LOAN COPY ONLY

# Report On A Survey Of Rhode Island Households Concerning Their Outdoor Recreational Activities

K. E. McConnell M. F. Caswell

CIRCULATING COPY Sea Grant Depository

NATIONAL SEA GRANT DEPOSITORY PELL LIBRARY BUILDING URI MARKADIMA IL DAN CAMPUS MAREAGANDETT, RT 02882

Department of Resource Economics NOAA/Sea Grant

University of Rhode Island Marine Memorandum No. 50



This publication is the result of research partially sponsored by NOAA Office of Sea Grant, U.S. Department of Commerce, under Grant #04-6-158-44002. The U.S. Government is authorized to produce and distribute reprints for governmental purposes notwithstanding any copyright notation that may appear hereon.

Additional copies of this publication are available from the Sea Grant Marine Advisory Service, University of Rhode Island, Narragansett Bay Campus, Narragansett, Rhode Island 02882.

4/28-200

REPORT ON A SURVEY

OF

RHODE ISLAND HOUSEHOLDS CONCERNING THEIR OUTDOOR RECREATIONAL ACTIVITIES

> K. E. McConnell M. F. Caswell

Department of Resource Economics

University of Rhode Island

### TABLE OF CONTENTS

.

.

Page

ż

1.	Background	1
2.	Socio-Economic Characteristics of the Sample. 🛪	3
3.	Recreational Participation by Rhode Island Households	8
	A. Family Income	10
	B. Home Ownership	12
	C. Education	12
4.	Activity Days by Rhode Island Households	15
5.	Crowding and Participation	19
6.	Conclusion	22
App	endíx	23

#### ACKNOWLEDGMENTS

The Department of Natural Resources and the University of Rhode Island Sea Grant Program provided financial support for the survey on which this report is based. We wish to thank Nancy Bockstael, Ralph Piccirilli, and Neils Rorholm for helpful comments on the report.

### LIST OF TABLES

. .

Table		Page
I	Family Income	4
II	Educational Attainment of the Head of Household.	5
111	Family Size	5
IV	Measures of Home Ownership	6
۷	Age Distribution	7
VI	Basic Participation Rates for Rhode Island Households	9
VII	Percent of Households Participating in Recreation Activity by Family Income	11
VIII	Percent of Households Participating in Recreation Activity by Home Ownership	13
IX	Percent of Sample Households Participating in Each Activity, by Education of Head of Household	14
X	Average Number of Activity Days Per Sample Household for July and August	16
XI	Proportion of Activity Days Taken by Different Age Groups	18
XII	Response of All Sample Households to the Statement: "My family would participate in this activity more often if existing facilities were less crowded."	20
XIII	Response of Sample Households Who Actually Participated in the Activity To the Statement: "My family would participate in this activity more often if existing facilities were less	
	crowded."	21

This paper reports on a survey made of Rhode Island households on their summer outdoor recreational activities. The purpose of this report is to help describe the recreational behavior of Rhode Islanders. This information could be useful to public planners while making decisions concerning Rhode Island's natural resources. The data may also be useful to private marketing firms because they yield insights into the extent of outdoor recreation and intra-state tourist markets in Rhode Island.

### 1. BACKGROUND

The survey on which this report is based was sponsored in part by a grant from the Rhode Island Department of Natural Resources to the Department of Resource Economics at the University of Rhode Island. The purpose of the grant was to improve the data base on which the State Comprehensive Outdoor Recreation Plan (SCORP) is based. The Rhode Island SCORP, published in 1975, used some of the results from this survey extensively. This report makes use of data available at the time the SCORP was being written.

Because a substantial part of outdoor recreation takes place on open-access resources, there are few market transactions and very little market data for researchers to study. Researchers have therefore devoted a great deal of time and effort to designing survey techniques for outdoor recreation. Basically, all survey techniques are variants of one or more of the following: home interview: telephone interview: mail questionnaire: diary. Each approach has its particular advantages and drawbacks. The home interview greatly reduces the non-response rate of the mail questionnaire, and permits clarification of questions and responses. It relies on the recall ability of the respondent, however, which makes the figures somewhat suspect. Moreover, of the various approaches, the home interview has the highest average cost per completed questionnaire.

The telephone interview also reduces the non-response problem of mail questionnaires, and also permits clarification of questions and responses. In addition, telephone interviews tend to be relatively cheap. However, like the home interview and mail questionnaire, the telephone approach relies on the recall ability of the subject. Also, such an approach restricts the length of the interview and the complexity of the questions. The mail survey is perhaps the most commonly used approach. It permits relatively complex questions to be asked. The average cost per completed questionnaire tends to be low. However, the mail questionnaire relies on the ability of the respondent to recall information, and the proportion of households not responding can be as high as 80 percent.

For this study, the diary approach was chosen because it was a relatively new technique for gathering recreational data. The diary approach is most appealing because it does not require the respondent to remember the household's participation. Instead, it merely requires that some member of the household record the recreational activities on a regular basis.

This survey was contracted to Market Facts, a marketing and consulting firm with experience using the diary technique. The 2,500 households who agreed to keep the diary were selected randomly from a list composed of Rhode Island households with telephones.

The survey covered five separate one-month periods in 1974 and 1975. At the beginning of the first survey period, July, 1974, each household completed a questionnaire dealing with socioeconomic characteristics of the household and with the household's ownership of goods used in various outdoor recreation activities. At the beginning of each period, including the first, households were sent a diary which requested information be kept on each outdoor recreational activity undertaken by any member of the household.

At the end of each survey period, the households returned their completed diaries to Market Facts to be coded and put on computer tapes. The five survey periods were July, 1974; August, 1974; October 15th to November 14th, 1974; January 15th to February 14th, 1975; and April 15th to May 14th, 1975. The current report covers only July and August of 1974. A copy of the questionnaire is presented in the appendix.

