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Seasonal Homes and Natural Resources:

Patterns of Use and Impact in Michigan

Daniel J. Stynes, JiaJia Zheng, and Susan I. Stewart

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INTRODUCTION

Michigan has more than 223,000 seasonal homes accounting for almost 6 percent of all housing units in the State (U.S. Census 1990). While permanent residences are concentrated in southern Michigan metropolitan areas, seasonal homes are located in rural and high-amenity areas, primarily in the northern part of the State (fig. 1). Seasonal homes account for more than half of the housing units in Lake, Keweenaw, Oscoda, Montmorency, Alcona, and Roscommon Counties, and seasonal homes outnumber permanent residences in 176 Michigan townships.

Seasonal homes range from small hunting cabins in the woods to luxury homes on 20 acres overlooking one of the Great Lakes. A large percentage of seasonal homes in Michigan are on small lots around inland lakes, along streams, and along Michigan's Great Lake shorelines. Others are condominiums within large planned seasonal home developments like the Homestead in Glen Arbor. Public forests also attract seasonal home development around their boundaries, providing the homeowner with a scenic vista, recreation area, and buffer from neighboring development.

Daniel J. Stynes is a Professor, Department of Park, Recreation and Tourism Resources at Michigan State University.

JiaJia Zheng was a graduate reseach assistant in the Department of Park, Recreation and Tourism Resources at Michigan State University when the research was done.

Susan Stewart is a Research Social Scientist with the North Central Forest Experiment Station in Chicago, IL.

Although seasonal homes have significant social, environmental, and economic implications for the State, they have received limited research attention. Most analyses of regional and community needs use the resident population of an area as the primary indicator of demands for services. Northern counties like Leelanau have found that the population of the county on any given day can be six or seven times the official resident population (Northwest Michigan Council of Governments 1989). Seasonal home owners and their guests make up a large proportion of these temporary visitors in many parts of the State. Seasonal home users are active in a variety of outdoor recreation pursuits, particularly water-based recreation, and have major impacts on local economies in many rural areas.

Seasonal homes generate significant travel and spending throughout the State, accounting for a substantial part of traffic flows from out-of-State and southern Michigan population centers to northern Michigan. Based on secondary data, Stynes (1997) estimates that spending associated with seasonal homes in Michigan accounts for more than a fifth of all tourism spending in Michigan. Waters (1990) suggests that failure to include seasonal homes as a component of tourism may omit as much as 50 percent of domestic tourism activity. Yet tourism studies continue to pay little attention to this important market segment.

Seasonal homes are an important factor in State, regional, and local planning because they have significant implications for land use (Tombaugh 1970), environmental quality and natural resources (Marans and Wellman 1978), economic development and the local tax base (Bond *et al.* 1978, Snyder 1968), retirement and migration (Stynes and Olivo 1990), and recreation and tourism (Godbey and Bevins 1987). These complex issues cannot all

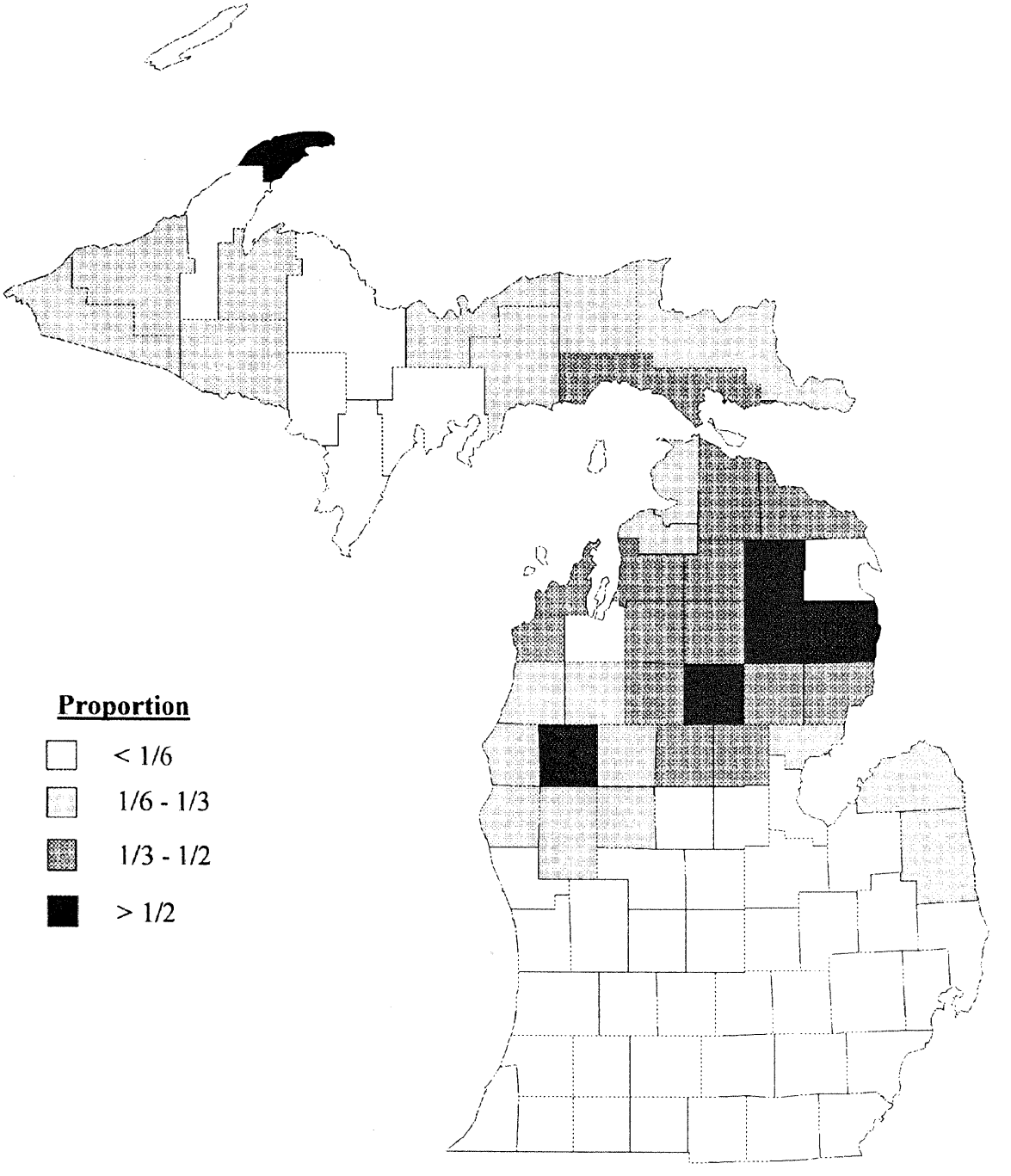

Figure 1.—*Seasonal homes as a proportion of housing units by county, 1990.*

be addressed here, but this report will provide baseline information about seasonal homes in northern Michigan and their impacts on local populations, recreation activity, land management, and local economies, generated by a 1994 survey of seasonal home owners.

SEASONAL HOME RESEARCH

As a topic of study, seasonal homes tend to fall between the cracks of both disciplinary and applied fields. Some descriptive research on seasonal homes was carried out before 1970, primarily by geographers (e.g., Wolfe 1951, 1962). Based on the 1970 Census, Ragatz (1980) estimated that 5 percent of all households in the United States in 1970 owned a seasonal home, with seasonal homes accounting for slightly less than 5 percent of the Nation's housing stock in that year. He also noted the concentration of seasonal homes in a few States, including Michigan, and identified major trends in the seasonal home industry.

Tombaugh (1970) and Marans and Wellman (1978) have studied seasonal homes in Michigan. Tombaugh provided a statewide profile of seasonal homes and their owners as of 1968 and examined relationships between environmental settings and owner characteristics. He found that seasonal home owners with higher incomes are more likely to be located on the Great Lakes shoreline, as are owners more than 55 years old. In a 1974-1975 study, Marans and Wellman compared demographics, recreation behavior and environmental attitudes of permanent residents and seasonal home owners in Cheboygan and Emmet counties. They provided some early evidence of conversions of seasonal homes to permanent residences and linkages between seasonal homes, recreation, and retirement. Although these two studies provided useful baseline information, no comparable studies of seasonal homes in Michigan have been conducted in the past 20 years.

More recent information about seasonal homes has surfaced from studies into related phenomena and is therefore rather sketchy and incomplete. Seasonal home growth was substantial during the 1970's and again in the late 1980's in many areas of the country, including northern Michigan. Recent growth patterns and major changes in the nature of the market make the few existing descriptive studies from the 1960's and 1970's quite dated. Hence the need for a new survey of the market.

In a host of outdoor recreation and tourism studies conducted over the past 20 years, seasonal home ownership and use frequently surfaces as an important dimension in activities as diverse as downhill skiing (Stynes and Mahoney 1980), boating (Stynes *et al.* 1997; Stynes and Safronoff 1982), retirement and migration (Stynes and Olivo 1990), and general tourism and economic development (Stynes 1997). Information gleaned from studies not specifically designed to investigate seasonal homes, however, yields at best an incomplete picture of seasonal homes and their impacts (Stewart and Stynes 1994a).

Our efforts to better understand seasonal homes and their use began with studies of the seasonal home choice process (Stewart and Stynes 1994b). A study of prospective seasonal home buyers showed that, compared with the types of tourism and recreation choices usually studied, the seasonal home choice process is very complex, often takes the prospective buyer many years to complete, involves a sizable share of their income, and has long range consequences. To add to our knowledge about the long range consequences of seasonal home development and use at the individual, community, and regional levels, we undertook this survey of seasonal home owners in northern Michigan.

STUDY OBJECTIVES

(1) To describe the characteristics of Michigan seasonal homes and seasonal home owners.
(2) To measure the patterns of seasonal home use and recreation activity associated with seasonal homes.
(3) To estimate spending by seasonal home owners and the economic impacts of seasonal homes on the local area.

METHODS

Study Population

The study population consists of seasonal homes in northern Lower Michigan. The sample was drawn from six counties in Michigan's northern Lower Peninsula: Alcona, Iosco, Clare, Roscommon, Leelanau, and Manistee (fig. 2). These counties were selected to represent seasonal homes in both coastal and inland counties and to obtain an adequate sample of homes in Great Lakes, inland lake or stream, and forest settings (table 1). Three townships were chosen in each county, and names and addresses of property owners were sampled in these townships from county tax rolls. Plat books were used to help identify concentrations of seasonal homes. Only properties whose tax bill address fell outside the county were selected to increase the likelihood of sampling seasonal homes. Balancing budget constraints against a need to keep sampling errors in the 3 to 5 percent range, we sought 400 completed surveys. Allowing for non-response, bad addresses, and sampled properties not containing a seasonal home, we sampled 1,300 non-resident property owners in the six counties.

