

TRENDS IN OUTDOOR RECREATION

ACTIVITY CONFLICTS¹

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Abstract.--Conflict caused by outdoor recreation activity groups competing for the same physical and psychological space has given rise to recreation resource planning, allocation and management problems. Research has shown recreation managers can expect certain types of users to be involved in significant conflict about 25 percent of their occupancy time. Well planned and managed outdoor recreation space can significantly reduce or even prevent conflict.

DEFINITIONS

Outdoor recreation conflict is defined as any physical, social or psychological obstruction arising within or between participants and their recreation goals.

Conflict may be inter- or intra- group in nature and can be identified with cause and effect relationships.

Conflict is directly related to the quality of the outdoor recreation experience and sets dynamic parameters on the social and psychological carrying capacity of an outdoor recreation environment.

Outdoor recreation carrying capacity is defined as the physical, biological, social and psychological capability of the outdoor recreation environment to support recreation activity without diminishing user satisfaction or site quality (Figure 1). It may be further conceptualized as a function of the quantity of the recreation resource, the tolerance of the site to use, the number of users, the type of user, the design and management of the site and the attitude and behavior of users and managers (Figure 2).

A second type of physical conflict occurs when participants' use of a recreation site

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RECREATION CARRYING CAPACITY

INVOLVES THE PHYSICAL
AND BIOLOGICAL COMPONENTS
OF THE SITE AS WELL AS
THE SOCIAL AND PSYCHO-
LOGICAL ATTITUDES AND
BEHAVIOR OF THE RECREA-
TION USERS.

Figure 1.--Outdoor recreation carrying capacity - a definition.

results in various kinds of impact on the natural environment.

A third type of conflict which may be termed political, takes place between opposing factions of outdoor recreation vested interests and involves land use allocation decisions. These conflicts are greatly complicated when non-recreation groups such as timber, water, cattle, and mineral interests conflict over the use of the same acreage sought by recreationists.

Finally, a fourth type of conflict exists between the philosophies and practices of natural resource owners and managers and the attitudes and behavior of the recreation seeking public.

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CARRYING CAPACITY IS A FUNCTION OF QUANTITY OF THE RECREATION RESOURCE, TOLERANCE OF THE SITE TO USE, NUMBER OF USERS, USER TYPE, DESIGN AND MANAGEMENT OF THE SITE, AND THE ATTITUDE AND BEHAVIOR OF THE USERS AND MANAGERS.

Figure 2.--A functional definition for outdoor recreation carrying capacity.

This paper will deal only with encounters of the first kind: those that involve inter- or intra-group conflict occurring when participants engage in recreation activity.

The Problem

The conflict problem simply stated, is that recreationists tend to compete for the same physical, social and psychological space during the same time period.

Its causes are many but perhaps the most serious is that the supply of outdoor recreation space, particularly in the eastern region of the United States is diminishing (primarily because of urbanization) while recreation demand for that same space is increasing both in the number of participants and kinds of activities which are often incompatible with one another. Shafer (1975) states in his paper, Impact of Human Needs on the Natural Environments for Recreation, that urban sprawl may consume 19.7 million more acres of potential recreation land by 2000, an area equivalent to the states of New Hampshire, Vermont, Massachusetts, and Rhode Island. Three and a half million acres may possibly go to highways and airports; 5 million acres of hunting and scenic areas from agriculture to public facilities and second homes and in 17 years 2 million more acres will be allocated to power line right-of-ways. At stake in this land reallocation are our recreation resources.

The second major cause of outdoor recreation conflict is the difference in perception, attitude and behavior between motorized and pedestrian users of recreation environments. The growth in the numbers of users of each type is impressive.

The Council of Environmental Quality estimates there are now (1979) 10 million off-road vehicles and snowmobiles being used in the

United States by some 43.6 million Americans. Seventy percent of the snowmobiles in the United States are used in the northeast region which has the highest population density and the least amount of public land (Figure 3).

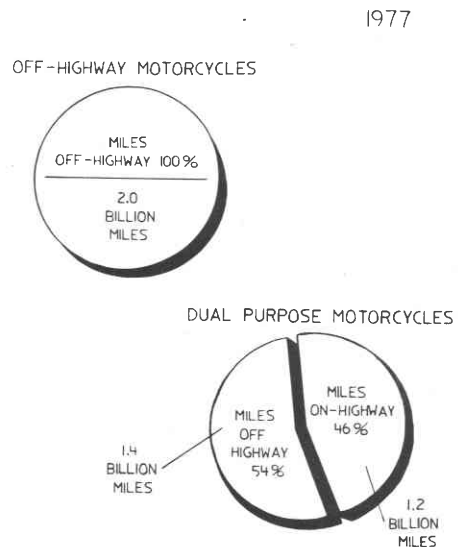


Figure 3.--Miles traveled by off-highway and dual purpose motorcycles in 1977.