<sup>&</sup>lt;sup>1</sup>The survey covered 18 activities. In this report, only 13 activities are discussed. Snow skiing, ice skating, and hunting were obviously not appropriate for an analysis of summer activities. Horseback riding had too few responses from which to base inferences. Outdoor games was a category open to wide interpretation, which diminished its descriptive value.

The problem of non-response exists for the diary as well as for the mail questionnaires. In the current study, Market Facts rewarded households completing their monthly diaries with gifts of Green Stamps. The reward system gave a fairly high rate of return (1,492 in July and 1,267 in August, out of 2,500 mailings, which resulted in 1,106 usable responses). Naturally, some bias exists because of non-response. However, to the extent that the bias depends on socio-economic characteristics, the direction and degree of bias can be determined by comparing socio-economic characteristics of the sample with the same characteristics gathered in the Census of Population.

### 2. SOCIO-ECONOMIC CHARACTERISTICS OF THE SAMPLE

In order to judge how representative the sample households were, the following section compares socio-economic characteristics of the sample with data gathered from the 1970 Census of Population for Rhode Island and the Rhode Island Department of Community Affairs. The characteristics compared are income, education, family size, home ownership, and age distribution.

Table I presents the basic data on family income, which is before-tax income from all sources. The income groupings differ slightly, but some comparison is still possible.

Table I shows that 63 percent of the sampled households had incomes of less than \$15,000 in 1974, whereas 84 percent of Rhode Island households had incomes below \$15,000 in 1970. Part of the disparity is due to the increases in family incomes over the four-year period. The mean family income for the United States in 1970 was \$11,106 and rose to \$14,502 in 1974, a 31 percent increase.<sup>2</sup> Even with income increases over the four-year period accounted for, incomes of households in the sample may be somewhat higher than the incomes of Rhode Island households.

<sup>2</sup>Bureau of the Census Current Population Reports, Series P-60, No. 80 & No. 101.

TABLI	3 I

FAMILY INCOME

	Percent of H laving the Famil	douseholds in Ly Incomes In		)
Less than \$9,000	\$9,000 to \$14,999	\$15,000 to \$21,000	0ver \$21,000	Not Elsewhere Classified
22%	417	19%	12%	5%
н	Percent of R aving the Famil	Rhode Island Ly Incomes In		)*
	\$10,00	0	\$15,000	
Less than \$10,000	\$10,00 to \$14,99		\$15,000 to \$25,000	0ver \$25,000

\*Source: Anthony Viccario, Housing Office of the Rhode Island Department of Community Affairs.

The second comparison concerns education levels. Table II shows the educational attainments of the heads of households. Although the data are from different years, they are reasonably comparable because the educational attainments of a population change quite slowly. This table clearly shows the bias that is created by a complicated diary. Those households having less developed educational skills would easily be discouraged by the complexity of the questionnaire. As a survey technique, the diary is too cumbersome to warrant repeated use. To the extent that participation in recreation changes with the level of education, inferences about the total participation will be biased.

### TABLE II

### EDUCATIONAL ATTAINMENT OF THE HEAD OF HOUSEHOLD

Years of Schooling	Sample (1974)	RI (1970)*
Elementary ( 8)	7%	28%
Secondary (9-12)	50	52
College or more	43	20

\*Source: United States Census of Population. 1970. Book 41. p. 320.

Table III compares the size of the sample families with Census data for family size in Rhode Island. This comparison could be important when making inferences about the total number of recreation days, since larger families might well participate more than smaller families in certain activities. Table III shows that the family size of the sample tends to be slightly larger than the family size given by the Rhode Island Department of Community Affairs. This discrepancy is due for the most part to the suggestion that the diary be filled out by an adult member of the household, but not the head. Thus, many households with only one adult may have wished not to participate.

### TABLE III

### FAMILY SIZE

Family Size	Sample House- holds (1974)	RI House- holds (1970)*
1 or 2 members	34%	47%
3 or 4 members	42	33
5 or more members	23	20
Not elsewhere classified	1	

\*Source: Anthony Viccario, Housing Office of the Rhode Island Department of Community Affairs.

5

e de terre de

The fourth table compares the proportion of sample families who own their own home with the proportion of Rhode Island families living in a home they own. The sample proportion is higher because a family may live in a rented dwelling but own a second home, and because home ownership increased over the four-year period from 1970 to 1974; the unknown remainder may be attributed to the non-representative nature of the sample.

### TABLE IV

MEASURES OF HOME OWNERSHIP

Proportion of Sample Families Who Own Their Own Home (1974)

77%

Proportion of Rhode Island Families Living in a Home They Own (1970) \*

58%

\*Source: Rhode Island Basic Statistics, Department of Economic Development, p. 48.

Table V compares the age distribution of the sample in 1974 with the age distribution of the Rhode Island population in 1970. It is clear from this table that the age group proportions of the sample are quite close to the age-group proportions of the state as a whole. There is a slight discrepancy in the over-60 age group. The proportion of the population over 60 was 16 percent in 1970, whereas the proportion of people in the sample over 60 is 11 percent. Although this difference is not great, it helps to allay the suspicion that many households agreeing to participate in the diary study contained a disproportionately large number of retired persons.

### TABLE V

ACC DISIKIDUIIU	AGE	DISTRIBUTION
-----------------	-----	--------------

Age	Sample (1974)	RI Population (1970)
14 and under	27%	26%
15 - 24	18	18
25 - 44	26	22
45 - 59	18	17
60 and over	11	16

\*Source: United States Census of Population. 1970. Book 41. p. 37.

Tables I through V tend to give the impression that the sample households are better educated and have slightly higher incomes than the Rhode Island population in general. This bias comes from two sources. First, better educated households are more able to complete the rather complex questionnaire. Second, higher income households may be more willing to respond to mail questionnaires.

Because the sample is in some ways not representative of the Rhode Island population, one must be cautious when making inferences from the sample about aggregate recreational participation in Rhode Island. However, the participation data are quite valuable in describing the summer activities in which the typical Rhode Island household engages.

