

THE PUBLIC AREA RECREATION VISITOR SURVEY:

A PROGRESS REPORT

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Abstract. -- The Public Area Recreation Visitor Survey (PARVS) was initiated in 1982 to gather data about visitors to recreation areas. State of the art methods have been incorporated into PARVS to evaluate the economic importance of recreation using cost effective procedures. A target of PARVS is improved scientific and professional credibility. PARVS provides data for economic impact assessment; estimates of direct value to users, and describes the travel, recreational, and demographic profiles of recreation visitors. PARVS employs both on-site interview and mail survey procedures and utilizes low-cost, error free optical scanning. Twelve states, 5 federal agencies, 3 universities, and several national organizations have cooperated in developing and managing PARVS and thus far over 20,000 visitors have been interviewed.

INTRODUCTION

The United States is changing toward a more service, information and retail oriented economy in response to technological advantages in this country relative to many other countries. This is also in response to rapidly rising demands for services and entertainment opportunities which have resulted from shifts in tastes, preferences, and lifestyles. Rising outdoor recreation demand in the last four decades is one major manifestation of these shifts.

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Maintaining information that describes the importance of shifts in recreation consumption as a component of the U.S. economy and that describes the value of recreation opportunities to consumers is one of the targets of the recreation and tourism policy making and research communities. In recent years, significant advances have been made in our ability to evaluate the economic importance of recreation. This report documents the progress made over the last 4 years by the Intergovernmental Public Area Recreation Visitor Survey Working Group (the PARVS WG) in developing and applying state-of-the-art technology for evaluating the economic importance of recreation in our contemporary society.

#### A Brief PARVS History

In 1982, plans were being formulated for replicating the 1977 Federal Estate Visitor Survey. At the same time, several state and federal agencies and related national associations, including the National Association of State Park Directors (NASPD) and the Council of State Planning Agencies, were independently seeking ways to credibly estimate the economic benefits of recreation and tourism. With the joint leadership of the U.S. Forest Service, Corps of Engineers, National Park Service and the NASPD, leading economists and scientists working in this area of recreation and tourism economics were assembled to develop a system for producing credible and cost effective estimates of the various economic parameters related to recreation and tourism. Georgia Southern College, Michigan State University and the University of Georgia were the lead Universities in this effort.

Currently 5 federal agencies, 12 states, 4 national associations and 6 universities are cooperating to apply a state-of-the-art system called PARVS - Public Area Recreation Visitor Survey. Data have been collected nationwide since June 1985, and will continue until spring, 1987. At the same time, the analysis and modeling components of the system have been developed and are in place. Over 20,000 cases thus far have been collected on 245 different recreation sites across the country.

#### The Process

The PARVS System involves the best, most credible techniques and theory available.

Data Collection. Data are collected in three phases: (1) On-site: interviews are conducted during a recreation trip to describe recreation visitors and their recreation behaviors and travel patterns. All data elements are designed to be comparable with Bureau of Census and other national survey definitions, categories, and standards. (2) At-home: visitors interviewed at recreation areas are mailed a follow-up survey instrument after their trip to obtain information about spending patterns for that particular recreation trip, at home, enroute and while at the site at which they were interviewed. (3) About the site: recreation area managers will be asked to provide descriptions of their area so that estimates of economic importance can be extrapolated to recreation sites with attributes similar to the sites actually studied.

Analysis. Data from the survey forms are input by optical machine reading for mainframe computer analysis using an optical scanner at a rate of about 6,000 sheets per hour. This optical scanning procedure results in very low-cost data entry. Data can then be analyzed using travel cost modeling (TCM), contingent valuation (CV) and economic impact estimation procedures. The economic impact procedures use the IMPLAN national "input/output" system managed by the U.S. Forest Service. These analyses will be described in a later section.

Cost Sharing. Because federal and state agencies and universities are sharing expertise and costs, the PARVS system, without compromising standards of reliability or comprehensiveness, is unprecedented for cost effectiveness.

### The Information Provided

Analysis of the PARVS data can provide four basic kinds of information.

Recreation and Travel Patterns. Recreation activities at the site and during the last 12 months; characteristics of recreation travelers; and distances, mode and purposes for travel are described. Statistical analysis can provide information on differences in recreation and travel patterns between different regions or states, and different managing agencies, population groups, or kinds of recreation areas.

Value to the Visitor. The dollar value of the experience of using a public site for recreation can be estimated. This is one of the principle measures of the economic importance of outdoor recreation. These estimated values are comparable to actual market transactions such as occur in the private sector and can be used for budgeting and site management decisions. Values attributable to different activities pursued by the visitor or to day versus overnight visits can be estimated.

Value of the Site. Sites have different attributes, opportunities, and services that are offered. Using the PARVS data, the value of these facilities and services provided at a site can be estimated.

Economic Impact. PARVS can provide estimates of the volume of business dollars and people employed and which businesses are affected by recreation travelers' spending. This is the second of the two major indicators of the economic importance of outdoor recreation. Through this information, the interrelationships between investments, policies and decisions reached in the public and private sectors can be studied. Economic impact estimates can be generated down to the level of a specific county or more broadly to the level of intrastate, state or interstate regions. Following are examples of questions that can be addressed:

1. What amount and kind of visitor fees are administratively feasible and how much total revenue could be generated?

2. Would peak load pricing work to control periodic crowding at recreation sites?
3. Which site management activities and facilities are more important to recreation visitors?
4. How much business income and employment could be generated by providing a new recreation area in a rural, economically depressed county?
5. Do some types of recreation areas provide more local economic stimulation than others?
6. Which businesses are most likely to be affected by closing a particular recreation area to public use?
7. What form of consumption and/or business tax structure is possible for providing revenues for operating and maintaining recreation areas?

