

THE TREND OF MEASURING PUBLIC USE
OF THE NATIONAL PARKS¹

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INTRODUCTION

Since the outburst of interest in outdoor recreation travel in the period following World War II, measurements of outdoor recreation have been made in many ways. The measurement of outdoor recreation is decentralized activity being carried out by a large number of private and federal agencies with a variety of goals and purposes. Future improvements in federal statistics will partially come from the emergence of a combined strategy for statistical data gathering. Partially due to decentralization, such a strategy has not emerged even though the need for trend data is wide-spread. To envision the characteristics of a more coordinated and cost effective program of outdoor recreation measurement, it is helpful to consider the history of outdoor recreation studies. Changes in studies conducted for the National Park Service (NPS) illustrate a trend with several periods.

Travel and Tourism Studies

From the early 50's to the early 60's, the Federal Highway Administration (FHA) engaged in cooperative programs with state

highway departments to collect specific measurements of travel and tourism activity. The primary concerns of these studies were to gather basic data for economic and highway planning. Major national parks were sites for many of these studies.

Because of the relatively narrow applications intended for these studies, the scope of inquiry was limited to a few basic issues. The information collected usually included vehicle type, home town, trip purpose, trip mileage, overnight stays, duration of stay, and trip expenditures. As a result of the narrowness of focus, the comparability between travel studies is surprisingly high.

These travel and tourist studies used entrance station interviews or mailback questionnaires. The brief sets of questions could be completed by the visitor in a few minutes. Appendix A contains information about how field operations were carried out (Cape Cod study of 1963). Appendix B shows several questionnaires used in the Grand Canyon Tourism Study (1953). Several of the studies used identical interview schedules (Grand Canyon and Yosemite studies in 1953).

The findings of the travel and tourism studies were generally reported as descriptive statistics in various tables and figures. The focus was on the market area served by a particular park, the forecast of future use which could be expected from that market area, and the economic benefits of visitation to surrounding areas. The reports vary in quality and tend to assume that the usefulness of the results is self-evident. Descriptive findings are typically presented with expressions like "it is of interest that" . . . "interesting to note", and "as reasonably could be expected. . ." (Shenandoah Travel Study, 1952). There is no record of any raw data ever being centrally stored for later use although in one case findings were compared to eight other travel studies (the 1963 Cape Cod survey).

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The travel and tourism studies reflect several advantages and disadvantages of measuring outdoor recreation. Advantages included the narrow focus, general comparability between studies, cost effectiveness of acquiring data, and the use of client participation in the collection effort (FHA funds enabled State highway departments to collect data or hire local people to do the work). Disadvantages included the failure to provide for the common storage of raw data and the failure to document applications of data to planning and management problems. These studies were one-shot studies and were not concerned with the problem of learning about trends.

Travel and tourism studies received lower priority beginning in the early 60's. As planning for the inter-state highway system neared completion, the work of the FHA concentrated more on the problems of urban area transportation planning. But as this particular type of study declined in frequency, a new type of study began to appear.

Visitor Use Studies

The study of travel and tourism had many beneficial effects for the NPS. Among the benefits was the interest stimulated in the visitor as a factor to be treated in both planning and management. The benefit, however, did not come directly from the original travel and tourism studies but from the great variety of "visitor use studies" which were sponsored by diverse interest from many different parts of the agency. These studies tended to be exploratory and responsive to the new curiosity of park staff about the visitor, visitor attitudes and behavior. The visitor use study appeared in several distinct forms.

The user satisfaction study was conducted to gather information needed to evaluate interpretive programs and to gather basic performance data on how well the park was doing its job. These studies often concentrated on the things which visitors liked, found useful, or judged to be of value to them. To the extent that they focused on manageable conditions, these studies discovered that people were more satisfied when the litter was controlled and the trails and facilities were maintained. Often, however, the focus of these studies was vague and they often identified circumstances which were beyond the realm of manageable conditions, e.g. campers were satisfied when other campers were pleasant to be around. Such studies often attempted to measure the perception of environmental quality or determine the meaning of the visiting

experience. To this extent, indicators were developed to capture differences in the expressions of feelings, experiences, and perceptions. These types of studies did not lend themselves to comparison because they used a great variety of definitions, concepts, and methods of measurement.