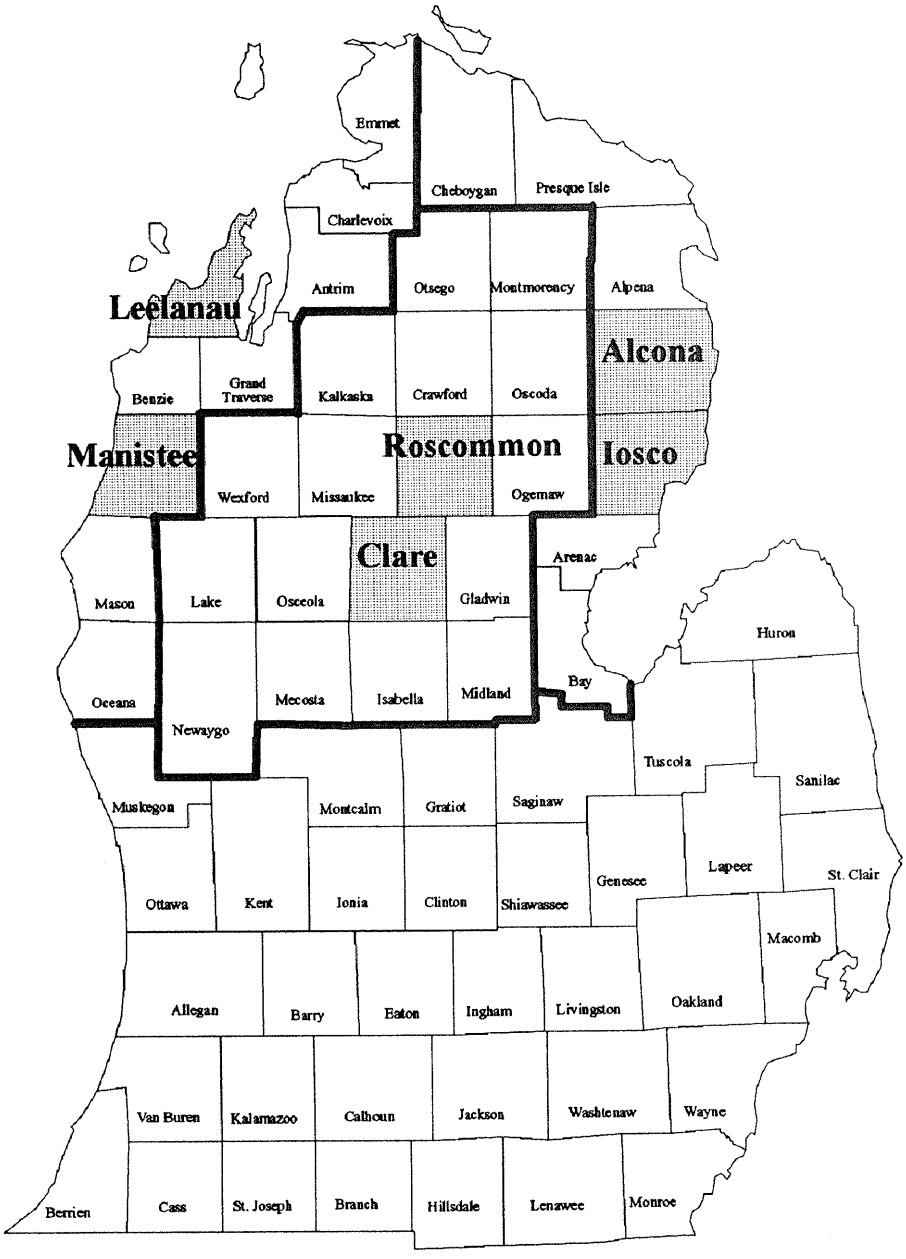

Figure 2.—*The study region.*

Table 1.—*Selected characteristics of study area*

Michigan County Township	Total housing units	Seasonal homes	Percent seasonal housing	Settings represented		
				Great Lakes	Inland lakes	Forest, rural, others
			East			
Alcona	10,414	5,605	54	x	x	x
Alcona	1,335	881	66	x	x	x
Curtis	1,631	881	54		x	x
Greenbush	1,437	692	48	x	x	x
Iosco	19,517	6,643	34	x	x	x
Grant	1,359	814	60		x	x
Plainfield	3,852	2,184	57		x	x
Baldwin	1,406	647	46	x	x	x
			Central			
Clare	19,315	8,285	43		x	x
Garfield	1,685	951	56		x	x
Hayes	3,596	1,853	52		x	x
Roscommon	19,881	10,580	53		x	x
Lyons	1,912	1,394	73		x	x
Gerrish	2,988	1,915	64		x	x
Denton	3,998	1,945	49		x	x
			West			
Leelanau	11,171	4,172	37	x	x	x
Glen Arbor	1,448	1,058	73	x	x	x
Empire	817	392	48	x	x	x
Leland	1,435	663	46	x	x	x
Manistee	13,330	3,196	24	x	x	x
Norman	1,542	897	58		x	x
Arcadia	489	207	42	x	x	x
Onekama	1,086	455	42	x	x	x

Measurement

Two questionnaires were designed to gather the required information. The first questionnaire screened property owners to identify qualifying seasonal home properties. It also gathered general information about seasonal homes and their owners along with expenses and use patterns for the previous year. A second questionnaire gathered more detailed information for either June, July, or August. Seasonal home owners were asked to report home occupancy by day for the previous month as well as patterns of use, spending, and recreation activity on the most recent trip (see questionnaires in Appendix A). Variables measured relative to each of the three study objectives were:

Phase 1: General Questionnaire

* Seasonal home characteristics: property size, value, location, when and how acquired, degree of winterization, and environmental setting (on Great Lakes, inland lake, stream, forest or rural setting, adjacent to public land or not).

* Home owner characteristics: age, income, retirement status, reasons for owning, membership in home owner associations, likelihood of conversion to permanent residence.

* Seasonal patterns of use: number of days the home was occupied in the last year by season, patterns of use by season (regular use, vacations, short stays, rental).

* Recreation activity: presence of 21 different types of recreation equipment at the seasonal home as indicators of recreation activities.

* Spending: annual expenses on seasonal home (taxes, utilities, insurance, maintenance, repairs, remodeling, recreation equipment, etc.).

Phase 2: Seasonal Home Use During Previous Month & Most Recent Stay

* Use patterns for previous month: daily use recorded on a calendar, number of trips to the seasonal home during the previous month.

* Recent trip characteristics: date, length of stay, party size including guests and visitors, trip spending, and frequency and location (public or private land) of participation in 14 outdoor recreation activities on the most recent trip.

Data Gathering Procedures

The initial questionnaire was mailed by first class postage in late May of 1994 to the sample of 1,300 property owners. As surveys were returned, we divided respondents at random into three subgroups. The second instrument was mailed in three waves to the respondents in each subgroup at the ends of June, July, and August, respectively. Each subgroup reported seasonal home use for the previous month.

RESULTS

The results are presented here in three major sections. First, sample representativeness, nonresponse, and other potential sources of sample bias are reported. The second section summarizes the characteristics of seasonal homes and their owners, along with patterns of use, recreation activity, and spending. Selected statistical tests are carried out to identify and explain variations in seasonal home use over space (counties), environmental settings, and property value categories. In the final section, the contribution of seasonal homes to population, recreation activity, and spending is estimated for the six counties in the sample.

Response Rates

Adjusting for undeliverable mail, the first-phase survey achieved an overall response rate of 44 percent with a single mailing. Of the 543 responses, 84 percent qualified as seasonal homes and 16 percent did not (most were permanent residences or vacant land). Eleven percent of the seasonal home owners formally declined participation, leaving a final sample of 397 seasonal homes (table 2). Assuming that those who owned non-qualifying properties were less likely to return the survey, we estimate the response rate from seasonal home owners to be between 50 and 60 percent for the first-phase questionnaire.

Seventeen first-phase respondents were excluded from the second-phase survey because they returned their first surveys after the second-phase mailing had gone out. The response rate for the second-phase questionnaires was just under 60 percent, with response rates dropping off from 63 percent in June to 53 percent in August as the time between the first and second phases increased (table 3).

Representativeness of the Sample

Representativeness of the sample and possible biases were assessed by comparing the sample with selected characteristics of seasonal homes as documented in the 1990 Census data (table 4). Since roughly equal sample sizes were sought in each of the six counties, the sample underrepresents seasonal home owners in counties like

Table 2.—*Phase-one survey response*

Sample	Number	Percent of deliverable surveys (N=1,248)	Percent of returns (N=543)
Initial sample	1,300	NA	
undeliverable	52		
Adjusted sample (deliverable)	1,248	100	
Non-responses	705	56	
Responses	543	44	100
Non-qualifying properties[1]	85	7	16
Seasonal home, declined survey	61	5	11
Seasonal home, completed survey	397	32	73

[1] Non-qualifying properties fell into four categories: 45 percent permanent residences; 38 percent vacant land; 6 percent commercial; and 11 percent no longer owned the property.

Table 3.—*Phase-two survey response*

	June		July		August		Summer total	
	N	%	N	%	N	%	N[1]	%
Surveys mailed	120	100	120	100	120	100	360	100
Returns	75	63	70	58	64	53	209	58
Non-response	45	37	50	42	56	47	151	42

[1] 37 households were dropped from the study because their first-phase survey response was recieved after second-phase surveys were mailed.

Roscommon and Clare with high numbers of seasonal homes. Correspondingly, seasonal home owners in Leelanau County are overrepresented in the sample relative to their proportion in the population of seasonal homes in the six-county area. The overrepresentation of Leelanau County in the sample biases estimates of occupancy and spending upward because this county had the highest rates of both. However, underrepresentation of Clare and Roscommon Counties, both with relatively low rates of occupancy and spending, would tend to counteract this bias, so only the simple unweighted sample statistics are reported.

Because use patterns and spending may be related to property value, we also checked the sample for bias relative to property values. Using property tax records, we compared the State-equalized value (SEV, one-half of market value) of respondents and nonrespondents. Seasonal home owners completing the survey had somewhat higher valued properties (avg. SEV=$43,721) than seasonal home owners who declined participating in the survey (avg. SEV=$37,109), although the difference was not statistically significant. Among subjects who did not return the survey at all, seasonal home owners cannot be distinguished from nonrespondents who did not qualify as seasonal home owners. The SEV for properties owned by non-respondents averaged $38,997, only slightly less than the average SEV for all respondents ($41,559). This difference may be explained largely by non-qualifying properties that are vacant land. Based on 32 returns from property owners indicating their property was vacant land, the average SEV value of vacant parcels was $29,374.

Good additional information about seasonal homes that could be used to check the representativeness of the sample is not available. The Census of Housing reports only limited information about seasonal housing units, so that only counts of seasonal homes are known. Some modest upward bias in the estimates of use and spending are possible due to the oversampling of some counties (e.g., Leelanau). The probability that frequent users of seasonal homes would be more likely to respond than infrequent users could also bias use estimates upward. Sampling methods combined with response patterns probably resulted in the underrepresentation of some types of seasonal homes, such as hunting cabins; homes on larger parcels; and homes that were vacant, up for sale, demolished, or otherwise not used in 1994. Nevertheless, the sample appears sufficiently representative to provide a good initial profile of the patterns of seasonal home use throughout the six counties and much of northern Lower Michigan.

Table 4.—*Distribution of sample and respondents by Michigan county*

County	Seasonal homes[1]		Initial sample		Phase-one returns		Phase-two returns	
	N	%	N	%	N	%	N	%
				East				
Alcona	5,605	15	220	17	56	14	32	16
Iosco	6,643	17	250	19	70	18	36	18
				Central				
Clare	8,285	22	150	12	59	15	30	15
Roscommon	10,580	27	232	18	70	18	37	18
				West				
Leelanau	4,172	11	230	18	80	20	38	19
Manistee	3,196	8	218	17	55	14	25	12
Other/Missing					7	2	3	1
Total	38,481	100	1,300	100	397	100	201	100

[1] Source: 1990 Census of Housing.

Seasonal Home Characteristics

Seasonal homes come in many shapes and sizes ranging from large expensive homes on small waterfront lots to small rustic cabins on large forested parcels. More than 70 percent of the seasonal homes in our sample were on small parcels of an acre or less. Only 6 percent were on lots larger than 5 acres. One in five homes in the sample was part of a seasonal home development, and over a third of the seasonal home owners belonged to a property owners' or lake or stream association. Seasonal home property values were divided among our six property value categories (fig. 3). About 30 percent of the homes were under $60,000 and 27 percent were over $150,000 in value. Forty percent of the properties were acquired during the 1980's, 22 percent during the 1970's, 26 percent before 1970, and 13 percent since 1990. Forty percent of the properties were purchased with the help of a realtor, while 34 percent were bought directly from the previous owner. Smaller percentages of properties were handed down within families (18 percent) or acquired initially as vacant land (17 percent). More than half of the properties are completely winterized, one-fourth partially, and 20 percent not at all. Sixty percent of the properties were on inland lakes, 20 percent on Great Lakes, and 20 percent in non-waterfront forest or rural settings (table 5).