### 3. RECREATIONAL PARTICIPATION BY RHODE ISLAND HOUSEHOLDS

In the remainder of this paper, the focus will be on participation by Rhode Island households in 13 recreational activities. The participation data will be presented in tabular form by socioeconomic characteristics and without regard to whether participation is within or outside of Rhode Island. The reader should remember that this survey covers the two-month period from July 1st to August 31st, 1974. Activities such as camping, freshwater fishing, and bird-and-wildlife watching may also be popular during other seasons, although nearly all the swimming done that year may be included in the two months surveyed. Hence, for annual data, the participation rate for activities popular in the fall or spring might be higher.

The basic participation rates for each of the 13 activities are presented in Table VI. These percentages represent the proportion of households which had at least one member engaging in the activity at least once during the two-month period. The figures say nothing about the magnitude of participation. Thus, our proportions indicate that more households participated in sightseeing than in any other mentioned activity. The figures do not imply that more time was spent sightseeing, because we have not indicated how much time (how many trips per household, how many hours per trip) each household spent. However, the figures on participation by household, because they tend to be more accurate than figures on the level or magnitude of participation, are useful for assessing the nature of recreational activity by Rhode Island households.

### TABLE VI

### BASIC PARTICIPATION RATES FOR RHODE ISLAND HOUSEHOLDS

Participation in Activitian (1976)

Participation in Ac	ctivities (1974)
Activity	Percent of Sample Households
Bicycle Trip	10%
Bird & Wildlife Watching	7
Boating	24
Camping	12
Fishing, Fresh Water	8
Fishing, Salt Water	13
Golf	14
Hiking	8
Picnicking	42
Sightseeing	57
Swimming, Salt Water	53
Swimming, Fresh Water	41
Tennis	13

The percent figures in Table VI and the following tables give the results of two sets of forces. On the one hand, the socioeconomic characteristics of the households, such as income, age structure, education, and other factors, influence which activities the household would like to choose. The other set of forces, determined by the cost and availability of recreational facilities, determines in which activities each household actually participates. Thus, from Table VI, the proportions that emerge are the result of the interactions of supply and demand. The figures do not indicate what Rhode Island households would do if they were given different opportunities. For example, Table VI shows that 53 percent of the households had at least one person engaged in salt water swimming. This proportion is larger than similar proportions found in other parts of the United States, but it does not imply that people like salt water better in Rhode Island (though they may); rather, we infer that people participate more because the cost of participating is lower. Hence, in examining the following tables, we must guard against the conclusion that we need to increase the capacity of more popular activities. Instead, we might conclude that such popular activities are the ones where substantial capacity already exists.

The remainder of the report deals with the effects of socioeconomic variables on recreational participation. The data are further broken down to separate participation within and outside of Rhode Island. This was done to aid planners in assessing the effects of recreational patterns.

#### A. Family Income

Table VII presents the basic participation rates by the level of family income, when participation may be within or outside of Rhode Island. In general, income has an effect on a household's activities because increases in income enlarge the range of opportunities. The numbers indicate what proportion of each income group in the sample participated in each activity. For example, Table VII shows that 27 percent of the sample households with family incomes less than \$9,000 went picnicking in Rhode Island at least once, but only 13 percent of the same group went picnicking outside of the state.

The income figures reveal that the activities likely to expand significantly as family income grows are tennis, golf, and boating. All other activities, except camping in Rhode Island, tend to show a more gradual positive response to increases in income. Participation outside the state tends to be less than within, with camping again the exception. The desire to go camping in Rhode Island appears to decline somewhat as family incomes grow. Not only is participation in camping greater outside of Rhode Island, but that participation responds positively to income. It should not be inferred from these figures that more camping should be provided for Rhode Island families. In fact, it is likely that camping farther away from home, because of novelty and the greater sense of escape, is more desirable than camping close to home. Hence, the higher participation rates for outside of Rhode Island.

### TABLE VII

.

<u>Activity</u> In Rhode Island	Less Than \$9,000	\$9,000- <u>\$14,999</u>		More Than \$21,000
Bicycle Trip	4%	8%	7%	4%
Bird & Wildlife Watching	4	2	2	2
Boating	9	17	16	21
Camping	7	4	6	3
Fishing, Fresh Water	4	9	4	4
Fishing, Salt Water	7	14	11	10
Golf	3	7	11	21
Hiking	2	3	4	5
Picnicking	27	35	32	30
Sightseeing	19	28	29	38
Swimming, Salt Water	31	49	49	53
Swimming, Fresh Water	23	27	24	27
<b>Fennis</b>	4	10	11	18
Out of Rhode Island				
Bicycle Trip	27	5%	2%	2%
Sird & Wildlife Watching	3	6	3	3
Boating	7	8	11	10
Camping	5	9	8	12
ishing, Fresh Water	2	3	1	3
ishing, Salt Water	3	2	2	3
olf	3	7	10	10
iking	3	4	6	5
icnicking	13	19	17	27
ightseeing	32	42	53	56
wimming, Salt Water	13	13	18	26
wimming, Fresh Water	15	24	<b>2</b> 2	31
ennis	2	3	3	7

### PERCENT OF HOUSEHOLDS PARTICIPATING IN RECREATION ACTIVITIES BY FAMILY INCOME

#### B. Home Ownership

Table VIII presents participation rates by home ownership. For example, 7 percent of the homeowning families in the survey participated in bicycling. This table reveals that home ownership is not a strong determinant of participation in any activity, within or outside of Rhode Island. The only apparently substantial differences in participation rates appear for freshwater swimming, sightseeing, and boating within Rhode Island. Participation in boating and sightseeing appears to be higher for home owners, while the freshwater swimming participation rate appears somewhat lower.