There were 670,000 motorcycles sold in the United States in 1969 and 1,050,000 more sold in 1976 accounting for a 57 percent sales increase in 7 years. Motorcycle registrations for these same two years increased from 1.4 million in 1965 to 5 million in 1976 (about a four fold increase).

Pedestrian recreation activity shows similar growth. The National Park Service reports that backcountry use in eastern National Parks has tripled since 1967. The Bureau of Outdoor Recreation estimated there were 10 million hikers 12 years of age and older in 1965, or about 7 percent of the population of the United States. Lucas 1971, quotes a "walking for pleasure" statistic of 68 million people or 48 percent of the population. He then sums the occasions of nature walks, walking for pleasure and hiking and estimates that 1.4 billion pedestrian recreation occasions occur in 1 year in this country. The Bureau of Outdoor Recreation statistics for 1970 estimate 30 million people in the United States have participated in nature walks. The Department of the Interior estimates in the 1974 National Outdoor Recreation Plan Draft that there were 1.9 billion walking activity occasions in 1965 and projects 2.8 billion in 1980 and 4.4 billion in 2000 (U.S.D.I. 1974).

It is possible to conclude from these pedestrian and vehicular recreation statistics that

based on numbers of participants, limited space and competing activities, the potential for outdoor recreation conflict both within and between recreation groups is substantial.

A Brief History

In their haste to bring the imbalance between demand and supply to the attention of the American public, the Outdoor Recreation Resources Review Commission (1962) did not deal with conflict or potential conflict between activity groups over the use of recreation resources except for a limited reference in their Report #5 entitled the Quality of Outdoor Recreation as Evidenced by User Satisfaction. In a study of participants using 11 selected outdoor recreation areas in the country ranging from ski areas to National Parks, the Commission reported that respondents indicated under development and overcrowding as problems they felt needed attention.

The next conflict references in the literature dealt with crowding in wilderness areas and conflicts between backpackers and horseback campers, and motorboaters conflicting with canoeists (Stankey 1971, Lucas 1964).

Lucas's 1964 Quetico-Superior report contained accounts of conflict between motorboat and canoe use of this wilderness waterway. He reported that canoeists "usually wanted no motorboats on the waterway" and felt crowded by them (Lucas 1961). Lime and Stankey (1971) state that the perception of the recreation environment is different between user types and what is a quality recreation experience to one may be entirely undesirable to another (Lime and Stankey 1971). Also, Lucas, Hendee and others (1964, 1968) report that what the recreationist perceives as acceptable or desirable may be quite different from what the recreation manager perceives.

Prausa stated in his 1971 paper on Multiple-Use Management for Recreation in the East that besides multiple-use conflicts there is another conflict much more difficult to resolve. It is the people vs. people conflict and concerns the conflicts brought about by growth and diversity of various recreation uses of wild lands.

Stankey's Ph.D. thesis dealing with wilderness recreation carrying capacity reported that "Over half of the hikers in three western wilderness areas preferred not to meet horsemen and that loss of solitude at campsites because of crowding, reduced satisfaction for his study participants" (Stankey 1971).

Wagar (1964) concludes in his Carrying Capacity of Wild Lands for Recreation report that "recreation management procedures may

allow both high-quality recreation and high rates of use if they: a) reduce conflicts between competing uses, b) reduce the destructiveness of people, c) increase the durability of areas, or d) provide increased opportunities for enjoyment".

The next group of noticeable conflict references in the literature came with the surge in the sale and the public's use of snowmobiles, trailbikes and other off-road vehicles. I have previously stated selected statistics on their use and you have heard Garrell Nichole's discussion of them. Suffice to say that the frequency and magnitude of the social, legal, and environmental impacts caused by off-road vehicles has been cataclysmic and that it is only in the last decade that recreation managers, governments and industry have begun to control their use within acceptable social standards. But the problem is far from solved.

Federal land management agencies have differed in the rate and nature of their response to Presidential Executive Order 11644 dealing with ORVS and their use and impact on federal land, but all are currently implementing regulations resulting from the Order (CEQ 1979).

In a well designed effort to bring to light current knowledge concerning the recreation resource carrying capacity problem, Stankey and Lime in 1973 released an annotated bibliography entitled Recreational Carrying Capacity containing 208 citations related to the subject.