Seasonal Home Owners

Seasonal home owners in our study were considerably older and wealthier than the general population of household heads. Home owners must have accumulated sufficient income to afford a second home, and they and their family and friends must have adequate leisure time to enjoy it. Almost half of our sample of seasonal home owners was over 60 years old, and 41 percent of the respondents were retired (table 6). Another 16 percent planned to retire by the year 2001. Almost one in six seasonal home owners was from out-of-State. In-State home owners resided primarily in the major southern Michigan metropolitan areas. The three most important reasons for owning a seasonal home were to (1) get away and relax, (2) spend time with friends and family, and (3) recreate in the outdoors. Investment was a minor reason for most owners; half of the sample stated this was not a reason for ownership.

Table 5.—*Characteristics of seasonal homes*

Characteristics	Percent of sample
Size of property	
Less than 0.25 acres	27
0.25 -0.5 acres	26
0.51-1 acres	21
1-5 acres	20
More than 5 acres	6
Year property was acquired	
Before 1960	11
1960-1970	15
1971-1980	22
1981-1990	39
after 1990	13
Degree of winterization	
Not winterized	20
Partially winterized	25
Completely winterized	55
Shared ownership	10

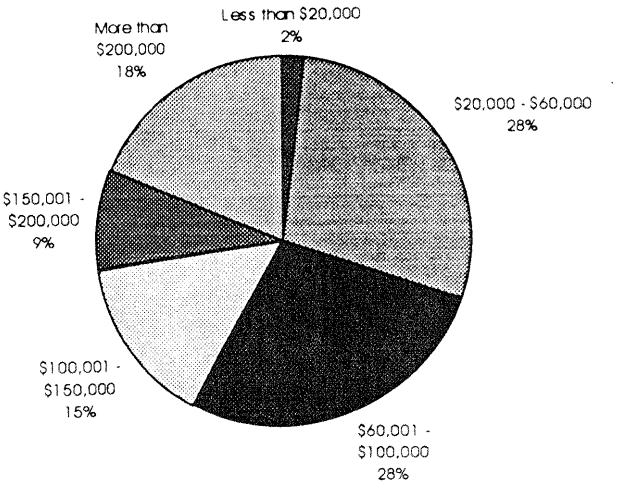

Figure 3.—*Distribution of seasonal homes by property value categories.*

Converting Seasonal Homes to Permanent Residences

In our study, many people said they purchased their seasonal homes as potential retirement homes. Two out of five seasonal home owners rated potential use as a retirement home as a very or extremely important reason for ownership. Because the conversion of seasonal homes to permanent residences has important implications for local and regional planning, we assessed the likelihood of conversion for different types of seasonal home owners.

About a third of seasonal home owners expressed some chance that they will convert their seasonal home to a permanent residence; one in nine indicated they are "very likely" to convert within the next 5 years. The likelihood of converting increased with age of the owner until age 60. Eighteen percent of respondents ages 51 to 60 said they are "very likely" to convert within the next 5 years. After age 60, many of those intending to convert will have already done so. The likelihood of conversions also increase with income, degree of winterization of the home, importance of retirement as a reason for seasonal home ownership, and the amount of off-season use (table 7).

Table 6.—*Characteristics of seasonal home owners by age group (in percent)*

Home owner characteristics	Age group (years)			Total
	Under 50	51-60	Over 60	
All respondents	28	24	48	100
Income				
Under $30,000	4	7	25	14
$30,000-$60,000	31	32	36	34
$60,001-$100,000	41	30	18	26
More than $100,000	25	31	22	26
Total	100	100	100	100
Retirement status				
Currently retired	3	15	76	41
Plan to retire, 1995-1997	1	22	11	11
Plan to retire, 1998-2000	3	9	2	5
Plan to retire after 2000	7	4	1	4
Not retired and no plans	86	50	10	40
Total	100	100	100	100
Convert seasonal to permanent home within 5 yrs.				
Very likely	6	18	11	11
Likely	5	8	10	9
Small chance	8	16	15	14
Not likely	81	58	64	66
Total	100	100	100	100
Convert seasonal to permanent home beyond 5 yrs.				
Very likely	22	19	5	14
Likely	23	15	10	15
Small chance	20	19	15	18
Not likely	35	48	71	53
Total	100	100	100	100

Table 7.—*Likelihood of seasonal home conversion by owner characteristics*

Owner characteristics	Likelihood of converting seasonal to permanent home				Total	Significance test[1]
	Very likely n=86	Likely n=69	Small chance n=32	Not likely n=209	N=396	
All respondents (%)	22	17	8	53	100	
Age (%)						0.00[a]
Under 40 years	23	23	0	54	100	
40-50 years	30	24	1	45	100	
51-60 years	31	17	8	44	100	
Over 60 years	14	14	10	62	100	
Income (%)						0.05[a]
Under $30,000	12	21	18	49	100	
$30,000-$50,000	19	18	8	55	100	
$50,001-$100,000	29	19	5	47	100	
More than $100,000	29	15	5	51	100	
Winterization (%)						0.01[a]
Not winterized	15	20	2	63	100	
Partially winterized	16	13	9	62	100	
Completely winterized	27	19	10	44	100	
Retirement home as reason for ownership (%)						0.00[a]
Extremely important	59	21	0	20	100	
Very important	33	30	9	28	100	
Somewhat important	6	21	14	59	100	
Not important	1	3	10	86	100	
Number of days of use						
Spring	17.1	11.8	13.2	11.4	12.8	0.00[b]
Summer	50.0	42.0	47.1	49.6	48.3	0.20[b]
Fall	19.8	16.2	17.6	16.5	17.2	0.32[b]
Winter	11.7	8.3	9.1	5.5	7.6	0.00[b]
Total, past year	98.6	82.0	87.0	83.0	86.0	0.01[b]
Annual Operating expenses	$7,058	$5,776	$7,363	$5,788	$6,194	0.47[b]
Trip spending per night	$61	$54	$58	$49	$57	0.48[b]

[1] Statistical significance levels are for either a. Chi-square or b. One-way analysis of variance test of the null hypothesis of no relationship between row and column variables.

Seasonal Home Use

Patterns of seasonal home use differed widely in our study. Some homes were used almost daily during one or more seasons, and others were used infrequently throughout the year. On average, seasonal homes were used 86 days a year (median = 82). Summer was the peak use period (48 days of use) accounting for almost 60 percent of overall use, followed by fall (17 days), spring (13 days), and winter (8 days) (fig. 4). Off-season use tended to involve short stays, while summer was the prime period for vacations or extended stays. Thirty-six percent of the homes were not used at all during the winter; only 5 percent were vacant all spring and 3 percent during fall. Less than 5 percent of the homes were rented out, usually during the summer or winter. Great Lakes waterfront homes were used more frequently during the summer, while non-waterfront homes saw more off-season use (fig. 5).

The phase-two survey yields quite detailed patterns of use for the summer months. Over the summer of 1994, use built from primarily weekend use in June to extended periods of use in July through the middle of August, dropping off again during the last 10 days of August (fig. 6). The overall occupancy rate grew from 38 percent in June to 63 percent in July and then fell off to 50 percent in August. Weekend occupancy rates were 55 percent in June, peak at 73 percent in July, and fall off to 64 percent in August. Differences in weekday occupancies were greater, increasing from 27 percent in June to a high of 53 percent in July (fig. 7 and table 8).

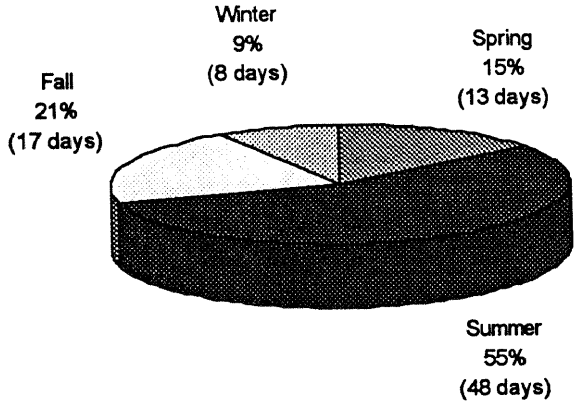

Figure 4.—*Average days of use by season.*

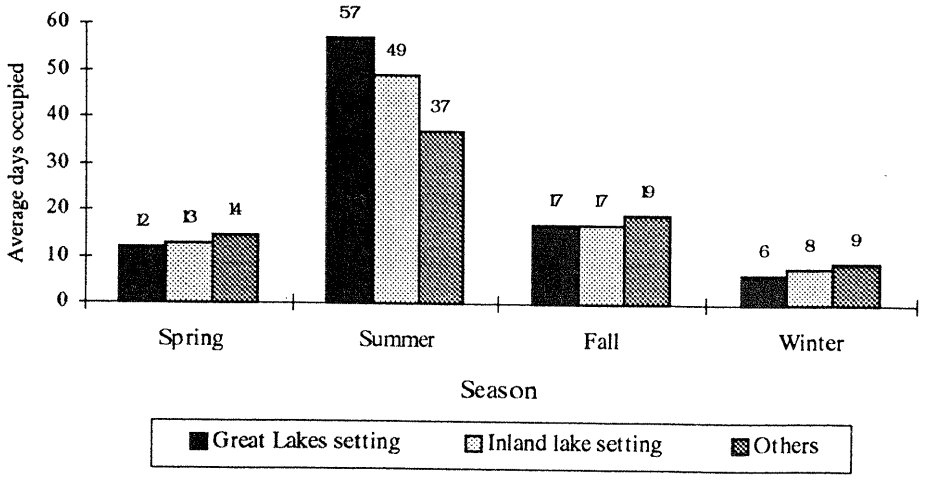

Figure 5.—*Average days of use by season and type of setting.*

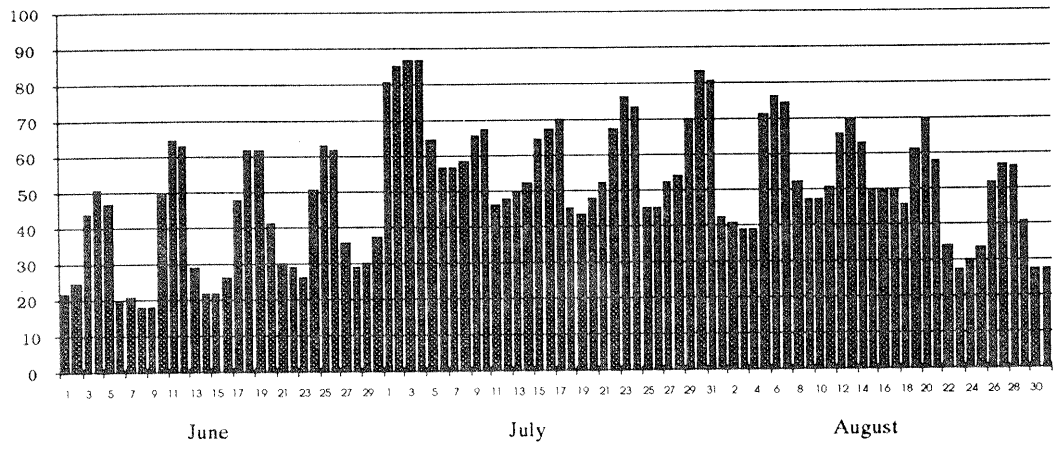

Figure 6.—*Daily occupancy rates for seasonal homes, summer 1994.*

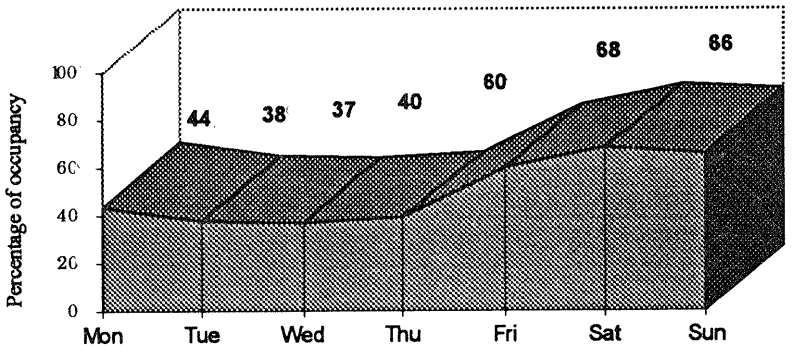

Figure 7.—*Average daily occupancy rates Monday through Sunday, summer 1994.*

During the summer of 1994, the average seasonal home owner took about 3 trips per month to their seasonal home in July and August, slightly fewer in June. Seasonal home owners hosted a number of visitors. Over the summer the immediate family averaged 8.5 visits, and friends and relatives made another 6 trips. The average party of the owner and family during the summer included 2.6 adults and 0.7 children; and owners reported that another 3 guests joined them at their seasonal home during their most recent stay (table 9).