#### PARVS RESEARCH DESIGN

The learning that has occurred during previous similar national studies has been incorporated into the PARVS research design. In addition, since June of 1985 refinements have been made as we have learned from 3 pilot tests and final application of the research design of PARVS. Below we describe the materials, training, sample design, field procedures, data processing, and software and analyses.

#### Survey Instruments and Other Printed Material

Basically there are 9 components of the physical inventory of printed PARVS instrumentation. These include (1) an on-site interview form, (2) non-respondent form, (3) activity and income category lists, (4) group characteristics form, (5) coding manual, (6) handout bookmark, (7) mail questionnaire, (8) reminder postcard, and (9) the mail questionnaire scan form. Each of these components are discussed briefly below.

On-Site Interview Form. One of the 3 principal survey instruments is the brown-ink, electronically scannable on-site interview form. This form is administered as a personal interview of randomly selected visitors stopped in their vehicles upon exiting PARVS study sites. This form contains the following sections:

- a. Interview numbering and site identification
- b. Screening to identify candidate recreation visitors
- c. On-site activity profile (current trip)
- d. Annual activity profile (all trips during last 12 months)
- e. Travel time, distance, origin and destinations(s)
- f. Income and trip expense responsibility

The PARVS on-site form is lengthy, but tightly designed and requires careful administration. Experience over the last year indicates an average interview time of about 20 minutes, with a range of between 7 and 30 minutes. Of the almost 25,000 vehicle stops made between June of 1985 and May of 1986, approximately 80 percent were screened as recreational visitors. Of these recreational visitors, almost all accepted our request to be interviewed.

Non-respondent Form. A one-page form is maintained by the interviewers to record information about persons who are not interviewed by reason of not being a recreational visitor or not agreeing to be interviewed. Also, a daily tally of number of interviews is recorded for each site.

Activity and Income Category Lists. A one-page, front-back plastic laminated card with 53 recreational activities on one side and income categories on the other is used to speed up the interview process. This card-stock form is handed to the interviewee so that they can refer to these lists in responding to questions. Response to the income question requires only that the interviewee state the letter corresponding to the income range that includes their annual income amount.

Group Characteristics Form. A separate scannable form (blue ink) is designed for self administration by a second person in the stopped vehicle (if there are 2 or more people) or the principal interviewee (if there is only one person). Characteristics of each individual in the vehicle is obtained including age, sex, education and disabilities. This is a one-page, front-back form.

Coding Manual. A manual is provided to the interviewers that contains standard codes for counties and states, site identification numbers, occupational classifications, and codes for other recreational activities not included in the principal list of 53. This manual standardizes locational and respondent coding.

Handout Bookmark. A 2" by 6" bookmark is given to the respondent. On this bookmark the character Mr. Pencil is introduced and is shown explaining the PARVS study and the mail survey process that will follow upon the respondent's return home (or other origin).

Mail Questionnaire. This 5½" by 8½", 24-page mail survey instrument was carefully designed to weigh under 1 ounce (wet), to serve as a mail return vehicle, and to collect expenditure profile data. Mr. Pencil appears throughout to add interest and to guide respondents through sections asking about transportation means and overnight accommodations used, recreational equipment use, expenditures in preparation for and during the trip, trip-relevant expenditures during the past 12 months, willingness to pay for a vehicle pass to the site, and evaluations of the recreational visit to the site. Mr. Pencil instructs the respondent on questionnaire mailing procedures, which is postage prepaid.

Reminder Postcard. A blue reminder postcard (with Mr. Pencil) is mailed within days of the first mailing to site interviewees to encourage response to the mailback questionnaire request. If within 2-weeks of that first questionnaire's mailing a response has not been received, a second mailing of the questionnaire is issued. This is standard followup procedure for mail surveys.

Mail Questionnaire Scan Form. To facilitate machine optical scanning of the mailback questionnaire responses, a scannable form using an ink color different from that used on the other scan forms was developed. Data from the "write in" mail questionnaire are transcribed by research personnel onto the scan form.

#### Mr. Pencil

The character Mr. Pencil was incorporated into the PARVS survey instruments as a strategy to enhance interest and thereby increase response rates. While we did not test response rates with and without Mr. Pencil's help, comments from respondents and interviewers during pretesting indicated a very positive image. Mr. Pencil was previously used on a statewide survey and will be used on another upcoming national survey.

