



Spring 1963

## Outdoor Recreation Research: Some Concepts and Suggested Areas of Study

Marion Clawson

Jack L. Knetsch

### Recommended Citation

Marion Clawson & Jack L. Knetsch, *Outdoor Recreation Research: Some Concepts and Suggested Areas of Study*, 3 Nat. Resources J. 250 (1963).

Available at: <https://digitalrepository.unm.edu/nrj/vol3/iss2/4>

This Article is brought to you for free and open access by the Law Journals at UNM Digital Repository. It has been accepted for inclusion in Natural Resources Journal by an authorized editor of UNM Digital Repository. For more information, please contact [amywinter@unm.edu](mailto:amywinter@unm.edu), [lsloane@salud.unm.edu](mailto:lsloane@salud.unm.edu), [sahrk@unm.edu](mailto:sahrk@unm.edu).

# OUTDOOR RECREATION RESEARCH: SOME CONCEPTS AND SUGGESTED AREAS OF STUDY†

MARION CLAWSON AND JACK L. KNETSCH\*

Outdoor recreation is booming, as a look at the attendance statistics for almost any area will show; but research regarding outdoor recreation has lagged badly.

To begin, we mean by outdoor recreation those activities undertaken because one wants to do them and done in a predominantly outdoor environment. Recreation is thus differentiated from employment, which one does for a living, or from the necessary personal chores of living. Some recreation is wholly indoors, *e.g.*, movies or TV; other forms are equally obviously outdoors; and some may be partly both. Our concern is with activities primarily outdoors, although many of the same problems and conclusions apply equally to indoor recreation.

By research, we mean an organized search for new knowledge, including the new understanding that comes from a rearrangement of old facts and old ideas. The emphasis in research is on understanding, especially of basic relationships. Research requires facts, but fact-gathering and fact-summarizing alone is not research. Research hopefully influences later actions and policies, but its prime purpose is not to direct or influence action.

So defined, research must be carefully distinguished from planning, on the one hand, and, on the other, from the accumulated knowledge that comes out of direct management experience. Planning is primarily a means for putting known facts together, evaluating them, and coming up with a proposed line or lines of action. It may draw on research; it may use some of the same basic data; but the moving purpose and often the scheme of analysis is different. We would generally characterize the Outdoor Recreation Resources Review Commission report as planning, not as research, although some of the study reports are clearly research. There is no sharp clean line between research and planning; each may influence the other, and each may include some elements of the other. But there is a major difference in the basic motivation and approach of the two, as we have suggested.

Resource management, including outdoor recreation management, leads to a body of experience and, in the hands of an observant practitioner, to an accumulation of knowledge. The experienced manager often knows a great deal;

---

† This article was presented to the National Conference on Outdoor Recreation Research, Ann Arbor, Michigan, May 6, 1963.

\* Resources for the Future, Inc.

but he may also generalize too widely and freely based upon his own direct, and sometimes limited, experience. At best, his knowledge is conditioned by his history; and since he presumably always chose lines of action which at the time seemed the most rational, he may not know what would occur under markedly different circumstances. The researcher, in contrast, has, or should have, tested concepts, ideas and hypotheses under controlled circumstances or within known bounds. Hopefully, he gains as much, or more, by rigorous logic and analytical procedures as he unavoidably loses through less intimate involvement in the processes he studies. The comparison between the recreation researcher and the recreation manager is somewhat parallel to the comparison between the forester and the lumberman, or between the agricultural experiment station worker and the farmer. One should be careful about concluding that the researcher has a "better" understanding; he merely approaches part of life from a different viewpoint and with a different purpose.

There are several reasons why organized research into the problems of outdoor recreation has been, and is, so small, comparatively. Recreation simply has not been recognized by most professions to be a respectable field for scientific inquiry. Many equated recreation with "fun," and not a serious subject for study. There has indeed been a good deal of emotionalism and sentimentalism associated with outdoor recreation. Many persons have asserted values and considerations not easily subject to analytical research; some have advocated reservation or establishment of outdoor areas or other actions that they did not care to subject to critical research. The careful research worker has wondered about the possibility of, or utility of, research undertaken under these circumstances. In an earlier period in American history, when the competition for use of natural resources was not as severe as it has become and promises to be in the future, the problems of recreation use of resources were not as serious. The need for research may have been, or may have seemed, less at that time. The fact that outdoor recreation is an activity with a general absence of market transactions, and for the most part provided by public bodies, has clearly inhibited research. Further, there has been no research institution organized specifically for outdoor recreation research—nothing remotely comparable to the USDA-Land Grant College system of research for agriculture. Any one of these factors might have been serious; their combination has been almost overwhelming. Comparatively little research on the problems of outdoor recreation, therefore, has been carried out. Much of that which has been done has been to a degree incidental to research on other uses of natural resources, and—regrettably—some of that done has not commanded universal respect for competence, insight and imagination.

The whole broad field of outdoor recreation has two major sources or origins which have influenced, and may continue to influence, research in the

field. On the one hand, many men have come to outdoor recreation from a natural resources background. Their training may have been in forestry, or wildlife management or some other essentially applied physical science field; their experience may well have been in management of natural resources for various purposes. The other broad origin is from the field of recreation activities. Men with this origin may have had training in physical education or other fields, may have managed a city recreation department or otherwise may have been concerned primarily with recreation activities. This difference in origin is sometimes characterized as those interested primarily in trees vs. those interested primarily in people, but this is a false distinction. Those with a resource background are concerned with how people use the resources they administer, and those interested in activities necessarily require resources for such activities.

This distinction has not been accurate in the past, and it is a wholly inappropriate dichotomy for either research or management in the future. Research, to be really meaningful or accurate, must consider both resources and users; so must well conceived and well carried out administration. The focus of research projects may differ depending upon the approach of the researcher, as we shall attempt to show later in this paper; but a more eclectic approach and a wider consideration of all aspects of outdoor recreation seems called for in the future.

Over a period of many decades or even centuries certain principles and methods of scientific research have been developed, broadly speaking. These are applicable to research on outdoor recreation. For example, a way of generalizing from specific experiences to a broader range of rationality and order is to construct hypotheses and theories and to test them empirically. This usually requires quantitative measurement and specific tests designed to test the particular theories. This may involve certain types of organized experimentation where it is possible to establish controlled or determined conditions. Close observation and measurement of various events or phenomena and statistical analysis of the data may be an appropriate approach under many circumstances, and indeed may be the only practical approach for many economic and social problems where controlled experimentation is impossible or undesirable. Without attempting to catalogue all the aspects of scientific inquiry, this brief listing of some attributes will suggest that these approaches or measures are applicable to research on outdoor recreation. The specific problems, and to some extent the relationships, of outdoor recreation differ from those in other resource fields, but the scientific method in general is applicable. We hope that our discussion of more specific research possibilities for outdoor recreation will make this clear.