Recreation Activity

Almost half of the homeowners cited outdoor recreation as an "extremely important" reason for owning a seasonal home in Michigan; only 3 percent said it was not important. The assortment of recreation equipment kept at seasonal homes is a good indicator of the recreation activity associated with seasonal home use. Water-based activities were the most evident with three-fourths of the respondents keeping fishing gear and some type of boat at their seasonal home (fig. 8). The

Table 8.—*Seasonal home use patterns, summer 1994*

Characteristics of use	June	July	August	Summer total
Days of use				
Mean	11.4	19.4	15.6	46.4
Median	9.0	19.0	13.5	41.5
Standard deviation	7.8	8.5	8.2	
Length of stay (%)				
1-7 days	30	8	16	
8-14 days	42	24	40	
15-21 days	17	30	17	
More than 21 days	11	39	28	
Occupancy rate (%)				
Weekends (includes Friday)	55	73	64	64
Weekdays	27	53	40	40
Average	38	63	50	50
Most recent trip Length of stay (%)				
1-3 nights	53	42	39	44
4-7 nights	22	25	18	22
8-14 nights	11	12	25	16
15-25 nights	6	6	5	5
More than 25 nights	8	15	13	12
Average stay (number of nights)[1]	4.0	5.1	5.2	4.8

[1] Stays of longer than 20 nights have been ommitted in computing average length of stay to avoid upward bias by a few very long stays.

Table 9.—*Seasonal home user group characteristics, summer 1994*

Group characteristics	June	July	August	Summer total
Number of trips				
Owner's family	2.6	3.0	2.9	8.5
Visiting families	1.5	2.9	1.6	6.0
Total	4.1	5.9	4.5	14.5
Owner's family (%)				
1-2 trips	53	39	58	50
3-4 trips	39	42	32	38
More than 4 trips	8	19	10	12
Visiting families (%)				
0 trips	38	19	34	31
1-2 trips	38	32	44	38
3-4 trips	13	30	17	20
More than 4 trips	11	19	5	12
Owner's party size (average)				
Adults	2.5	2.6	2.7	2.6
Children	0.6	0.7	0.9	0.7
Whole party	3.1	3.3	3.6	3.3
Number in owner's party (%)				
1-2 people	51	58	48	53
3-5 people	36	32	37	34
More than 5 people	13	11	15	13
Visiting party size (average)				
Adults	1.4	2.3	2.1	1.9
Children	0.8	0.9	1.0	0.9
Whole party	2.2	3.2	3.1	2.8
Number of visitors (%)				
0 people	67	47	55	56
1-2 people	5	16	13	11
3-5 people	17	19	15	17
More than 5 people	12	18	17	15

prevalence of bicycles (53 percent), yard toys (50 percent), downhill or cross-country skis (30 percent), hunting gear (25 percent), television sets (90 percent) and VCR's (53 percent) indicates the variety of recreation and leisure activities occurring at seasonal homes.

The number of person-days of recreation activity associated with seasonal homes was computed from activities reported on the most recent trip. Only summer use was estimated, because only summer trips were covered in the phase-two survey.

Figure 9 reports estimates of the rates of participation in recreation activity for the owner and household, the latter including days of participation for all persons staying at the home, including guests. These household participation rates were designed to be multiplied by the number of nights a home is occupied to yield person days of participation in a given activity. For example, over the summer, owners reported swimming 31 percent of the days they were at their seasonal home. If participation by other family members and guests is included, 0.93 person days of swimming were generated for every day a seasonal home is occupied, or about one person day for every day the home is occupied. Swimming was the most frequent summer activity at seasonal homes, followed closely by boating (0.85 person days per night occupied), hiking (0.40), sightseeing (0.37), fishing from a boat (0.32), fishing from shore (0.27), and bicycling (0.19).

For each recreational activity, subjects reported whether the activity took place on their property, on other private land, or on public land. Recreation use was then allocated to locations based on the number of locations checked for each activity. If only one location

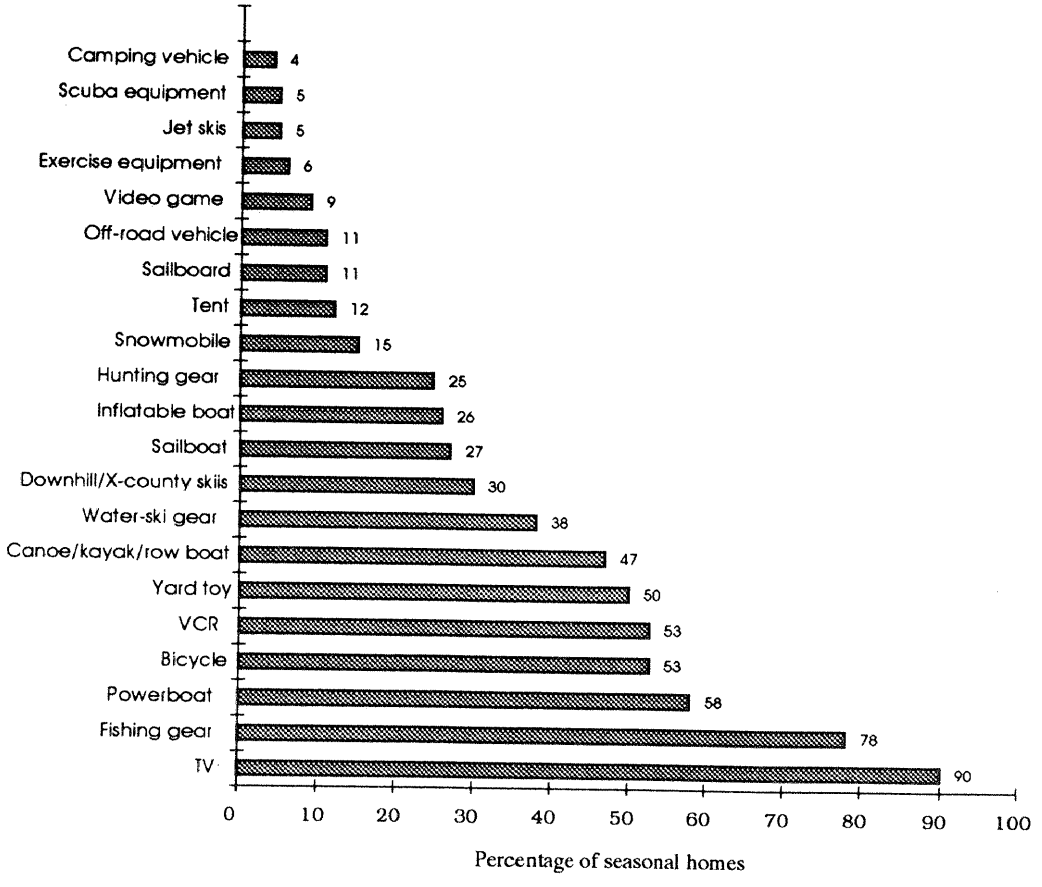

Figure 8.—*Recreation equipment kept at seasonal home.*

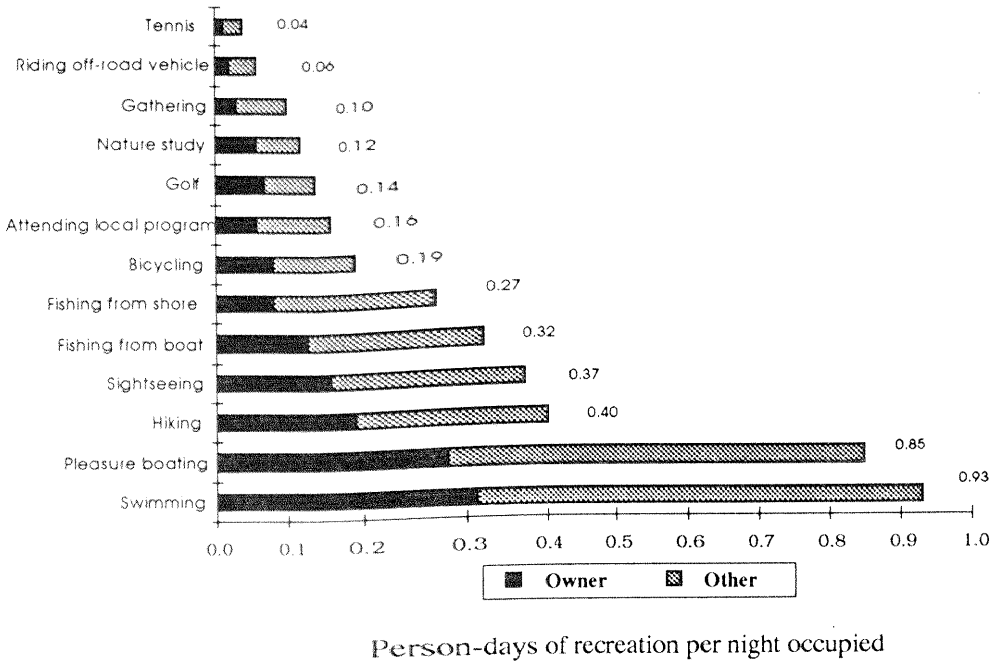

Figure 9.—*Recreation activity participation rate by owner and other visitor.*

was checked, all the activity days were assigned to that category. If two locations were checked, the activity was split 50-50 between the two; if all three locations were checked, use was distributed equally across the three. Because many seasonal homes in our study were waterfront properties, up to three-fourths of water-based activity took place from the seasonal home owner's property. Sightseeing, bicycling, hiking, and tennis tended to occur on nearby public lands, while golf took place primarily at private facilities (fig. 10).

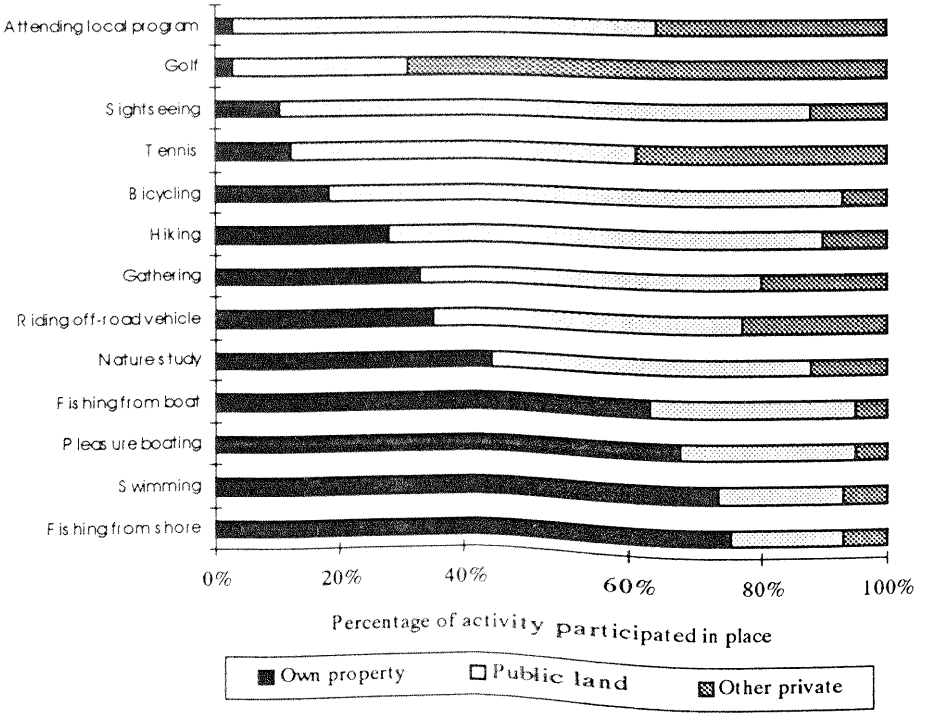

Figure 10.—*Locations of recreation activity.*

Spending Associated With Seasonal Homes

The average seasonal home owner spent about $10,000 a year, with $6,000 allocated to operations and maintenance of the seasonal home and another $4,000 spent on trips to the seasonal home. The estimate of trip spending does not include spending by guests.