Closely related to the "satisfaction" type of study was the attempt to measure sociological "carrying capacity." Emerging in the early seventies, these studies attempted to parallel natural science studies of resource wear and tear. The sociological measurement problem was to determine when visitor density itself prompts changes in the quality of the visiting experience. These studies were plagued by a variety of confounding conceptual, theoretical, and operational problems. Some visitors, for example, valued having others around while others wanted to avoid people. The "sociological carrying capacity" type of study, however, did serve to sensitize managers to the varying needs of user groups.

The "visitor profile" was yet another form of visitor use study. Characterized by their taxonomic style, these studies grouped people according to various types or styles of behavior, e.g. backcountry users, straight and counter-culture users, family users, etc. These studies served to refine statistical generalizations such as emerged from the tourism studies by demonstrating that while the "average visitor" did not exist, there are patterns of behavior that distinguish people from one another in ways that bear on management actions. The focus on differences between visitors is important because it suggests that there can be corresponding differences in management actions. Such studies, for example, contributed to thinking about ways to control potential conflict among visitors by zoning activities. Knowledge of seasonal changes in types of visitors enabled changes to be made in the content of interpretive programs.

One of the most distinctive types of visitor study was the regional, interagency transportation study. These studies attempted to bring the accumulation of many earlier styles of inquiry to bear on outdoor recreation behavior at one time. While few of these were completed (Great Smoky Mountain National Park study in 1975 and Yellowstone-Teton National Park in 1978), they played a key role in the spread of interest in the visitor and impacts of visitation on parks and the surrounding communities.

However, because of the broad focus, the large variety of participants, and wide areas of geographic interest, the volume of survey data collected by these studies grew to enormous proportions. In contrast to the brief tourism studies, the regional visitor use studies pursued answers to scores of questions ranging from general recreational activities to social attitudes. A major result of this type of study was the sensitivity it created about cost effectiveness (time and monetary cost to the agency as well as reporting burden on the participating public). It seemed evident that if information about the public as a consumer group was to be applied routinely to national park management, it would have to be timely and through a more limited, cost effective method.

Throughout the sixties and into the mid-seventies, various forms of visitor use studies have been conducted on behalf of the NPS. Throughout this period, unfortunately, an integrated body of organized knowledge failed to emerge even though great effort was invested in the task. If anything, the great diversity of effort suggested the need for establishing some centralizing control to insure economy of effort.

Research Studies

The proliferation of ad hoc studies during the 60's served to bring the need for a more systematic program of studying the visitor and visitor behavior to the attention of NPS management. In the early 70's, efforts were completed to establish several regional centers of social-scientific research in the NPS.

The Cooperative Park Studies Units were created at various universities for the purpose of blending the intellectual power of academia with the apparently intractable difficulties of resource management.

Centralizing the expertise for social science work served a variety of purposes. At last there were places where consultation could be acquired, where research coordination could be made, where quality control over study design could be exercised, and where findings and raw data could be assembled for later use. The institutional formalization of social science activity prompted greater research coordination and indirectly contributed to the assembly of interdisciplinary perspectives. These centers served as a focus of communication between the academic and governmental communities and achieved some degree of reorientation of effort for their mutual

benefit. In addition, the monumental task of inter-agency coordination was carried out by these centers, eliminating some redundancy and improving the transfer of social science technology to NPS management at minimal cost, e.g. the computerized backcountry permit system developed by the Social Science Program in the Pacific Northwest Region, NPS.

Throughout the period of growing experience and mobilization of effort, however, a persistent problem served to confuse the establishment of more viable social science goals: who was to be served by the application of social science to management and planning, and how? Was the level of application to be at the site, within the region, or at the national level? Nowhere is the conflict of applications more evident than in various public opinion polls which were conducted.