A concept basic to an understanding of outdoor recreation statistics and to outdoor recreation is that a visit is something more than what is experienced on

the recreation site. Rather, the whole recreation experience consists of five rather clearly identifiable phases, each having importance in recreation decisions.

*Planning or anticipation* is the first phase. At this stage, the family or group decides when it will go, where and how long it will stay, what it will try to do, how much it can afford to spend, what equipment and supplies it will need, and makes other major decisions. This phase occurs typically within the recreationist's own home and certainly within his home town.

*Travel to* the recreation site is the second major phase. Nearly all outdoor recreation involves some travel, and it is not uncommon for as much time to be spent in travel to an area as will later be spent there; and travel costs are frequently larger than on-site costs. While travel is often an enjoyable portion of the whole experience, it is true that the longer the travel required the fewer the visits that are made to an area. The degree of this distance friction depends on how disagreeable or enjoyable the travel is, and this is often a variable factor.

*On site* experiences are the third major phase of the total outdoor recreation experience. These are what most persons, including most professional workers in outdoor recreation, think of when "recreation" is mentioned. The range of activities can be very wide, as we all know, but it is these activities which provide the basic purpose for the whole outdoor recreation experience.

*Travel back* is the fourth major phase of the whole outdoor recreation experience. Obviously, its end points are the same—the recreation area and home—as the end points of *travel to*; but the route may be different. Even the same route looks different when traveled from the opposite direction, and we judge that the attitude of the family may be very different. The kinds of services the family wants or can afford en route may differ greatly according to whether it is going to or from the recreation site.

*Recollection* is the fifth major phase of the whole experience. It is altogether possible that most of the total satisfactions, at least for some people, come from this last major phase. It is also important because it generally forms the basis for decisions in the planning phase of the next experience.

The whole outdoor recreation experience must be viewed as a package. The recreationist cannot have only one, two or three parts of the whole; he must have them all. All the costs of the whole must be balanced against all the satisfactions from the whole; one cannot reasonably balance only the costs and satisfactions of some parts. For instance, dirty rest rooms or bad meals en route may offset, to a large degree or wholly, the pleasant impressions from the new scenic lookout or at the new park museum. While specialized researchers or administrators may focus particular attention upon only one phase of the total experience, they run the risk of going seriously astray if they do not recognize the whole experience.

We believe that this idea is basic to research on outdoor recreation. Statisti-

cal demand analysis, for instance, can proceed with the total experience as the unit of measurement, but not on the basis of one phase alone. Measurement of user satisfactions and dissatisfactions must consider the whole experience, although the separate parts may also be studied. All the financial problems of economic impact, pricing and sources of funds must be considered in light of the total outdoor recreation experience, not merely for one or a few parts of it. Likewise, research on the role of government at different levels, and of the relation between government and private activities in outdoor recreation, must be based upon the concept of the total experience.

One general comment can be made: outdoor recreation is not, and probably will not be, a separate field of human knowledge or inquiry in the sense that economics, or ecology, or psychology or any one of many other recognized fields of professional knowledge is. Outdoor recreation is a kind of human activity. Many problems arise which are related to this activity; they need study, and organized study or search for new knowledge is research. One can apply to outdoor recreation research the theory, logic and established methods of inquiry of many of the established fields of professional knowledge, either singly or in combination. Thus outdoor recreation research has as a unifying theme a kind of activity and a range of problems but not a special field of knowledge as such. We think it will and should remain so.

Although each phase of outdoor recreation is closely related to the others, and although each outdoor recreation area is related in some way to other such areas, as a matter of practical fact it is necessary to subdivide the field of outdoor recreation research into manageable "chunks". One man or one group cannot possibly study everything at one time. Some problems will loom as more important than others; some field of specialty will condition the individual researcher's approach; and some physical area will require more specific attention than just recreation in general or recreation areas in general. Administrative considerations in research agencies will require a project approach or at least some delineation of specific research attempts. For all of these reasons subdivision of the broad field of outdoor recreation research is necessary.

At the same time, it must be recognized that *any* subdivision of the field is arbitrary in some degree. Further, it must be recognized that various segments of research are related, just as various subgroups of problems are related. Specific research projects may properly have two or more specific aims; or two or more kinds of problems may be studied at one time. In fact, joint undertakings, or undertakings which deliberately cross boundary lines often established, may be highly productive. Administrative convenience, interest and abilities of the researchers, and nature of the problems may combine to affect greatly the organization of specific research projects. In this regard the need for the researcher to have a broad understanding of recreation as a whole and

an appreciation of the fact that he is studying only a part of that whole is far more important than specific decisions.

This subdivision of research efforts and the important recognition of how individual projects are related is well established in research on agriculture, for example. While interdisciplinary work is often desirable, specialists working in individual fields of endeavor effectively carry on research in the field. The agronomist works on improved cropping practices and varieties; the animal husbandry man increases productivity through better nutrition; the farm management specialist devises new production organization to better utilize such advances; the agricultural market analyst is concerned with the market aspects of major changes in production and consumption; and so it is with the several different research specialties. Each conducts projects in his field of interest, but each is related in some well understood way, and each contributes to a furthering of the field of agricultural research. Forestry research is clearly another area in which individual specialists in silviculture, dendrology, and forest economics, for example, contribute to advancement of the whole field of forestry.

Research in outdoor recreation will be advanced in similar ways by individuals and groups working on different aspects of problems but who are conscious of the relations between them. Again, as outdoor recreation is more a type of activity with a range of problems, research in this area calls for investigation into a number of fields of interest.

An outline of areas of study that might be undertaken in the area of outdoor recreation may be highly detailed and risk a classification of too narrowly defined projects, or be suggestive of the kinds of work or particular approaches within broad kinds of studies that seem to be important. Most of the remainder of this article consists of suggested areas of research within the broad field of outdoor recreation. We do not mean this to be any final or complete delineation of the field, but rather it is a suggestive classification of research on outdoor recreation. While our outline possibly reflects our biases as economists, we have tried to list a considerable number of specific lines of research which might be made into specific projects and which can be expanded to achieve a greater comprehensiveness than we have intended.

## I

### RESEARCH ON DEMAND FOR OUTDOOR RECREATION

The rapid and sustained growth in outdoor recreation activity since the Second World War has focused much attention on the nature of its demand relationships. An understanding of present demands and how they are changing

over time has become of major importance in resource planning and policy formulation.