### C. Education

The level of education of the head of the household affects primarily the tastes of individuals and secondarily the household's ability to learn about recreational opportunities. Table IX gives participation rates by the level of education of the head of household for each activity. For example, the results show that 19 percent of the households with a head of household who attended college participate in boating in Rhode Island. Table IX shows that participation increases rather uniformly as educational attainments rise. However, in a tabular setting such as Table IX, it is difficult to remove the effect of income from the effect of education; increased education tends to increase income. Hence, for Table IX, it is not possible to assert that education causes increased participation, as one might infer from an initial glance at the data. This difficulty can be confirmed by comparing Table IX with Table VII, which gives information on income. These tables indicate that the general tendency is for participation rates to increase as income and education rise; and if these tables are compared activity by activity, the rates increase similarly.

. \_

PERCENT OF	HOUSEHOLDS PARTICIPATING IN RECREATION	
	ACTIVITY BY HOME OWNERSHIP	

.

<u>Activity</u>	Home/Owner	Non Home/Owne:
In Rhode Island		
Bicycle Trip	7%	6%
Bird & Wildlife Watching	3	2
Boating	17	13
Camping	4	6
Fishing, Fresh Water	7	4
Fishing, Salt Water	11	12
Golf	10	6
Hiking	4	2
Picnicking	31	<b>~</b> 34
Sightseeing	29	23
Swimming, Salt Water	45	43
Swimming, Fresh Water	23	30
Tennis	10	10
Dut of Rhode Island		
Bicycle Trip	3%	4%
Bird & Wildlife Watching	4	5
Boating	8	10
Camping	9	6
ishing, Fresh Water	3	2
ishing, Salt Water	2	4
<b>01</b> f	8	5
iking	4	5
icnicking	19	
ightseeing		15 43
wimming, Salt Water	15	
wimming, Fresh Water	22	17
ennis	4	22 6

1

### TABLE IX PERCENT OF SAMPLE HOUSEHOLDS PARTICIPATING IN EACH ACTIVITY BY EDUCATION OF HEAD OF HOUSEHOLD

.

Activity	1-8	9-12	College	Post Graduate
In Rhode Island				
Bicycle Trip	1%	7%	8%	6%
Bird & Wildlife Watching	0	2	4	3
Boating	5	15	19	17
Camping	3	5	6	4
Fishing, Fresh Water	1	7	6	4
Fishing, Salt Water	12	11	10	10
Golf	5	7	12	11
Hiking	1	3	3	6
Picnicking	30	31	33	30
Sightseeing	17	25	30	39
Swimming, Salt Water	20	44	48	52
Swimming, Fresh Water	15	26	28	18
Tennis	1	8	14	12
Out of Rhode Island				
Bicycle Trip	3%	3%	4%	4%
Bird & Wildlife Watching	1	5	3	7
Boating	8	7	11	10
Camping	3	8	10	8
Fishing, Fresh Water	4	3	2	0
Fishing, Salt Water	3	2	3	2
Golf	1	8	8	6
Hiking	5	4	5	8
Picnicking	15	16	20	23
Sightseeing	30	41	46	58
Swimming, Salt Water	15	10	22	22
Swimming, Fresh Water	8	22	24	25
Tennis	1	2	6	6

Tables VII, VIII, and IX show in general that participation in most recreation activities increases as socio-economic status (measured by income, education, and home ownership) increases. Several types of activities respond to changes in income: capital intensive activities like boating and golf, and out-of-state activities.

### 4. ACTIVITY DAYS BY RHODE ISLAND HOUSEHOLDS

The previous section dealt at length with the relationship between the socio-economic characteristics of Rhode Island households and their participation in recreational activities. In this section, the focus of the analysis is shifted from mere participation to the extent of that participation. The extent or degree is measured by activity days, which are defined as one person engaging in the mentioned activity for any part of one day. The activity days are quite variable, and the relationships between activity days and socio-economic characteristics are statistically more difficult to establish than those between participation and socio-economic characteristics. Hence, the analysis of activity days is quite limited.

The most basic information describing activity days is the average number of days per household. This figure is given for days spent within Rhode Island, days outside of Rhode Island, and their sum for each of the thirteen activities in Table X. These figures show, for example, that the typical sample household engaged in 5.2 days at Rhode Island saltwater beaches during July and August of 1974. The figures demonstrate that recreational activity by Rhode Island households tends to be greater within Rhode Island than outside of the state.

÷		

TABLE	Х
-------	---

Activity	Total Days	Days Outside Rhode Island	Days Within <u>Rhode Island</u>
Bicycle Trip	.30	.08	.22
Bird & Wildlife Watching	.35	.27	.08
Boating	1,50	.46	1.04
Camping	. 99	.70	, 29
Fishing, Fresh Water	.34	.12	.22
Fishing, Salt Water	. 54	.06	.48
Golf	.78	. 29	.49
Hiking	,32	.18	.14
Picnicking	3.42	1.29	2,13
Sightseeing	4.85	3.36	1.49
Swimming, Salt Water	5,20	.96	4.24
Swimming, Fresh Water	3.90	1.61	2.29
Tennis	,61	.14	.47

AVERAGE NUMBER OF ACTIVITY DAYS PER SAMPLE HOUSEHOLD FOR JULY AND AUGUST

Not surprisingly, Table X shows that the average household spends more days engaged in saltwater swimming than in any other activity. Sightseeing is the second most prevalent activity, and picnicking is third. Almost 70% of the sightseeing activity occurs outside of Rhode Island. This result should not be surprising. By its nature, sightseeing is an activity which requires a variety of scenes.

By combining the information provided in Tables VI and X, and with information on the total number of households in Rhode Island, one can make a crude estimate of the total level of participation in each activity. For example, in 1974 there were approximately 300,000 households in Rhode Island. Table VI indicates that 24 percent, or 72,000 households, engaged in boating. From Table X, we see that the average household had 1.5 days of boating during July and August. Hence, the total number of boating days during that period can be roughly estimated at (72,000) (1.5) = 108,000. Because the sample is not entirely representative, it is possible to improve on this estimate using multivariate statistical methods.

