

SOCIAL INDICATORS AND OUTDOOR RECREATION:
THE FORGOTTEN SECTOR¹

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Abstract.--Following a brief historical overview of the social indicators movement, outdoor recreation measures which can be considered as social indicators are discussed. Such indicators are largely derived from social surveys. Illustrative data from 53 such surveys are presented. Despite the availability of such data, there have been few attempts to adapt them as established indicators in the outdoor recreation field. Reasons for not considering the data as indicators are suggested. Finally, a number of parameters which might be used as social indicators in outdoor recreation in the 1980's are outlined.

WHAT ARE SOCIAL INDICATORS?

Although policy makers and planners are familiar with the concept of "social indicators," there is little consensus among them as to what constitutes a social indicator and how indicators are intended to be used. The ambiguity associated with the concept in part reflects the evolutionary nature of what has been referred to for more than a decade as a movement. The social indicators movement, however is not that new. In the late 1920's, President Hoover appointed a commission to report on the changing social conditions taking place in the United States. The results of that commission's efforts were published in 1933 and described social trends reflecting various aspects of life in the United States. In addition to the report, 13 separate monographs were produced, covering topics ranging from nutrition and health to recreation and leisure.

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The movement, however, received its label in the mid-1960's with the publication of Raymond Bauer's widely publicized book, Social Indicators. The focus of Bauer's edited volume was on the development and use of social measures in assessing the state of society in relation to national goals. One influential chapter covered social systems accounting and called for the development of comprehensive models describing the structures of entire social systems.

In part as a response to the Bauer publication, the federal government issued Toward A Social Report in the late 1960's. The report, prepared by HEW, detailed the need for social indicators as a way of assessing the progress the country was making toward achieving societal goals. One part of the report focused on the compilation of descriptive statistics in a format such that they could be aggregated for summary purposes or disaggregated to allow for detailed analysis of sub-areas and sub-populations of the country. Another theme considered the collection of direct measures of welfare and the need to contrast them with the more readily available measures of government expenditures or other types of inputs. Implicit in this theme is the notion that measures of welfare should be expressed in terms of outputs and herein lies one of the central issues facing the social indicator movement today; that is, just how do we measure output?

This issue is brought home when reviewing the two government volumes, Social Indicators,

1973 and Social Indicators, 1976. In the first volume, measures of welfare are expressed in terms of various statistics describing conditions of American life. Measures of longevity, mental retardation, crime, educational attainment and income obtained from various governmental records are typical of the material reported in the volume. It is not difficult to understand why there is a lack of consensus about social indicators when one considers these types of measures. On the one hand, they can be viewed as the direct measures of welfare called for in Toward a Social Report; on the other hand, they might be viewed as inputs by some who would argue that they do not present a complete picture of what is happening in the country.

In Social Indicators, 1976, the descriptive measures are presented once again, but also there is greater attention given to public perceptions of social conditions. In the social indicator movement, the distinction is made between these two types of indicators: one deals with the objective conditions of society while the other covers peoples' responses to these conditions. The distinction between objective and subjective indicators is reflected in much of the quality of life research conducted over the past decade. Some studies describe quality of life in a particular place in terms of its crime rate, its level of unemployment or the amount of air pollution, while others describe quality of life by the way people experience it and as reflected by their attitudes and behaviors. Thus, social indicators can be talked about in terms of social accounting, ways of monitoring social change and reporting social conditions or measuring the quality of life as people experience it.

While there is some agreement that social indicators however described are needed, the question of how indicators are and should be used is far from clear. Ideally, indicators in the form of social statistics could be used to guide decision makers in their deliberations. However, a systematic study of the use of Social Indicators, 1973 by federal bureaucrats shows that few make direct use of such data. (Caplan and Barton 1978)

AVAILABLE OUTDOOR RECREATION INDICATORS /

Voluminous data are available on all facets of outdoor recreation. Providers of outdoor recreation opportunity have collected data on facilities, lands, programs and equipment sales. Additionally, information has been solicited from participants in outdoor

recreation activities and the general public. Typical data from social surveys have included participation rates, use pattern descriptions, preferences for participation and constraints to participation. This paper focuses primarily on information solicited from such surveys.

By the 1970's, surveys dealing with outdoor recreation had become an integral part of the planning functions for all seven federal land managing agencies and all Statewide Comprehensive Outdoor Recreation Plans. A study of recreation surveys was conducted for the years 1970-77 as part of an unpublished analysis of the 1977 National Outdoor Recreation Surveys. It revealed that various federal agencies and the majority of state governments, as well as commercial researchers, had conducted 65 major surveys oriented specifically to outdoor recreation. Approximately 650,000 people have participated in these surveys which carry a price tag in excess of 6 million dollars. Dozens more small-scale surveys have also been carried out. In total, these survey efforts have produced a wealth of information on outdoor recreation.

The national outdoor recreation surveys

Research in outdoor recreation came to the forefront early in the 1960's at a time when the concept of social indicators was gaining visibility. The Outdoor Recreation Resource Review commission (ORRRC) produced a series of reports which are, even today, unprecedented in their scope and comprehensiveness. Recreation data were presented on financing, behaviors, attitudes, management, and existing and potential resource supply. Unfortunately, these data have never been fully utilized as bench marks for establishing social trends.