Fundamentally the interest in demand studies stems from the importance they have in the explanation and analysis of the regularities and patterns of behavior among individuals in the use of all kinds of recreation areas. That such patterns exist is clearly demonstrable. We observe, for example, that use of an area bears a direct relationship to the cost of the visits. We also find that more people make use of certain types of recreation areas more than they do others, and that areas located near large metropolitan areas attract more visits than similar areas located in relatively isolated areas. However, to observe instances of such behavior and to have intuitive notions about them is one thing; to relate the regularities to the important determining factors and to have empirically determined estimates of the importance of each and of the relationship of one to another and to time related changes, is quite another thing. It is this latter type of information that is in such short supply in the outdoor recreation field, but which is so useful. Quantitative estimates of demand relations are needed for all economic aspects of resource allocations (*e.g.* determining the relative values of resources when used for such purposes, making economic impact determination, establishing pricing schemes, making management decisions, timing of acquisition and development), and it enters government policy making generally. Not only do we believe demand analysis to be important but we also believe that it is entirely practical to develop research projects to estimate reliable empirical demand relations for outdoor recreation.

The analysis of demand for outdoor recreation may be roughly at the same stage of development that analysis of demand for agricultural commodities was 40 or more years ago. In the early 1920's the demand curves of theory were well known among economists, but many doubted that empirical demand curves ever could be estimated with any accuracy. During the 1920's various methods for doing this were developed; later many of the early empirical results were revealed to be in error. Better data were needed and gradually came into existence, as well as more sophisticated and efficient methods of analysis. But today the demand for all agricultural commodities is fairly well known, and different workers have obtained numerical measures which are quite consistent. Although debate on agricultural policy may rage, there is general agreement on the basic underlying demand relationships.

Perhaps a first kind of study into recreation demand is research to determine the best methods of collecting data on recreation activity and on use of recreation areas. Presently available data are often seriously deficient, and present data are often suspected of being highly inaccurate. Present methods of data collection differ widely between public agencies, sometimes within agencies, and in nearly all cases seem to have been dictated more by administrative



convenience in data collection than by meaningfulness of data collected. Basic to this divergence in data is a lack of agreement on definitions of what is to be measured. For such basic items as "visit" or "visitor day," there is no agreement of definition. There are virtually no data on recreation use of privately owned areas and facilities. It must be recognized that collection of accurate and meaningful data is neither easy nor cheap, but such data are basic.

Various kinds of research projects could be set up in the field to collect data of various kinds in various ways, and the results could be tested, one against the other. It may be extremely difficult to define "accuracy," but consistency is a lower, and perhaps more attainable, goal. Various methods, *e.g.*, mechanical, electronic, or human, could be devised to measure total attendance, for instance; perhaps various ways and degrees of sampling could be devised to obtain more information on the socio-economic characteristics of the users. We have only the roughest guesses as to how many individuals the total number of visits represent, for instance. Sample studies have obtained information as to age, family composition, income and other characteristics of recreationists; but the definitions or class intervals have varied from study to study. These studies often are not comparable with more general information such as contained in the Census, and they almost invariably apply to one point in time. Moreover, such information as is collected on recreation use is often "published" in occasional mimeographed releases that are physically almost impossible to file and preserve. Few librarians would recognize them as being worth preserving.

One cannot reasonably ask recreation administrative agencies to collect, tabulate and publish better recreation use data until one can accurately define "better." Research projects on this phase deserve a high priority.

The concept of the whole outdoor recreation experience has its analog in the concept of systems of outdoor recreation. The one relates to the different phases of the experience for the individual or group; the other relates in large part to the relationship between different areas. One of the outstanding characteristics of our economic and social system is that of extreme interdependence. For example, the quantities of all goods and services produced and the values attached to them are not determined in a vacuum but are directly and indirectly dependent on quantities and prices of nearly all other goods and services. And these are all in turn dependent on the preferences and tastes of consumers, which are dependent in turn on a large number of characteristics of people and their environment. Similarly the interdependence of outdoor recreation is abundantly apparent in the complex array of demands, facilities, and activities and the many things that affect them.

The notion that the demand for any resource changes as a result of changes in income or leisure of the people making use of the area, or in road conditions, or in management of the area in question, is part of this complexity. Although

these complications add to our problems of definition and measurement, it is important to recognize that they are all part of a system of interrelationships, and, further, that useful things can still be said about the demand for outdoor recreation. This recognition of various relationships allows us to explain otherwise puzzling aspects of the demand situation. It means mainly that we must be aware of factors which are important to our problem and make allowance for them in such ways as to make our empirical data useful.

We can intuitively note some effects of such things as income, leisure time, travel and numbers of people on demand for recreation resources. When either free time or money available for discretionary spending rises more of each will almost always be spent for outdoor recreation. But just as the decision to use both time and money for recreation means less is available for other activities, expenditures for one type of recreation activity, or on one area, means less for other recreation and other areas.

So it is that all recreation areas or resources are in varying degrees substitutes for one another, and attendance characteristics at one area are conditioned by the existence and characteristics of others. If the different resources or areas are highly similar each area is then almost completely competitive with each other area. If one had water recreation and another did not, it might be argued that people would go to each park independently of the others. In practice the situation is almost always somewhere between these extremes. That is, it is probable that all areas accessible to a given population are to some extent competitors or rivals, but also to some extent are independent of one another. The degree of substitutability or competition between areas will in large part depend on the inherent attraction of the area and upon its location. Neighborhood parks are generally of importance to people only in fairly close proximity to them, but areas such as Yellowstone National Park have an attraction throughout the country, and indeed even farther.

The numerous kinds of outdoor recreation areas and the numerous kinds of activities on the various areas require some classification for meaningful analysis. The general relationships are perhaps better understood if areas and activities are grouped, in spite of some loss in detail. Many classification systems are possible; we shall describe very briefly one which we think has considerable utility for demand analysis. We suggest that outdoor recreation areas can be meaningfully classified into three types: user-oriented, intermediate, and resource-based.

For user-oriented areas, location is the dominant consideration; such areas must be near their chief users. Typically, these areas are used after school, after work, or during the day by mothers with small children or others neither in school nor at work. City parks often fall in this category, but some private areas do also. The physical characteristics of the area are important but not highly demanding; modest terrain, reasonable drainage and absence of severe

hazard of any kind are perhaps enough. Many such areas are highly developed and most are used relatively intensively. Cash costs to users of visiting such areas are minimal and often zero. The dominant factors affecting their use are the numbers of people within their service area and the leisure time of those people.

Resource-based outdoor recreation areas lie at the other extreme; their dominant characteristic is their outstanding scenic or other recreational quality. As a nation, we have placed great value upon major mountain areas, lakes and seashore, swamps and other unusual natural landscapes and phenomena. As a matter of fact, most of these areas lie at a considerable distance from the larger centers of population; this requires relatively long travel to reach them and tends to limit use to vacations. Costs of visiting such areas are also unavoidably high for most people, and this tends also to limit their use to people with average or higher incomes. Individual areas of this kind tend to be large—several thousand acres usually and often a million acres or more.