Public Opinion Polls

This type of work differs from other visitor studies in that the population studied is the general rather than the visitor population. The methods, therefore, tended to be off site telephone and personal interviews. Such studies were needed because studies done for research purposes or on behalf of unit managers did not yield information needed about broader problems.

From 1968 to 1972 a variety of national and regional public opinion polls were designed and carried out for the purpose of expanding knowledge of participation in and opinions about outdoor recreation, a purpose which was not being served by other studies. From these studies valuable perspectives about the relationship between visitors and nonvisitors was gathered and made available to upper level management. In addition, a series of short "People in the Parks" reports were prepared to explain the general usefulness of the data to planners and managers. Theoretically, information would "filter down" until it found an application. The reports were propagated because they "may also be useful to other divisions for any number of purposes. . . How it may be useful to each division will, of necessity, be decided within the division."

Unfortunately the expected integration of general survey findings into planning and management documents did not spontaneously happen, possibly because there were no experienced social scientists available to help other professionals find the meaning of general findings for specific actions. On the other hand, social scientists themselves may not have had sufficient experience in the work of planning and resource management. Although much effort was put into the task of delivering findings to other professional groups, social scientists often stopped short of saying exactly how information was to be used.

Discussion

The preceding account of studies done for the National Park Service represents one viewpoint on how social science work was carried out and what was accomplished over the years. While many subjects have been explored and a variety of study tactics have been tried, the cumulative impact of the findings on planning and management is less than might have been expected judging by the effort (time and cost) invested. The failure to communicate better could be due to a variety of problems such as the delays necessary to accomplish the studies themselves, lack of general experience of scientists and planners in working together on managerial problems, the artificial "freezing" of data in the text of a written report, failure to focus on comparative and trend data, and mismatched expectations of what studies can and cannot do. While studies can make crucial impacts on thinking, study findings too often were applied cosmetically if at all.

Up to the present both the scientific and managerial communities have been learning about the role of social and economic data in natural resources management. While the period of learning is far from over, a period of applications needs to be started. The tactic of gathering data by studies may itself be a problem. While scientific studies will continue to be essential sources of new knowledge, studies may not represent the tools needed to effectively bring information to planners and managers. Other ways of gathering and communicating the use of information need to be explored.

The coming decade promises to bring revolutionary changes in the economy which will alter previous circumstances in which out-door recreation has occurred. The context of planning will soon be unlike what it has been in the past. The rate and degrees of change may be so fast and extreme that conventional studies will be inadequate to assemble required data for planning and management. In the future, natural resources planning and management will rely more heavily on limited programs to monitor public use and an improved system of federal statistical reporting about out-door recreation.

Monitoring Public Use

From the limitation of studies as a method of collecting information for park management, a complementary method was developed in the late seventies: continual monitoring of public use. While not an evolutionary step beyond the ad hoc study, continual monitoring serves purposes which

cannot be as effectively served by conventional studies. While monitoring must be an activity which is restricted to collecting a few variables, the benefit of monitoring is that it yields comparable data on a continuing basis. The focus of monitoring is on change and, more importantly, comparative change. This is an important development in the effort to bring social science to bear on park planning and management because with this type of information it is possible to focus on the trends of public use and the question of what differences exist between types of areas, geographic locations, and forms of management.

The content of the current public use monitoring program under development by the NPS is limited to a few items which can be quickly gathered using a free-form interview schedule. Questions include (1) where people entered the park, (2) when they entered, (3) how often they come, (4) where they live, and (5) what other places they have visited on their trip. In addition, the visitor is asked "on your first day in the park, (6) where did you go, and (7) what did you do?" This last question is a general probe designed to recover the details of the visit using a notational coding method. For the purpose of reducing costs, this type of interview is designed to be conducted by members of the park staff who are specially trained by the NPS Statistical Office. Seasonal or permanent staff members gather the data in the context of their day-to-day contacts with visitors. The interviews serve to give visitors an opportunity to ask questions and give comments (both positive and negative) about their visit and to give park staff a systematic way to learn about the visitor and the pattern of park use. All data are carefully edited and errors are returned to the interviewer for training purposes.