In 1965, while the perspectives of ORRRC were still fresh, the newly formed Bureau of Outdoor Recreation (BOR) sponsored a national recreation survey which was a close approximation of the 1960 survey conducted for the ORRRC. According to its enabling legislation, the BOR was intended to be the federal focal point for recreation research and the collection of trend data. Hopes were high that the generation of social indicators for outdoor recreation was an established fact.

Unfortunately, the 1965 BOR survey never lived up to its research expectations. The data were never fully analyzed and only a small portion of the findings have been published. Data from this and the earlier ORRRC survey were soon lost and with them the opportunity to establish a trend line for outdoor recreation indicators. The 1965 survey experience had established a trend of sorts, in that subsequent national recreation surveys were

sponsored by BOR/HCRS in 1970, 1971, 1972, and 1977. (BOR was renamed the Heritage Conservation and Recreation Service in 1977) None of these surveys have been thoroughly analyzed, very little has been published, and until recently, some of the data were unavailable.

An additional problem in establishing trends is that the comparability of those surveys is limited. A methodological summary of the four most comparable surveys sponsored by the BOR/HCRS is shown in Table 1. Participation rates shown in Table 2 illustrate the difficulty in comparing these survey results over time. That difficulty stems from variation in sampling techniques, activity names, length of recall for participation, and the circumstances of the participation (summer only, during type of trip, or year around). The 1972 survey provided an underestimate of activity participation relative to findings of the 1960 and 1965 surveys according to an analysis of the methodology of the first five national outdoor recreation citizen surveys (Stowell 1975). On the other hand, participation in the 1977 survey was an apparent overstatement for several activities in comparison to other contemporary national surveys. This discrepancy was probably due to a shift to data collection by telephone. Thus, although a series of national surveys was envisioned as providing trend data from which social indicators would evolve, it did not happen.

Other federally collected outdoor recreation data

Federal involvement in outdoor recreation research has been considerable. During the search for data comparable to the 1977 National Outdoor Recreation Survey, contact with 16 agencies representing six departments of the federal government uncovered 41 surveys conducted in the previous five years. This momentum for federal recreation surveys continues to build since all seven federal land managing agencies are presently planning or conducting new surveys.

Table 3 displays descriptive comparisons among a sample of federal surveys. Some surveys were conducted on site while others were of regional or national scope. A variety of questions has been asked and many survey techniques were applied. The opportunity to identify common data for several time reference points is limited, but on the other hand many questions have been asked more than once. Federal land managing agencies also have a wealth of descriptive data covering their resource areas. Social indicators on recreation opportunities provided by the federal govern-

ment could be compiled easily if reporting standards for descriptive inventories were applied. Such standards have recently been adopted for reporting visitation to federal recreation areas (Federal Recreation Fee Program, 1978). The trouble with using federal visitation figures as a social indicator is that it is difficult and expensive to accurately collect them. As a result, reported visitation figures invariably are viewed with considerable skepticism.

State collected outdoor recreation data

The greatest volume of data concerning outdoor recreation behavior has been collected through surveys sponsored by state governments. Statewide surveys have been conducted by 43 states since 1970, including at least one during every year of that decade. These surveys are conducted as part of the Statewide Comprehensive Outdoor Recreation Plans which are required by BOR/HCRS for state participation in the Land and Water Conservation Fund. No attempt has ever been made by BOR/HCRS to encourage standardization of some key elements of these state surveys in order to expedite regional market analysis or suggest national trends. Unfortunately, the utilization of statewide surveys to help establish outdoor recreation trends has never been explored. More opportunity for coordination continues to be lost as 18 state governments are now in the process of planning or conducting new outdoor recreation surveys. Table 4 illustrates descriptive comparisons among 25 statewide outdoor recreation surveys. In every state the primary theme is the establishment of participation rates which are in turn applied to some demand-supply-needs analysis. As is the case with the BOR/HCRS surveys, most of the time spent with the respondents has been devoted to obtaining information for the establishment of participation rates. After all this effort, no consensus exists as to whether these rates are accurate or whether when collected over time, they represent trends. The paradox is having the public sector collect such a formidable mountain of data without being able to describe basic behavioral trends. It is out of this kind of sheer frustration that this conference is being held here today.

The state governments typically maintain extensive inventories of recreation related facilities, lands and programs allowing definitive analyses of geographic distribution and accessibility. On the other hand, the detail of information collected and reporting methods are variable and thereby hinder regional analysis and make national analysis virtually impossible. Encouraging progress in coordinating the collection and analysis of statewide surveys and inventory data has been initiated in the northwestern, northeastern, and southeastern

sections of the country (Recreation Data Subcommittee, 1975). If this trend toward consolidation of methodology continues, the potential for utilizing such information to establish trend data is most promising.

Commercially collected outdoor recreation data

Unquestionably, the best trend data in outdoor recreation activity available today is provided by the commercial sector. Descriptions of some commercial sector surveys are presented in Table 5. These surveys are generally restricted to reporting incidents of activity participation. The Neilsen Company has replicated its 1973 outdoor recreation survey twice (Table 6); the resulting trend data are probably the most accurate available.

Similarly, manufacturers of outdoor recreation equipment keep records of unit sales. Such data reflect public interest and involvement in many recreation activities. For example, manufacturers were the first to report that the boom in tennis and bicycling had tapered off and that the boom in snow skiing is still strong.