16

Once again, it must be emphasized that this report includes only the survey period of July and August. The extent of yearly participation cannot be extrapolated from these figures. Hiking may serve as a substitute for swimming for many Rhode Islanders in spring and fall, but would not be represented in this report.

Although the figures in Table X are descriptive of recreational behavior of Rhode Island households, they do not, by themselves, indicate direction for future policy. The fact that participation in any activity is high does not necessarily mean that there are preferences for that activity over others of equal accessibility, nor that more capacity should be provided. A high level of activity days per household is the result of two sets of forces. On one side operates the forces which provide the capacity: for example, the natural setting of the area or the state government policy providing picnic sites. On the other side, people exercise their preference within constraints of time, income, and resource accessibility. No policy decision can be judiciously made without accounting for both sets of forces.

One question frequently arising in the analysis of recreational activity concerns the age of the participants. In order to deal with the age, it is necessary to examine the activity days. Table XI gives basic information on the distribution of activity days among different age groups for different activities. The figures are percentages, and they sum to one hundred for each activity (except for possible rounding error). These figures show, for example, that 34 percent of all bicycle trips within Rhode Island were made by children under 15 years of age. Thus, each proportion gives that age group's share of the number of outings for that activity.

فالمعتد مشمشه ومعتان الأردي

TABLE	XI
-------	----

### PROPORTION OF ACTIVITY DAYS TAKEN BY DIFFERENT AGE GROUPS

.

Activity	<u>≤14</u>	15-24	25-44	<u>45-59</u>	260
In Rhode Island					
Bicycle Trip	34 <b>X</b>	22%	322	92	2%
Bird & Wildlife Watching	22	13	28	21	16
Boating	23	21	30	22	4
Camping	51	8	23	15	2
Fishing, Fresh Water	41	12	35	8	4
Fishing, Salt Water	24	13	32	24	7
Golf	4	11	30	36	19
Hiking	37	21	21	9	12
Picnicking	31	15	28	16	10
Sightseeing	32	12	28	15	13
Swimming, Salt Water	35	18	26	15	7
Swimming, Fresh Water	52	12	25	9	2
Tennis	16	33	42	7	3
Out of Rhode Island					
Bicycle Trip	12%	45 <b>%</b>	27%	6%	107
Bird & Wildlife Watching	22	11	28	23	15
Boating	25	16	33	17	8
Camping	29	14	40	13	4
Fishing, Fresh Water	33	12	30	9	16
Fishing, Salt Water	19	15	37	22	7
Golf	10	12	29	34	15
Hiking	25	12	37	15	10
Picnicking	30	13	31	16	9
Sightseeing	23	13	29	24	11
Swimming, Salt Water	26	15	29	19	10
Swimming, Fresh Water	36	15	28	15	6
Tennis	10	21	47	18	3

The figures on the age distribution of activities are interesting, but not surprising. By comparing the columns for the under-15 age group within and outside of Rhode Island, we see that this group accounts for a substantially larger proportion of the activity within the state. The youngest age group accounts for over 50 percent of the camping within the state.

The table identifies those activities in which people over 60 are most likely to engage. For this age group, bird watching, golf, and sightseeing are more attractive than fishing, swimming, or camping. This information is important because of the growing proportion of elderly people in our population.

Another interesting phenomenon apparent in Table XI concerns the age group from 15 to 24. Although people in this age group are in their prime and have few constraints on their time, our figures show that they account for a surprisingly small share of the total activity. Probably, this small proportion is due to the inability of the adults to keep track of what the teenagers in the household do, as well as the reluctance of many young people to engage in "family" outings. Thus, though the age composition of the sample is approximately that of the population (see Table V), it is likely that the level of activity days is biased downward due to the under-reporting of the activities engaged in by 15 to 24 year-olds.

### 5. CROWDING AND PARTICIPATION

The last tables deal with the perception of crowding at recreation facilities. Naturally, the perception of crowding varies ' between individuals. However, it is interesting to observe how households might respond if crowded recreation sites were less frequently encountered.

Table XII presents the responses from all the sample households to the statement, "My family would participate in this activity more often if existing facilities were less crowded." Table XII includes those who participate as well as those who do not. It is striking that almost 60 percent of the households would participate more often in saltwater swimming if they thought that beaches would be less crowded. By comparison, less crowding would induce more participation in hiking and bird and wildlife watching for less than 15 percent of the families.

### TABLE XII

<u>Activity</u>	Perce	ent of H	ousehold
	Yes	No	No Answer
Bicycle Trip	22%	67%	11%
Bird & Wildlife Watching	10	<b>78</b>	12
Boating	20	69	12
Camping	25	65	11
Fishing, Fresh Water	20	68	12
Fishing, Salt Water	18	69	13
Golf	19	69	12
Hiking	14	74	13
Picnicking	49	41	10
Sightseeing	52	39	9
Swimming, Salt Water	58	33	9
Swimming, Fresh Water	45	45	10
Tennis	33	56	11

RESPONSE OF ALL SAMPLE HOUSEHOLDS TO THE STATEMENT: "My family would participate in this activity more often if existing facilities were less crowded."

Table XIII presents the results for those families who actually participated in the activity. Many families who know nothing about the crowding or may have no interest in the activity under any conditions are also excluded from this table. Table XIII gives an indication of how participants feel about crowding. The figures show, for example, that 74 percent of those who play tennis would do so more if the courts were less crowded.

### TABLE XIII

### RESPONSE OF SAMPLE HOUSEHOLDS WHO PARTICIPATED IN THE ACTIVITY TO THE FOLLOWING STATEMENT: "My family would participate in this activity more often if existing facilities were less crowded."