The major source of cost effectiveness, however, is the entry of data into a data base management system (DBMS) which is accessed by conventional English commands (INQUIRE). The timeliness of data collection and editing creates a "live" foundation of statistical data for planning and management. Rather than prepare reports on findings, park service statisticians prepare a library of graphic and tabular outputs which is made available to clients of the system as needed (Computer Assisted Management Program - CAMP). Parks draw data interactively using conventional computer terminals. Use of the system and its application to various kinds of work are explored in "Applications Clinics" conducted at the parks by members of the agency statistical office.

One of the major limitations of the monitoring type of activity is the question about the quality of the data. If such programs are to be successful in terms of financial cost, they must take advantage of every opportunity to economize. Asking the unit manager to administrate the task with existing staff is a shortcut which eliminates one of the major expenses of this work. Although NPS field staff are not primarily assigned to conduct interviews, most have shown a genuine interest in gathering this kind of information. One of the major reasons for strong field support is the dedication of the monitoring effort to gather basic information commonly recognized as essential to routine park management. The availability of data within ten days of collection also serves to stimulate interest in the quality and utility of the findings. To the extent that active interest in the findings can be maintained by timely production of findings and to the extent that training and careful editing of data can be completed, the monitoring program can result in data of respectable quality for the purpose to which it is applied.

As the concept of monitoring as a tool of park administration spreads, more areas will be added to the system and comparative, aggregate, and time series studies will be conducted. As interest in data based management grows, new applications will be found. Program and policy evaluation will become easier and more timely as actions are reviewed for effects which are detected by the monitoring of public use.

By monitoring public use on a limited basis, the Park Service engages the active participation of visitors in the park management process. However, to insure the application of data to the largest number of managerial problems faced by the federal government, the data collected by the National Park Service needs to be a part of an integrated statistical effort.

Federal Statistical Policy and Outdoor Recreation Statistics

The current federal activity in out-door recreation measurement suffers from a variety of problems. Standardization of procedures and documentation of methods have not been fully completed. Training and quality control over field practices needs to be improved, particularly in areas where staff resources are minimal and conventional sampling is difficult to carry out. The frequency of "estimates" as a basis for determining certain figures is much greater than is desirable.

At the same time, the breadth of the current statistical accounts (generally visitor hours and visits) is of slim utility for any sort of realistic planning and of little use for site management.

A major element of the problem is more or less common to all federal offices working with minor statistical programs. A situation of perpetual negative feedback tends to exist: (1) lack of resources (staff and money) requires shortcuts in statistical procedures; (2) shortcuts in statistical procedures lower validity and reliability of data; (3) data low in validity and reliability cannot be used to solve managerial problems; (4) data which do not solve problems do not receive priority for resources; (5) lack of resources. . . Although all agree that good public use data are essential to planning and management, the negative feedback cycle creates a situation which tends to maintain statistical systems at subsistence levels.

The problem, however, is widespread. In July, 1978, the U.S. Department of Commerce issued A Framework for Planning U.S. Federal Statistics, acknowledging the various problems of decentralization generally, and specifically the numerous difficulties of minor statistical programs such as the general efforts to measure trends of outdoor recreation.

It seems safe to predict that increases in resources for out-door recreation statistical programs will not change without improving the programs themselves. Fortunately, this can be done. To the extent that a voluntary division of labor is accepted by various agencies, the combined efforts to cover segments of outdoor recreation statistics can be made cost effective. In the past an agency might look into a problem and report certain findings which would have limited utility for or be at odds with the immediate objectives of another agency. The typical response is to launch an additional study/counter-study tendency is enormously costly. Redundancy of effort can be reduced if agency social science professionals guide their agencies toward better coordination. This requires, however, that the same professionals take greater interest in what is being done around them and act to influence the work of other agencies to adequately meet the needs of their parent agency as well.