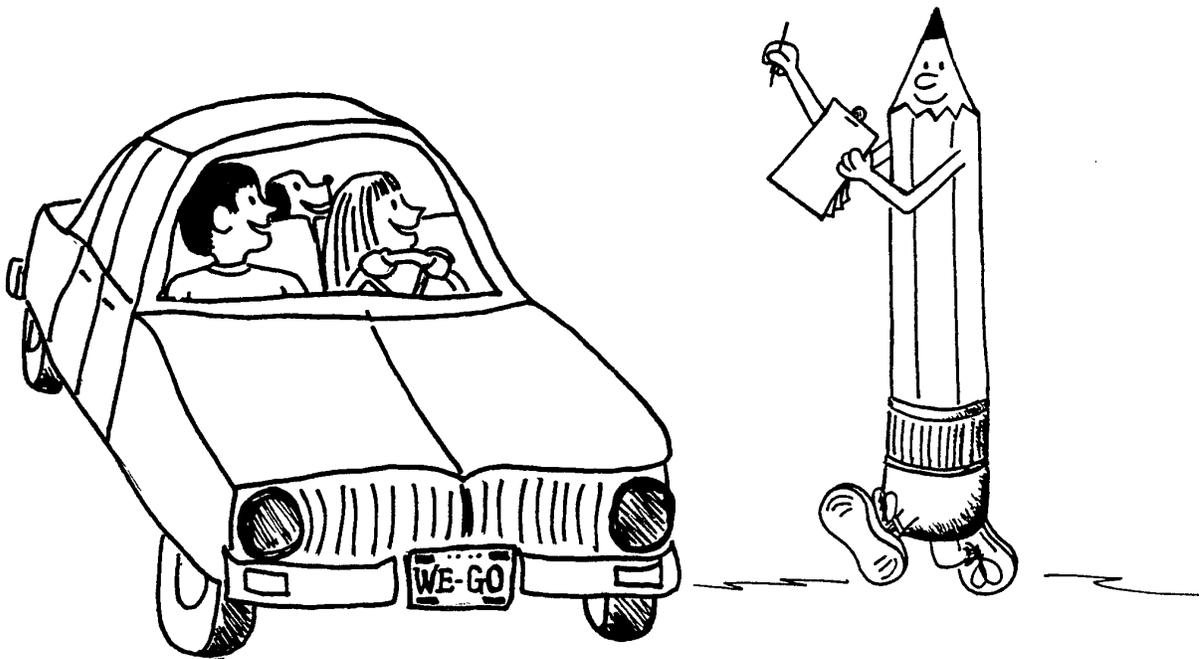


Figure 1. -- Character "Mr. Pencil" used in the mailback questionnaire portion of the Public Area Recreation Visitor Survey

## Training

One of the most important steps in implementation of PARVS is training of the interviewers. The PARVS instrumentation is tightly designed and must be administered uniformly by all interviewers at all sites. No deviations from procedure can be accommodated because of the interdependencies of the various questions and parts of the survey and to avoid introduction of interviewer bias. The recommended PARVS procedure is to train interviewers during a 1-week time equivalent session involving classroom instruction and practical experience at interviewing. Our training procedure has evolved to one that works best when administered over a 3-to-4 week period as a short-course taught in 2-hour sessions, twice per week. Two ½-day interviewing practice sessions are held during this period.

## Sampling Design

Sampling occurs in four phases -- site, date, on-site location, and interviewer selections.

Site. A site is defined as an administrative unit roughly equivalent to a National Forest district, a state park, a National Park, Corps of Engineers or TVA reservoir, or other management unit. Involved agencies identify the basic types of sites (strata) they administer (e.g., commercial, historic and natural parks) and then draw a geographically spread sample from each strata. Where desired, large samples of visitors can be collected from a single site to produce site-level estimates of the study parameters. Otherwise, site samples are intended to produce estimates applicable to a stratum or to a whole system of sites. The only difference is intensity of visitor sampling. Good estimates of visitation by the most significant types of visitors is essential to the PARVS study.

Date. If site use is substantially different in different seasons, months of the year, between weekends-and-holidays and weekdays, then collection of interviews during each major season or other time strata is necessary. Sample sizes should vary depending on the variability of visitation patterns and purposes.

On-Site Location. On a state park or National Forest or other comparable site, the intent of picking specific locations at which to interview is to represent the major types of site visitors. These types may be differentiated by principal recreational activity or purpose for visit, by travelling group composition (family, unrelated adults, etc.), by in-state/out-of-state origin, or by other characteristics. The major concern is to interview a sample of people from among those visitor types who exhibit different visitation and/or expenditure patterns. Interview locations are picked where these principal types of visitors are most likely to exit in large numbers and where they can be pulled safely to roadside. Where vehicular traffic flow is erratic or of low volume, interviews may be conducted at specific recreation facilities. Time of day and frequency of stops is systematically determined to represent the mix of visitors of interest.

Interviewee Selections. Once a vehicle is stopped or a recreating group is otherwise identified for an interview, a random selection of a person in the vehicle over 12 years of age is made. This focus on the individual recreationist is essential to weighting sample data back to represent total site visitation (typically expressed as visits, visitor hours, or visitor days by individuals, not groups). With individual data, weighted to the proportion of the visiting public they represent, relationships between visitation and expenditures and visitor origins, characteristics and motivations can be estimated.

#### Field Procedures

Deployment of a team of interviewers to selected "PARVS sites" requires rigid coordination and adherence to interviewing procedures. A central coordinator person is necessary so that unique site, interviewer, and interviewee numbers can be assigned. These numbers are the critical linkages between the on-site and mailback portions of the survey once data entry is completed. This central coordinator is also necessary for establishing the communication linkages between the interviewer, the site manager, and the survey assistant. The logistics of setting up a traffic stop and of flagging and stopping moving vehicles must be carefully administered.

Once a vehicle or recreating group has been identified for interviewing, a person over age 12 is randomly selected for interviewing. Simultaneously, another person over 12 is selected to fill out the group demographics form. Upon retrieving the demographics form and completing the interview, the interviewer immediately checks the forms to be sure all information is complete and that identification numbers are included. The person paying the respondent's expenses (himself included), is then identified and the mail portion of the survey is explained and permission is obtained for later mailing.