Activity	Percent of Households Participating			
<u>-</u>	Yes	No	No Answer	
Bicycle Trip	47%	48%	5%	
Bird & Wildlife Watching	27	64	9	
Boating	31	61	8	
Camping	56	37	7	
Fishing, Fresh Water	41	48	11	
Fishing, Salt Water	42	51	7	
Golf	56	41	3	
Hiking	26	61	13	
Picnicking	58	34	8	
Sightseeing	56	38	6	
Swimming, Salt Water	65	30	5	
Swimming, Fresh Water	56	38	6	
Tennis	74	25	1	

The comparison between the two tables is quite revealing. From Table XII we find that for camping, crowding is a consideration of 20 percent of all of those in the survey. Table XIII, however, indicates that, of those households who camp, crowding is important for 56 percent. The difference between these proportions is substantial, indicating that an increase in camping capacity might increase participation among those already camping rather than increase the numbers who camp. Similar observations can be made by comparing the first column of each of the two tables. Roughly, we can say that when the difference is relatively large, such as in tennis, crowding has a more significant effect on participants than on non-participants. However, when the difference is relatively small, such as in picnicking, crowding could be an important determinant in the decision not to participate.

•

#### 6. CONCLUSION

This report has presented some descriptive data from a recreational survey conducted jointly by the University of Rhode Island's Department of Resource Economics and the Rhode Island Department of Natural Resources. We have attempted to describe the recreational behavior of Rhode Island households rather than to forecast behavior or make conclusions about the adequacy of current facilities or prices.

Although this report is primarily descriptive, it is possible to make some broad statements about recreational behavior patterns in Rhode Island. For example, if we are interested in future demand for recreational facilities by Rhode Island households, we can expect increases in activities such as golf, tennis, and boating, in which participation tends to increase as income grows. Similarly, camping in Rhode Island by Rhode Island families will likely decline as income grows. Or as the population on the average grows older, we can expect more participation in less strenuous activities such as sightseeing and golf. Although recreation by Rhode Island families in the past has been related primarily to the ocean or the coast, it is not unreasonable to expect some shift toward inland resources Such a shift might occur because, as Rhode Island in the future. household incomes grow, families will be willing to spend extra time and money for less congested facilities inland.

In addition to the descriptive work presented in this report, it is necessary to have analytical studies of demand forecasts, out-of-state use rates, estimates of current capacity, and individual benefit-cost analyses in order to make sound judgments about investment in Rhode Island's recreational facilities. At the University of Rhode Island other studies on recreation, using the data from this survey as well as others, are currently being conducted. These studies include the development of a forecasting model, the investigation of pricing policies at Rhode Island state campgrounds, and continuing research into the determinants of recreational demand. APPENDIX

.

1

Activity Sheet Activity Record Inventory of Recreation Goods, Supplies and Facilities

\_\_\_\_

.

, i

.

З.

i. i

### ACTIVITY SHEET

Code Number Bicycle Trip (Do not include just riding around the neighborhood.) 1 Bird and Wildlife Watching 2 Boating (Include canoeing, sailing, motor boating, yachting, and 3 water skiing.) 4 Camping 5 Fishing, Fresh Water 6 Fishing, Salt Water, Deep Sea, etc. 7 Golf 8 Hiking 9 Horseback Riding Hunting 10 11 Ice Skating Outdoor Games (such as softball, volleyball, basketball, football, 12 etc.) 13 Picknicking Sightseeing (includes visits to historical places) 14 15 Snow Skiing Swimming (salt water, going to the beach) 16 Swimming (fresh water, pools, rivers, lakes, ponds) 17

18 Tennis

24

### SINGLE DAY ACTIVITIES For July 1 through July 31

		Activity 6	Activity 7	Activity 8	Activity 9	Activity 10
1.	Please record date of month		07 (12+13)	Ch (12-13)		
2.	Record recreation activity from blue activity sheet,		14 t j	1415	14 15	
3.	Did this activity take place in Rhode Island? {"X" Box}	Y••□L (16) No □2	Y L (16) No 2	Yes []1 (16) No []2	Yes [] (16) No []2	Y ]1 (1 No ]2
4,	Please indicate14 years athe number ofunderfamily members15-24 yearswho participated15-24 yearsIn this activity25-44 yearsfor each age45-59 yearsgroup. (If none,60 and ove	(17) (18) (19) (20)	(18) (19) (20)	(17) (18) (19) (20) (21)	(17) (18) (19) (20) (21)	
5.	How crowded was Too crowd the recreation Somewhat facility? crowdad ("X" Box) Not at all crowded.		[]1 (22) []2 []3	□1 (22) □2 □3	□1 (22) □2 □3	01 (2 02 03
<b>6</b> .	How much did you Food	\$(26-27) \$(28-30) :-	\$(26-27)	s(26-27)	\$(23-25) \$(26-27) \$(28-30)	\$(23-25 \$(26-27 \$(28-30
	to activity (exc. new equipment) Total	pt ••• <u>\$(31-33)</u>			<u></u>	\$31-33 \$34-36
7 <b>a</b> .	Did anyone give up wages or sala to participate in this activity? ["X" Box)	이 분락님, 이제	Yes 1 No 2 (37)	Yes    (37) No   2	Yes []1 No []2 (37)	Yee 1 (31 No 2
њ.	If "yes", how much in total could have been earned?	\$ <u>(</u> 38-40)	\$(38-40)	\$ <u>(</u> 38-40)	\$ <u>(</u> 38-40)	\$ <u>(</u> 38-40
la,	What was the round trip mileage for this trip? (Write In)		(41-44)	(41 - 44)	(41 - 44)	[41-44
вь.	What means of travel was used? Automobile Bus   {"X" Box} Other		□1 (45) □2 □3	□1 (45) □2 □3		1 (45 2 3
).	Where did you go? Name of facility Located in this Town/City   Address or Closest Intersection					

(FOR ADDITIONAL SINGLE DAY ACTIVITIES, CONTINUE ON THE FOLLOWING PACES)

4. This question is about anyone in your family who might be going to summer camp this year. Flease list the age of the person going, the number of weeks they will be staying at the camp, the total cost charged by the camp and whether or not the camp is located in Rhode Island. "X" this box — I for one will be going to summer camp this year.

