

HIKERS AND OTHER TRAIL USERS

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ABSTRACT. Trail users seem neglected. Trail systems are limited, largely relics of fire control rather than designed for recreation; and total trail miles are probably declining. On the other hand, participation in various kinds of trail-oriented recreation is substantial and growing. Most activity is for short periods of time close to participants' homes. A varied and diffuse trail system, with an emphasis on opportunities near urban areas, is needed. The research base for planning needs to be strengthened.

THERE ARE MANY kinds of trail users: hikers, horseback riders, bicyclists, motorcyclists, ski tourists, snowshoers, snowmobilers, and all-terrain-vehicle (ATV) riders—and there probably will be some others. Definitions of “trail users” get fuzzy. Some of these trail users spread out from trails into general cross-country travel off trails, while others are found both on rural trails and on city sidewalks, and still others use roads in addition to trails.

What do we know about these users that could help us plan trails and trail systems? How much use is there? What kinds of use? What are the trends? What sorts of people participate, and what are their attitudes about trails and trail use?

THE NEGLECTED HIKER

The more one studies the hiker and other trail users, the more the word “neglect” seems to fit the situation. This is not my feeling alone. President Johnson said in his 1965 Natural Beauty Message: “The forgotten outdoorsmen of today are those who like to walk, hike, ride horseback, bicycle.”

Earlier, the Outdoor Recreation Resources Review Commission (1962) stated: “It is something of a tribute to Americans that they do as much cycling and walking as they do, for very little has been done to encourage these activities, and a good bit, if inadvertently, to discourage them.”

Opportunities for trail travel must be about as limited relative to interest as for any major sort of outdoor recreation. There are only a little over 100,000 miles of trails in the United States (BOR 1966). This is less than 1 yard of trail per U.S. citizen, and only about 50 yards per square mile, Alaska aside. England and Wales together have more miles of rural foot paths and bridleways than the whole U.S. (Countryside Commission 1970). Most of the U.S. trails are relics of past programs, mainly fire protection, rather than the product of any recreation planning. And, despite the 1968 National Trails System Act (P.L. 90-543), there still are few active programs to create truly recreational trails.

There are many adverse trends. Total trail mileage in the U.S. is probably declining. Over half of the U.S. trail mileage is

on National Forests, where trail mileage has dropped over one-third since 1945 as roads replaced trails and aerial fire-fighting techniques led to abandonment of some trails. Suburban and exurban sprawl, limited-access highways, new large airports, and other land-use changes have probably eliminated hiking opportunities, especially on unofficial unmaintained paths. The places where I hiked as a boy have become shopping centers, homes, and barren flood-control dikes. Growing population pressures have resulted in many more "NO TRESPASSING" signs.

Hiking may be neglected because it does not produce any income (*Sargent 1969*) and because it is inconspicuous as a result of being dispersed. In contrast, camping and skiing are concentrated, conspicuous, and often produce income. Hikers also are not as well represented by voluntary organizations as are many other types of recreationists. The hikers either tend to be absorbed in national wilderness-oriented groups or involved in hiking clubs that promote a particular trail or region, such as the Appalachian Trail. In either case there is practically no national pressure for hiking opportunities outside wilderness areas.

The neglect applies to research, also. There are only a handful of studies of trail users or trails, and almost all of these concern the traveler in established wilderness, not the general hiker, horseman, and so on. Because research is so limited, many of my remarks will be subjective judgments and speculations.

A national trails symposium has been announced for June 1971, and will have been held by the time you read this. Perhaps it will kindle enthusiasm for trails and will help overcome the neglect they now suffer.

TRAIL USE

The 1965 Survey of Outdoor Recreation (*BOR 1967*), especially the unpublished detailed information, is the main source of estimates of participation. This survey covered U.S. citizens 12 years old or older. It covered the summer period in depth, but gathered only limited data for the other seasons of the year.

Hiking, which was defined as "walking of a substantial nature in which a pack containing provisions and/or shelter is carried by at least one member of the party," had almost 10 million estimated participants 12 or older in 1965, or about 7 percent of the population in that age range. The average participant hiked 5 days during the year.