A first mailing, a reminder post card, and if necessary, a second mailing of the mail questionnaire is completed promptly after the on-site visit. Records are kept at the data processing center to maintain identity of who has and who has not responded.

#### Data Processing

Data from on-site interviews are on machine readable scanning forms. Data from the mail questionnaires are not and must be transcribed onto a scannable form by a team of data processors. All scannable forms are reviewed and detectable problems are corrected. Reviewed forms are then read using an optical scanning machine that can read 6,000 pages per hour, reading front and back simultaneously. These data are read directly onto a computer tape and then backed up for use in computer analysis. Interview, demographic and mail questionnaire data emerge as separate files with common site, interviewer and interviewee numbers. These separate files are merged into a single data set for each agency cooperating in PARVS. The result is a record for each respondent that includes 1087 different pieces of information about

Expenditure Data Formatting. This program module formats individual respondent expenditure profiles into per-category expenditure averages for the weighted sample. This data reduction, transformation step prepares the data for input into the IMPLAN input/output econometric model. It further transforms these weighted average expenditure amounts into personal consumption expenditure categories which subsequently are proportioned among sectors of the economy as defined by IMPLAN.

IMPLAN. IMPLAN is an input/output model that simulates the U.S. economy based on the 1982 Census of Business. It provides estimates of the amount of personal and property income, employment, and other business effects generated as a result of consumer spending in a region. IMPLAN is the product of the Land Management Planning Division of the U.S. Forest Service. It is operated from Ft. Collins, Colorado, and is the model to which the PARVS data were tailored. IMPLAN can produce estimates of the economic impact of recreationists' spending at as high a resolution as county level. The PARVS Working Group will sponsor a training session on use of PARVS data and IMPLAN modelling during the week of September 8, 1986.

Travel Cost Modelling. PARVS produces the data on travel distances and times and on substitute sites needed for travel cost modelling (TCM). With these data, estimates of the values of a recreational site visit can be estimated. TCM results can be used to estimate the recreational value of a site as well. When interfaced with a hedonic modelling technique, the values produced by various facility and management inputs and site characteristics can be estimated.

TCM methodology is being improved through the research efforts of the Valuation Research Unit at Ft. Collins, Colorado. A version of TCM software to operate on a microcomputer is nearing completion. The PARVS survey instruments were tailored to produce the necessary data for TCM modelling.

#### SOME PRELIMINARY DESCRIPTIONS OF THE PARVS SAMPLE

To illustrate the kind of descriptive data which PARVS can provide, we present below some preliminary summary information about the visitors included in the PARVS sample. These data are not weighted to represent the populations of users at the surveyed sites. Thus caution should be used in any further citation or use of these numbers since they represent only the sampled visitors.

#### Travel Distances and Length of Stay

A comparison of average, round-trip travel distance among selected federal land-management agencies revealed differences between samples (Figure 2). Sampled National Park Service and Corps of Engineers visitors were from greater distances, on the average, than Tennessee Valley Authority and USDA Forest Service visitors.

activities, expenditures, travel and characteristics. The data are further edited to detect and correct outliers, misaligned fields, coding errors and other obvious errors. Upon completion of these steps, the data are ready for analysis.

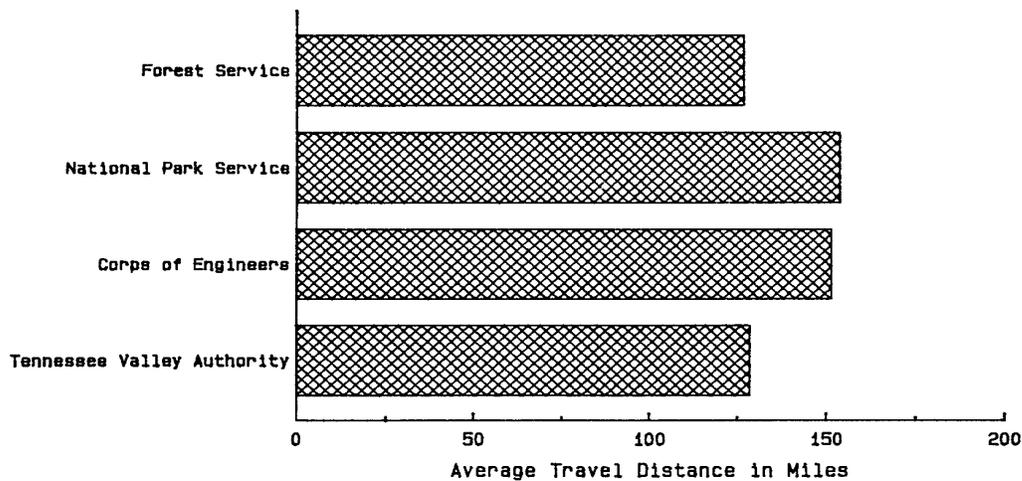
### Software and Analyses

A large amount of software programming and interfacing with existing programs has been done in order to analyze the PARVS data. The major components of this software and the resultant analysis and reporting capabilities it represents are reported below. The customized software for PARVS resides on the University of Georgia mainframe at Athens, Georgia. This mainframe is shared between the Athens location and Georgia Southern College at Statesboro. These two universities are the principal cooperators in the analysis.