Intermediate outdoor recreation areas are intermediate both in location and in physical character. Most of them lie where they can be reached in an hour or two of travel; their use is predominantly for parts or all of a single day rather than for overnight or longer. Within the distance range, they are usually on the most physically attractive sites. Many involve water bodies, natural or artificial. Activities here differ from those at either of the other two major types. Individual areas may also be intermediate in size—larger than the user-oriented but smaller than resource-based. Many state parks fit into this category, although not all of them do; so do many of the reservoir areas created by various federal agencies. In recent years a type of park often known as a regional park, established and managed by some metropolitan agency, fits into this category also.

On a priori or deductive grounds, one would expect the factors affecting the usage of these different kinds of areas to differ. Each will be affected by the number of people within its normal zone of attraction—the local community for the user-oriented area, the city or metropolitan area for the intermediate area and the nation or at least a major national region for the resource-based area. However, age distribution of total population may affect demand differently; more children, for instance, may increase most the demand for user-oriented areas. The effect of real income per capita will differ greatly among these three kinds of areas. Increased real income per capita may increase the demand for resource-based areas very greatly; with more income, and more in the discretionary spending category, people may travel much more. On the other hand, use of user-oriented areas will rise more slowly as average incomes rise, because use of such areas involves little cash cost. Increases in leisure time will increase the demand for each kind of area, but the form of the increased leisure is highly important. Shorter working

hours per day will have the greatest impact upon user-oriented areas; reduced working days per week would have greatest impact upon intermediate areas; and lengthened paid vacations will have the greatest effect upon resource-based areas. It should be noted that most of the reduction in the average work week since the Second World War has been in lengthened paid vacation, but most of the current demand for further reductions is in the form of proposals for shorter typical or average work weeks without reduction in weekly take-home pay. Without attempting at this point to suggest all the factors affecting the demand for each kind of outdoor recreation area, or without suggesting the varying effects of different kinds of changes such as in income or leisure, we simply wish to suggest that such a system of recreation area classification has large relevance for demand analysis.

The Outdoor Recreation Resources Review Commission adopted a six-fold classification of outdoor recreation areas: high density, general outdoor, natural environment, unique natural, primitive, and historic and cultural sites. This classification seems primarily useful for management consideration of outdoor recreation areas; to the best of our understanding, it is both highly relevant and highly useful for this purpose. The value of a classification system depends largely upon how helpful it is in meeting problems which the classifier had in mind in devising it, but these should take into account the various factors affecting use.

Thus, in any system of classification and in the analysis of demand, we must particularly note the effect of location of an area relative to population centers. This role of locational relationships is of immense importance. But in addition to numbers of people, their characteristics relative to participation in outdoor recreation are also important. Such differences should be taken account of, if possible, in deriving demand estimates. Realistic estimates would allow for possible differences in the propensities of different people in different tributary groups or areas to visit the area. For example, if all areas near a recreation site except one were rural with low per capita incomes, and the other area was principally an urban area with higher incomes, the rate of visits from the urban area would, allowing for distance or cost differences, probably be somewhat higher. The final estimate of demand should reflect this difference.

Observations of the demand conditions sometimes have seemed to suggest that the number of visits which a given population makes to recreation areas is dependent upon the availability of such areas. If suitable resources are readily available to a population center, many more visits will be recorded than if the identical population had to travel great distances to participate in outdoor activities. While demand may therefore appear to be wholly dependent upon the supply of recreation areas, this is not a very satisfactory explanation. It is much more helpful to view the structure of the demand situation as it exists

and to recognize the implications of the presence or lack of facilities relative to a given population.

The upshot of all of this is to suggest that demand for outdoor recreation is dependent upon a number of interrelated factors, and these may be changing over time. What we are primarily interested in doing with demand analysis is to examine the status of recreation resources relative to population distribution, incomes, roads, etc. and determine how the demand situation might work itself out. As further evidence is accumulated more meaningful generalizations can be made about recreation demand which will be enormously helpful in the planning and management of outdoor areas. While work proceeds in these directions, we continuously need to be aware of the value and limitations of the information available at any time; but with these limitations in mind, this knowledge remains highly useful.

## II

### RESOURCE EVALUATION AND IMPROVEMENT STUDIES

The previous discussion has pointed out that demand and supply are always intertwined for outdoor recreation as for any other service or commodity. Supply in any meaningful sense must be related to demand. The past upsurges in demand for outdoor recreation have been possible only because areas and facilities to satisfy that demand were present, and, in fact, supply has expanded substantially over the past years. Any projected future increases in demand will be realized only if the supply of outdoor recreation areas and facilities expands to accommodate them, at least in large part. On the other hand, with the large probable increase in demand, there will be difficulty in supplying the more urgent needs. Hence, the subject of supply has major significance in itself. Different types of specific research might well be directed toward recreation supply problems.

One line of research on recreation supply is to develop rating scales or systems to measure the inherent attractiveness of different outdoor recreation areas. Even the most casual observation shows that some areas are much more attractive than others; often, however, differences are not as clear or lack specific description or measurement. Some features are readily measurable in quantitative and objective terms; water temperatures, for instance, will condition attractiveness for swimming or will limit the kinds of sport fish that may be produced. Other features are less readily measured in the same terms but must rely more upon descriptive and perhaps essentially subjective features. For instance, some scenery is outstanding and inspiring to some people but not to others. Yet it would be possible to list the more important natural features of an area and give each of them some kind of rating. Those aspects of an area which reflected man's use could also be listed—degree of water pollution, degree of

drawdown of artificial reservoirs, accumulated litter and many others. The greatest difficulty would come in combining data or ratings on individual qualities or characteristics into a combined or summary rating scale; yet this seems both possible and desirable. Ratings would differ according to the kinds of use that were sought; an artificial reservoir might be quite suitable for motorboating but unattractive for shore-based activities. Ratings could hardly be developed by specialists alone; rather, the attitude of users should be included. With all the difficulties involved, it seems entirely possible to develop specific, and rather objective, rating scales for different outdoor recreation areas and for major different uses of each. These scales would have great utility in planning, other research and administration. The talents and knowledge of different kinds of specialists might well be used in devising and testing such rating scales.