COMMON LIMITATIONS TO ESTABLISHING INDICATORS

Problems arise in attempting to compare results among surveys which are conducted for different purposes and therefore are not exact replications of each other. For instance, the "universe" or population upon which the surveys are based varies considerably according to each survey's purpose. Some surveys sample a cross section of all people within a geographic boundary such as a park, a state, or a region of the country; others may focus on the population of the entire nation. Additionally, surveys may focus only on certain segments of the population such as those people participating in specific activities such as boating, hunting, camping, or fishing.

Sampling methodologies reflect vastly different study purposes and circumstances of time, money, personnel and expertise. Questionnaires are administered in person, via telephone or by mail. Combinations of techniques such as the handout, mail back format are becoming more common. Rarely are rigorous tests made on the effect specific techniques have on the accuracy of the sample drawn. Sample size also varies ranging from 600 to over 20,000 respondents. Data gathered from most surveys are weighted using various schemes to correct for sampling bias. Often these procedures are complicated and not well documented, making data manipulation potentially more difficult

as time passes and as familiarity with the process fades.

Common themes are followed in virtually all outdoor recreation surveys, but it is rare to find questions relating to those themes phrased in the same manner. For example, the number of recreational activity names included in various surveys ranges from 10 to more than 40. What appears as a single activity in one survey may be divided into two, three, or even four activities in another. Definitions of activities also vary among surveys; for instance, is "camping by tent" the same as "primitive camping?"

Another difficulty concerns the variations in time frames used in different surveys to determine from the respondent whether or not participation has taken place. For example: "Have you been camping in the last (seven days, three months, year)?" The longer the recall period, the less likely the response will be accurate.

Data are reported in a variety of formats. Survey reports vary from simple frequency counts on response to the publication of computer printouts of cross tabulations with many statistical tests. Activity participation may be expressed as a simple percentage of the total population, or as specific activity days or participation occasions, all of which may be presented within varying categories of frequency of participation. Tremendous variation also occurs in the way standard socioeconomic factors are categorized. Income, for instance, may be grouped anywhere from three to ten categories.

Limitations associated with comparisons among recreation inventory data sets stem from similar concerns: lack of standard definitions, levels of detail in data description, and fragmented reporting of data.

USES OF EXISTING OUTDOOR RECREATION DATA

Despite the previously stated difficulties in data comparison, there is enormous potential represented by the wealth of unminded data which have been collected.

As the result of the large number of surveys and a large variety of questions asked, most topics of inquiry have been covered in the work. The most obvious example of opportunity for comparative data analysis is activity participation rates. All state and commercial surveys include some type of participation data as do several of the federal surveys. Such a comparative analysis of activity participation rates has recently been published by Dr. Malcolm Bevins of the

University of Vermont who devised trend lines for participation in several activities over time.

Other broad brush trends in outdoor recreation participation can also be portrayed. Trends in the demographic descriptions of recreation participants can be derived showing shifts over time in who is involved in each activity (O'Leary and Peine 1980). Examples of other categories of questions commonly asked are portrayed in Tables 1, 3, and 4. An example of the type of information gleaned from similar questions is portrayed in Table 7 which displays questions on the effect on recreation of gasoline price and availability which have been included in six surveys since the gasoline shortage of 1973.

In order for existing data to be more actively utilized in the policy arena, two conditions must be met. First, the data must be more readily available for analysis and, second, researchers must become more involved in data interpretation for specific policy issues. Significant progress on the accessibility front has been made by the establishment of the National Leisure Archive at the Institute of Social Research, University of Michigan. To date, 30 data sets from questionnaire type surveys on outdoor recreation, sponsored by federal and state agencies, are on file and most new surveys in the planning stages will be entered when the data are available. On the interpretation front, the active use of data from the HCRS national outdoor recreation surveys by researchers at 80 universities around the country constitutes a breakthrough in analysis. It is hoped policy makers will more actively seek out the research community to interpret existing data in terms of specific topical issues on outdoor recreation.

POTENTIAL SOCIAL INDICATORS FOR OUTDOOR RECREATION

Still another, and perhaps the most significant reason indicators for outdoor recreation have not been established in the past is that there is no simple, agreed upon way of measuring the social benefits derived from outdoor recreation. Such benefits from participation, for instance, could stem from personal rewards such as satisfaction from mastering a physical skill, greater physical fitness, relief from stress, a sense of adventure, improved self concept, greater worker productivity, greater family solidarity, change of pace in daily routine, or communing with nature. Obviously, the list could go on.

From this myriad of potential candidates for social parameters in outdoor recreation, which would be the most useful to monitor over time? This difficult question hits at the crux of the dilemma. It is doubtful that social scientists and public policy makers will ever find an answer to such a question through consensus of opinion.

This next section of the paper briefly reviews selected parameters in terms of how extensively data have been gathered on them, how they have been applied to policy formulation, and an opinion as to their future utility in the rapidly changing world of outdoor recreation. This is by no means meant to be an all inclusive listing but rather examples of useful parameters.

Societal changes affecting outdoor recreation include an increase in discretionary time, changing attitudes toward the work ethic and leisure activity, changing family structures, emerging outdoor recreation participation by women and racial minorities, constraints on participants due to high inflation and energy limitations and the growing constraints on public providers of outdoor recreation opportunity.