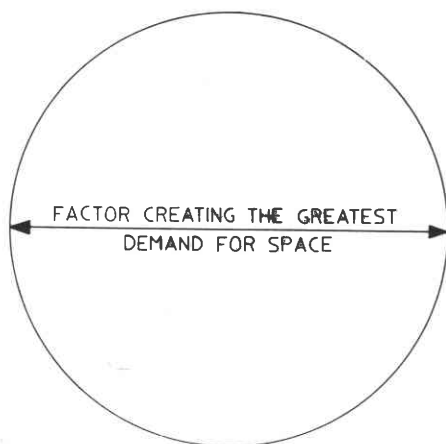
Finally in the historical mode, outdoor recreation researchers have recently come under some criticism from sociologists and psychologists for not using established precepts from those disciplines. Bryan (1979) has just released a study report entitled Conflict in the Great Outdoors which is a conceptual framework of outdoor recreation behavior based on sociological and psychological principles.

Concepts From The Literature

In this section of my paper I have annotated key postulates and concepts from the literature to familiarize you with current thinking on the conflict problem.

- In order to manage an area under the carrying capacity concept, managers and the public must set recreation use and environmental impact objectives prior to area utilization. Unless this is accomplished, carrying capacity becomes enmeshed in a sliding scale of uncontrolled use detrimental to site quality and user satisfaction (Lindsay 1979).
- Recreation space demand may be thought of as a sphere whose diameter is set by the greatest space demanding factor associated with that

RESOURCE CONSUMPTION SPHEPE



- Recreation activity space demand spheres may be completely compatible and concentric on the same site such as those created by nature observers and fly fishermen, or partially compatible and partly overlapping such as those created by sailboaters and boat fishermen, or they may be totally incompatible and demand separate space spheres such as those created by trailbikes and backcountry hikers (Figure 5). Such activities involve single use resource allocations. When the various activity space spheres fill the entire recreation space site sphere, the site is said to be at its point of carrying capacity for a specific period in time (Figure 6) (Lindsay 1979).

- Recreation encounters or path intersects can be measured, predicted and managed (Colton and Pitt 1979).
- Outdoor recreation space occupancy and utilization may be managed by using electronic monitoring and data systems (McCurdy and Wilkens, Shechter and Lucas 1979).
- Activity displacement, for example trailbikers displacing hikers in a recreation management unit, may take place without the area managers' knowledge (CEQ 1979).
- Outdoor recreation plans and objectives must be written for target areas or visitor destination areas (NPS 1976).

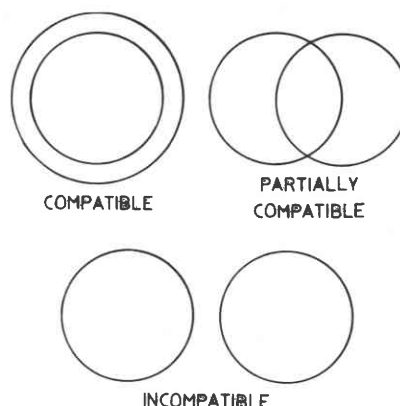


Figure 5.--Compatible, incompatible and partially compatible outdoor recreation space demand spheres.



VERMONT'S TOTAL RECREATION
RESOURCE ENVIRONMENT

Figure 6.--The outdoor recreation space resource
at capacity.

- Recreation managers are being compelled, often unwillingly, to perceive man-environmental relationships as complex ecological entities. It is becoming too costly and too dangerous to perceive them any other way (Schafer 1975).
- Human spatial behavior must be understood before a recreation planner allocates acres to recreation use. The diffusion or circ-

lation of humans in space in order to gain access to recreation facilities or experience space is a major part of this understanding (VanDoren 1975).

- Two major ski areas in Vermont have limited their sale of weekend lift tickets because lift lines were constantly exceeding lift capacities resulting in dissatisfied and non-returning customers (Lindsay 1975).
- Recreationists must lower their threshold of sensitivity to other users (Stankey 1973).
- The number and type of recreationists that can use a recreation area at the same time without destroying user satisfaction or area quality is a basic management decision (Tribe 1972).
- How people perceive outdoor recreation experiences and environments is basic to their levels of actual enjoyment, frustration or conflict (Lime and Stankey 1971, Moeller et al. 1974).
- Users will accept regulation of conduct and movement if (1) they don't know they are being regulated, or (2) if they are educated through sound information and interpretive techniques (Lime and Stankey 1971).
- Defining what is acceptable outdoor recreation behavior is a value choice rather than a technical issue (Lime and Stankey 1971).
- Recreation use can be ratisned through pricing, queing, reservations or lottery (Lime and Stankey 1971).
- Recreation use may be separated by space and time (Lucas 1971, Tribe 1972).
- Depreciative behavior describes behavior that violates institutional restrictions, accepted social norms or both. Too many people on a recreation site may be worse than a littered campsite (Clark 1971)
- Undesirable (high conflict) uses may be prohibited through closure (Hetherington 1971).
- Outdoor recreation conflict intensity is greatest on urban fringe areas because of limited space, dense populations and a greater diversity of outdoor recreation interests (Lucas 1971).
- Through direct regulation of where visitors may go, how long they may stay and when they may enter the area, management can attain a desired intensity of a use for a particular site. Implicit in these techniques is a trade-off between the loss in the recreationists' freedom of choice and the gain in ability of the site to more nearly meet visitor

needs and objectives (Lime and Stankey 1971).