Another kind of research into factors affecting the supply of outdoor recreation is to devise methods of measuring the carrying capacity of various kinds of areas for different kinds of uses. We all know that there is some limit to recreation capacity. Two satirical remarks rise to mind: "when you can use the other fellow's tent pegs for your tent pegs, the campground is filled up"; and, on the beach, "we are either standing in the ocean or in someone else's lunch." Capacity is closely related as a concept to crowding; or, perhaps more generally, to the concept of optimum intensity of use. For many people and many kinds of use satisfaction rises as use rises up to a point; many people dislike camping alone in a large campground or being the only users on a large beach. For such people it is probable that utility rises as use increases in intensity, at least through the low ranges of intensity. For everyone, however, there comes a point of "crowding"; we strongly suspect this is psychological rather than physical, although there certainly can come a point where users physically interfere with one another. If capacity is a psychological concept in part, then research on this subject may properly employ psychological concepts and techniques as well as physical ones.

Research on carrying capacity probably should include consideration of methods of increasing capacity. How far can physical layout, use of screening vegetation, specific structures or physical improvements increase the ability of an area to serve people without diminution in satisfaction?

A different but closely allied line of research could be directed at the means of increasing either attractiveness or capacity, or both, for different kinds of areas by use of capital, or labor or both. How far can different kinds of areas "profitably" absorb inputs of capital and labor to produce more or better outdoor recreation at reasonable costs? We suggest that areas differ greatly in this respect; the kind of use also greatly affects the situation. Man-made installations may greatly reduce the value of natural environment and primitive kinds of areas. On the other hand, installations are necessary for the intensively

used areas. Some kinds of areas cannot be improved much, or their capacity cannot be much increased by investment of manpower and capital; whereas other areas have much more capacity in this respect. Any research on this problem would necessarily consider the values and satisfactions from the recreation experience; otherwise, what might seem like an increase in capacity might be only a decrease in quality. This problem, like many others, is one on which recreation administrators have had a good deal of experience and will have many ideas. Research on it might involve physical scientists—such as foresters, landscape architects, architects, and others—and economists to measure the values involved, and might involve other social scientists to measure the human reactions to the improvements.

Another related line of research might be into methods of design or management which will reduce or prevent damage to the area or facilities. There are always a few people who damage recreation areas either ignorantly or willfully. While this problem may be met by dealing with the people directly, and research in this direction should be suggested, yet the design, construction, maintenance and other aspects of areas and facilities also demand research. Also it seems highly probable that design, maintenance, and other aspects of areas and facilities affect mental and emotional attitudes of users. While there are many ideas on this subject, a careful testing by experimentation in recreation areas might yield new insights and more quantitative expression.

A related but different line of research on supply of recreation could be concerned with ways of preserving the value or quality of various kinds of areas. In part this could come from using areas without destruction and at the optimum degree of intensity. But there are additional factors involved. Use of an area for purposes less important than it is potentially capable of satisfying is a psychological and managerial downgrading, even when physical features are unimpaired. If unique areas of any kind were used for intensive activities, such as camping, this would constitute a form of economic and social waste. Moreover, there may be highly significant relationships between one kind of area and another; for example, the value of the campground in the developed part of a national forest may depend on preservation of the quality of the scenic back country. Actual preservation of recreation quality is a problem for the administrator, but research into what is meant, how it might be done and what can be gained by it are problems for the researcher.

### III

#### RESEARCH INTO ALLOCATION OF NATURAL RESOURCES FOR OUTDOOR RECREATION

Competition for natural resources will almost certainly force a more careful evaluation of their value for different uses in the future than has been

characteristic in the past. Planners, legislators, and administrators will increasingly ask about the comparative values of resources in different uses. This is not to say that all future decisions about resources will be, or perhaps should be, on the basis of values alone; this certainly has not been the case in the past. But resource decisions on any other basis should take into account the values involved or foregone. Research can contribute greatly to measurement of the values involved and thus indirectly to much sounder future policies.

One basic kind of research in this general field is the measurement of the physical substitution ratios among the various uses of land. If recreation use of the forest increases, how far and in what ways does this compete with timber harvest or other use? If the number of deer is allowed to increase on the range, how far and in what ways does this impinge upon grazing by domestic livestock? How far is the recreation use of a multiple purpose reservoir reduced or modified by its operation for other purposes? How far can management practices that would ordinarily be undertaken for one resource use be modified so as to increase the output of the resource for each use? These are illustrative of the kinds of questions that must be answered by this type of research.

The first consideration is the physical substitution rates at the margin of adjustment between the various pairs or combinations of use. This obviously involves specialists for the various uses—foresters, game managers, reservoir management specialists and others, as well as recreation specialists. It may be necessary to estimate the interrelations of use in combinations or intensities beyond any encountered thus far. Presumably, the substitution ratios should be estimated on the basis of preserving the productivity of the resource for each of the uses involved. Evidence is piling up which indicates that much recreation use in the past has been at intensities past this level, with consequent deterioration of the resources involved. Perhaps one consideration should be, how long is it likely to be before results of over-use will be apparent? The physical substitution ratios should be at the margin of change between uses, and presumably will vary as the level of each use changes. The deer-livestock substitution ratio will depend upon the relative number of deer, for instance.

If we are to improve decisions on how to use scarce resources to obtain desired goals and objectives, the physical substitution ratios need to be related to economic values. The work in this area has been seriously deficient in the past. Economic analysis has particular applicability to this type of problem, because it is largely a study of human reactions and action and of man's choices. It deals with the implications of subjective evaluations and intrinsic characteristics of recreation sites and experiences, not as such directly, but in terms of how such things affect what man does or is willing to do. Economic comparisons deal with physical and other characteristics of goods and services only to the extent that these affect human decisions.



Statements that the reactions to recreation experiences are personal, unique and highly variable between individuals are true. But it is seriously misleading to contend that analysis is therefore inadequate and inapplicable and that it is impossible to measure the worth or value of either the recreation experience as such or the recreation site. For many significant purposes the personal values or intangibility of recreation is of little concern as such; they are reflected and gain importance by what people are willing to give up to obtain them. Indeed, nearly any good or service has satisfying qualities which are highly particularized and almost completely personal and varied. This is true of the most common things sold in the market place, such as bread and automobiles. However, the economic system takes account of these varied satisfactions, arrives at a single price for individual goods and services and gives order to the whole structure. We have the example of bread which has been described as one of man's most important and valuable foods, yet it sells for but a relatively few cents per loaf; or still more extreme is the case of water without which life would be impossible, but it is priced at little or no cost; in sharp contrast there is the case of diamonds which certainly are less necessary, but which have great value. Such seeming contradictions are resolved only when the pricing mechanism, the way things are valued, is looked at a bit closer. The price does not value the worth of the total quantity of water or bread—either of which are indeed more valuable than the total quantity of diamonds—but only the very last unit of each which is put on the market. Thus, because water and bread are both very plentiful relative to our wants and needs they command but a small price.