Indicators we have considerable experience measuring

Considerable data are available for the following outdoor recreation parameters:

Participation rates. As indicated earlier, participation rates are the most commonly collected outdoor recreation parameter and rate comparability among surveys is severely limited by variations in survey methodology, activity names, lengths of recall, unit of measure and context of participation. There is considerable popular interest in participation rates. A commonly asked question is "How many Americans are campers, etc.?" Unfortunately, since participation rates usually are very general in context and their accuracy questionable, their utility in the policy arena is quite limited. Hunting, fishing and camping, for example, are frequently used activity names which are not tied to any particular resource circumstance. Also, participation rates are frequently misinterpreted. Many planners have equated these rates with recreation "demand" in the context of a planning demand-supply-needs analysis. Participation rates are simply a description of consumption which may reflect supply more than public preference. Also, many have attempted to generate predictive "demand" models incorporating resource supply and demographics to predict participation, but the reliability of such models is highly questionable. As a result, participation rates are much more likely to be found in the intro-

ductory remarks of outdoor recreation plans than in discussions at meetings on outdoor recreation policy. Measurement of participation rates will most likely endure in the future due to continuing public curiosity about them. Their interpretation may be most useful when tied to socioeconomic factors to show shifts in outdoor recreation interest across age, sex, education, race and income parameters.

Resource availability and utilization.

Most recreation studies and plans incorporate inventories of available resources. Federal, state and local land managing agencies maintain resource inventories. Much effort in most outdoor recreation studies is devoted to the compilation of such information. Also, outdoor recreation visitation records at land management units are usually kept. More and more agency managers are expanding the scope of such information to include more specific information on visitor use patterns, preferences and dissatisfactions. The format of such data bases is quite complicated and the list of areas extensive. Also, a variety of units of measurement are applied. As such, the information is not easily translated into definable parameters of resource availability. The usual application of such material is to portray the geographic distribution and diversity of resource opportunity. While it may be doubtful that a universal method of accounting for resource supply will ever be adopted nationally, efforts are being made by federal land managing agencies to develop and adopt a mutually agreed upon system for inventorying and classifying recreation resources. Such systems are needed for state, local and private lands as well. Until these systems are developed, the portrayal of "supply" as a social indicator will continue to be limited to a rather localized perspective.

If the growth of park systems continues to decline as the population becomes more concentrated and travel more restricted, more will have to be learned about the maximum recreational utility of close to home resources. More emphasis will surely be placed here in the 1980's.

Recreational travel. As portrayed in Tables 1, 3, and 4, several recent surveys have included information on travel to participate in recreation activities. Distance traveled, mode of transportation, nature of the trip and expenses incurred have all been repeatedly asked. If national indicators on travel were to evolve, they would most likely be generated by the U.S. Travel Bureau utilizing their repeated recreation travel study. If energy shortages and inflation continue and there persists a dramatic drop

in National Park attendance and the sales of recreation vehicles, this parameter may be one of the most important to monitor in the 1980s.

Willingness to pay. Recreation benefits have been estimated by measuring professed willingness to pay for access to particular facilities or areas. Out of pocket expenses to pursue activities have also been monitored in surveys and equated to estimates of the public good. The unit of measure in these instances is the almighty dollar, the most universally accepted measure of public good. The degree to which willingness to pay questions can really predict future behavior is debatable as is the appropriateness of money to represent the multifaceted public good generated from outdoor recreation. However, given today's constraints on public providers of outdoor recreation opportunity, the importance of such information is obvious. Pay as you go recreation will probably become a more prominent principle of public policy in the 1980s. More data on this topic will surely be collected.

Satisfaction with experiences. Several surveys have measured people's satisfactions with their recreational experiences. This approach to measuring social good has been more effective at identifying the usually low percentage of malcontents than differentiating the subtleties of degrees and types of satisfaction. Interpretation of such findings are usually abstract, subjective, and not a particularly compelling argument in the policy arena. However, research linking subjective reports of satisfaction with various social, environmental and management elements of the recreation experience would aid managers in their planning efforts. Perhaps more importantly, subjectively reported satisfactions need to be linked to objectively determined social benefits of recreation. More research is needed before activity satisfaction can be described in convincing terms to the practitioner.

Constraints to participation. Some surveys attempt to identify constraints to participation through direct questioning. Although results provide greater insight into needs, the questions usually afford such general response that the need is at best obscure. For example, the 1977 national outdoor recreation survey included such a question (see Table 8). As vague as the results may be, this is the type of question which is more likely to reflect a more comprehensive perception of need than could ever be generated simply by a study of participation rates. In the future, this line of questioning will have to evolve so that needs as perceived by the public can be more fully understood.

Indicators We Have Little Experience Measuring

The following outdoor recreation parameters would provide valuable insight for the future but, as yet, we have little experience collecting such information.

Unmet expectations for participation. People frequently have preconceived expectations about recreation activity or areas which may relate to any one of a number of things such as scenery, wildlife, cleanliness, condition or type of facilities or type of fellow recreators. As conditions change at parks and recreation areas, the clientele using the areas may change as well. Increased crowding or a change in the type of people using an area, for instance, may go beyond the social tolerance of some people who then no longer visit the park. Their experience expectations were not met by conditions at the area.

Measuring such a parameter is most difficult. Attempts at asking point blank questions on unmet expectations has tended to yield superficial results which most likely do not reflect the depth of respondent opinion, but the concept should be pursued in order to assess the preferences of both participants and non-participants.

