

TRENDS IN DAY USES OF

PARKS AND FORESTS¹

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Abstract.--Trends for seven day use activities were compared from national recreation survey data collected in 1965, 1972 and 1977. General increases in involvement of the total population was found for the 1965-1977 period. Little change in participation was found for racial and sex characteristics, but shifts in participation were found for age and education groups that could have significant impacts on the future of outdoor recreation.

INTRODUCTION

The United States is a nation that maintains almost a demonic interest in collecting data about just about everything. Participation in outdoor recreation has not escaped this gaze, with several national and many regional, state and local surveys being done since the 1950's. Of all the outdoor involvement that has been measured, day use activities done in parks, forests and other recreation places represent one area that has received substantial attention perhaps because they are pursuits that can be done both locally and regionally and impact almost every facility level.

Unfortunately, it has often been difficult to monitor changes over time in participation because the data needed to do it were not available or exactly comparable. The Bureau of Outdoor Recreation, now known as Heritage Conservation and Recreation Service, has been involved in several national surveys of outdoor recreation.

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Leisure scientists have found it difficult obtaining the data to allow secondary analysis. This tendency appears to have been changed with the 1977 national survey. Several scientists acquired actual copies of the original data tapes or participated in preparing an assortment of papers that explored various relationships of other data with the 1977 survey results or exclusively concentrated on the survey itself. As the research community learned more about this national data, there was an increasing interest to gain access to actual data tapes of some of the other original national surveys. Beyond initial reporting in the official publications describing results, very little additional study appears to have been made of this information and there has been an absence of comparative analysis. However, three of these national surveys (1965, 1972 and 1977) have become available to researchers at Purdue University and the University of Michigan. Since the surveys contain much information about day use involvement and can be compared for selected questions, this paper will examine seven selected activities and the manner in which involvement is distributed within the population for 1965, 1972 and 1977. The orientation of the paper concentrates on using activity involvement to examine day-use of parks and forest because use has normally been measured in most studies via the activity route. Similarly, the nature of the variables in the data available could be compared most satisfactorily in this way. The material is seen as being exploratory in that no explicit hypotheses are tested, yet because of the absence of previous comparative work, this effort can set the stage for subsequent in-depth secondary analysis.

PROCEDURE

Copies of the data tapes for the 1965 Bureau of Outdoor Recreation National Recreation survey, the 1972 Audits and Surveys National Recreation Survey and the 1977 Bureau of Outdoor Recreation National Outdoor Recreation Survey were obtained for analysis of the day use activities, bicycling, other boating, fishing, hunting, picnicking, sailing and swimming (pool and other outdoor). Information describing the features of the three surveys is presented in Table 1. Computer analysis of the 1965 and 1972 surveys was done at the University of Michigan and analysis of the 1977 survey was done at Purdue University using similar SPSS statistical package programs. For each year, the activities were examined to obtain the total percent of those who had reported participating. Then five socioeconomic/demographic variables (income, age, race, sex, and education) were used to examine the percent distribution of participation by categories that were common to the three surveys.

In the 1977 survey respondents were asked whether or not they participated in the activities during the previous year and a yes/no response was obtained. However, in both the 1965 and 1972 surveys the respondents were queried about their activity involvement using several different questions. To obtain an aggregate measure of participation in an activity during a year, each question was searched. If there was a positive response to any of the questions, then that respondent was identified as a participant for calculation of percent of the population that was participating in an activity. There should be no double counting.

It is important to note this strategy. After considerable thought this procedure was selected. It appeared to be the logical way to examine the data for the aggregated measure of involvement we needed. However, when the final results are examined, none of the final results are the same as those reported in the "official" 1965 and 1972 publications. In most cases, the data reported here is slightly higher. Thought was given to why these differences might exist, but in the absence of documentation about procedures used in the original tabulations it was impossible to do any type of complementary analysis.