Annual expenses of seasonal home owners were divided between property taxes (28 percent), new construction and remodeling (23 percent), recreation equipment purchases (12 percent), utilities (10 percent), home and grounds maintenance (7 percent), furnishings (7 percent), insurance (6 percent), and other expenses (fig. 11). Respondents were not asked to identify where these annual expenditures were made, but it is likely that the vast majority of this spending accrued to the local economy. Some of the recreational equipment and furnishings may have been purchased at the permanent residence.

As expected, seasonal home operating expenses varied directly in proportion to property value. Owners of properties worth less than $60,000 spent about a third of what owners of the highest valued properties (>$100,000) spent each year to operate and maintain their seasonal home. This pattern is quite consistent across spending categories (table 10).

Seasonal home owners spent an average of $46 per night in the local area on trips to their seasonal home (table 11). Trip spending was divided between groceries (34 percent); restaurants (20 percent); gas and oil for autos and boats (15 percent); local services, recreation, auto and boat repairs (12 percent); and other goods (19 percent) (fig. 12). Trip spending also varied by property value, although not as much as operating expenses did. The highest valued properties averaged $53 per trip compared to $34 per trip for the lowest valued properties.

Annual spending on trips to seasonal homes may be estimated by multiplying the average spending per night ($46) times the number of nights that seasonal homes are occupied (86 days per year). Trip spending amounted to about $4,000 per year for each seasonal home. Because only trips made during the summer of 1994 were reported, off-season trips must be assumed to involve similar levels and types of spending on a per night basis as summer trips. This seems a reasonable assumption because somewhat lower off-season prices and levels of activity are likely offset by the effects of shorter stays. Other tourism studies have found that spending per day (or night) tends to decrease with length of stay.

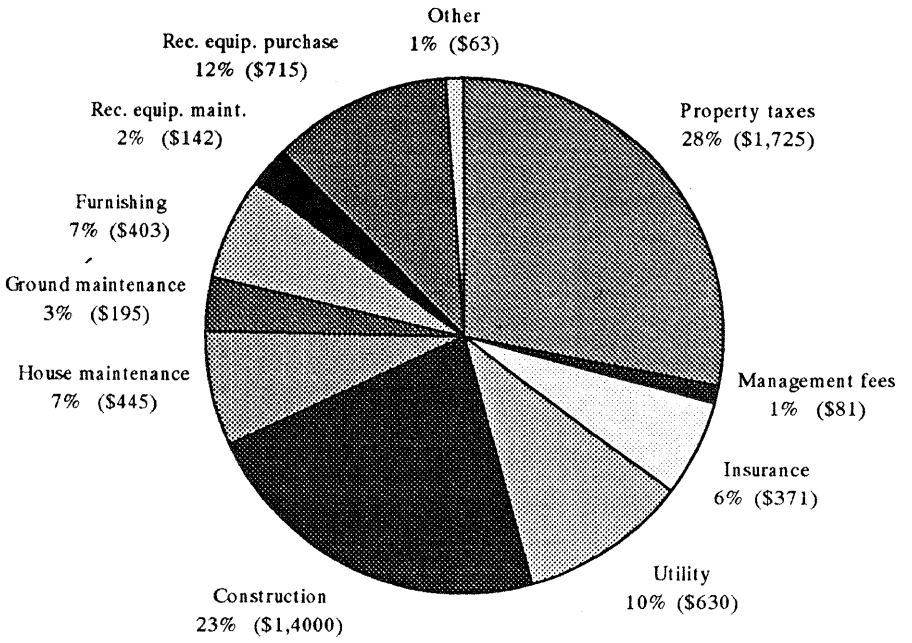

Figure 11.—*Annual costs of operating a seasonal home.*

Table 10.—*Seasonal home operating expenses by property value, 1994*

Expense category	Property value[1]				Significance test[2]
	High	Middle	Low	All homes	
Property taxes	$ 2,872	$ 1,175	$ 762	$ 1,725	0.02
Management fees	152	12	54	81	
Insurance	509	315	244	371	0.00
Utility	878	551	388	630	0.00
Construction	1,873	1,568	660	1,400	0.15
House maintenace	635	335	303	445	0.01
Grounds maintenance	351	124	64	195	0.00
Home furnishings	744	161	193	403	0.02
Recreation equipment purchases	913	736	451	715	0.37
Recreation equipment maintenance	191	121	100	142	0.10
Other	85	36	61	63	0.54
Total	$9,203	$5,134	$3,280	$6,171	0.00

[1] Categories of property value are: High=more than $100,000; Middle=$60,000 to $100,000; Low=less than $60,000

[2] Statistical significance levels are for one-way analysis of variance test of the null hypothesis of no relationship between row and column variables.

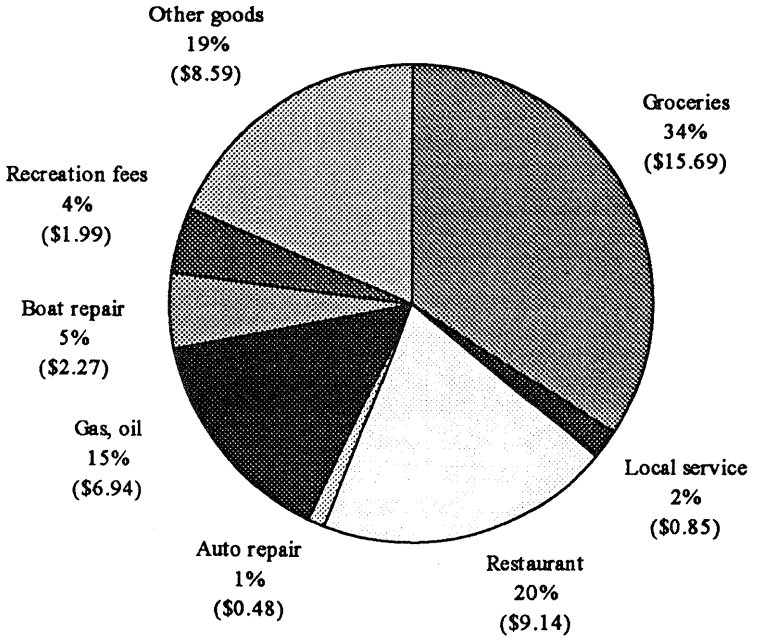

Figure 12.—*Spending on trips to seasonal homes ($ per night).*

Table 11.—*Spending on trips to seasonal home, 1994*

Spending category	Property value[1]				Significance test[2]
	High	Middle	Low	All homes	
Groceries	$17.73	$16.49	$12.22	$15.59	0.064
Restaurant	11.34	8.52	7.21	9.14	0.030
Gas, oil	6.53	7.72	6.64	6.94	0.549
Auto repair	0.74	0.65	0.00	0.48	0.257
Boat repair	2.92	3.11	0.60	2.27	0.453
Recreation fees	3.06	1.14	1.56	1.99	0.194
Hotel, camping	0.00	0.24	0.17	0.13	0.528
Local services	1.51	0.50	0.39	0.85	0.054
Other goods	9.49	9.91	5.25	8.59	0.282
Total	$53.32	$48.28	$34.04	$45.98	0.005

[1] Categories of property value are: High=more than $100,000; Middle=$60,000 to $100,000; Low= less than $60,000.

[2] Statistical significance levels are for one-way analysis of variance test of the null hypothesis of no relationship between row and column variables.

Spatial Variations in Ownership, Use, and Spending

Spatial variations in seasonal home characteristics and use were examined by testing for differences in occupancy rates, spending and selected characteristics of seasonal homes and their owners across counties, settings, and property values. An understanding of these variations will be helpful in generalizing and applying the survey results to counties that were not sampled.

Among the six counties studied, Leelanau represented the higher end of seasonal home properties in terms of use, spending, and owner's incomes (table 12). In our study, seasonal homes in Leelanau County reported occupancy rates about 20 percent higher than in the other five counties studied. The value of seasonal home properties in Leelanau was also much higher, with 83 percent of the homes sampled in Leelanau County valued at more than $100,000. Compared to other counties in the study, considerably higher percentages of Leelanau County seasonal home owners were over 60 and earned more than $100,000 in annual income. These owners spent twice the average to operate and maintain their seasonal home (in particular higher property taxes) and about 20 percent more in trip spending per night. Among the other five sampled counties, seasonal homes in Clare County reported the lowest occupancies and spending. Homes here were mostly on inland lakes, and more than half were valued at less than $60,000.

Differences in use and spending patterns across counties are explained to a great extent by differences in settings (table 13) and property values (table 14). Homes on the Great Lakes were used more in the summer, while those in non-waterfront settings reported higher than average off-season use. Seasonal homes on the Great Lakes had significantly higher property values. Differences across settings in spending and income categories are not statistically significant. Waterfront settings were generally associated with higher property values, higher incomes, and somewhat higher rates of spending compared to non-waterfront properties. Property values were the strongest predictor of spending. Annual expenses dropped from over $9,000 a year in the highest property value category to just over $3,000 in the lowest. Trip spending also dropped from $53 per night to $34 for owners of the lowest valued property. About half of the owners of highest valued properties earned more than $100,000 in income compared to 3 percent of those who owned lower value properties. Lower valued seasonal homes were more likely to be in non-waterfront settings.

Table 12.—*Seasonal home ownership and use by sampled Michigan county, 1994*

	East		Central		West		All	Significance
	Alcona	Iosco	Clare	Ros-common	Leelanau	Manistee	counties	test[1]
Number of days of use								
Spring	13.4	13.3	14.9	13.1	10.8	11.9	12.9	0.334[b]
Summer	44.2	42.1	41.9	44.0	63.4	53.5	48.3	0.000[b]
Fall	20.7	19.4	16.8	15.5	15.5	16.5	17.5	0.164[b]
Winter	6.5	7.0	7.1	8.9	7.9	6.6	7.7	0.652[b]
Annual total	84.7	81.8	80.8	81.4	97.7	88.6	86.5	0.101[b]
Annual operating expenses	$4,850	$5,645	$4,179	$6,096	$10,091	$5,584	$6,171	0.000[b]
Trip spending per night	$49	$45	$33	$47	$55	$38	$46	0.151[b]
Property value (%)								0.000[a]
Under $60,000	28	34	54	32	5	39	30	
$60,000-$100,000	42	44	34	20	12	16	28	
Over $100,000	30	22	12	48	83	45	42	
Owner's income (%)								0.000[a]
Under $30,000	18	20	23	8	4	12	14	
$30,000-$60,000	37	37	38	41	22	39	35	
$60,001-$100,000	28	31	31	26	18	24	26	
Over $100,000	17	12	8	25	56	25	25	
Owner's age (%)								0.055[a]
Under 40 yrs.	4	9	11	4	3	4	6	
40-50 yrs.	28	22	14	27	17	24	22	
51-60 yrs.	26	37	21	21	19	18	24	
Over 60 yrs.	42	31	54	48	61	54	48	
Type of setting (%)								0.000[a]
Great Lakes	20	29	0	0	29	42	20	
Inland lake	60	64	86	62	53	29	60	
Forest, rural, other	20	7	14	38	18	29	20	

[1] Statistical significance levels are for either a. Chi-square or b. One-way analysis of variance test of the null hypothesis of no relationship between row and column variables.
[2] Days per season may not add to annual total due to rounding.