- Use zoning and experience level zoning become critical tactical tools in the effort to manage for high quality recreation experiences (Wagar 1964, USFS 1970).
- Signing (the proper use of signs) can be effectively used to reduce or prevent outdoor recreation conflict (Brown and Hunt 1969).
- Differential fee charges may be used to shift use of off-peak times (LaPage 1968).
- Conflicting uses must be physically separated by distances that depend on the nature of the activity (Lucas 1964, Hendee et al. 1968).
- Some uses should be concentrated while others dispersed over the recreation management unit. This depends on user numbers, facilities needed and potential impact on hardened or natural sites (Lucas 1964).
- Users concepts of crowding are important for managers to understand if they are interested in providing environments in which quality recreation experiences take place (Lucas 1964).
- Managers must decide on the quality of the recreation experience planned for an area and then consciously manage for that experience level (Anon.).

and finally...

- Trophy recreation experiences are legitimate management objectives to which managers must be committed (Anon.).

The Vermont Conflict Study

Even though there are ample references to conflict and carrying capacity in the literature very few researchers have attempted to measure its frequency and magnitude. Over the past 5 years we have attempted to do this at the University of Vermont with the following results.

Our 1974 exploratory study entitled Outdoor Recreation Conflict in Vermont, revealed that (1) conflict was a problem in Vermont, (2) most recreation activity groups experience conflict but some more than others.

Of the 15 recreation activities studied, 6 were identified as "high conflictors" found to be involved in outdoor recreation conflict at significantly higher rates than the other activity groups. These were snowmobilers, trailbikers, motorboaters, hikers, hunters and

fishermen. Private landowners, as a separate study group, incurred the highest rate of conflict as recipients of outdoor recreation use impact.

Our study showed that certain user groups can be predicted to conflict and that the type and cause of their conflict can be forecasted. Based on our findings we were able to recommend conflict solution and prevention measures.

Forty percent of all the recreationists interviewed in our study experienced some sort of outdoor recreation conflict during the 1972-73 season. Twenty-seven percent experienced conflict as recreation participants and 13 percent experienced conflict as landowners conflicting with recreationists using their land.

Recreation participants living in urban areas experienced a slightly higher rate of conflict (29%) than participants living in rural areas (24%). Fifty-eight percent of the conflict occurred in rural areas compared to 42 percent in urban areas.

Subsequent studies of snowmobilers, trailbikers, and motorboaters revealed the following information. Snowmobilers did not believe they were much of a problem to other user groups. Over half (53%) of the sampled snowmobilers said they had experienced no problems while using their snowmobile in 1975. About one-quarter of the respondents cited poor trail and trailside facilities as being their only complaint. Only 4 percent cited conflicts with other recreation groups and these were mostly with cross-country skiers. If you compare these results with our base report, however, other recreation groups and landowners had a much more significant conflict with snowmobilers than the snowmobilers felt they had with these other groups. Lucas, in his 1964 Quetico-Superior study refers to this same phenomenon when he found that motorboaters did not mind having canoeists on the waterway, but the opposite was true for canoeists who did not wish to have motorboaters on "their" waterway and cited many conflicts with their form of motorized recreation activity. The other explanation for the low conflict incidence reported (4%) by Vermont snowmobilers may be that at the time of the study, there had been several thousand miles of approved trails constructed by and for snowmobilers in Vermont and when such a single use, sanctioned facility is built, conflict tends to decrease appreciably.

Thirty-one percent of Vermont trailbikers reported conflict with other groups; 19 percent conflicting with equestrians, 8 percent with law enforcement officials, and 4 percent with hikers and hunters.

Twenty-six percent of Vermont motorboaters studied experienced conflict while boating in our state during 1977. Most of their conflicts were with water skiers and other motorboaters, but included other water recreationists, landowners and law enforcement officials.

If you average the number of Vermont snowmobile, trailbike and motorboat participants that experienced conflict, about 25 percent acknowledged conflict serious enough to report. Data from Vermont hikers is just being analyzed, but at this point in the study it looks safe to say that, based on the "high conflict" sports studied, one out of four participants experience conflict during their activity season.

We further conclude that the intensity, frequency and type of conflict varies considerably with the activity, participant characteristics and the time and place the activity takes place.

Conclusion Statement

Outdoor recreation planners and managers not only have the responsibility to provide high quality natural environments for recreation activity, but perhaps more importantly, they must control or prevent conflict between participants. It is only by such dual objective efforts that high levels of user satisfaction and site quality can be maintained and that managers can feel confident that the recreation product consumed on their lands will be of a superior nature.

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