Comparability of the Three Surveys

One of the key issues that needs examination in any use of different data sets is the comparability of the material. In the case of the three national surveys used

in this paper there are at least two sources of information that have been consulted. Kirschner Associates (1975) prepared an in-depth review for the then Bureau of Outdoor Recreation of five nationwide citizen surveys dealing with outdoor recreation. Included in this discussion was a comparison of the 1965 BOR Survey and the 1972 Audits and Surveys survey used here. In addition, Blahna (1979) has reviewed and compared the 1972 survey work with the 1977 Outdoor Recreation Nationwide survey.

The Kirschner Associates document is an extensive review (close to 300 pages) that makes comparisons, provides copies of questionnaires and makes recommendation for subsequent work in the citizen survey area. In their comparison of the 1965 and 1972 surveys, a basic finding was that because of the nature of the 1972 instrument the reporting of participation would probably tend to be conservative or underestimated because of the redesign for use in demand equations. Based on their review it does appear that gross comparisons (% of people participating) and types of persons participating in specific activities are possible. Since this was the goal of the "day-use" activity orientation in this paper the comparisons we made seemed reasonable.

Blahna's (1979) review of the 1972 and 1977 surveys also pointed to areas of concern. First, the activity participation reported in the 1977 survey appear to be high based on reviews of other surveys done between 1973 and 1978. This may be related to the low response rate encountered in the telephone interviewing and the tendency of this procedure to include those who are most interested in the subject area.

Of the activities that were examined, the phrasing of the question for swimming created a problem. In the 1977 survey the question linked the activity "sunbathing" to swimming thus identifying two activities and confounding the issue of involvement. We would assume that this would inflate the response to the question.

Finally, to construct a participation percent for each activity in the 1972 survey, the data had to be accumulated from four questions. The first three questions addressed the three summer months of 1972 and inquired about activity involvement on vacations, overnight trips, recreational outings that took the better part of a day, and finally for other short recreation outings. Then another question was posed to ask about a nine month period from September to May and the activities done in that period.

Table 1. Features of the 1965, 1972 and 1977 Survey Samples

	Y E A R		
	1965 ^a	1972 ^b	1977 ^b
Type of Interview	Personal	Personal	Telephone
Time Period Coverage	3 summer months	3 summer months plus rest of year	entire year
Number of Respondents	7194	4029	4029
Response rate	91%	54%	51%
Respondent Age	12+	12+	12+
Sample Selection	persons from CPS households	1 person/household in a systematic cluster sample of households	random systematic sampling of counties and random digit dial technique (up to 4 callbacks for no answers)

^aKirschner Associates (1975)

^bBlahna (1979)

Table 2. Comparison of 1972 and 1977 survey questions about swimming.

Y E A R	
1972	1977
Outdoor pool swimming	Swimming or sunbathing in an outdoor pool
Other swimming	Other outdoor swimming or sunbathing

The subjects in the 1977 survey were read a list of activities and asked whether or not they had done any of those in the last 12 months. This was done on the first page of the survey instrument while respondents were still fresh. The complexity of the 1972 questions may have caused those not particularly interested in the survey to respond negatively simply to get the whole process over with.

RESULTS

Analyses of the overall percent of the population reporting involvement in the period 1965-1972. These decreases are rather dramatic, in some cases indicating that there was a drop in participation of almost 50%. Of course, this is inconsistent with contemporary gospel about recreation use. Yet even in the published material that provided summaries of the 1965 and 1972 data, decreases or relative stability in the amount of use was reported (Kirschner, 1975: Appendix D). There are at least two explanations for these apparent changes. One is that there actually was a downward change in the nation's involvement in outdoor recreation. This is a difficult hypothesis to accept since most on site visitation data suggests continuing growth. Perhaps the more likely reason for the changes is related to the methodological changes that suggest an underestimation of involvement. Yet the differences are still somewhat unusual.