Benefits from participation. If the constraints on public agencies continue in the 1980s, outdoor recreation will be in greater competition with other social services for public funds. In such an environment, the ability to articulate the variety of benefits derived from outdoor recreation activity made possible by the public sector would be most advantageous. As previously discussed, much effort has gone into estimating recreation benefits. Many approaches have been utilized but the results are frequently challenged. Benefit analyses have focused on quantitative parameters such as a visitor occasions or dollars expended. A challenge to the research community is to define subjective parameters which address both the more personal rewards of participation and the community-wide benefits afforded by recreation opportunity. If such subjectively based parameters were adopted and measured over time, powerful indicators would be likely to evolve.

Substitution of activity environs. If in the 1980s, the mobility of the population continues to decrease while the interest in outdoor recreation continues to expand, the need will grow for developing substitute environments for the outdoor recreation activities which today require substantial mobility for participation. Such insight

would necessitate some appreciation for dimensions of satisfaction derived from participation and an assessment of whether or not those dimensions are transferable from one physical environment to another. Although substitution of recreation environments has not received much attention in the research community, there are indications that it will receive greater attention in the 1980s.

Roles of the public and private sectors. As the decade begins, providers of recreational opportunities from the public and private sectors are approaching the issue from different perspectives. The public sector, on the one hand, is faced with an ever increasing fiscal constraint and thinking and planning smaller. The leisure industry, on the other hand, is picked to be one of the major growth sectors of the 1980s and is thinking big. Equipment manufacturers, recreation facility developers, and near-home tourist attractions are in an expansionary mode. Such a situation would suggest that a shift in some roles will occur between the public and the private sectors. The monitoring over time of such shifts vis-a-vis facility and program inventories could prove to be useful in the policy arena.

ESTABLISHING SOCIAL INDICATORS IN OUTDOOR RECREATION

One must admit that the picture painted here is a sobering one at best. We have concluded that despite the collection of an immense amount of data over the last two decades, there is no clearly identified set of indicators in the outdoor recreation field. Circumstances which have contributed to this situation include the lack of consistent procedures and types of data collection over time, inadequate reporting of survey results, the difficulties in accessing existing data sets, and the limitations of past efforts to interpret data in terms of key policy issues. Furthermore, the broad perspective of potential human benefits derived from outdoor recreation experiences makes it most difficult to determine an all-inclusive set of measures covering this social good.

While identifying the problems that have impeded the development of an appropriate set of social indicators has been fairly straightforward, making meaningful suggestions for establishing useful indicators of outdoor recreation may be more difficult. As a way of expediting the establishment of such indicators, we offer the following suggestions:

Data standardization

Standardization should be introduced into recreational data collected by the public sector.

Collecting a standard set of core data as part of inventories and surveys would aid in making comparisons between studies and among studies over time. Appropriate candidates for standardization might include the names of recreational activities and facilities and specific demographic characteristics of respondents (participants and nonparticipants). For surveys, an index of commonly asked questions and how they have been phrased would be most helpful. Steps toward implementing such a goal have been initiated by a task force within the U.S. Department of the Interior charged with the establishing standard data elements for outdoor recreation surveys.

Data access

Recreation data should be made more accessible. As mentioned earlier, such an effort has been established for recreation surveys through the development of the National Leisure Archive at the University of Michigan's Institute for Social Research. To date, 30 data sets have been compiled in the archive. These sets have been made available by agencies of the federal government and various state governments. The data archive at the Institute is part of an inter-university consortium which has 240 member institutions world wide; these institutions have free access to the data. A similar type of mechanism needs to be instituted for recreation inventory data.

Data interpretation

Federal and state outdoor recreation policy makers should exert less energy on developing major reports on recreation studies and surveys and place greater emphasis on the interpretation of existing data vis-a-vis specific policy issues. The academic and research community should be called upon more often to contribute their expertise to this process. If policy makers begin to actively seek out information from existing recreation data, the most useful parameters to the policy arena will eventually surface. This process must take place if usable recreation indicators are to emerge. There is obviously no simple mechanism to realize such a goal, so the process will most likely evolve at an undetermined rate through the concerted efforts of inspired individuals.

Define conceptual framework

The research community should address the problem of developing a conceptual framework for categorizing social indicators and for evaluating their importance. Recreation researchers and practitioners come from many disciplines and organizations. Although this

diversity has enriched the field, it has contributed to a lack of organizing principle for developing either a unified body of knowledge of social indicator measures or a methodology for collecting data. Development of such a framework would provide a focal point for future research efforts.

Identify key indicators now

At this time, we feel it is appropriate to offer a challenge to participants of this conference. We believe a special effort can be made to identify one or two key social indicators for outdoor recreation which would be systematically monitored in the future. Very specifically, we suggest that members of this conference "take the bull by the horns" and identify one or two line items for the "Mid-Decade" census and forward such recommendations for consideration by the Bureau of Census. At the very least, such an initiative will awaken those in the social indicator movement as well as ourselves to the fact recreation and leisure are important aspects of life which are influenced by public policy and which need to be understood over time.