Seasonal Home Impacts by County

Parameters estimated from the sample of seasonal home owners can be used to generate estimates of overall seasonal home activity for individual counties. Of particular interest are estimates of the contribution of seasonal homes to: (1) seasonal populations in an area, (2) recreation activity, and (3) the local economy. In this section, the data from the sample are expanded to the counties directly represented (by selected townships) in the sample.

Estimates for a given county can be generated by multiplying estimates of average use, activity, and spending per home by a count of the total number of seasonal homes in the county. The 1990 U.S. Census provides counts of the number of seasonal homes by county. Average levels of use, recreation activity, and spending are estimated from the sample of 397 seasonal homes.

Table 13.—*Seasonal home ownership and use by setting, 1994*

	Great Lakes	Inland lakes	Forest, rural, other	Total	Significance test[1]
Number of days of use					
Spring	11.9	12.8	14.5	12.9	0.327[b]
Summer	56.9	48.9	37.3	48.3	0.000[b]
Fall	17.2	16.9	19.1	17.5	0.493[b]
Winter	6.4	7.8	8.8	7.7	0.346[b]
Annual total[2]	92.5	86.5	79.6	86.5	0.146[b]
Annual operating expenses	$6,943	$6,152	$5,712	$6,171	0.615[b]
Trip spending per night	$42	$48	$40	$46	0.417[b]
Property value (%)					0.000[a]
Less than $60,000	9	26	62	30	
$60,001-$100,000	23	31	25	28	
More than $100,000	68	43	13	42	
Owner's income (%)					0.517[a]
Under $30,000	10	13	21	14	
$30,000-$60,000	34	33	41	35	
$60,001-$100,000	28	26	22	26	
More than $100,000	28	28	16	25	
Owner's age (%)					0.069[a]
Under 40 yrs.	3	7	3	6	
40-50 yrs.	16	25	22	22	
51-60 yrs.	25	26	17	24	
Over 60 yrs.	56	42	58	48	
Winterization (%)					0.145[a]
Not winterized	25	20	12	20	
Partially winterized	18	28	27	25	
Completely winterized	57	52	61	55	
Conversion to permanent home (%)					0.009[a]
Very likely	20	23	18	22	
Likely	14	15	21	18	
Small chance	3	7	18	8	
Not likely	63	55	43	52	

[1] Statistical significance levels are for either a. Chi-square or b. One-way analysis of variance test of the null hypothesis of no relationship between row and column variables.
[2] Days per season may not add to annual total due to rounding.

Table 14.—*Seasonal home ownership and use by property value, 1994*

	Property value[1]				Significance test[2]
	High	Middle	Low	Total	
Number of days of use					
Spring	12.1	14.5	12.9	12.9	0.20[b]
Summer	55.9	46.9	39.3	48.3	0.00[b]
Fall	15.9	18.5	18.3	17.5	0.22[b]
Winter	8.0	8.7	6.6	7.7	0.28[b]
Annual total[3]	91.9	88.6	77.0	86.5	0.01[b]
Annual operating expenses	$9,203	$5,133	$3,280	$6,171	0.00[b]
Trip spending per night	$53	$48	$34	$46	0.00[b]
Owner's income (%)					0.00[a]
Under $30,000	2	14	30	14	
$30,000-$60,000	23	35	50	35	
$60,001-$100,000	26	36	17	26	
more than $100,000	49	15	3	25	
Owner's age (%)					0.06[a]
Under 40 yrs.	6	9	3	6	
40-50 yrs.	20	27	21	22	
51-60 yrs.	24	28	19	24	
over 60 yrs.	50	26	57	48	
Type of setting					0.00[a]
Great Lakes	33	17	6	20	
Inland lakes	61	65	51	60	
Forest, rural, other	6	18	43	20	
Sampled Michigan counties (%)					0.00[a]
East					
Alcona	10	22	13	15	
Iosco	10	29	20	18	
Central					
Clare	4	19	27	15	
Roscommon	21	13	19	18	
West					
Leelanau	40	9	3	20	
Manistee	15	8	18	14	

[1] Categories of property value are: High=more than $100,000; Middle=$60,000 to $100,000; Low= less than $60,000.

[2] Statistical significance levels are for either a. Chi-square or b. One-way analysis of variance test of the null hypothesis of no relationship between row and column variables.

[3] Days per season may not add to annual total due to rounding.

Table 16 reports estimates of impacts of seasonal homes for the six counties in the sample using the parameter estimates for each county from table 15. This procedure takes into account variations between counties that were observed in the sample.

Roscommon County is used to illustrate the impacts and procedures. Roscommon County had 10,580 seasonal homes in 1990, representing 53 percent of all housing units in the county. An average use rate of 81.4 days per year (table 15) yields 861,212 days of seasonal home use in Roscommon County. This translates to 3.2 million person-days of seasonal home use, including family and guests. The average daily seasonal home population in the county of 8,870 people is 45 percent of the resident population (table 16). During the peak summer season, there are as many people at seasonal homes in Roscommon County as at permanent residences.

Total spending associated with seasonal home use in Roscommon County in 1994 was $119 million, with $64 million going to annual operating expenses and $55 million spent on trips to seasonal homes. Total industrial output covering all sales in Roscommon County in 1990 was $321 million, so that seasonal homes accounted for about 37 percent of all economic activity in the county, based on this estimate (table 16). The seasonal home-related spending reported here does not include construction of new homes. Except for some recreational equipment and furnishings bought outside the county and a portion of insurance and utility costs, the spending measured in the survey largely accrued to the local economy (i.e., the county in which the seasonal home is located).

Across the six counties in the sample, seasonal homes ranged from 24 percent of housing units in Manistee to 54 percent in Alcona (table 16). The average daily seasonal home population ranged from 14 percent of the resident population in Manistee to 48 percent in Alcona. During the summer, seasonal home visitors represented from 30 to 103 percent of the number of permanent residents across these six counties. Total spending associated with seasonal homes ranged from $34 million in Manistee to almost $120 million in Roscommon. Estimates of spending in the other four counties were between $60 and $75 million. Because of considerable variation in the size and nature of the economies in each of the six counties, the contribution of seasonal homes to total sales (i.e., seasonal home spending/total industrial output) varied from 49 percent for Alcona to about 7 percent in Manistee and Iosco.

Seasonal Home Impacts on Northern Lower Michigan

To estimate the impacts of seasonal homes on other counties in northern Lower Michigan, the study area was divided into three subregions: east, central, and west. Parameter values for the three regions (table 17) were estimated by taking sample averages for homes in the two counties falling within each region. Leelanau and Manistee represent the western region, Clare and Roscommon the central region, and Alcona and Iosco the eastern region. Regional parameters were then multiplied by the numbers of seasonal homes in each northern Michigan county to estimate total impacts (table 18).

Table 18 reports estimates of seasonal home use and spending for 33 northern Lower Michigan counties. Within each region, counties are ranked by the percentage contribution of seasonal homes to each county's economy using total industrial output as an indicator of overall economic activity in the county. The estimates for the six counties from the sample in table 18 vary slightly from those in table 15 because the former estimates are based on parameters for the three regions rather than on the individual county parameters. The regional parameters have smaller sampling errors because they were estimated from larger sample sizes, but they don't capture any variations between individual counties in each region. An indication of possible variation between counties can be obtained by comparing the parameter estimates for the two counties in each region (table 14).

In five counties (Lake, Oscoda, Roscommon, Montmorency, and Alcona), seasonal homes accounted for 30 percent or more of all spending in the county. Seasonal homes in these counties accounted for more than half of the housing units, so the contribution to the local economy should not be too surprising, particularly for economies driven largely by household spending. Remember that seasonal home

Table 15.—*Parameter estimates of seasonal home use and spending by Michigan county, 1994*

Use and spending	East		Central		West		Average
	Alcona	Iosco	Clare	Roscommon	Leelanau	Manistee	
Number of days occupied per seasonal home per year (use rate)	84.7	81.8	80.8	81.4	97.7	86.8	86.5
Seasonal home visitor population per year (number)							
Owner's family (person-days)	280	270	267	269	322	292	285
Visitors (person-days)	38	38	38	38	38	38	38
Total (person-days), average occupancy [1]	317	308	304	306	360	330	323
Annual operating expenses per home	$4,850	$5,645	$4,179	$6,096	$10,091	$5,584	$6,171
Trip spending per person-night, owner's family	$20	$17	$13	$18	$23	$16	$18
Trip spending per person-night, visitors	$10	$8	$6	$9	$12	$8	$9

[1] Owner and visitors person-days may not add to total due to rounding.

owners generally have higher incomes than the permanent residents of these counties and in many cases may generate as much spending in the 80 days they are in their seasonal home as a permanent resident spends in 365 days. Also bear in mind that a number of "permanent residents" of these areas, especially retirees, may spend from 1 to 4 months outside the region.

The number of visitors staying at seasonal homes on a given day amounted to almost half of the resident population in these top five counties. In another 10 counties, seasonal homes accounted for between 10 and 20 percent of the economy (table 18). In these counties seasonal homes generally represent 30 to 40 percent of all housing units, and the county has other generators of economic activity. Some have a strong government sector, a few have manufacturing or mining as an economic base, and many have strong tourism sectors that complement the seasonal home activity. Counties in which seasonal homes contribute less than 10 percent of economic activity either have few seasonal homes (e.g., Bay, Isabella, and Midland), significant resident population bases (e.g., Grand Traverse), and/or other important generators of economic activity.

Twenty-nine of the 33 northern Lower Michigan counties received more than $20 million in spending from seasonal home owners and their guests. The relative impact of seasonal homes varies widely based upon what other generators of economic activity exist in the county. For example, Grand Traverse and

Table 16. —*Parameter estimates; seasonal home use, users, and expenditures by Michigan county, 1994*

Impact Measure	East		Central		West	
	Alcona	Iosco	Clare	Roscommon	Leelanau	Manistee
Seasonal homes	5,605	6,643	8,285	10,580	4,172	3,196
Number of seasonal homes	54	34	43	53	37	24
Percent of housing units that are seasonal						
Use and users	475	543	669	861	408	283
Occupied days per year (thousands)						
Annual person-days at seasonal homes (thousands)	1,567	1,793	2,209	2,842	1,345	934
Owner's family	212	251	313	400	158	121
Visitors	1,779	2,044	2,522	3,242	1,503	1,055
Total						
Average number of daily seasonal home users	4,873	5,601	6,909	8,870	4,117	2,891
County resident population	10,145	30,209	24,952	19,776	16,527	21,265
Seasonal home users as a percentage of resident population, annual average	48	19	28	45	25	14
Seasonal home users as a percentage of resident population, summer season	103	39	59	99	64	33
Spending (millions of dollars)	27.2	37.5	34.6	64.5	42.1	17.8
Operating expenditures	32.1	30.0	27.9	51.1	31.4	15.3
Trip spending by owner's family	2.2	2.1	2.0	3.6	1.8	1.0
Trip spending by guests	61.5	69.6	64.4	119.2	75.3	34.1
Total expenditures per year	126.1	1,049.5	449.1	320.7	288.1	571.4
Total industrial output						
Total spending as a percentage of total industrial output	49	7	14	37	26	6

Oscoda counties each generated about $45 million in spending by seasonal home owners, but while this spending represented only 2 percent of Grand Traverse County's economy, it was 34 percent of Oscoda's.

Summer Recreation Activity

The number of person-days of recreation activity generated by a seasonal home may be estimated by multiplying the rates of participation in recreation activities (fig. 9) times seasonal home occupancy rates (table 16). Multiplying these numbers in turn by the number of seasonal homes in each county yields an estimate of the number of person-days of recreation activity generated by seasonal homes in each county. In our study, recreation participation rates did not vary substantially by county or subregion, so the overall sample averages are applied to each county.

Since recreation activity data were gathered only for summer trips, estimates apply only to summer activity.