Two other related categories of foot travel were also covered in the survey. "Walking for pleasure" involved about 68 million people or 48 percent of the population, with participants averaging 15 days per year walking. "Walking for pleasure" was defined as "any walk where the primary purpose is pleasure, which has not been included under hiking or nature walks and which lasted 30 minutes or more." "Nature walks" were "walks for the specific purpose of observing plants, birds, or animals and often including the collection of specimens." Nature walks had 20 million participants, 16 percent of the population; and participants averaged 16 days in this activity. It is impossible to add the participation rates for these three foot-travel activities because many of the same people participated in two or all three. Occasions can be added, however; and they total about 1.4 billion for 1 year.

None of the definitions of these activities specify anything about where or on what kind of land the activity takes place. A substantial proportion of the hiking, perhaps 10 to 15 percent, apparently takes place in established wilderness in the National Forests or in the backcountry wilderness of the National Parks, based on some rough calculations with agency use reports, and another 15 to 20 percent of all hiking is on National Forest trails outside wilderness. The National Forests reported 6 million visitor-days of hiking for 1970, most of it outside wilderness.

People were asked about the sorts of occasions on which they participated in each activity, and this information suggests something about place. Most hiking (42 percent) was on 1-day outings from home, which means it must be within a few hours travel of where the hikers live. About 20 percent of the hikes were squeezed into "a

few available hours" (although this raises some doubts about the consistency of such brief hikes and the definition that requires a pack on the back). Another 20 percent of the hikes took place on vacation trips and 18 percent on overnight trips.

In two Michigan National Forests, 40 percent of the campers reported hiking (which probably included much of what the BOR called "walking for pleasure"), and two-thirds of the campers at campgrounds without trails nearby asked for trails (*Lucas 1970*); so we should not underestimate the value of trails in areas more distant from population centers. Hunters also make good use of trails (*James et al. 1964*); *James et al. 1969*; *Wilder 1969*).

We do not know how long these hikes were, in time or miles, or how many involved overnight camping. Obviously, most of them were fairly short, part of a day, and involved only a few miles of hiking. Even in designated wilderness, many hikes are short. An intensive study of recreational use in the Mission Mountains Primitive Area in Montana (*Lucas et al. 1971*) showed over 80 percent of all visitors left the area the same day they entered, although previous official estimates showed 50 percent overnight use. Even much larger wildernesses, which conjure up images of 2-week pack trips, are used substantially for short trips, much more so, relative to long trips, than is generally thought.

Two studies of hikers in the Canadian National Parks in the Rockies (*Thorsell 1967*; *Thorsell 1968*) showed that around 90 percent of all trail trips (almost all by hikers) were 1-day activities, averaging 4 to 5 hours. Only 11 percent exceeded 5 miles penetration. Even the overnight stays were mostly for only 1 or 2 nights. In the Three Sisters Wilderness, 80 percent of the visits (again, almost all by hikers) were only for a day (*Wenger 1964*). Hende (1968) also reported frequent, short wilderness trips to be characteristic.

The predominance of short trips, usually fairly close to home, is even more characteristic of walking for pleasure and nature walks than it is for hiking.

The large amount of horseback riding is surprising, at least to me. According to the

BOR survey, over 11 million people (8 percent of the population) rode horses in 1965, for an average of almost 7 days each. Horse ownership has been climbing rapidly all over the U.S. in recent years. Again, we know nothing about the nature of the riding, how much is done on personal horses, how much at riding academies, resorts, etc., how much is on trails, in arenas, on suburban streets, or on the back 40. Riding is much more of a short-time activity than hiking and walking. "A few available hours" accounted for 48 percent of the rides, and 1-day outings covered another 28 percent. Most of the riding must be done close to home. Where opportunities exist for overnight horse camping, however, it is popular. It is common on the Michigan Hiking and Riding Trail from Lake Michigan to Lake Huron (*Cajucum 1970*) and, of course, it is common in most western wildernesses, and perhaps predominant over hiking in a few.

Bicycling is also big business: 23 million riders (16 percent of the population), and 21 days per participant. Most of this is on city streets, but vacations away from home accounted for 10 percent of the reported bicycling, and overnight recreation trips for 6 percent; so at least some bicycling appears to take place out in the country beyond the home neighborhood.