File Management, Editing and Weighting. A lengthy program has been written to move, merge and segregate files within the PARVS data set. The enormous size of the PARVS files and the interdependency of variables within the data set required careful development of file management and editing software. Within this software the locations of each of the 1087 pieces of data are identified, combinations of these pieces are formed to enable file manipulations, and check parameters are installed to highlight problems. Using this software, any imaginable subset of the data can be retrieved down to and including, for example, a printout of activities reported by elderly, out-of-state visitors to the Shoshone National Forest on July 4, 1985. This software module will soon have the capability of weighting the sample data from PARVS so that it will represent the population of visitors sampled. This step enables reporting and interpreting directly from the PARVS data for management and policy decision input.

Descriptive Overview. A software module will soon be completed that produces a narrative report with graphs and tables describing the frequencies, means, modes, medians and other "first-cut" statistics describing the PARVS results. This module can be applied to any subset of the data having in it at least 300 respondent records. With a small amount of specification within the program, frequencies, means, medians, etc. can be compared across different site strata, years, user types, or other categorization schema.

Distance Computation. This program module uses either ZIP or FIPS code information for identifying the geographic locations of origin and site destination by longitude and latitude. Origin-to-destination, straight-line distances are then computed. This program module can also calculate the proportion of travel distance that lies within a defined region (e.g., multicounty, state, multistate). This defined region is the impact region within which later analyses estimate local and regional economic impact. The assumption is made that proportion of travel distance within a region represents the proportion of enroute expenditures made within the region.



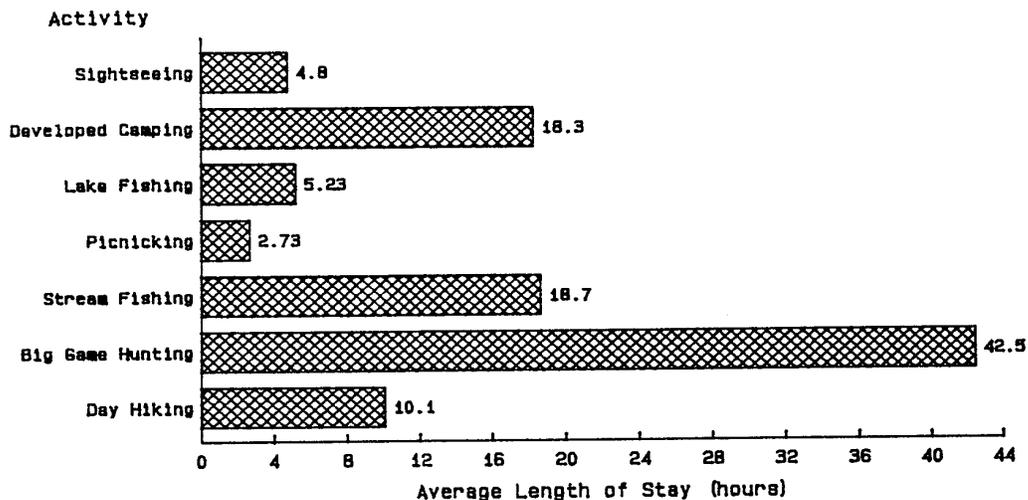
SOURCE: Public Area Recreation Visitor Survey, preliminary results, summer, 1985.

Figure 2. -- Average travel distance by sampled visitors to selected federal areas -- 1985.

An examination of average travel distance by trip length for PARVS visitors to state parks provided information about possible market area differences for different state systems. First the correspondence between longer duration trips and greater average roundtrip mileage is shown. Also, comparisons among different state park systems revealed that sampled visitors to some state park systems have shorter average travel distances across most trip-length categories. These differences are often due to differences in characteristics of the resources, available activities, marketing strategies, and relative distances to major population centers.

The length of time sampled visitors stayed at state parks varied greatly between primary recreation activities. Visitors going to state parks primarily to camp obviously would stay longer than visitors pursuing other activities. But, length of stay varied for other activities depending on which state the interviews occurred in. Again, such differences usually reflect both the type of resources available in the different state park systems and differences in management emphasis.

The length of time sampled visitors stayed at National Forests varied greatly with primary recreation activity (Figure 3). On the average, respondents who went to National Forests primarily for picnicking, sightseeing or lake fishing stayed for relatively short periods. Visitors who went for big game hunting, camping or stream fishing stayed longer, generally including at least 1 overnight stay. On the average, surveyed day hikers stayed a full 10-hour day.



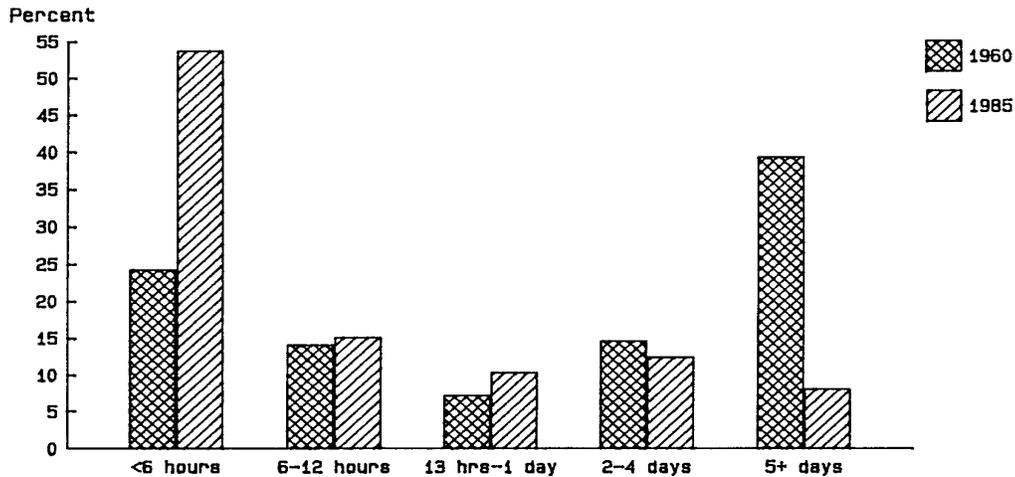
SOURCE: Public Area Recreation Visitor Survey, summer 1985 data. NOTE: Figures represent unweighted sample data.