It is important to note that two of the activities - fishing and hunting - showed mild increases in the same period that the other activities were decreasing. The subtle upward change found for fishing (30% to 31%) in our analysis is in opposition to the information that was published describing a decrease from 30% to 24%.

While the analysis done here points toward questions about the original analysis of these two data sets, there is at least a general observation to be made. Although the absolute numbers are not the same, the tendency to report decreases from 1965 to 1972 is consistent for five of the seven activities examined.

In light of the 1972 data, comparing it to the 1977 data is somewhat easier. In every case, participation reported from the 1977 survey shows a dramatic to moderate increase. For example the portion of the population involved in bicycling went from about 21% in 1972 to 50.4% in 1977. Boating involvement doubled; fishing increased 23% over the 1972 level; picnicking rose to a

Table 3. Percent involvement in all activities, 1965, 1972, 1977.

Activity	YEAR		
	1965	1972	1977
Bicycling	29.4	20.9	50.4
Fishing	30.2	31.2	54.2
Hunting	13.5	14.8	18.7
Other Boating	30.4	17.4	36.3
Picnicking	62.2	52.4	73.8
Sailing	7.1	3.0	13.2
Swimming	51.3		
Pool		21.2	66.7
Other outdoor		36.4	49.2

level 20% higher. One of the most intriguing changes is in swimming at a pool which showed 300% growth. A companion activity - other outdoor swimming - increased about 13% over its 1972 level. The swimming changes are particularly confounding because sunbathing was included as part of the activity description. The changes reported suggest measurement of two activities and it is impossible to disaggregate the results to reflect the contribution of each to the overall number. Finally, hunting is the only activity demonstrating a subtle upward movement from 14.8% in 1972 to 18.7% in 1977.

Again an earlier point should be reemphasized. The change in the manner in which questions were asked about participation (one question in the 1977 instrument vs. several questions in 1965 and 1972) and the location of the question right at the beginning of the 1977 instrument may have had a significant effect on response. Similarly, the response rate for the 1977 survey may show some selection of respondents most interested in outdoor recreation.

Participation and Descriptive Population Characteristics

Tables 4 thru 12 provide descriptive socioeconomic and demographic information for those individuals reporting involvement in the day use activities being examined. An initial observation that can be made about this data is that in every activity there are persons from every socioeconomic/demographic category involved. The number of characteristics provided make summary difficult. In addition, the income categories that are used in each of the three surveys are difficult to compare. First, \$6000 in 1965 is valued much differently than it is in 1977.

Similarly the 1972 (15,000-24,999;>25,000) and 1977 (25,000-50,000; >50,000) surveys added additional categories to the >\$15,000 figure used as the upper level in 1965.

Comparison of the data appears to show that non-white involvement in these activities has changed little in the 12 year period. In some activities there actually appears to be a minor decrease (e.g., hunting, other outdoor swimming, pool swimming, boating and sailing). Small increases or no change in non-white involvement are apparent in bicycling, picnicking and fishing. Similarly, there are significant differences between some activities by sex, but within activities there appear to be few shifts (an exception to this is in hunting).

Age and education appear to be the most complementary categories that can be compared in the three surveys. While there are differences within each group over time, the general shape of these distributions is similar. It is interesting to note that the 1977 data appears to show lower levels of involvement for the younger age groups for virtually all the activities. It also shows higher levels of involvement than ever reported before in the 25-44 age groups for all the activities. This latter observation is especially true for bicycling. Involvement by persons in the 25-44 age group has almost doubled since 1972, and shown a sizeable change since 1965.

Sailing appears to have been a particularly volatile activity (if you can use the word to describe the process) decreasing in involvement for every age group except for those 25-44. Other boating demonstrates a similar tendency.

When involvement in the activities is compared by education levels, the results from the 1965 and 1972 surveys are quite similar. Sharp peaks are apparent in the percent of those with a high school education doing an activity. The 1977 data shows evidence that those reporting a college education are more involved in these day-use activities than ever before. The distributions are rather similar in their general shape. Almost all of these changes represent 100% increases over either the 1965 or 1972 situation. Sailing is an interesting activity in that the 1972 and 1977 data for those with college education and above virtually coincide.