There are no participation estimates, to my knowledge, for motorbike riders, snowmobilers, cross-country skiers, or other possible trail users. The National Forests reported 2 million visitor-days of snowmobiling in 1970. Equipment sales suggest substantial participation. There were reported to be 600,000 snowmobiles as of 1968 (*Baldwin 1969*), with 280,000 sold that year (*Briggs 1969*); and by April 1970 there were almost half a million registered snowmobiles in Michigan, Wisconsin, and Minnesota alone (*Directional Marketing Co. 1970*). Five hundred thousand motorcycles were sold in 1966 (*Anon. 1966*).

A snowmobile study in Minnesota (*Minn. Dep. Conserv. 1970*) reported that almost all snowmobiling was day-use, averaging 4 hours per outing; 87 percent of the snowmobiling was in the participant's home county, and 28 percent of it was after dark.

TRENDS IN USE

Something of a pedestrian renaissance may be developing, or at least some disenchantment with the automobile. Pedestrian malls are springing up in cities, and temporary closures of streets to cars have been popular in New York, Tokyo, and elsewhere.

This renaissance is reflected in participation in hiking and other similar forms of recreation. Numbers of participants in the 1965 survey were compared to participant figures from a similar 1960 survey. During the 1960-1965 period the 12-year-old and over population grew 8 percent, but hiking by this group increased 26 percent, walking for pleasure grew 57 percent (and became the leading type of outdoor recreation in terms of numbers of occasions), horseback riding climbed 44 percent, and bicycling soared 92 percent. Trends are obviously going up rapidly for snowmobiling, motorcycle riding, ski touring, and so on; but there are no figures. The skiing magazines report a boom in cross-country skiing or ski touring; and the outdoor and mechanics magazines reflect an almost explosive growth in snowmobiles, trail bikes, and various sorts of ATV's.

Projections to 1980 (*BOR 1967*) show that hiking grew 78 percent from 1965, walking for pleasure 49 percent, horseback riding 44 percent, and bicycling 32 percent. I would treat all recreation projections cautiously. We do not know enough now to make acceptable projections; but it is clear that these activities are substantial, have been growing rapidly, and are expected to continue to grow in the future. Meanwhile, the trail systems and open spaces necessary for these activities are probably declining slowly.

VISITOR CHARACTERISTICS

What sorts of people are most active in hiking and the other types of trail use? This information is important for making use projections, for planning communications with potential users, for considering possible fees, and for evaluating needs and desires.

Hikers and horseback riders are about

evenly divided between males and females, but women and girls outnumber men and boys by small to moderate margins in walking for pleasure, nature walks, and bicycling (*BOR 1967*).

Young people predominate in all the unmotorized activities. Participation drops sharply as age increases, according to the *BOR* survey (1967). For hikers, as one example, 19 percent of the 12- to 17-year-olds hiked, 10 percent of the 18 to 24 group, 5 percent of the 25 to 44 group, and only 3 percent of the over-45 group. However, hikers on and around part of the Long Trail in Vermont included substantially more older people (*Sargent 1969*). Bicycling and horseback riding plummet after the teens: riding drops from 24 percent for the teens to 2 percent for the 45-and-over people, while bicycling drops from 60 percent to 2 percent.

Is this a reflection of declining physical ability? Only in small part, I think. One reason for my belief is that walking for pleasure and taking nature walks, which would be physically difficult for only a few older people, also drop off rapidly. Part of this decline probably is due to changing interests and desires as a result of aging, but much of it is related to history rather than aging. The older people grew up in a different society. Opportunities to develop interests in many sorts of outdoor recreation were more limited than in recent years. Work weeks were longer, travel was less easy, parks and so on were less common, and most important, attitudes about leisure and its use were more restrictive.

Mueller and Gurin (1962) reached similar conclusions for outdoor recreation in general, and presented data showing the proportion of people in different age groups who had learned to swim. Most young people knew how to swim; 73 percent of the 18 to 24 class had learned, but only 33 percent of the 65-and-over class knew how to swim. For all people who could swim, participation still declined substantially with age, but only about half as fast as it did for the whole population.