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Key to Tables 1, 3 and 4

Date - Year data was gathered

Agency (Table 3 only) - Federal agency sponsoring survey

- BLM - Bureau of Land Management
- BLS - Bureau of Labor Statistics
- BOC - Bureau of the Census
- COE - U.S. Army Corps of Engineers
- DOT - Department of Transportation
- FWS - U.S. Fish and Wildlife Service
- NPS - National Park Service
- TVA - Tennessee Valley Authority
- USCG- U.S. Coast Guard
- USFS- U.S. Forest Service

Administration (Tables 3 and 4 only) -

- I - Work conducted in-house
- C - Work contracted to a consulting firm

Universe Sampled (Tables 3 and 4 only) -

- N - Nationwide sample of general population
- O - On-site sample for a resource area
- R - Regional sample of general population
- S - Statewide sample of general population
- T - Tourist sampled from out-of-state

Cost - Estimated cost to conduct survey

Sample Size - Number of persons responding to the survey

Sample Techniques -

- D - Diary questionnaire
- H - Household interview
- M - Mail questionnaire
- P - Personal interview (face to face)
- T - Telephone interview

Subject (Table 3 only) - Key words of subject covered or of the resource area name.

Age Range (Table 1 only) - Minimum age of respondent

Response Rate (Table 1 only) - % of people contacted that participated in the survey.

Geo. Reliability - Geographic reliability

- C - data stratified by county
- R - data stratified by region
- S - data for statewide only, not stratified

Activities - Number of recreational activities included in the questions asked.

Length of Recall - Length of past time respondent is asked to recall activity participation.

Period Conducted (Tables 1 and 4 only) - months that data was collected.

Question Content - Amount of survey instrument devoted to subject area:

- 0 - not included in survey
- 1 - briefly referred to in survey
- 2 - subject referenced by at least 2 questions
- 3 - subject major emphasis of survey

TABLE 1 - NATIONAL OUTDOOR RECREATION SURVEYS UTILIZED
IN THE NATIONWIDE PLANNING PROCESS

Date	1960	1965	1970	1971	1972	1977*	1977**
Sample Size	3,817	7,194	26,450	3,258	4,029	4,029	13,729
Sample Technique	P	P	M	P	T	T	P
Age Range	12+	12+	9+	10+	12+	12+	12+
Response Rate	89%	91%	78%	81%	54%	54%	95%
Period Conducted	Sept.	Sept.- Oct.	Nov.- Dec.	Oct.- Nov.	Sept.- Oct.	June	Feb.- Nov.
# of Activities	20	28	14	11	31	30	30
# of Activities Strictly Comparable to 1977	15	20	5	5	18	--	--
# of Activities Roughly Comparable to 1977	5	6	7	4	12	--	--
Length of Recall	Summer	Summer	1 yr.	1 yr. except vacation	1 yr.	1 yr.	1 yr.
Question Content:							
Activity Participation	3	3	3	3	0	3	3
Satisfaction	1	1	0	2	0	3	3
Location of Participation	1	1	0	1	1	3	3
Transportation	1	1	0	0	1	1	1
Length of Stay	1	1	0	0	1	0	3
\$ spent	1	0	0	0	1	0	0
Recreation Equipment	1	0	0	1	0	0	0
Deterrence	0	0	0	0	2	3	3
Policy	0	0	0	0	0	2	2
Demographics	2	1	1	2	2	3	3

* National Outdoor Recreation Survey of the general population

** National Outdoor Recreation Survey of recreation on Federal lands

Source: Unpublished Report on the 1977 National Outdoor Recreation Survey

TABLE 2 ACTIVITY PARTICIPATION RATES FROM NATIONAL OUTDOOR RECREATION SURVEYS (PERCENT PARTICIPATION)

Activity	Summer Rates			Annual Rates
	1960	1965	1972	1977*
Picnicking	53	57	47	72
Driving for pleasure	52	55	34	69
Sightseeing	42	49	37	62
Swimming - Pool	45	48	18	63
Other			34	46
Walking for pleasure	33	48	34	
Playing outdoor games or sports	30	38	22	56
Golf		9	5	16
Tennis		6	5	33
Fishing	29	30	24	53
Attending outdoor sports events	24	30	12	61
Other boating	22	24	15	34
Bicycling	9	16	10	50
Nature walks	14 **	14	17	
Bird watching		5	4	
Wildlife and bird photography		2	2	
Attending outdoor concerts, plays	9	11	7	41
Camping - Developed	8	10	11	30
Wilderness			5	21
Horseback riding	6	8	5	15
Hiking	6	7	5 ***	28
Water skiing	6	6	5	16
Canoeing	2	3	3	11
Sailing	2	3	3	
Mountain climbing	1	1		
Visiting zoos, fairs, amusement parks			24	73
Off-road driving (motorcycles/other vehicles)			5/2	26
Other activities category	5		24	

* 1977 National Outdoor Recreation Survey by telephone

** Includes bird watching and photography

*** Includes mountain climbing

Source: Stowell, 1975, p. 104, for summer rates.

Unpublished Report on the 1977 National Outdoor Recreation Surveys for annual rates.