DISCUSSION

The trends in the seven day-use activities provide a point of departure for

discussing longitudinal data examinations. It is interesting to consider that we were not able to replicate the exact results that had been officially published. Although a number of attempts to duplicate the original fundings were made, none of these seemed to work. While the results from these analyses appear to be close, it has taken this retrospective review to raise questions about possible differences. The Kirschner Associates report suggested some other considerations that would also lend themselves to possibly clarifying the survey results and making them more useful (exploring selected differences between variables; changing the weighting scheme; evaluation of preferences, etc.). It seems clear that more adequate documentation is necessary for these data sets, something which goes beyond a listing of variables and their column locations.

More research (and secondary analysis at that) should be directed at the surveys to explore in greater detail the complexity of the relationships in the data. For example, the observation that for almost all the day-use activities younger persons (12-17; 18-24) are not participating as a group at the same level as they did in 1965 or 1972 is rather intriguing. Even if we were to disregard the 1972 survey, a change in the 12 years from 1965 to 1977 appears to have taken place. The immediate question to be asked would be if this pattern is the same for all the other activities that could be compared. It would be possible to explore some of the possible reasons for change based on additional questions asked in the 1977 survey. It is also interesting to speculate on what will happen to this group as they become older since some literature appears to suggest that early recreation experiences will impact involvement later on in one's life.

Perhaps one of the more interesting observations from the trend data is the increase in the proportion of the population with college education participating in day-use activities. The change is so dramatic that at least some consideration should be given to the alteration. We would anticipate that this group would maintain an above average income with more of it available for leisure expenditures. Therefore, we might anticipate that there would be greater interest in the acquisition of accoutrements associated with the activities. Similarly we would anticipate a more knowledgeable group of users pursuing the activities under consideration. This would potentially impact the view of the participating public on the management activities undertaken to provide the activities. Managers may find that they will be increasingly questioned about their activities because of the increased involvement

Table 4. Socioeconomic/demographic characteristics for Bicycling, 1965, 1972, and 1977 outdoor recreation survey.

Characteristic	YEAR		
	1965	1972	1977
Income			
<6000	44.9	16.4	7.6
6000-9999	31.0	27.7	15.6
10000-14999	17.2	28.3	25.1
>15000	6.8	20.6	34.2
		15000-24999	25000-49999
		>25000	>50000
		7.0	14.4
			3.0
Age			
12-17	35.0	43.1	25.3
18-24	14.9	18.6	19.8
25-44	28.4	26.6	39.4
45-64	16.1	9.4	12.2
over 65	5.6	2.2	3.3
Race			
White	88.4	82.6	86.1
Nonwhite	11.6	12.6	10.8
		Black	Other
		4.8	3.1
Sex			
Male	46.9	44.1	49.0
Female	53.1	55.9	51.0
Education			
Grade School	7.2	6.9	3.6
Junior High	21.4	18.1	11.1
High School	55.8	50.4	44.7
College	14.1	19.9	33.4
Graduate	1.4	4.7	7.3

Table 5. Socioeconomic/demographic characteristics for Fishing, 1965, 1972, and 1977 outdoor recreation survey.

Characteristic	YEAR		
	1965	1972	1977
Income			
<6000	42.5	21.2	9.5
6000-9999	32.8	32.6	16.7
10000-14999	17.5	27.9	26.1
>15000	7.2	13.7	32.0
		15000-24999	25000-49999
		>25000	>50000
		4.6	13.1
			2.6
Age			
12-17	23.2	19.6	19.0
18-24	15.3	16.0	15.9
25-44	33.4	36.7	37.7
45-64	22.7	22.8	19.9
over 65	5.4	4.0	7.6
Race			
White	92.8	88.3	88.5
Nonwhite	7.2	8.8	8.8
		Black	Other
		2.9	2.7
Sex			
Male	57.6	61.2	58.1
Female	42.4	38.8	41.9
Education			
Grade School	6.8	6.3	3.9
Junior High	18.2	16.1	10.9
High School	57.1	55.2	48.1
College	15.7	18.9	31.1
Graduate	2.2	3.6	6.0

Table 6. Socioeconomic/demographic characteristics for Hunting, 1965, 1972, and 1977 outdoor recreation survey.