Age of <u>Camper</u>	<u>Typ</u> Day	e of Camp Overnight	Duration of Camp (weeks)	Fees <u>Charged</u>	<u>لہ</u> in <u>R.L</u>	Cation Outside <u>R.1.</u>	
(34-35)	۵ı	2 (36)	(37)	<u>\$</u> (38-41)	<b>D</b> 1	<b>D</b> 2	(42)
(43-44)	٦ı	<b>[]</b> 2 (45)	(46)	<u>\$</u> (47-50)	<b>D</b> 1	22	(51)
(52-53)	Dı	<b>2 (54)</b>	(55)	<u>\$</u> (56-59)	01	<b>D</b> 2	(60)
(61-62)	<b>D</b> 1	Ds (93)	(64)	<u>\$</u> (65-68)	ı٦	<b>[]</b> 2	(69)

5. Here we would like to know what types of recreational clubs or organizations to which your family belongs. Please indicate whether you have a family or single membership and the annual or yearly cost of that membership.

		BELOW) bership			
Country club	<u>Tamily</u>	<u>Individual</u> 2	Belong []3 (70) <u>\$</u>	<u>Annual Cost</u> (71-74)	(75-78 Open) 79{[8]80 Cd. #9
Tennis club	١	2	□3 (13) <u>\$</u>	(14-17)	Dup. 1-11 12-
Golf club	۵ı	٥z	[]3 (18) <u>\$</u>	(19-22)	
Husting club	٦ı	<b>D</b> 2	🔲3 (23) <u>5</u>	(24-27)	
Ski club	۵ı	<b>2</b>	()3 (28) <u>\$</u>	(29-32)	
Fishing club	<b>1</b>	2	<b>[]3</b> (33) <u>\$</u>	(34-37)	
Yacht & Boat club	1	<b>2</b>	🔲 3 (38) <u>\$</u>	(39-42)	

.

33

•

Now we have a series of family-oriented questions; please answer all of the questions to the best of your ability because these questions are important when we analyze the whole study, 6a. Do you own your own house? Ye∎ □1 No □2 43 6b. How many care do you have in your family? (CIRCLE NUMBER) Number of cars 1 2 3 4 5 or more 44 How many family members including yourself do you have in each of these age groups: 6c. (CIRCLE NUMBER) Are Number of persons 14 and under 1 2 3 4 5 or more (45) 15 - 24 1 2 3 4 5 or more (46) 25 - 44 1 2 3 4 5 (47) 45 - 59 1 2 3 4 5 (48) 60 or more 1 2 3 4 5 (49) 6d. Please circle the highest grade of school completed by the head of your bousehold. (CIRCLE NUMBER) Elementary and High School 1 2 3 4 5 6 7 8 9 10 11 12 College E Z 3 4 5 6 Please "X" the appropriate box below to indicate your total 74. yearly income for all family members. Under \$5000 \$13,000 - 14,999 36 \$5000 - 6999 2 \$15,000 - 16,999 77 52 \$7000 - 8999 1 \$17,000 - 18,999 38 \$9000 - 10,999 - 4 \$19,000 - 20,999 - 9 \$11,000 - 12,999 5 Over \$21,000 De 7Ъ. How much of this income was derived from non-work sources such as interest, dividends, social security, unemployment compensation, welfare payments, retirement or other? Under \$1000 \$6000 - 6999 07 \$1000 - 1999 **D**2 \$7000 - 7999 ۵ 🗋 \$2000 - 2999 □3 \$8000 - 8999 ۵۶ 53 \$3000 - 3999 □4 \$9000 - 9999 \$4000 - 4999 5 \$10,000 and over 🗆 X \$5000 - 5999 ⊡6

27

8a. For <u>each</u> working member of your household, please list their occupation, whether or not they were self employed, the number of hours worked per week <u>and</u> the number of vacation days they get per year.

	<u>Occupation</u>	Self Employed	Not Self Employed	Hours Worked/ Week	Number of Vacation Days	
Head of household			<b>□2</b> (55)	(56-57)	(58-59)	
	54	6		(30-31)	(30-37)	
Other workers		<b>[]</b> 1	<u>[]</u> 2 (61)	(62-63)	(64-65)	
	60	i			(04-05)	
		1	□2 (67 <u>)</u>	(68-69)	(70-71)	
	66	_	_	• • • •	• •	(78
	`		<b>□</b> 2 (73)	(74-75)	(76-77)	Open) 79 [-]
	72	1				80 9 Cd. 10
Have any working r January, 1974 beca						Dup.
circle below and in "X" this box	dicate the numb	er of month	ns they have	e been una	ble to work.	
	Have be- unable to v			mber nonths		
Head of household	1	(13)	(1-	4-15)		

1 (16)

1 (19)

Other workers

8ъ.

•

(20-21)

(17 - 18)

9. Please answer the following questions regarding each of the activities: My family would participate in this activity more often if existing facilities were less crowded. ("X" ONE BOX FOR EACH)

	Yes	No	
Bicycle Trip (Do not include just riding around the neighborhood.)		[]2 (	(22)
Bird and Wildlife Watching		[]2 (	(23)
Boating (Include canoeing, sailing, motor boating, yachting, and water skiing.)		<b>2</b> (	(24)
Camping	<b>1</b>	<b>2</b>	(25)
Fishing, Fresh Water	<u></u> ι	<b></b> 2 (	(26)
Fishing, Salt Water, Deep Sea, etc	<b>[]</b> 1	<b>2</b>	(27)
Golf		<b>2</b>	(28)
Hiking	٦ı	<b>2</b>	(29)
Horseback Riding		<b>2</b>	(30)
Hunting	<b>[]</b> 1	<b>2</b>	(31)
Ice Skating		<b>2</b>	(32)
Outdoor Games (such as softball, volleyball, basket- ball, football, etc.)		<b></b> 2	(33)
Picknicking	<b>1</b>	<b>2</b>	(34)
Sightseeing (includes visits to historical places)	٦ı	<b>[]</b> 2	(35)
Snow Skiing		<b>2</b>	(36)
Swimming (salt water, going to the beach)		<b>2</b>	(37)
Swimming (fresh water, pools, rivers, lakes, ponds)		<b>2</b>	(38)
Tennis	<b>[]</b> 1	<b>2</b>	(39)

(40-78 Open) 79[10]80

.