The National Park Service's effort in this direction include both sharing data it produces and depending more on data produced by other participants in the measurement of out-door recreation. The U.S. Travel Data Center, for example, conducts monthly surveys of travel from a random sample of people in the nation which promises to yield valuable data which is not available elsewhere. Combined with the

surveys of national recreation and travel conducted by the Heritage, Conservation, Recreation Service and the Bureau of Census, a formidable body of data for new area and existing site planning is available. National Park Service data are already shared with the Department of Commerce, Federal Highway Administration, and Department of Energy. Current planning work is especially sensitive to the need for information exchanges such as near areas where boundary land exist. Here again, the NPS Cooperative Park Studies Units at various universities have played a key role in improving interagency exchanges by easing the problems of information access. Ideally, creating better access to statistics at the federal and state level, including distribution to places of higher learning, will have a positive influence and will enable basic improvements to be made as higher demand justifies better support for programs to measure outdoor recreation.

Conclusion

Viewed as a series of changing tactics of measuring public use, outdoor recreation studies since WWII reflect a variety of accomplishments and shortcomings. Travel and tourism studies served to stimulate and broaden the interest of planners and managers for information about people. Visitor studies served to satisfy curiosity about a large variety of interesting questions ranging from visitor judgements to attitudes and opinions. Research studies brought methodical thinking to conceptual problems of measuring out-door recreation and sharpened the tools of study. In spite of obvious progress in the ability to contribute to planning and management, the actual adoption of public use data as a factor in planning and management has been limited. Until a better strategy for gathering data about out-door recreation can be developed, the desired impact of public use information on planning and management will not take place.

Studies may not be sufficient to communicate the applications of data to the problems of management and planning. An improved strategy will also involve the idea of continual monitoring of public use. The resulting statistics can be merged into a system which is both useful to the site manager and useful to the managerial concerns of those working at regional and national levels. Many improvements, however, need to be made in the quality of existing statistical programs. These improvements may be made without substantial additional investments if a productive voluntary division of labor can occur among agencies participating in the

measurement of outdoor recreation.

These views are offered in the belief that important work has been accomplished but is undervalued. Suggestions are offered in spite of the likelihood that, here too, every solution has a problem.

LITERATURE

Although this paper has not involved direct references to other literature, the reader may have interest in related work. The following references are offered for those with continuing interest:

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APPENDIX A

CAPE COD TOURIST STUDY

	COLUMN	CODE
1. Station	1	
2. Date	2-3	
3. Hour	4-5	
4. Vehicle - Sedan() Station Wagon() Trailer - Camper() U-Haul() Boat()	6	
5. State of Registration Mass.() R.I.() Conn.() N.Y.() Other _____	7-8	
6. Car Occupancy Adults _____ Male _____ Female _____ Children under 16 _____ Male _____ Female _____	9-14 15-20	
7. Where is your permanent residence? Town _____ State _____		
<u>If on the Cape</u>	<u>If not on the Cape</u>	
↓	(A) Do you have a summer residence on Cape Cod? Yes() No() Where _____ Town _____	21 22-23
(B) What is the purpose of your trip? Business and Pleasure () Personal Business () Shopping () Serve Passenger () Recreation () Vacation () Medical, Dental, Education, Church () Social () Work () Other _____		24-25
Specify _____		
(C) When did you arrive on the Cape?	Mo. Day Time	26-30
<u>If today</u>	<u>If prior to today</u>	
↓	(1) Where did you stay? _____ Town _____	31-32
	(2) At a motel() hotel() cottage() tent() private home() other _____ Specify _____	33-34
(D) What was the purpose of this trip? () vacation, () recreation, () work, other _____ Specify _____ What was your major recreational activity? () beach, () boat, () fish () scenery () other _____		35-36 37-38
(E) Is this a rented car? () Yes () No		39
(F) Now for my last question, approximately how much did you spend on the Cape? \$ _____		40-43

The questionnaires were filled in by the interviewers and coded later in the office. 17,404 vehicles were interviewed out of 62,312, an overall sample of 28.4 percent. In addition to serving the requirements of the study, the stations were selected to insure the safety of the motorists and the interviewers. Wherever possible, sites were so chosen that interviews could be conducted off the road. One station was located at a rest stop. When the interview was completed, each driver received a formal note of thanks explaining the reason for the interview.