Some of the apparent effect of age may be due to its correlation with other factors, such as income. Income is related to par-

ticipation only at lower levels for most of those activities for which we have data. There is an income threshold, a necessary minimum income; but beyond this level, participation rates are fairly constant. The threshold seems to lie a little below national median income for most activities. Horseback riding is an exception; participation rises steadily with income, reaching a top of 14 percent for the \$15,000 to \$25,000 category. Horseback riding is obviously more expensive than walking or hiking. Walking need cost nothing, and hiking itself very little—perhaps boots and a small pack. However, access to most hiking areas is difficult without a car, so low income has some logical negative effect.

Snowmobiles and ATV's in particular—and trail motorcycles to a lesser extent—are expensive, often more so than horses. However, the people in middle income categories apparently have the highest participation rates, and snowmobiling seems to appeal largely to blue-collar workers (*Directional Marketing Co. 1970*). Boaters also have this character, and boating seems to parallel snowmobiling somewhat as another high-speed motorized recreation.

Data on the relationship of race to participation are scanty. The 1965 BOR survey reported no important differences in rates between whites and nonwhites for bicycling or walking for pleasure. Whites

had almost twice as high a rate for nature walks. If we could unravel the interrelated social factors, race would probably turn out to have little or no association after education, income, opportunity, and racial barriers had been accounted for.

Education has a strong association with participation for all the trail-related forms of recreation for which data are available, which leaves out the motorized users. More education is associated with more participation in every case, and usually substantially. All the wilderness visitor studies show very high educational levels.

Education seems to bring out interests and help people acquire abilities that lead to more outdoor recreation activity, especially some of the simpler and more contemplative, environment-oriented activities. Nature walks, for example, were participated in at four times as high a rate by college graduates as by people with 8 years or less education, and at more than twice the rate of high school dropouts. Even people with only a few years of college education had half again as high a rate as high school graduates. Perhaps people who are more curious about the natural world are also more likely to continue their educations, but I feel there probably is something about the educational experience that contributes directly and importantly to recreational tastes.

Table 1.—Percent of population 12 or over that participates in hiking, and miles of public trail relative to area and population, by U. S. Census regions

Census region	Percent hiking ¹ (rank)	Miles of trail ² (rank)	Miles of trail per 100 square miles (rank)	Miles of trail per 100,000 people ³ (rank)
Northeast	8 (3)	1,957 (6)	2.9 (3)	17 (3)
Middle Atlantic	5 (5)	1,663 (7)	1.6 (4)	5 (8)
East North Central	8 (3)	2,306 (4)	.9 (6)	6 (7)
West North Central	6 (5)	785 (9)	.2 (9)	5 (8)
South Atlantic	3 (9)	4,263 (3)	1.5 (5)	14 (4)
East South Central	6 (5)	1,093 (8)	.6 (7)	9 (6)
West South Central	6 (5)	1,988 (5)	.5 (8)	11 (5)
Mountain	14 (1)	52,355 (1)	6.1 (1)	471 (1)
Pacific	10 (2)	32,027 (2)	3.5 (2)	117 (2)
Total, U. S.	7	98,437	2.7	48

¹From SURVEY OF OUTDOOR RECREATION, BOR 1965.

²From TRAILS FOR AMERICA, BOR 1966.

³Based on 1970 census population reports.

Geographical factors are also related to participation rates. For most activities, participation rates are a little higher for people who live in metropolitan areas, in the Census Bureau's Standard Metropolitan Statistical Areas (SMSA). An SMSA is defined to include at least one city over 50,000. Horseback riding is an exception, but the difference is small.

Participation varies greatly from region to region, also. For hiking (table 1) participation rates vary from only 3 percent in the South Atlantic region to 14 percent in the Mountain States. It is impossible to unscramble regional differences in preferences from regional variations in opportunity. Table 1 shows large differences in public trail mileage between regions, in terms of trails as related both to area and to people. The Mountain States lead by far, followed by the Pacific Coast, with the Middle Atlantic and Central States bringing up the rear. Even if preferences were uniform regionally, participation would still vary as a result of these disparities in opportunities. However, four regions that are less well-supplied with trails than the South Atlantic region have participation rates twice as high. Part of this may be related to socioeconomic handicaps in this region and part to poor distribution of the trail opportunities.

The Northeast is relatively well-supplied and has a high participation rate. The Middle Atlantic and North Central areas are shorter on trails, but still have substantial participation.