## CONSUMER MAIL PANELS



(4-9192)

	INVENTORY OF RECREATION GOODS, SUPPLIES AND FACILITIES	Ca #1
1=.	Do you own or have part ownership in a second home (cottage or cabin or house trailer parked in a permanent location) which you use at any time during the year for recreational purposes?	12
	Yes 1 No 2 $\rightarrow$ (SKIP TO QUESTION 2)	
15.	Please indicate year in which purchased	14
lc.	Please indicate approximate present value including lot	·
	\$	
1d.	\$	
	Within two miles of Rhode Island coast 1 On a lakefront in Rhode Island	20.
le.	How many weeks is it used by any member of your family in each of these seasons? No. of <u>weeks</u>	
	March, April, May	
	June, July, August	
	September, October, November	
	December, January, February (27-28)	

.

.

2. These questions are concerned with larger items and we would like to know the year when they were purchased, the total purchase price and your annual or yearly operating and maintenance costs. If you have more than one boat, please list them on separate lines.

	Year Purchased	"X" Box If None Owned	Price	Yearly Operating Cost	Amount Spent In <u>Past</u> 12 Months	
Camping Trailer	(29-30)		(31-35)	<u>(</u> 36-39)	(40-44)	
Swimming Pool: In ground	(41-42)		(43-47)	(48-51)	(52-56)	
Above ground	(57-58)		(59-63)	(64-67)	(68-72)	(73-78 Open)
Boat #1	(12-13)		+(14-18)	(19-22)		79 - 1190 Cd. #2
Bost #2	(28-29)		+(30-34)	(35-38)	(39-43)	Dup. 1-11
Boat #3	(44-45)			(51+54)	(55-59)	
Horses	(60-61)		(62-66)	(67-70)	(71-75) (	76-78 Open)
* Including outfit	ting, rails, and	inboarde il	aonlicable.		_	<u>79[-]280</u>

\* Including outfitting, rails, and inboards if applicable.

3. Please read the list of items below and for each item please indicate the number owned by all family members, the solal purchase price and the amount spent for thest items in the past 12 months - for example, your family may own six tennis rackets which cost a total of \$100.00. However, if two of these were purchased in the past year for a cost of \$40.00, this is the amount you enter in the third column.

	Number Owned	X" Box If None Owned	Total Purchase Price	Amount spent on these items in _past 12 months		Cd, #3
Boating Items						Dup, 1-11
Electronic equipment	(12)		(13-17)		(18-22)	
Outboard motors	(23)		(24-28)		(29-33)	
Boat trailers	(34)		(35-39)		(40-44)	
Water skie	(45)			<u> </u>	(50-53)	
Winter Sports						
Skis (pairs, including poles)	(54)	Ö	(55-58)		(59-62)	
Ski boots	(63)	0	(64-67)		(68-71)	(72-78 Open)
Special ski clothing	(12)	J	(13+16)	<u>-</u>	(17+20)	<u>79</u> ]3 <u>80</u> Cd. #4
Snowmobile	(21)				(26-29)	Dup. 1-11
Ice Skates (pairs)	—_ <sup>(30)</sup>		(31-33)		(34-36)	
Other Items						
Bicycles	(37)	0	(38-41)		(42-45)	
Golf clubs (set)	(46)		(47-50)		(51-54)	
Binoculara	(55)		(56-58)		(59-61)	
Tennis racket	(62)		(63-65)		(66-68)	
Trail mini bikes	(69)				(75-78)	79 - 480 Cd. #5
Bike trailer	(12)	Ο	(13-16)		(17-20)	Dup, 1-11

3. (continued)

		"X" Box Number L'None Owned Owned	Total Purchase Price	Amouni spent on these items in past 12 months	
<u>Swin</u>	oming Items				
	Swim fins	(21) 🔲	(22-24)	(25-2)	
	Maska	(28) 📋	{29-31)		4}
	Scuba tanks	(35)	(36-39)	(40-4	2017200
	Scuba regulators	(12) 🔲	(13-16)	(17-2)	<sup>()</sup> Cd. #6
	Surf boards	(21)	(22-25)		9) Dup.1-11
	Wet suits	(30)	(31-33)	(34-3	6)
Cam	ping. Fishing 4 Hunting				
	Guns (only those used for hunting)				
	Shot guns	(37) 🖸	(38-41)	(42-4	5)
	Rifles	(46) 🛄	(47-50)	(51-5	<b>6</b> )
	<b>Reloading</b> equipment	(55)			1)
	Hunting suit and jackets	(62)	(63-65)	(66-6i	8}
	Hunting knives		(70-72)	(73-7	
	Bows		(13-15)	(16-1	8) 79-680 Cd. #7
	Arrows	(19) 🗔	(20-22)	(23-2	5) Dup, 1-11
	Fishing rods	(26) 🖸	(27-29)	(30-3	2)
	Tackle box and equipment	(33)	(34-36)		9)
	Reels	(40) 🔲	(41-43)	(44-4	6)
	Tents	(47)	(48-51)	(52-5	5}
	Sleeping bags	(56) 🗖	<u>    (</u> 57–59)	(60-6	2)
	Back packs	(63) 🗖	(64-66)	(67-6	9)
	Special hiking boots		<u>    (</u> 71-73)	(74-7	201 1300
	Camping stoves	(12)	<u> </u>	(16-1	$\begin{array}{c} 8) & \frac{79[-17]80}{C4. \ \#8} \end{array}$
	lee chests	(19) 🗋	(20-22)	(23-2	5) Dup. 1-11
	Clam forks and oyster rakes	(26) 🛛	(27-29)		2)

•