The numbers of person-days of summer recreation activity generated by seasonal homes is reported for each county in table 19. These should be treated as rough estimates because they are based on a sample of 400 homes and a number of simplifying assumptions. County rankings vary directly with the number of seasonal homes because the model assumes no variation in participation rates across counties. Roscommon County, with the largest number of seasonal homes, therefore generates the greatest number of person days of recreation from seasonal homes. The contribution of seasonal homes to recreation participation in Roscommon County ranges from 423,000 person-days of swimming to 18,000 person-days of tennis. The demands

Table 17.—*Parameter estimates: seasonal home use and spending by region of Michigan, 1994*

Parameter	East	Central	West
Occupied days per seasonal home, annual (number)	83.3	81.1	93.2
Occupied days per seasonal home, summer only (number)	43.2	43.0	58.5
Annual seasonal home visitor population (number of person-days)			
Owner's family	274.7	267.6	307.4
Visitors	37.8	37.8	37.8
Total	312.5	305.4	345.2
Spending (dollars)			
Annual operating expenses per home	5,247	5,138	7,838
Trip spending per person-day, owner's family	19	15	20
Trip spending per person-day, visitors	9	8	10

that seasonal homes might place on public or private facilities can be estimated using the percentages of use by location in figure 10.

Reliable estimates of overall recreation participation by county, which could be used to assess the accuracy of the recreation participation estimates or the proportion of recreation activity represented by seasonal homes, are generally lacking. The 1994 Michigan Recreational Boating Survey (Stynes *et al.* 1997) provides the best validation check. About a third of Michigan's registered boat owners also own a seasonal home, so nearly 1,000 seasonal home owners are included in the random sample of more than 3,000 boat owners chosen from the State's boat registration list. The boating survey estimates that 3.2 million boat days were generated in 1994 from seasonal homes in Michigan's northern Lower Peninsula. Assuming an average party size of two people per boat, this equates to 6.4 million person-days of boating from seasonal homes. The estimate of 5.3 million person-days of boating from seasonal homes shown in table 19 is about one million short of this estimate. Part of this deficit can be explained by boating activity in late spring and early fall, which is not included in the seasonal home survey figure. The two estimates are therefore reasonably consistent. Estimates for individual counties are, of course, subject to larger errors, but the consistency of these results with the boating survey is encouraging.

Generalizing From the Sample

Some cautions are in order in interpreting these estimates of total county-level impacts. There are variations across counties and other geographic units in the patterns of use and spending by seasonal home owners. This sample is not large enough to detect some of these variations, and seasonal homes in many parts of the State were not represented. The sample may not be completely representative of seasonal homes statewide or for any particular county. Smaller parcels and waterfront properties may have been oversampled. Respondents in our study may also be more frequent users of their seasonal homes than those who did not respond, resulting in overestimates of some activities and spending. There are, however, no data to formally test these hypotheses, and the analyses conducted have revealed no significant biases in the sample.

The sample appears adequate to obtain good ballpark estimates of the magnitude and distribution of seasonal home impacts around the State. The U.S. Census counts of seasonal homes provide a reasonably firm basis for expanding our estimates from the sample to the population of all seasonal homes. The Census counts will include some seasonal homes that are up for sale, vacant, or used infrequently. There is a good chance that these homes are underrepresented in the

Table 18.--Estimated seasonal home use and spending by county, northern Michigan, 1994

County	Seasonal homes[1]		SH use (thousands)		Spending (Millions of dollars)			Total industrial output	
	Number	Percent of housing units	Days Occupied	Person-days	Annual	Trip	Total[2]	1990 (Millions of dollars)	SH spending as percent of TIO
				Central					
Lake	7,461	62	605	2,279	$ 38.33	$ 32.70	$ 71.04	97.8	73
Oscoda	4,520	56	367	1,380	$ 23.22	$ 19.81	$ 43.04	124.7	34
Roscommon	10,580	53	858	3,231	$ 54.36	$ 46.38	$ 100.73	320.7	31
Montmorency	4,873	55	395	1,488	$ 25.04	$ 21.36	$ 46.40	156.8	30
Clare	8,285	43	672	2,530	$ 42.56	$ 36.32	$ 78.88	449.1	18
Crawford	3,912	45	317	1,195	$ 20.10	$ 17.15	$ 37.25	223.7	17
Gladwin	5,492	37	445	1,677	$ 28.22	$ 24.07	$ 52.29	344.0	15
Ogemaw	5,678	41	460	1,734	$ 29.17	$ 24.89	$ 54.06	363.4	15
Missaukee	2,413	34	196	737	$ 12.40	$ 10.58	$ 22.97	238.4	10
Kalkaska	3,466	38	281	1,059	$ 17.81	$ 15.19	$ 33.00	446.4	7
Osceola	3,328	29	270	1,016	$ 17.10	$ 14.59	$ 31.69	516.5	6
Otsego	3,711	35	301	1,133	$ 19.07	$ 16.27	$ 35.33	680.1	5
Newaygo	5,057	25	410	1,544	$ 25.98	$ 22.17	$ 48.15	961.8	5
Mecosta	3,273	19	265	1,000	$ 16.82	$ 14.35	$ 31.16	689.0	5
Wexford	2,166	17	176	661	$ 11.13	$ 9.49	$ 20.62	818.3	3
Isabella	933	5	76	285	$ 4.79	$ 4.09	$ 8.88	1,552.6	1
Midland	417	1	34	127	$ 2.14	$ 1.83	$ 3.97	6,880.6	0
				East					
Alcona	5,605	54	467	1,752	$ 29.41	$ 30.61	$ 60.02	126.1	48
Cheboygan	4,831	34	402	1,510	$ 25.35	$ 26.38	$ 51.73	420.8	12
Presque Isle	3,044	34	253	951	$ 15.97	$ 16.62	$ 32.60	269.9	12
Arenac	2,413	27	201	754	$ 12.66	$ 13.18	$ 25.84	295.4	9
Iosco	6,643	34	553	2,076	$ 34.86	$ 36.28	$ 71.14	1,049.5	7
Alpena	1,810	13	151	566	$ 9.50	$ 9.89	$ 19.38	938.3	2
Bay	327	1	27	102	$ 1.72	$ 1.79	$ 3.50	3,162.0	0
				West					
Leelanau	4,172	37	389	1,440	$ 32.70	$ 27.04	$ 59.73	288.1	21
Benzie	3,145	37	293	1,086	$ 24.65	$ 20.38	$ 45.03	254.8	18
Antrim	4,695	36	438	1,621	$ 36.80	$ 30.43	$ 67.22	424.4	16
Oceana	3,504	27	327	1,210	$ 27.46	$ 22.71	$ 50.17	510.7	10
Manistee	3,196	24	298	1,103	$ 25.05	$ 20.71	$ 45.76	571.4	8
Charlevoix	3,873	30	361	1,337	$ 30.36	$ 25.10	$ 55.45	748.8	7
Emmet	4,382	30	408	1,513	$ 34.34	$ 28.40	$ 62.74	861.1	7
Mason	3,045	22	284	1,051	$ 23.87	$ 19.73	$ 43.60	844.5	5
Grand Traverse	3,296	11	307	1,138	$ 25.83	$ 21.36	$ 47.19	2,623.3	2

1. Source: 1990 Census of Housing.

2. Due to rounding, annual and trip spending may not add to total spending.

Table 19.--Summer recreation activity generated from seasonal homes by county (thousands of person-days), 1994

County	Swim	Boat	Hike	Sightsee	Bike	Local program	Golf	Nature	Gather	ORV	Tennis	Fish (boat)	Fish (shore)
							Central						
Roscommon	423	387	182	168	86	73	64	55	45	27	18	146	123
Clare	331	303	143	132	68	57	50	43	36	21	14	114	96
Lake	298	273	128	119	61	51	45	38	32	19	13	103	87
Ogemaw	227	208	98	90	46	39	34	29	24	15	10	78	66
Gladwin	220	201	94	87	45	38	33	28	24	14	9	76	64
Newaygo	202	185	87	80	41	35	30	26	22	13	9	70	59
Montmorency	195	178	84	78	40	34	29	25	21	13	8	67	57
Oscoda	181	165	78	72	37	31	27	23	19	12	8	62	52
Crawford	156	143	67	62	32	27	24	20	17	10	7	54	45
Otsego	148	136	64	59	30	26	22	19	16	10	6	51	43
Kalkaska	139	127	60	55	28	24	21	18	15	9	6	48	40
Osceola	133	122	57	53	27	23	20	17	14	9	6	46	39
Mecosta	131	120	56	52	27	23	20	17	14	8	6	45	38
Missaukee	96	88	42	38	20	17	15	12	10	6	4	33	28
Wexford	87	79	37	34	18	15	13	11	9	6	4	30	25
Isabella	37	34	16	15	8	6	6	5	4	2	2	13	11
Midland	17	15	7	7	3	3	3	2	2	1	1	6	5
							East						
Iosco	267	244	115	106	55	46	40	34	29	17	11	92	77
Alcona	225	206	97	90	46	39	34	29	24	15	10	77	65
Cheboygan	194	177	83	77	40	33	29	25	21	13	8	67	56
Presque Isle	122	112	53	49	25	21	18	16	13	8	5	42	36
Arenac	97	89	42	39	20	17	15	13	10	6	4	33	28
Alpena	73	66	31	29	15	13	11	9	8	5	3	25	21
Bay	13	12	6	5	3	2	2	2	1	1	1	5	4
							West						
Antrim	255	233	110	102	52	44	38	33	27	16	11	88	74
Emmet	238	218	103	95	49	41	36	31	26	15	10	82	69
Leelanau	227	207	98	90	46	39	34	29	24	15	10	78	66
Charlevoix	211	193	91	84	43	36	32	27	23	14	9	73	61
Oceana	191	174	82	76	39	33	29	25	20	12	8	66	55
Grand Traverse	179	164	77	71	37	31	27	23	19	12	8	62	52
Manistee	174	159	75	69	36	30	26	22	19	11	7	60	50
Benzie	171	156	74	68	35	29	26	22	18	11	7	59	50
Mason	166	151	71	66	34	29	25	21	18	11	7	57	48
N. MI Total	5,825	5,324	2,505	2,318	1,190	1,002	877	752	626	376	251	2,004	1,691

sample. Nevertheless, the results provide strong evidence of the significance of seasonal homes in many areas of Michigan, and we will hope they will stimulate increased research attention to improve the geographic coverage and further refine these estimates.

In the future, additional data should be gathered to expand coverage to other areas of the State and to all four seasons. This additional data would permit some modeling of regional variations in use of seasonal homes and help to better explain variations across the State.

SUMMARY AND CONCLUSIONS

We conducted this study to describe the characteristics of seasonal homes in northern Lower Michigan and their owners, measure patterns of use and associated recreation activity, and estimate impacts of seasonal homes on area populations, recreation facilities, and local economies. Seasonal home characteristics and patterns of use were estimated from a stratified random sample of 397 seasonal home owners in six northern Lower Michigan counties.

Seasonal home owners were identified by way of mailed surveys of 1,300 property owners. The response rate from seasonal home owners is estimated to be between 50 and 60 percent. The sample is adequate to estimate most population parameters to within plus or minus 3 to 5 percent sampling error. Comparisons of parameter estimates across counties, seasonal home settings, and property values indicate the range of potential variations across counties and identify some of the key predictors of seasonal home use and spending patterns. By applying parameter estimates from the survey to 1990 U.S. Census counts of seasonal homes in each county, we estimated seasonal home impacts in all counties in the northern Lower Peninsula of Michigan.

Seasonal homes represent a quarter of all housing units in the northern Lower Peninsula and more than 50 percent of housing units in five counties. Spending associated with seasonal homes (not including new home construction) constitutes 30 percent or more of the economic activity in five of these counties. An average seasonal home is occupied 86 days a year (55 percent during the summer) accumulating 323 person-days of use by the owner's family and guests. Seasonal home owners spend an average of $6,000 a year to operate and maintain their seasonal home and spend $46 per day in the local area on trips to their seasonal home. Spending is directly related to the owner's income and value of the seasonal home property.