The regularities and patterns of behavior among individuals which permit the economic system to operate as it does very significantly are also found in participation in recreational activities. The use of parks and other recreation facilities and the time, money and trouble given up by people behave in ways that are not fundamentally different from items with which we are more familiar. We can, in a good many ways, think of society or the economy producing good parks, playgrounds and other recreational facilities and enjoying the benefits of them in very much the same way it produces and enjoys automobiles, dishwashers, roads and nearly everything else.

Interpreted in these ways economic analysis is as applicable to outdoor recreation as it is to any other of man's wealth-getting or income-spending activities. Such a framework allows a very considerable number of things to be said about outdoor recreation, particularly in respect to the allocation of resources among competing uses. This means that market price information, which only rarely is used in outdoor recreation activities, will need to be supplemented with other value data to fully measure the economic worth of resources used for recreation. In practice, there would certainly be some "roughness" or approximation in both the physical substitution ratios and the

economic "prices," so that any estimate of comparable values would necessarily be only approximate. Moreover, as noted before, decisions might continue to include factors other than comparative returns. But dependable estimates of such values, based on sound methods worked out through careful research, would surely narrow the range of the present uncertainty and would provide a more objective basis for decision making than now exists.

A closely related but somewhat different line of research could consider the value of specific natural resources for different uses at varying levels of intensity of management. For instance, a federal reservoir area would attract one number and type of visitor with no improvements around it, but would attract another number and perhaps type of user if improvements such as boat-launching ramps were installed. The value of the natural resource depends in some degree upon the level and type of management of the area. Some management practices may cost more than they will add in value while others may add value far in excess of their cost. In making comparisons of the value of particular natural resources for different uses, it is a net value in which we are interested. Research into the effect of management upon resource values would seem likely to involve several kinds of specialists, and estimates might have to be made for management practices and use intensities not yet experienced in actual operations.

Another line of research should be concerned with the final incidence of benefits and costs from recreation use of natural resources and investments therein. The initial beneficiaries of recreation use are the recreationists themselves, but on another level the beneficiaries may be those who provide them with services at a price. The benefits of outdoor recreation may be rather widely diffused. But the incidence of costs of providing the outdoor recreation area may be even more diffused. In practice only a small part of the costs are paid directly by the recreation users at the time of use; more is paid by them in the form of taxes, but in many instances taxes are paid to help provide outdoor recreation by people who do not then use it. The matter of final incidence of a tax is rather involved, but it is not beyond reasonably accurate measurement.

It would be very interesting, and might be very revealing, to compare the final incidence of cost with the final benefits from the use of a particular recreation area. Planners, legislators and others might find very useful the results of careful analyses that would show who really pays for outdoor recreation, who gets its benefits, and how the costs and benefits compare.

#### IV

##### RESEARCH INTO THE ECONOMIC IMPACT OF OUTDOOR RECREATION

The economic impact of outdoor recreation in a given area is becoming a matter of more than intellectual interest to many people. The cost of providing

additional recreation areas is likely to grow, and this will sharpen interest in the economic benefits to be derived therefrom. There is much interest in trying to use the provision of outdoor recreation opportunity as an economic support for depressed rural areas. At times there almost seems an assumption that an area with no other values or source of income must surely be well suited for outdoor recreation. Investments are being proposed or undertaken in the hope or belief that large recreational use will thereby follow, and that this will bring a measure of economic well-being to the area. One may well wonder if some major failures may not be in the offing. We must confess, however, that economic and other research has not clearly pointed the way to better measurement of the costs and values involved.

A beginning step would be to construct economic models showing where money is spent, for what and how it circulates from the first expenditure. We need clearer illustrations of the whole process than any we now have, and on a purely deductive basis it should be possible to develop some useful hypotheses. We know that some money is spent in the recreationist's home community, some is spent en route and some is spent at the recreation site; we know some is spent for equipment, some is spent for food and other personal supplies and some is spent for travel, etc. And we know that part of the recreationist's expenditure pays for the labor and other services provided by the person who receives the recreationist's money, but that other parts of the expenditure go to pay for goods, services, capital and very often management shipped in from other areas. All of this, and more, could be amplified into a number of alternative models of varying complexity.

This kind of research might well be complemented by some aimed at developing the best methods of getting reliable data to be used in economic impact studies. Certain kinds of data, especially on expenditures but also on the socio-economic characteristics of users and on other factors related to their activities, are obviously necessary. Yet it is a matter of common knowledge that such data are rather difficult and costly to collect, and it is often suspected that even the best of them have substantial errors. Most projects including collection of original data from recreationists are designed on the basis of the experience and judgment of those in charge of the project. But it would be possible to design research projects to test the consistency, if not the accuracy, of data obtained in different ways. For example, questionnaires of different length and complexity could be used in a sample survey and the results compared. It is generally assumed that the length of a questionnaire that can be taken from a recreationist must be rather short because he will not answer a longer one. But are there ways around this difficulty? It is also usually assumed that errors increase as the time period to which the answers relate gets longer. But have we ever tested this or tried to develop alternative procedures? If we plan to base our analysis on different zones of origin of the visitors, how much detail do we need for

determining this fact? These are but some of the questions that might be answered by this kind of research project.

These two types of research projects would normally be preliminary to more detailed studies of the economic impact of outdoor recreation in a number of areas. We are aware that some of these studies have been made; most, we think, are not wholly satisfactory even to those who made them. The whole procedure should be on a much more accurate and incisive basis.

We should like to see a considerable number of research studies made on the economic impact of outdoor recreation activity, under a number of different locational, economic and natural resource circumstances. Research studies of this type would possibly require more manpower and be more expensive than later surveys made, once methodology was fully developed and tested. But it would be unwise, in our judgment, to skimp on expenditures during this research phase.

Another special aspect of economic impact is the matter of obsolescence. This applies particularly to improvements of all kinds. It is not too difficult to estimate the physical life of various structures or other improvements, but will the economic life be equally long? May not entirely different new facilities replace them long before they are physically outworn? If the profitability of private enterprises or management of public facilities is based upon an economic life which is cut short, what problems does this create? Can we be sure that economically obsolete facilities will be removed physically? As one looks at ancient billboards along highways, or even at old tourist courts no longer patronized, one has doubts. How important has obsolescence been in the past? How can we best avoid it in the future? It would seem that these questions might be answered, at least in part, by careful research. Related, too, is the question of local interests which may call for certain developments, being consistent, or inconsistent, with a broader public interest. This is of particular concern in areas where certain types of commercial development detract from the total value of the area and the recreational enjoyment afforded. A range of problems exists that relate to this, such as to how serious this is, why it occurs and what can be done economically and institutionally.