TABLE 3 - OTHER FEDERAL SURVEYS RELATED TO OUTDOOR RECREATION

AGENCY	BEM	BOC	BOC	BLS	COE	COE	COE	DOT	FWS	NPS	NPS	NPS	TVA	USCG	USFS	USFS
Date	1977	1977	1977	1972-1974	1976	1976	1976	1975	1975	1975	1976	1976	1976	1974	1970	1975
Administration	C	I	I	I	I	I	I	C	C	C	I	I	I	I	I	C
Cost (X 1000)	9	4000		1500	87				985	170	5.5	20				
Subject	Desert Plan	Long Travel	Short Travel	Vacation Cost	Nine Site Quality	McClellan Kerr	Urban Area	Access	Hunters Fishers	Smoky Mtns.	Sequoia Kings Canyon	Yosemite	Land Between Lakes	Boating	Wilderness	Campers
Universe Sampled	California	N	N	N	0	0	0	Boston Atlanta	N	0	0	0		N	0	N
Sample Size (X 1000)	1	18		64	3.3	22	8	2	127	15	1.2	1.6	7.6	24	2.7	2.2
Sample Technique	P	P	P	P.T	H.H	P	P	T	T.M	T.P	P.S	H.M	P	T	P	T
Question Content:																
Activity																
Participation	3	0	0	0	2	2	2	0	2	3	1	2	3	2	2	2
Satisfaction	1	0	0	0	3	0	0	0	1	2	0	0	0	0	2	3
Location of Participation	0	3	3	1	0	1	0	2	0	3	0	2	0	0	0	1
Transportation	0	3	3	1	0	2	0	2	0	0	0	1	0	0	0	0
Length of Stay	2	2	0	0	0	1	2	0	1	1	1	1	2	0	1	0
\$ Spent	0	0	0	3	0	3	0	0	3	1	0	1	0	0	2	0
Recreation Equipment	0	0	0	0	0	2	0	0	0	0	1	0	0	3	1	3
Deterrence	2	0	0	0	3	2	0	3	2	1	0	2	0	0	3	2
Policy	3	0	0	0	0	0	2	0	1	0	3	3	1	0	3	2
Demographics	0	2	2	0	2	2	1	1	2	2	1	2	1	1	1	1

Source: Unpublished report on the 1977 National Outdoor Recreation Surveys

TABLE 4 Selected Statewide Outdoor Recreation Surveys		Arizona	Colorado	Delaware	Florida	Georgia	Hawaii	Illinois	Indiana	Kentucky	Maine	Maryland	Michigan	Missouri	Nebraska	New Jersey	New Mexico	N.Y. (Tri- city only)	Ohio	Oregon	Oregon State Parks	Pennsyl- vania	Rhode Island	S. Dakota	Utah	Washington
Date		1977	1974	1978	1975	1976	1974	1977	1976	1977	1977	1977	1976	1973	1978	1976	1975	1976	1973	1975	1975	1974	1974	1974	1977	1976
Administration		C	I, C	I, C	C	I	C	C	C	C	C	I, C	I	C	C	C	C	C	I, C	C	I	C	C	C	C	C
\$ Cost (X 1000)		41	32	30	34	59	43	145	13	25	16	45	79	60	6	80	15	30	130	6	20	130	125	33	25	125
Universe Sampled		T, S	T, S	S	T, S	S	S	T, S	S	S	S	S	S	S	S	T, S	S	R	S	S	T, S	S	S	S	S	S
Sample Size (X 1000)		38	9	16	2.5	2.4	5	10	5.6	5	1.5	6	18	12	2	2.6	2.6	3	5.5	2	22.	9	2	4.5	3.6	4
Geo. Reliability		C	S	C	R	R	C	R	R	R	C	C	R	R	R	T, P	T, P	T	R	C	To Site	R	R	R	R	R
Sample Technique		P	T	P	P	P	P	T	M	M	T	T, M	Open	T	T	T, P	T, P	T	M	T	M	T	M, P	M	D	T, M
# Activities		40	56	25	24	53	20	18	24	30	42	30	Open	36	27	56	40	13	21	22	14	19	18	24	72	81
Length of Recall		4 mo	1 yr	1 yr	1 yr	1 yr	1 mo	1 yr	1 yr	1 yr	1 yr	1 yr	2 wk	1 yr	1 yr	1 yr	1 yr	3 mo	1 yr	1 yr	per visit	1 yr	D	1 yr	1 yr	D
Period Conducted		Jan- Four	Oct	June	Aug- Sept.	July- Aug.	June- Aug.	Oct.- Jan.	Sept- Dec.	July	Jan- March	July- Jan.	Summer	July- Aug.	April	Aug.	May- June	Aug- Sept.	Winter	Spring	Sept.	July- Sept.	Four Season	Summer	Four Season	Four Season
Question Content:																										
Activity		3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Participation		1	0	1	0	0	0	0	1	0	0	1	0	0	2	0	1	2	2	1	1	1	1	1	0	0
Satisfaction		0	0	2	1	1	1	1	1	1	1	2	2	0	0	0	1	1	1	1	2	1	1	0	2	2
Location of		2	0	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1	0	1	2	1	0	0	0
Transportation		1	0	0	1	1	1	1	1	1	1	2	0	0	0	0	0	0	0	0	0	1	1	0	1	1
Length of Stay		0	0	2	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	1	0	1	0	0	0
\$ Spent		1	0	2	0	0	0	0	0	0	1	1	0	0	1	0	0	0	0	0	0	1	2	0	0	0
Recreation		1	0	2	0	0	0	0	0	0	1	1	0	0	1	0	1	0	0	0	1	1	2	0	0	0
Equipment		1	0	2	0	0	0	0	2	0	0	2	0	0	0	0	1	2	2	0	0	1	1	0	0	1
Betterment		0	0	2	0	0	0	0	1	0	1	2	1	3	0	0	0	0	2	0	3	1	1	0	0	1
Policy		2	1	2	1	2	0	2	1	1	2	2	1	1	2	1	1	2	1	1	1	2	2	1	2	1
Demographics																										

Source: Unpublished report on the 1977 National Outdoor Recreation Surveys

TABLE 5 - COMMERCIAL OUTDOOR RECREATION SURVEYS OF THE 1970's

	New York Zoological Society	Hawes, Blackwell Talarzvk	National Opinion Research Center	Nielsen	Nielsen	Sindlinger	Nielsen
Date	1970	1972	1973	1973	1976	1977	1979
Universe	N	N	N	N	N	N	N
Sample Size	944	1,015	692	9,600	9,600	4,616	9,600
Sample Technique	P	M	P	T	T	T	T
Length of Recall	1 year	1 year	Last month	From time to time	From time to time	Last week	From time to time
Number of Activities	5	15	12	23	27	28	30

Source: Unpublished Report on the 1977 National Outdoor Recreation Surveys.