APPENDIX B

GRAND CANYON NATIONAL PARK TRAVEL SURVEY

1. Auto
 2. Bus
 3. Truck
 4. Motorcycle
- A. Residence:
1. City or Town _____ State _____
 2. State of Vehicle Registration _____
- B. Is this trip for: 1.Pleasure _____ 2.Business _____ 3.Both _____
- C. Was your trip to the Grand Canyon the principal purpose for your trip from home? Yes _____ No _____
- D. How many persons in your party?
(Don't forget the babies and other children) _____
- E. Where were your last two overnight stopping places before entering the Park? If more than one night in either place, then, please write the number of nights:
- a. Last Night _____
 - b. Night Before _____
 - c. What type of accommodations did you use during these stops?
 1.Hotel _____ 2.Auto Court(Motel) _____ 3.Trailer Park _____
 4.Camping _____ 5.Friends or Relatives _____ 6.Home _____
 7.Other (Specify) _____
- F. Overnight stops while in the Park:
- a. How many nights did you stay in the following accommodations?
 1.Hotel _____ 2.Cabin with Bath _____ 3.Cabin without Bath _____
 4.Camping _____ 5.House Trailer _____ 6.Other (Specify) _____
 - b. CIRCLE your first preference above, if type desired was not available.
 - c. If you are not stopping overnight, are you leaving the Park because accommodations were not available? Yes _____ No _____
- G. For the ENTIRE TRIP, please estimate:
- a. How many days will you be gone from home? _____
 - b. How many miles will you travel on the entire trip? _____
 - c. How much will you spend on your entire trip? _____
- H. For that portion of your trip in Arizona, please estimate:
- a. How many days will you stay in Arizona? _____
 - b. How much will you spend in Arizona? _____
- I. During your stay in the Park and while enroute to and from the Park, please estimate how much you and the members of your party will spend in this GENERAL VICINITY for the items listed below: (Outer limits of this "general vicinity" includes such places as Prescott, Ashfork, Williams, Flagstaff, Cameron, St. George, Cedar City and Panguitch)
- | | |
|---|-------------------|
| (NOTE: Include Credit Card Purchases) | TO NEAREST DOLLAR |
| Food | \$ _____ |
| Lodging | \$ _____ |
| Gas and Oil or Transportation | \$ _____ |
| Other(Park Entrance Fee,souvenirs,etc.) | \$ _____ |
| TOTAL | \$ _____ |
- J. Where do you plan to make your next overnight stopping place after leaving the Park? _____ No. of days _____
- a. Town and State _____ this stop _____
 - b. Please check the type of accommodations you expect to use:
 1.Hotel _____ 2.Auto Court(Motel) _____ 3.Camping _____
 4.Trailer Park _____ 5.Friends or Relatives _____
 6.Home _____ 7.Other (Specify) _____

APPENDIX B (continued)

- K. Show order of preference with a 1, 2, 3, for the THREE features which appealed to you most in the Park:
- | | |
|-------------------------------------|-------------------------------|
| a. Enjoyment of Scenery_____ | f. Horseback Riding_____ |
| b. Mule trip into Canyon_____ | g. Ranger Talks_____ |
| c. Climate_____ | h. Indian Dances_____ |
| d. Hiking_____ | i. Wild Life_____ |
| e. Camping_____ | j. Evening Entertainment_____ |
| k. Other Attractions (Specify)_____ | |
- L. Have you visited or do you plan to visit the other Rim of the Grand Canyon on this trip? Yes___ No___

COMMENTS OR SUGGESTIONS REGARDING YOUR VISIT TO THE PARK WILL BE APPRECIATED: _____