VISITOR ATTITUDES

The objectives or motives of participants, their knowledge of opportunities, and their attitudes about resources, developments, other users, and policies and regulations are all potentially valuable for planning decisions. What are visitors or potential visitors seeking? What sorts of trails would meet different visitors' desires? What level of development is appropriate in what situation? How easy or challenging should different trails be—how long, steep, rough, and so on? What sorts of country are most suitable for trails, and what sorts of attrac-

tions should trails lead to? What kinds of users can share trails and what kinds need to be separated?

These relevant questions could be answered by feasible research. However, research has been limited, and most of the questions cannot be answered satisfactorily now. Even where good studies have been conducted, the applicability of the results to different sorts of environments and different sorts of visitors is limited.

All the published hiker studies deal with wilderness situations, or at least substantially wilderness environments. Similar purposes show up in all the studies, from the Adirondacks and White Mountains (*Shafer and Mietz 1969*) to the mountainous West (*Hendee et al. 1968; Univ. Calif. 1962; Merriam 1963; Merriam and Ammons 1967*) and in the Canadian Rockies (*Thorsell 1967 and 1968*) despite the variety of definitions and methods used in the studies. Aesthetic values are tops with hikers; the enjoyment of scenery and contact with the natural environment stand above exercise, socializing with other people, or specific activities such as fishing. The relation to the natural world is more an aesthetic, emotional, or romantic link than an intellectual, educational relationship, although these are also important.

A desire to temporarily get away from civilization and its artifacts and social pressures also emerges from these studies. Simple trails without elaborate facilities are preferred by most wilderness visitors (*Hendee et al. 1968*).

How much of this aesthetic orientation applies to hikers in nonwilderness environments? Probably a good deal. The Vermont study (*Sargent 1969*) showed similar characteristics and attitudes between hikers there in a semiwild setting and visitors to official wilderness. Furthermore, much of the wilderness hiking was the same sort of rather short day-use activity as hiking in general. In addition, a great many hikers in areas that are not strictly wilderness probably still perceive the environment as substantially wild.

What about the unstudied walkers, bicyclists, motorcyclists, etc.? It is hard to even

speculate, but that is about all we can do. Probably the walkers are similar to hikers. Certainly the distinction between the definitions of the two activities is blurred. Exercise might be more prominent as a purpose for walking than it is for hiking. I would speculate that the mechanized travelers are less scenery- and nature-oriented, more interested in the activity of riding their machines as a game, an end itself, or conversely, in some cases more concerned with trail travel as a means of reaching a destination, usually a fishing spot. Planners need to know what the trail machine users are seeking; it really is not obvious, and such information has major implications for planning for these users. Minnesota snowmobilers expressed strong interest in loop trails (*Minn. Dep. Conserv. 1970*), but their desires and use patterns need much more study.

Which types of users can share trails? Over half of the hikers in three western wildernesses preferred *not* to meet horsemen (*Stankey 1971*). There are obvious problems in combining use by hikers and horsemen, especially if use is heavy; and separation has advantages (*Hendee et al. 1968; Wis. Dep. Nat. Resources 1969*). However, a far more serious incompatibility exists between trail cycles and hikers or horsemen (*Hendee et al. 1968; Univ. Calif. 1962; Merriam 1963; Clay 1966; Wis. Dep. Nat. Resources 1969*). Some of my own research still in progress also shows this friction clearly. The new ATV's almost surely would provoke even more resentment from hikers and horsemen. The conflict appears one-sided; the mechanized travelers do not mind the foot- or horse-travelers, but the latter dislike the machine-users with fervor. This severe friction was also found between paddling canoeists and users of outboard motors (*Lucas 1964; Lucas and Priddle 1964*).

The reaction of skiers and snowshoers to snowmobilers is unstudied; but, by extension, I would expect sharp hostility toward the machines and their users by nonmechanized travelers.

Crowding on trails is probably not a serious problem either in terms of visitor satisfaction or trail wear and tear, except in

established wilderness. Even in wilderness, satisfaction is usually not reduced much by a few encounters with other groups on the trail, but loss of solitude at campsites does knock down satisfaction (*Stankey 1971*).