TABLE 6 - Participation Trends From Neilson Surveys

(RANKING OF POPULARITY OF PARTICIPATION IN SPORTS MEASURED
1979 vs 1976 vs 1973 Sports Participation Surveys)

Rank	Sport	projected individual participants (000) 1979	% change in projected participants 1979 vs 1976	projected individual participants (000) 1976	% change in projected participants 1976 vs 1973	projected individual participants (000) 1973
1	Swimming	105,441	+2%	103,503	-3%	107,191
2	Bicycling	69,810	-7%	75,015	+14%	65,613
3	Camping	60,300	+4%	58,102	+7%	54,435
4	Fishing	59,275	-7%	63,901	+4%	61,263
5	Bowling	43,330	-2%	44,434	+16%	38,218
6	Boating	37,920	+8%	35,230	+8%	32,629
7	Jogging/Running	35,727	*	*	*	*
8	Tennis	32,271	+10%	29,201	+45%	20,158
9	Pool/Billiards	31,937	-11%	35,805	+9%	32,920
10	Softball	28,458	+4%	27,268	+3%	26,362
11	Table Tennis	26,908	-16%	32,215	-4%	33,501
12	Roller Skating	25,359	*	*	*	*
13	Basketball	24,048	-7%	25,818	+17%	22,129
14	Hunting	19,711	-4%	20,480	+2%	19,997
15	Ice Skating	18,924	-26%	25,772	+4%	24,875
16	Water Skiing	16,922	+15%	14,681	+5%	14,021
17	Golf	15,897	-4%	16,568	-3%	17,025
18	Snow Skiing	15,397 [†]	+40%	10,999	+42%	7,721
19	Baseball	15,039	-4%	15,670	+3%	15,216
20	Football	14,300	-4%	14,911	+5%	14,247
21	Racquetball	10,654	+283%	2,784	*	*
22	Motorbiking	10,511	+8%	9,734	-14%	11,339
23	Sailing	8,652	+19%	7,271	+4%	6,978
24	Snowmobiling	8,628	-6%	9,204	+19%	7,753
25	Soccer	6,530	*	*	*	*
26	Handball	5,578	+1%	5,546	*	*
27	Archery	5,529	+1%	5,477	-6%	5,847
28	Paddle Tennis	2,431	-6%	2,577	*	*
29	Ice Hockey	1,668	-38%	2,669	-18%	3,263
30	Platform Tennis	405	+120%	184	*	*
Total U. S. Population		214,958	+2%	210,019	+2%	205,950

* Not measured in 1973/1976.

[†] Includes downhill and cross-country skiers.

Source: News Release By The Neilson Company

TABLE 7 - A COMPARISON AMONG SURVEYS OF THE EFFECT THAT GASOLINE PRICES HAVE HAD ON OUTDOOR RECREATION

Year	Survey and Question	Percent
1974	State of Ohio How important is the cost of gasoline in your participation in outdoor recreation?	47% very important
1975	COE at McClellan Kerr site How has the price of gasoline (shortage) affected your recreation related travel plans? (1975 compared to 1974)	29% fewer trips 28% shorter trips
1976	State of Indiana Has energy or economic changes during the previous year affected your outdoor recreation involvement? How?	38% yes and of those... 59% fewer trips away from home 32% closer to home 29% stopped participating in some activities
1977	State of Arizona (Has) the increase in price of gasoline over the past several years affected how much your family uses (gasoline consuming) equipment for recreational purposes?	44% much or a little less use
1977	HCRS General Population Survey Has the present price of gasoline caused you to take shorter trips for outdoor recreation activities?	49% yes
1978	State of Maryland Has the present price of gasoline caused you to take shorter trips than you normally would for outdoor recreation activities?	42% yes

Source: Unpublished Report on the 1977 National Outdoor Recreation Survey

TABLE 8 - REASONS PREVENTING USE OF PARKS OR RECREATION AREAS
(percent)

<u>Reason</u>	<u>Type</u> ^{1/}	<u>General Population</u>	<u>Federal Estate Population</u>	<u>Percent Point Difference</u>
Lack of time	P	52	52	0
Area too crowded	A	43	40	3
Lack of money	P	37	24	13
Lack of information	A or P	32	12	20
Recreate at residence	P	30	4	26
Area not convenient	A	29	10	19
Area polluted	A	25	8	17
Lack of interest	P	22	4	18
Personal health	P	21	6	15
Area poorly maintained	A	20	10	10
Lack of transportation	P	20	8	12
Area safety problems	A	19	4	15

Note: ^{1/} P = Personal situation
A = condition perceived for Area

Source: Unpublished report on the 1977 National Outdoor Recreation Survey