Figure 3. -- Average length of stay by sampled visitors to selected National Forests by primary activity as reason for visit -- 1985.

The length of time interviewed visitors stayed at National Parks and at Corps of Engineers sites also varied greatly with their primary recreation activity. Those going primarily for picnicking or lake fishing stayed no more than 2 hours on the average. Interviewed persons whose primary activity was visiting historic sites or sightseeing stayed for the better part of a day. Those visiting National Parks for saltwater fishing, observing and photographing wildlife, or visiting prehistoric sites stayed more than 8 hours on the average.

Surveyed visitors going to Corps areas primarily for sightseeing stayed for very short periods of time while those whose primary activity was picnicking stayed several hours. Respondents whose primary trip activity was motorboating, developed camping, or waterskiing stayed much longer, generally including at least 1 overnight stay. People visiting Corps projects to go lake fishing stayed an intermediate length of time, often involving an overnight stay.

The PARVS sample can also be compared with previous surveys to obtain trend information. In 1960, not quite one quarter of recreational trips to public lands were less than 6 hours long while almost 40 percent of these trips lasted at least 5 days (Figure 4). In 1985, over 53 percent of sampled trips to public lands lasted less than 6 hours and only 8 percent lasted more than 4 days. This may point to an important shift in the way Americans recreate; away from week-long trips as the primary recreation mode and more toward day trips. If these results hold up even after the PARVS data are fully developed and weighted, this will be a dramatic finding.



SOURCE: ORFAC Study Report #5, Table 14; Public Area Recreation Visitor Survey, preliminary results, summer 1985.

Figure 4. -- Time series comparison of time away from home for recreation trips from samples of visitors to public areas -- 1960 and 1985.

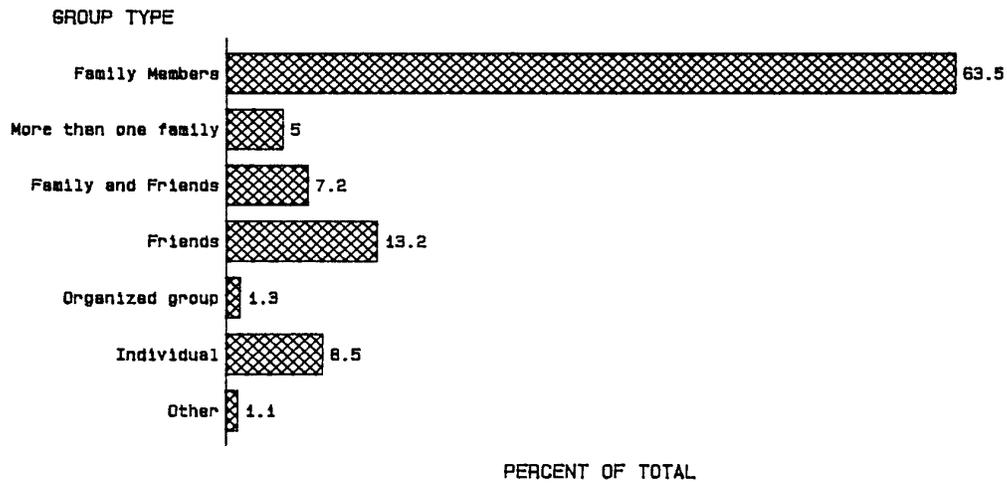
#### Group Composition

Our sample included family groups as the most common type of group visiting PARVS survey areas (Figure 5). They totaled nearly two-thirds of groups sampled for PARVS. Groups of friends were the next most common group surveyed, and over 8 percent of the PARVS respondents were individuals traveling alone. Despite a national trend of increasing diversity in household type and fewer "typical" family groups, it is interesting to note that outdoor recreation on state and federal lands seems still to be predominantly a traditional family activity. One may not assume, perhaps, that all these groups are nuclear families.

Two of every 3 groups interviewed at PARVS public recreation areas were from the same household. This agrees with the above finding which showed that 64 percent of groups were comprised of family members and another 9 percent of single individuals. Taken together, it seems that about 8 percent of sampled groups are family members who do not all live together, but who were taking a joint outing or trip. About 18 percent of groups used more than 1 vehicle.