MANAGEMENT IMPLICATIONS

The most obvious and general implication is that a more effective, positive program of planning and managing for trail recreation is badly needed. Use and interest are growing; both seem certain to continue to grow; and opportunities are not keeping up, but, on the contrary, probably are actually declining. Trail systems need and deserve more attention outside established wilderness. Wilderness has its own special role to play, but it cannot and should not become almost the only place to hike because of neglect of other chances. Non-wilderness "trail recreation areas" could fill a real void and provide a great deal of enjoyment for many people better and at lower cost than strict wilderness, and at the same time they could free wilderness to serve the purpose for which it has been established.

The need is for diversity and variety in trail systems (*Wagar 1966*); long and short, hard and easy, close and far, and for different kinds of users. The greatest need at this time, however, is for day-use opportunities, which must be close to or even inside major population centers. This is clearly the kind of hiking and the sort of location where the demand is greatest and the opportunities are the most limited. Safe bicycle trails are an important part of this need (*Ritter 1966, Crafts 1966*). The needs of innercity people can be met at this time in our history only by providing opportunities close to home; these citizens lack the mobility to use more distant areas much.

Ingenuity will be needed to find places for trails near cities where little public land is available. Abandoned railroad lines and power line right-of-ways, military reserves, run-down waterfronts, and so on may have potentials.

In contrast, I think we should resist an overfascination with grandiose National Trails running on for hundreds or thou-

sands of miles. These trails have a monumental aura about them, and are impressive on a map. They are an interesting part, but only a small part, of the diverse system needed. They are no substitute for shorter trails near population concentrations or for trail networks in interesting places that may be somewhat more distant from population centers. Private lands, particularly timber-industry lands, are important in this class of opportunities, and could be more so.

Hiker trails should be designed primarily for scenic enjoyment, as an opportunity for aesthetic experiences. Seeking out views, vistas, the enchanting little spots, and environmental variety should predominate over engineering efficiency. The shortest distance need not and generally should not be followed. A good trail does not necessarily have to lead to a specific destination; trails *can* be an end in themselves, although the opposite idea has been expressed (*Brockman 1959*). Most trails can be fairly simple.

Incompatible trail uses need to be separated more thoroughly. Low-intensity horse and hiker use can be combined many places if necessary, but mechanical travel must be isolated if at all possible (*Griffith 1969; Baldwin 1969; Anon. 1971*). This makes the planning job bigger and raises costs, but I think the benefits would justify the expense of separation. The alternatives seem to be either banning all mechanized trail travel or allowing it to seriously impair the satisfactions of all other trail users.

Related to the need for separating mechanized travelers, I think someone should challenge irresponsible advertising of trail bikes, ATV's, and snowmobiles. Too many ads glorify conquering nature and ignore the damage done.

For example, one ATV ad says "Even 2- to 3-inch trees topple—just drive right through trees and brush" (*Anon. 1971*). ATV and trail bike ads show wet meadows being ripped up, mud flying from wheels churning up trails, and slopes so steep they are frightening being mastered—and eroded.

Impossible and even illegal images are presented, such as the "sportsman" seated on his trail cycle, shooting a presumably deaf deer. Snowmobiles swoop gracefully through a trouble-free Shangri-la where there is never a fence, no posted private land, no protruding tips of growing trees, and no undernourished deer clinging precariously to life until spring rescues them again. I do not see why public recreation officials need to feel obligated to somehow accommodate anything the engineers can concoct and the advertising men can misrepresent.

Planning and building trails takes lots of time and money, but better information about trails could aid people to make better use of existing opportunities, quickly and at modest cost. The would-be hikers (and related recreationists) are often frustrated, I think, by lack of knowledge of places to go. The problem is especially acute in large cities where there is little public land available for hiking nearby. I think much more could be done than has been done to help people find what is available. Maps and guidebooks are available for a few areas. Some are listed at the end of this paper. I know of several good ones for Western States. Perhaps there already are trail guides for the environs of our major cities, but if not, I think they would be a good investment.

Finally, more research is needed. The management programs for trail users are sorely in need of greatly increased emphasis. However, even if funds and other resources were provided, the uncertainties I have discussed here would inevitably produce major mistakes and inefficiencies. And yet these uncertainties are by no means imponderable and intractable puzzles. Researchers have the ability to attack them productively, but the research effort to date has been too small and too scattered. The returns for the American people from good research, which could be implemented in better planning and management, would exceed the costs many fold.

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