Characteristic	YEAR		
	1965	1972	1977
Income			
<6000	49.7	18.5	8.4
6000-9999	30.8	37.0	14.5
10000-14999	14.5	27.7	24.9
>15000	5.0	12.6	35.3
		15000-24999	13.7
		>25000	3.2
		25000-49999	
		>50000	
Age			
12-17	20.5	15.9	17.0
18-24	19.7	17.9	18.5
25-44	35.8	39.8	40.1
45-64	19.6	21.2	18.7
over 65	4.4	5.3	5.6
Race			
White	92.7	91.4	94.1
Nonwhite	7.3	6.7	3.8
		Black	2.1
		Other	
Sex			
Male	87.8	81.8	79.9
Female	12.2	18.2	20.1
Education			
Grade School	8.8	5.7	3.8
Junior High	17.2	15.0	9.6
High School	57.7	58.9	52.7
College	14.4	18.3	29.8
Graduate	1.9	2.2	4.1

Table 7. Socioeconomic/demographic characteristics for Boating (Other), 1965, 1972, and 1977 outdoor recreation survey.

Characteristic	YEAR		
	1965	1972	1977
Income			
<6000	37.8	13.0	6.7
6000-9999	33.8	26.6	14.9
10000-14999	20.2	31.7	23.1
>15000	8.3	22.4	34.5
		15000-24999	16.9
		>25000	3.9
		25000-49999	
		>50000	
Age			
12-17	20.9	20.6	18.4
18-24	17.7	17.8	17.0
25-44	33.4	37.1	40.7
45-64	22.5	21.1	17.1
over 65	5.6	3.2	6.8
Race			
White	95.5	93.3	92.6
Nonwhite	4.5	4.8	5.1
		Black	2.3
		Other	
Sex			
Male	54.1	49.8	55.3
Female	45.9	50.2	44.7
Education			
Grade School	4.8	4.3	2.6
Junior High	16.1	11.7	8.2
High School	56.9	52.2	45.0
College	19.9	26.0	36.0
Graduate	2.3	5.9	8.1

Table 8. Socioeconomic/demographic characteristics for Picnicking, 1965, 1972, and 1977 outdoor recreation survey.

Characteristic	YEAR			
	1965	1972	1977	
Income				
<6000	44.4	20.4		10.2
6000-9999	33.0	32.8		17.2
10000-14999	16.7	26.8		24.8
>15000	5.9	15.4		32.1
		15000-24999		
		>25000		
			25000-49999	13.1
			>50000	2.4
Age				
12-17	18.3	16.0		14.9
18-24	15.4	16.9		14.7
25-44	37.7	36.0		40.0
45-64	21.6	24.2		21.3
over 65	7.1	6.8		9.1
Race				
White	91.4	86.2		87.4
Nonwhite	8.6	10.1		9.7
		Black		
		Other		2.9
Sex				
Male	46.0	43.9		47.5
Female	54.0	56.1		52.5
Education				
Grade School	5.7	5.8		2.7
Junior High	17.2	14.3		9.6
High School	57.1	54.4		46.2
College	17.2	20.4		33.1
Graduate	2.9	5.1		8.3

Table 9. Socioeconomic/demographic characteristics for Sailing, 1965, 1972, and 1977 outdoor recreation survey.