## V

### RESEARCH INTO PRICING METHODS FOR OUTDOOR RECREATION

The use of outdoor recreation areas and facilities is always priced; the price may range from zero to the maximum net revenue point, or beyond, or at any intermediate level. But zero is still a price, and the decision to charge a zero price is as much a decision as that to charge any other price. While such decisions involve policy issues of many kinds, yet some careful research might help to make a more informed choice.

As important as the level of prices charged is the method of levying them. Numerous systems of pricing are possible. Perhaps the simplest is a single charge per person admitted to an area or per person provided a service. A variant which helps large families is a charge per party including per car of people. Since most people visit many kinds of recreation areas in their personal cars, a per car charge is a per party charge for them. Another variant is a windshield sticker, good for a limited period of time or for the whole season, which permits unlimited use within the time period. This type of charge has a zero incremental cost. It provides help to the people in a position to, and desirous of, making use of the area several times during the time period. For public areas, shall the charge be for each area separately, or for all areas within the system as a group? A different approach is to permit free entry into the recreation area, but to charge for many activities ranging from parking the car, to swimming, to boat launching. Other kinds of charges could easily be identified or constructed.

Research could deliberately seek to test the effect of the method of pricing—as distinct from or as related to the level of charges—on a number of aspects of use and management of the areas concerned. What effect do any charges, or charges of a particular kind, have upon total use of the recreation area? What effect do they have upon the use by particular socio-economic groups? What kind of administration of the area is most suited to the level of prices charged? For instance, is there any rationale to support less careful maintenance of an area if the use price is zero? If a use charge is made, must the level of maintenance be improved? Does the imposition of a use charge, or the form of the use charge, affect the kind of use that people make of an area? Will payment of a use charge make them respect the area as being more valuable, or will it lead them to feel they have a right to throw Kleenex on the ground because they have paid for the privilege? What effect will the level and kind of charge have upon the final incidence of costs of the area? What effect will they have upon the revenue raised from the area?

These are questions upon which many recreation administrators have definite ideas, sometimes based upon personal experience and sometimes based upon their conceptions of how people will respond. There has been, however, as far as we know, no specific research into this matter. It should be possible, though perhaps difficult, to conduct research on these problems. Experiments could even be set up, although it might be difficult to isolate the cross-currents of relation between one area and another. One might get one reaction to a particular pricing scheme if it were applied on a single park or part of a park only than if it were applied to all parks within a state or major portion thereof. There might be a difference in the reaction to a higher entrance fee if it were publicly viewed only as a revenue measure than if it were actually made part of a

program to provide better service to the public within the recreation area. These are the kinds of problems for which research has generally not tried to provide answers; yet they are difficult and important management questions deserving careful study.

A somewhat related but different kind of pricing research problem relates to the use of pricing as a definite recreation management tool. Entrance fees might be charged on week ends, but not on weekdays, to spread use peaks. Or parking or camping charges might be imposed in heavily used areas but not in lightly used ones. Or charges might be imposed for campground use beyond the first week in order to discourage longer stays. Many other differential charge schemes can be imagined, the objective of each being to influence users to certain areas, times, activities, modes of conduct and the like. It would seem, *a priori*, that charges could not be expected to be effective in this way unless they were high enough to present a real burden on the user who paid them and a real advantage to the user who avoided them. How high would this have to be? Would it be politically or socially acceptable to levy such charges?

Differential pricing as a management tool has been used relatively little and almost always on a trial and error basis. Again, many administrators have rather definite ideas based upon their own personal experiences or interpretations of popular reaction, but almost no research along this line has been done. It is wholly possible to establish some experiments to test these ideas and to make careful observations of use in areas where charges are imposed for other reasons.

Lastly, research might be directed to the use of pricing as a method of getting more efficient levels of use of the recreation resources. How far is present overcrowding of some park and recreation areas a consequence of a low or zero use charge? How far is public action, in setting prices far lower than many users would be willing to pay, encouraging types and levels of use seriously incommensurate with the capacity of the area to support on a sustained yield basis? If prices were set at different levels either as management devices or to raise necessary funds, how would this affect the amount and kinds of use of the area? How far would it make impossible the use of the area by low income groups, or do the latter now use the area? If it does exclude some groups which public policy would not wish to see excluded, how might their needs be taken care of otherwise? Prices are a versatile and often effective tool in resource management—one used too infrequently. Again, this is a field in which research has been notably lacking but should be helpful.

The discussion in this section has more or less assumed that prices are solely money prices. However, other kinds of costs are incurred and might be used deliberately. For example, instead of using money prices to affect recreation area use, one might require would-be users to take their turn in admittance with no more people admitted than there was room for. This would substitute a cost

in time for a cost in dollars. Or one might require people to make reservations well in advance, again with limits on total numbers of people admitted. This would substitute a price in foresight for one in dollars. Research as well as administration should be as imaginative as possible in these matters. One might well test some ideas on a research basis which he would be very reluctant to support as an untried management tool.

## VI

### RESEARCH INTO THE FINANCING OF OUTDOOR RECREATION

Provision of outdoor recreation costs money, and the difficulties of getting enough public funds allocated to this function may limit the adequacy of the recreation resources. Decisions to allocate or to refuse funds for a public activity are made by political processes; but the provision of facts may aid those processes. In any case political action and inaction are fit subjects for research in themselves.

One kind of research within this general field is concerned with the equity of various systems of recreation and park financing, in contrast with the benefits obtained by users. This is closely related to some of the projects suggested above. A political leader or an administrator wants to know who is going to pay, who is going to benefit, how closely final incidence of costs and benefits coincide or diverge, and other related matters. Facts on these matters are unlikely in themselves to be decisive, but they may be helpful. Taxes to support schools are not levied merely upon families with children in school; we have long agreed in this country that there is a sufficient general social benefit from universal schooling to overbalance any inequities that may arise because some people pay more or less taxes for schools than they get back in schooling for their children.

A closely related line of research is concerned with the administrative practicability of raising funds in different ways. If a decision is made to try to raise a substantial share of total costs by charges levied against users, how administratively practical is this decision? The experience of recreation administrators is obviously valuable, but organized research could add something. The collection of taxes is administratively simple, of course; there the problem is one of political acceptability.

Another line of research is a comparative analysis of the financial requirements for recreation as compared with those for other necessary governmental activities in the same unit of government. The typical governmental budget processes show amounts proposed for different functions, and sometimes also shows the sources of revenue to support the expenditures. But this provides no

real basis for judging the importance or urgency of different kinds of expenditures or the advantages of each. It is possible to do significant research on this problem. In some respects it is the multiple use problem in reverse. A tract of land or water under multiple use administration must balance one use against another with some degree of competition and some degree of supplementation between uses. Different uses of a given amount of public revenue also involve choices with almost complete competition between them. As in the multiple use case the benefits are often not directly comparable, or are comparable only with difficulty; yet someone must make choices. Research would not obviate the need for choices, but it might delineate more sharply the kinds of choices that could be made. If administrators, legislators and the public knew which choices were realistically possible and what had to be given up for what, then the choices presumably would be more rational in terms of their own goals.