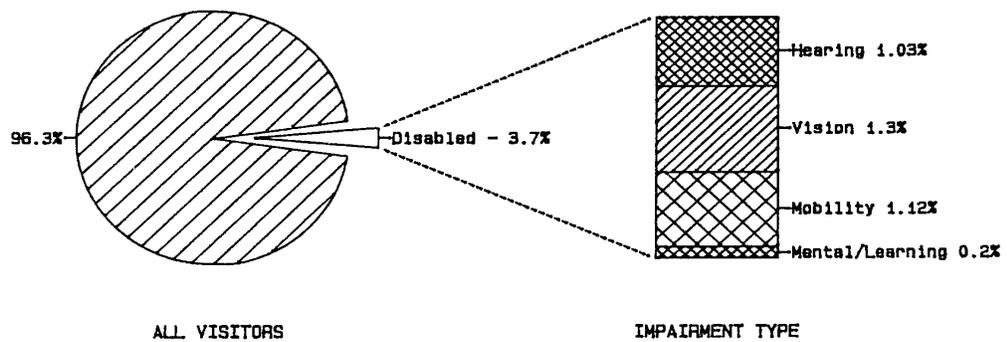
#### Other Characteristics of Sampled Visitors

Vision, mobility and hearing losses are the most common impairments which classified some PARVS interviewees as disabled. In the PARVS sample, disabled visitors represented 3.7 percent of state and federal visitors (Figure 6). Typically, however, there are many more disabled persons who use local park and recreation facilities and these have not yet been included in PARVS.



SOURCE: PARVS unweighted Summer/Fall 1985 data.  
 Combined USDA-FS, NPS, COE, TVA & State  
 Parks: GA IN KS MO MN NJ SC TN VA

Figure 5. -- Percentage of sampled visiting parties classified by type of group at public recreation areas -- 1985.



SOURCE: PARVS unweighted 1985 Summer/Fall data.  
 Combined USDA-FS, NPS, COE, TVA & State  
 Parks: GA IN KS MO MN NJ SC TN VA

Figure 6. -- Percentage of surveyed visitors with impairments to public areas by type of impairment -- 1985.

The Public Area Recreation Visitor Survey collects other standard demographic information on all group members traveling with the individual being interviewed. Data on race of surveyed visitors revealed a large majority of whites (92 percent), larger than would be expected given the racial distribution of the total population in the United States. In interpreting these data, it should be noted that the PARVS national sample was not evenly distributed nationwide, as fewer state park agencies in the West participated in the survey than in the South and East. This sample distribution may also partially explain the low percentages of visitors of Asian or Hispanic descent.

Based on these preliminary PARVS data, from 1960 to 1985 the median income of visitors in constant 1960 dollars increased. In both 1960 and 1985, the most affluent visitors were those at National Park Service areas. The greatest apparent percentage increase in median income (20%) was also for visitors to NPS areas.

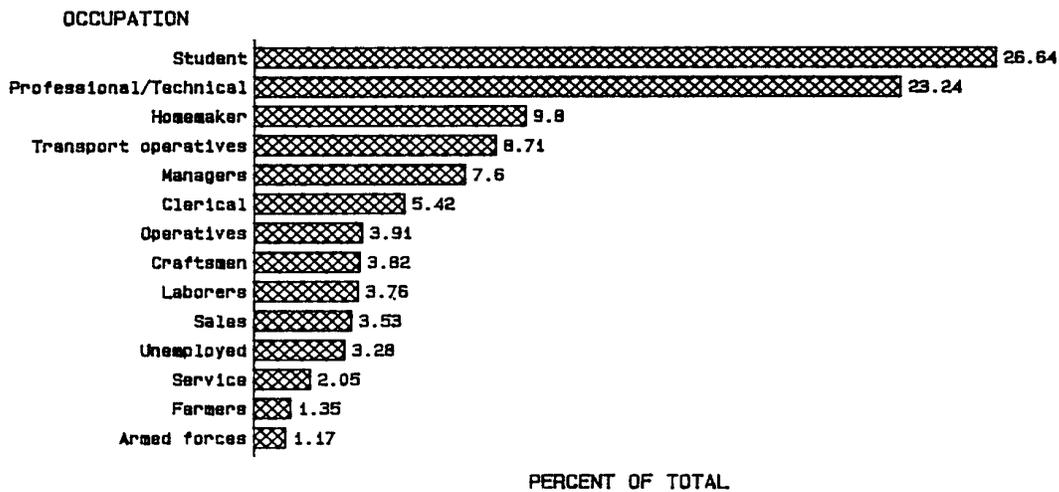
Visitors to National Forests showed very little real increase in reported median income. In 1960 National Forest visitors were the second most affluent. By 1985, the PARVS sample indicates that the median income of both state park visitors and visitors to TVA and Corps of Engineers sites may be higher than the median income of Forest Service visitors.

The proportion of persons visiting public recreation areas who have fewer than 9 years of formal schooling may have more than doubled in the last 25 years. At the same time, the proportion with some postgraduate education seems to have dropped by 10 percent. The percentage of persons under age 20 had risen by 16 percent since 1960. These visitors range from 5th graders to college sophomores or juniors and thus have lower educational levels.

Student, professional and technical occupations characterize 50 percent of surveyed visitors to federal and state recreation areas. Notably absent from the sample were blue collar occupations and farmers. (Figure 7).

In 1960, almost 2/3 of visitors to public recreation areas, excluding those under 12 years old, were in their 30's or 40's. Preliminary 1985 data indicates that this percentage has dropped substantially. Larger proportions of visitors under age 20 and over age 59 are indicated by the 1985 PARVS summer data.

There are three "humps" in the age patterns of sampled visitors -- about 7 to 17, 28 to 44, and 62 to 68. The middle age group represents adults in family groups with children. Young adults between 18 and 27 years and older adults between 45 and 60 seem to be represented less than people in these adjacent age groups. Adults in their 60s were relatively numerous, probably because of increased leisure time early into retirement. A dramatic drop in visitation is indicated at about age 70, perhaps reflecting changed mobility, health, and discretionary income situations.