Characteristic	YEAR			
	1965	1972	1977	
Income				
<6000	36.8	7.2		4.6
6000-9999	31.5	10.6		11.9
10000-14999	20.0	31.7		15.9
>15000	11.8	26.1		35.2
		15000-24999		
		>25000		26.6
			25000-49999	
			>50000	5.7
Age				
12-17	19.5	22.9		19.9
18-24	16.2	23.5		19.2
25-44	33.7	31.5		43.8
45-64	21.4	18.9		14.4
over 65	9.3	3.2		2.7
Race				
White	93.7	97.5		91.3
Nonwhite	6.3	2.0		6.5
		Black		
		Other	0.5	2.1
Sex				
Male	51.9	54.3		52.2
Female	48.1	45.7		47.8
Education				
Grade School	7.1	3.2		2.3
Junior High	18.9	10.0		7.1
High School	46.8	29.2		33.4
College	23.8	44.9		43.9
Graduate	3.5	12.7		13.4

Table 10. Socioeconomic/demographic characteristics for Swimming,
1965, 1972, and 1977 outdoor recreation survey.

Characteristic	YEAR		
	1965	1972	1977
Income			
<6000	38.2		
6000-9999	34.3		
10000-14999	19.1		
>15000	8.4	15000-24999 >25000	25000-49999 >50000
Age			
12-17	25.1		
18-24	19.4		
25-44	36.0		
45-64	16.7		
over 65	2.9		
Race			
White	93.3		
Nonwhite	6.7	Black Other	
Sex			
Male	50.1		
Female	49.9		
Education			
Grade School	4.2		
Junior High	15.3		
High School	57.7		
College	19.7		
Graduate	3.1		

Table 11. Socioeconomic/demographic characteristics for Other Outdoor Swimming,
1965, 1972, and 1977 outdoor recreation survey.

Characteristic	YEAR		
	1965	1972	1977
Income			
<6000		15.8	7.2
6000-9999		29.3	15.9
10000-14999		28.1	25.3
>15000		15000-24999 >25000	25000-49999 >50000
		18.9 7.9	33.1 15.5 2.9
Age			
12-17		25.3	19.3
18-24		21.2	18.5
25-44		38.5	42.9
45-64		13.5	15.7
over 65		1.6	3.7
Race			
White		89.1	91.5
Nonwhite		Black Other	5.8 2.7
		6.5 4.4	
Sex			
Male		46.8	50.1
Female		53.2	49.9
Education			
Grade School		3.6	2.0
Junior High		12.9	9.1
High School		54.9	44.1
College		23.0	36.0
Graduate		5.6	8.8

Table 12. Socioeconomic/demographic characteristics for Pool Swimming, 1965, 1972, and 1977 outdoor recreation survey.

Characteristic	YEAR		
	1965	1972	1977
Income			
<6000		15.1	7.4
6000-9999		29.1	15.9
10000-14999		28.4	24.0
>15000	15000-24999	19.4	33.4
	>25000	8.0	16.1
		25000-49999	3.2
		>50000	
Age			
12-17		31.2	19.6
18-24		20.5	18.1
25-44		32.4	40.9
45-64		14.2	17.0
over 65		1.8	4.4
Race			
White		87.3	90.3
Nonwhite	Black	8.0	7.0
	Other	4.7	2.6
Sex			
Male		47.9	49.0
Female		52.1	51.0
Education			
Grade School		5.0	2.7
Junior High		13.4	9.3
High School		51.7	44.9
College		24.1	34.6
Graduate		5.8	8.6

of this group. These are issues that at this point can only be speculated upon. More specific investigation within this group may provide better understanding of the process.

CONCLUSION

The examination of the seven day-use activities suggests both increases in overall recreation involvement since 1965 and shifts within the population of those involved in the activities. However, because of the differences between some of the results reported here and the "official" published data, care must be exercised in the interpretation. A helpful clarification of this analysis could come from within group studies, especially where significant shifts appear to have occurred. Additional secondary analysis of other data may provide further insight into these changes and assist planners and managers in understanding the future of day-use activity involvement and the subsequent resource impacts.

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