This type of essentially economic analysis might be supplemented by political science studies of the political processes for the reconciliation of competing demands either for the same resources or for the same public revenues. In practice in almost any public activity some minority groups exert political influence or control far out of proportion to their numbers. Whether one defends this on the ground that some people have a large and direct interest in the particular public activity whereas others have only a general and sometimes remote interest, or whether one regards this as undesirable government by minorities, yet it is a fact of political life. In the case of outdoor recreation, how are the interests of the mass of recreationists to be reconciled with the interests of other groups competing either for the same resources or for the same public treasury? Are existing political structures and processes adequately geared to produce a satisfactory reconciliation of interests, or might some improvements be suggested? There is a proper field for research here, but one must recognize the dangers of merely propounding one's preconceptions.

Another possible line of research on the financing of outdoor recreation is concerned with the political practicability of getting funds for this purpose. What are the factors which make the electorate and their representatives support or oppose public action for outdoor recreation? How far are actions taken on the basis of accurate information and how far on the basis of preconception? Are there some "side effects" of proposed public action which either draw support or opposition out of proportion to their importance to the whole program? To what extent can the issues of public policy be clarified as a first step toward a more rational political decision? This type of research should avoid becoming a form of pressure politics in itself, but there would seem a useful and practical area here for objective research which could improve the decision-making process.



## VII

RESEARCH INTO POLITICAL AND INSTITUTIONAL ORGANIZATIONS  
FOR OUTDOOR RECREATION

Outdoor recreation is an activity which affects government at almost every level and many private organizations as well. As a result it poses governmental and institutional problems of major size. This is a field which has had almost no research. Some research might be directed to the appraisal of different arrangements which exist; other projects might be aimed at constructing proposals for new arrangements. There might be a degree of experimentation undertaken.

One line of research could be concerned with the relative roles of government at different levels with outdoor recreation research. A first step would be to explore more carefully what different kinds of government now do—not only in general but quite specifically. The Outdoor Recreation Resources Review Commission did some of this, but its results were more descriptive than analytical. Government activities, as far as outdoor recreation are concerned, include at least planning, managing and financing functions. How far are these different functions now grouped within the same organizations, and how far are they divided among various levels of government or units at each level? How far should they be grouped or divided? What special problems arise when these functions are divided? For instance, what are the secondary or indirect effects of grants-in-aid from one level of government to another? Should recreation planning be centered in recreation agencies or in planning agencies? How can we obtain better coordination of recreation planning among the various governmental and private groups? These are policy questions, to some extent, but research might unearth facts and suggest lines of action which would be helpful to policy makers in reaching decisions.

Another general line of research in this field could concern the institutional problems and arrangements for greater public use of private land for outdoor recreation. The importance of the large private land and water area is generally recognized. Some arrangements for its recreation use by the general public now exist; but with few exceptions they have not been studied carefully. The problem has financial, legal and administrative aspects, each of which must be considered. We cannot, in general, expect private landowners to make their land available for recreation on a free basis; neither equity nor economics justifies their doing so. But the problem is infinitely more complex than saying that landowners should provide recreation for a fee. The institutional arrangements whereby this might be done may be more important than the amount of money paid. How can the individual farmer contact and deal with the individual recreationist, and vice versa? Can the individual farmer provide an adequate

recreation opportunity, or must it be done on a larger basis? Can a landowner afford to service and supervise a single recreationist, or must he deal with a group? How can a reasonable level of charges be determined, and will this provide an adequate incentive to farmers and other landowners to provide the land and facilities? What are the legal liabilities of the recreationist and of the landowner? How may each be minimized and perhaps insured against? These are but some of the questions that might be posed for research in this field.

### CONCLUSION

As we contemplate the certain increased demand for outdoor recreation in the United States over the decades ahead, and as we review the scope and content of research in outdoor recreation as we have discussed it above, some conclusions and suggestions about outdoor recreation research clearly present themselves.

1. Research on the important problems of outdoor recreation will be more important in the future than it has been in the past. The problems will be more difficult, and the intuitive approach, under which a man leans heavily on his own experience generalized to a broader situation, simply will not be adequate.

2. But usable results from research will flow rather slowly; no miracles can be expected tomorrow. Research workers must develop improved and adequate methodology, test it rigorously under a variety of conditions and then accumulate a body of research results. Premature reliance on untested research might bring the whole concept of research into disrepute; for the next few years, we shall have to continue to rely heavily on the intuitive approach which is inadequate for the longer run.

3. The most important immediate task of research is conceptualizing. We need more useful, more sophisticated and more imaginative analytical models into which to fit data and by which to analyze difficult problems. Until we have these models, more data may be as confusing as helpful. Analytical models must be tested adequately under a variety of conditions; there is no place in this field of intensely practical problems for theorizing which cannot be, or is not put, into research application.

4. Once better analytical models are developed and tested, there is a major need to collect data on a much larger scale and to analyze it as fully as possible. We need to know the purpose for which we collect data before we spend scarce money and manpower resources on its collection. Replication or multiplication of research studies of the same or similar kinds will help build up a body of research findings that will test the universality of the research techniques and also will provide sounder guides to planning, administration and financing.

5. The need exists for a few, or perhaps for several, research organizations specializing in recreation research. If the field is to be developed rapidly, then it needs the push which can best come from organizations whose major interest and concern is recreation research. Among others, the Bureau of Outdoor Recreation can serve this function. Perhaps other organizations with a specialized interest in outdoor recreation research can be developed.

6. But much research on outdoor recreation probably—and also we would say properly—will be done by various specialists in research organizations with other interests as well as outdoor recreation. We have in mind the Forest Service, forestry schools, land grant colleges and others. It will be carried out by foresters, wildlife management specialists, park specialists, economists, sociologists, political scientists and others with varied professional backgrounds. As a general rule it is better to have this research undertaken by men thoroughly competent in their basic field, who learn about outdoor recreation as they progress in research, than to attempt to develop “recreation researchers” who would then learn about economics, political science and forestry. Men with various professional backgrounds should be encouraged to seek research projects on problems in outdoor recreation. One function of the specialized recreation research agencies will be to bring such problems to the attention of these specialists.

7. The need clearly exists for a better clearing house of recreation research than now exists. The fragmentation and diversification of the field of recreation research, obvious to anyone who explores it even casually, means that men who work in one part are often unaware of men who work in another part—even those at their institution or in their state. We do not attempt to spell out how the clearing house function can best be performed, but the need is real.