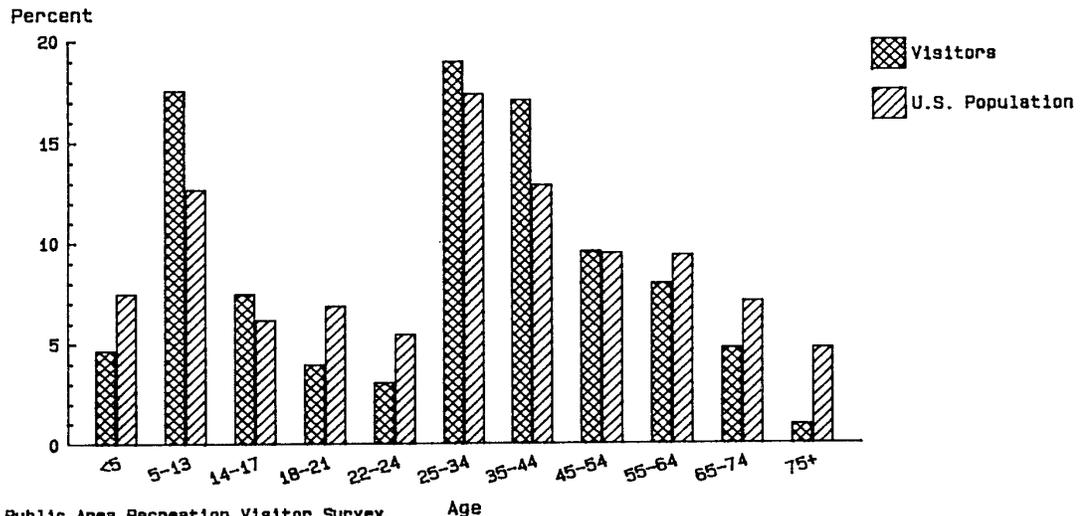
SOURCE: PARVS unweighted Summer/Fall 1985 data.  
 Combined USDA-FS, NSP, COE, TVA & State  
 Parks: GA IN KS MO MN NJ SC TN VA

Figure 7. -- Percentage distribution of members of groups included in the PARVS sample by occupation -- 1985.

Comparison of 1985 summer data from the Public Area Recreation Visitor Survey (PARVS) with current Census Bureau population estimates further substantiated this observed disproportionate age distribution of visitors (Figure 8). These data revealed that a disproportionately large number of individuals between the ages of 25 and 44 and between the ages 5 and 13 visit federal and state recreation areas. Teenagers and the elderly seem to be under-represented.

#### PARVS AND THE NEED FOR ON-GOING INTER-GOVERNMENTAL COOPERATIVE RESEARCH

PARVS is a success story of productive intergovernmental cooperative research. Universities, state agencies, private organizations and federal agencies have cooperated to develop and implement state-of-the-art methodology for assessing the economic importance of outdoor recreation. There are and have been other success stories, for example, the National Private Land Ownership Study (12 universities, 4 federal and several state agencies, and 4 private organizations) and the National Recreation Surveys (typically involving several federal agencies). There is need to further explore cooperative research arrangements applied to outdoor recreation.



SOURCE: Public Area Recreation Visitor Survey, preliminary results, summer 1985; Statistical Abstract of the U.S., 1986.

Figure 8. -- Percentage distribution of members of groups included in the PARVS sample and of the U.S. population by age -- 1985.

#### Advantages of Cooperative Research

Intergovernmental cooperation in efforts such as PARVS has many advantages. The more significant of these advantages include:

1. Low average costs for data. The cost per PARVS record (case) for printing, shipping, mailing, travel, on-site interviewing, entering and analyzing data and developing descriptive statistics is less than \$15. In addition, and probably more significant, by sharing data and data collection, many fewer cases are needed by any one agency to meet individual needs.
2. Common data base. Identical data, sampling frame, definitions, and analytic approaches provide the advantages of comparability across jurisdictions and across geographic locations. This obviously enhances the generalizability of any resultant findings. Careful research design through application of combined expertise also heightens the credibility of the data and findings.
3. Basis for on-going collection of comparable data. Widespread involvement and agreement upon methods and variables can and very likely will lead to on-going application of PARVS so that longitudinal data are collected. By thus establishing comparability over time, a great deal can be learned about time trends.

4. Stimulus to develop further cooperative research. Successful development and completion of cooperative projects such as PARVS leads to a rapport and mutual respect for sharing costs, data and expertise. This positive working relationship can and usually does lead to further productive efforts.

#### Continuing Research and Assessment

Recreation demand and supply situations are in constant flux. Market forces, public tastes, international balances of trade, environmental change, and technological advancements are only a few among the many factors which direct this flux. Public and private providers of recreation opportunities need to be responsive to market changes. This requires accurate information and better ways to generate this information. We cannot and should not rely upon antiquated data, nor should we be complacent with existing methodology. Methodology, and theory, must constantly be improved.

Recent budget reductions along with some program eliminations have hit recreation research and data development especially hard. Although inconsistent with the continued and obvious rising demand for recreation opportunities, these reductions are a reality. Updated data bases must be available if we are to appropriately plan recreation delivery and if we're to determine who is losing and who is gaining as the demand/supply balance and distribution shifts, as it surely will. We encourage continued application of PARVS both toward new objectives and on new places. We encourage as well, building this data base in stages over time with continuing updating.

