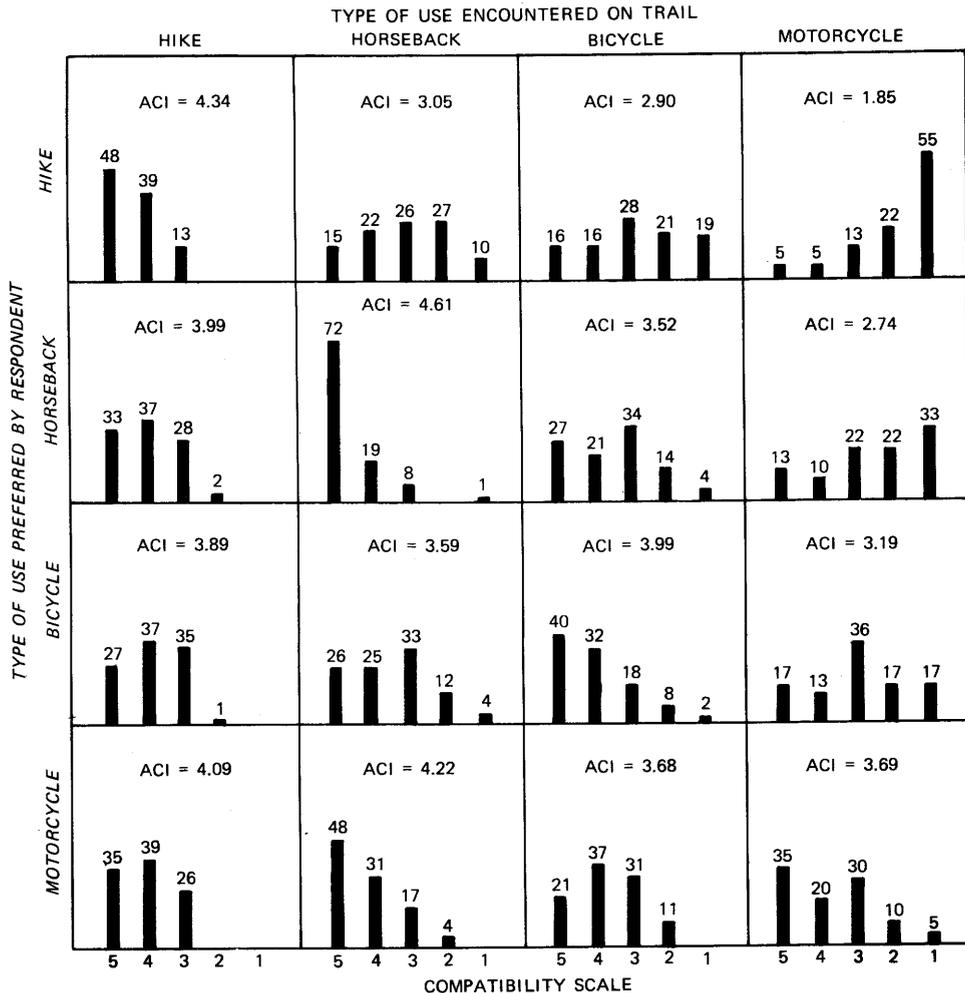
### Results

Average compatibility indexes show how each type of user feels about meeting others (figure 1). For example, hikers do not like meeting motorcycle riders—ACI = 1.86, but motorcycle riders enjoy meeting hikers—ACI = 4.09.

The highest ACI's for three of the four trail-using groups were for encountering their own kind. That is, hikers like to meet hikers, horseback riders like to meet horseback riders, and bicycle riders like to meet bicycle riders.

When the ACI's are divided into their components, we get an even sharper picture of compatibility. For example, examine hikers' feelings about meeting bicycle riders. The ACI of 2.90 (figure 1) indicates that hikers,

Figure 1.—Attitudes of trail users toward meeting other trail users. Bars show percentage of respondents who chose each of five attitude descriptions, ranging from 5 (very desirable) to 1 (very undesirable), on the compatibility scale. ACI = Average Compatibility Index.



on the average, feel neutral about meeting bicycle riders. But the components of this ACI indicate that 40 percent of the hikers find them undesirable or very undesirable. However, 32 percent of the hikers enjoy meeting bicycle riders; they rate them desirable or very desirable. Only 28 percent of the hikers really feel neutral about bikers.

Generally speaking, hikers enjoy meeting other hikers; are about equally divided on meeting horseback riders and bicycle riders; and do not enjoy meeting motorcycle riders.

Horseback riders tend to enjoy meeting all other users except motorcycle riders. Some

horseback riders indicated that strange or loud noises startle their horses; therefore, the riders dislike meeting motorcycles on the trail.

Bicycle riders seem to be tolerant of all other types of users. Most of the interviews with them were conducted along hard-surfaced roads because most of the designated bike trails in Ohio are on such roads. Many cyclists feel that if other trail users would use these same routes, car and truck traffic could be limited so that bicycle riding would be safer.

Motorcycle riders are the most tolerant of

all trail users; 74 percent enjoy meeting hikers, 80 percent enjoy meeting horseback riders, 58 percent enjoy meeting bicycle riders, and 55 percent enjoy meeting other motorcycle riders.

### Implications

Developing successful trails is a challenge, because no users are completely compatible and the compatibility is different between different types of users.

Three general conclusions of this research deserve mention:

- (1) Most trail users enjoy meeting their own kind. This is shown by high average compatibility indexes—none was less than 3.69.
- (2) The pattern of ACI's reflects antagonism

among trail users toward faster and more mechanized types. Every group enjoys meeting hikers—ACI's range from 3.89 to 4.34. But hikers, in general, are not overjoyed about meeting any of the other types. Furthermore, horseback riders and bicyclists are not particularly fond of motorcycle riders. As a matter of fact, only other motorcycle riders really enjoy meeting motorcycle riders on the trail.

- (3) Not all the members of one user group dislike any other user group. For example, a small percentage of hikers enjoy meeting motorcycle riders. The percentage of users who enjoy and do not enjoy meeting other types of users on the trail is revealed by separating the average compatibility indexes into their components.