The most important reasons for seasonal home ownership are to get away and relax, spend time with family and friends, and enjoy outdoor recreation. More than half of the owners keep television sets, fishing gear, boats, bicycles, and yard toys at their seasonal home. Seasonal homes generate considerable amounts of swimming, pleasure boating, hiking, sightseeing, and fishing activity in the local area. For example, Roscommon County's 10,580 seasonal homes generated an estimated 423,000 person-days of swimming, 387,000 days of boating, and 182,000 days of hiking during the summer of 1994. Some of this activity took place on the owner's property, some on public land, and some on other private land. The demands that seasonal homes place on recreation facilities and services are indicative of needs that are generated for health, transportation, utilities, and a variety of other social and municipal services.

Seasonal homes also have major implications for the population growth and age structure in northern Lower Michigan. Almost half of the seasonal home owners are over 60 years old and 41 percent are retired. Forty percent of seasonal home owners listed potential use as a retirement home as an important reason for ownership, and 20 percent said they are likely to convert their seasonal home to a permanent residence within the next 5 years. If half of those likely to convert do so, it would increase the resident population of the region by 10 percent in 5 years and by 20 percent in 10 years. Seasonal homes are clearly one of the most significant components of population change in northern Michigan.

Seasonal homes are an important element of the lifestyle of their owners and an integral part of the social, economic, and environmental character of the region and the State. The intent of this study is not to promote seasonal homes or to emphasize their positive or negative impacts. Seasonal homes involve costs and benefits for both the owner and the local community. But because there is virtually no

recent information about seasonal homes (beyond the Census counts) that covers more than a small local area, we wanted to provide some baseline descriptive information for counties in northern Lower Michigan. This information will be useful for a variety of planning and policy decisions, and it will provide a foundation for further studies.

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0003

SEASONAL HOME SURVEY

SCREENING BOX: Please complete this box to indicate your eligibility and willingness to participate in this seasonal home study.

Do you own a home in northern Michigan that is used for seasonal or occasional use?

☐ NO I do not qualify as a seasonal home owner, because (check one and RETURN the UNCOMPLETED SURVEY):

- ☐ I do not own property in northern Michigan
- ☐ My property is vacant land
- ☐ My property is a permanent residence
- ☐ My property is commercial or rental property
- ☐ Other Reason, _____

☐ YES , but I do not wish to participate in this survey (RETURN UNCOMPLETED SURVEY)

☐ YES and I'd like to help by completing this survey. (CONTINUE BELOW)

1. Where is your **seasonal home** located? _____ (Town/Village) _____ (County) _____ (Zipcode)

2. What is the approximate size of your seasonal home property? _____ acres
(Enter zero if you own the housing structure but no land)

3. What is your best estimate of the current market value of your property?

- ☐ Less than $20,000
- ☐ $20,000 - $60,000
- ☐ $60,001 - $100,000
- ☐ $100,001 - $150,000
- ☐ $150,001 - $200,000
- ☐ More than $200,000

4. When did you acquire this property? _____ year.

5. How did you acquire it? (*please check all that apply*)

- ☐ Property was handed down or purchased from within the family
- ☐ Found & purchased the property with the help of a Realtor or sales office.
- ☐ Purchased directly from previous owner .
- ☐ Purchased from a friend or acquaintance
- ☐ Purchased the property originally as vacant land

6. Do you share ownership of this property with someone else?

☐ Yes ⇒ What percentage interest do you have in the home? _____%

☐ No

7. Is your property part of a seasonal home, condominium or resort development? ☐ Yes ☐ No.

Do you belong to a property owners association? ☐ Yes ☐ No.

Are you a member of a lake or stream association? ☐ Yes ☐ No.

8. Describe your seasonal home locational setting (*please check all that apply).*

☐ Great Lakes waterfront
☐ Inland lakes waterfront
☐ River or Stream frontage
☐ Forest setting
☐ Rural area
☐ Adjacent to public land

9. To what degree is your seasonal home winterized for year-round use?

☐ Not winterized ☐ Partially winterized ☐ Completely winterized

10. How important to you are the following reasons for owning your seasonal home? *(Circle one box on each line)*

Reason for Owning Seasonal Home	Extremely Important	Very Important	Somewhat Important	Not Important
A place for outdoor recreation	☐	☐	☐	☐
A place to get away and relax	☐	☐	☐	☐
A place to spend time with family & friends	☐	☐	☐	☐
A possible retirement home or area	☐	☐	☐	☐
An investment or source of income	☐	☐	☐	☐
Having a seasonal job in the area	☐	☐	☐	☐

Seasonal Home Use and Spending Patterns

11. Describe the patterns of use of your seasonal home using the chart below. In the first column, check the box next to each statement at the left that applies to your use of your seasonal home this past Spring. Check boxes in the **Summer, Fall,** and **Winter** columns based on your use during those seasons this past year.

	Spring Mar,Apr,May	**Summer** Jun,Jul,Aug	**Fall** Sep,Oct,Nov	**Winter** Dec,Jan,Feb
Use pattern by season				
Someone stays at seasonal home nearly every day	☐	☐	☐	☐
Spend at least one vacation period of 6 or more nights	☐	☐	☐	☐
Frequent short stays	☐	☐	☐	☐
Occasional use	☐	☐	☐	☐
Not used	☐	☐	☐	☐
Rented out to others	☐	☐	☐	☐

12. Please estimate how many days your seasonal home was occupied during each season this past year. Include days the home was occupied by you, family, friends, or renters. There are roughly 90 days in each season.

	Spring Mar,Apr,May	**Summer** Jun,Jul,Aug	**Fall** Sep,Oct,Nov	**Winter** Dec,Jan,Feb
Days Occupied	_____	_____	_____	_____

13. What kinds of **recreation equipment** do you keep at your seasonal home? *(please check all that apply).*

☐ Powerboats
☐ Jet skis
☐ Sailboats
☐ Sailboard
☐ Canoe/kayak/row boat
☐ Inflatable boat
☐ Fishing gear
☐ Water-ski gear
☐ Camping vehicle
☐ Tent
☐ Powered off-road vehicle
☐ Snowmobile
☐ Downhill/X-country skis
☐ Bicycles
☐ Hunting gear
☐ Scuba equipment
☐ Television
☐ VCR
☐ Video games (Nintendo)
☐ Exercise equipment
☐ Yard toys

14. How much money did you spend to operate and maintain your seasonal home **during calendar year 1993?**

Property taxes	$_____
Property management fees	$_____
Insurance & Security	$_____
Utilities (phone, electric, gas, etc)	$_____
New construction & remodeling	$_____
House repair & maintenance	$_____
Grounds maintenance including docks	$_____
Furnishings and utensils	$_____
Recreation equipment purchases	$_____
Recr. equipment maintenance & repair	$_____
Other, please specify_____	$_____

15. Where is your **permanent home** located?_____ _____ _____
City State Zipcode

16. Are you or your spouse currently retired or planning to retire?

☐ Yes ⟹ What year did you retire or do you plan to retire? _____
What year did your spouse retire or plan to retire? _____

☐ No

17. What is the likelihood that you will convert your seasonal home to your primary residence within the next 5 years or beyond?

	Very Likely	Somewhat Likely	Small Chance	Not Likely
Within the next 5 years	☐	☐	☐	☐
At some time beyond 5 years?	☐	☐	☐	☐

18. Finally, we would like a rough idea of your income and age group to develop a general profile of seasonal home owners. Check the appropriate boxes below if you do not mind revealing this information.

1993 HOUSEHOLD INCOME GROUP

☐ Under $30,000
☐ $30,001-$60,000
☐ $60,001-$100,000
☐ More than $100,000

YOUR AGE GROUP

☐ Under 40
☐ 40-50
☐ 51-60
☐ Over 60

THANK YOU FOR YOUR PARTICIPATION IN THIS SURVEY. PLEASE RETURN THE COMPLETED SURVEY BY MAIL IN THE ENCLOSED POSTAGE PAID BUSINESS REPLY ENVELOPE .

SEASONAL HOME USE SURVEY

To estimate recreation activity and spending associated with seasonal homes, we would like some information on recent use of your seasonal home. The first two questions ask about use of your seasonal home during the past month and the remainder ask about your most recent trip to your seasonal home.

USE OF SEASONAL HOME IN MAY

1. On the calendar below, please circle each day that your seasonal home was occupied or used by yourself, family, friends, or anyone else during the month of **May**. Put an "R" on the calendar for any dates the home was rented out.

May 1994

Sun	Mon	Tue	Wed	Thu	Fri	Sat
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

2. During the month of **May**, how many trips were made to your seasonal home? Count each separate vehicle bringing one or more people from their permanent residence to the seasonal home as a distinct trip.

Trips by yourself and family living with you #_____trips

Trips by other family, relatives and friends #_____trips

THE REMAINING QUESTIONS ASK ABOUT YOUR MOST RECENT TRIP TO YOUR SEASONAL HOME. If you did not visit your seasonal home during the past month, select the most recent visit during a previous month.

3. When did you arrive at your seasonal home on your most recent trip ? _____ (month) _____ (day).

How many consecutive nights did **you** stay at your seasonal home on this trip? _____ nights.

4. How many adults and children including yourself stayed at your seasonal home during your entire stay on this trip?

_____ Adults (age 18 & older) _____ Children (up to 17)

How many other adults and children visited or stayed overnight for only part of the time during this stay ?

_____ Adults (age 18 & older) _____ Children (up to 17)

5. **Spending on your recent trip.** Estimate how much money you and other family members spent **within roughly 30 miles of your seasonal home during this trip**. Do not attempt to estimate what visitors and guests may have spent, but include your own expenses in the area and those of your immediate family. Report expenses just for your most recent stay (or the last week if your stay was longer than 7 days) within the appropriate categories below. Do not include purchases of major durable goods or spending for home maintenance and repairs.

Spending in Local Area on Recent Trip

Groceries, beverages and take-out food	$_____
Restaurant meals	$_____
Gas and oil for auto, boat, etc.	$_____
Auto repairs or rentals	$_____
Boat & equipment repairs or rentals	$_____
Recreation and entertainment fees	$_____
Hotels, motels, or campgrounds	$_____
Other local services (e.g. haircuts, film developing...)	$_____
All other goods (e.g. clothing, souveniers, supplies..)	$_____

6. Recreation Activities on Recent Trip. Use the following table to report the number of days that you and others staying at your seasonal home participated in each of the listed activities **during your most recent trip.** In Column A, enter the number of **days** during this stay that you participated in each activity. Enter zero if you did not participate in that activity. In column B enter the number of **person days** of participation (one person participating for any part of one day) by all others visiting or staying at your seasonal home during your last trip. Check appropriate boxes in Column C to indicate whether the activity took place on your property, public lands, or other private property (check each that applies). For water-based activites answer Column C based on where you gained access to the water.

Recreation Activity	Column A **DAYS YOU PARTICIPATED**	Column B **PARTICIPATION OF OTHERS** Person Days	Column C **Where Participated?** Your Property	Public Land	Other Private
Swimming	____	____	☐	☐	☐
Pleasure Boating	____	____	☐	☐	☐
Fishing from boat	____	____	☐	☐	☐
Fishing from shore	____	____	☐	☐	☐
Hiking	____	____	☐	☐	☐
Bicycling	____	____	☐	☐	☐
Riding powered off-road vehicles	____	____	☐	☐	☐
Golf	____	____	☐	☐	☐
Tennis	____	____	☐	☐	☐
Hunting	____	____	☐	☐	☐
Nature study activities	____	____	☐	☐	☐
Gathering mushrooms, rocks, etc	____	____	☐	☐	☐
Sightseeing	____	____	☐	☐	☐
Attending local programs or events	____	____	☐	☐	☐

Example for calculating person days: If your spouse hiked on 2 days and two guests hiked one day each during your recent stay, you would enter a total of 4 person days under hiking in Column B. If you hiked on 3 days during your recent stay, enter 3 in Column A under hiking.

USE THE BACK OF THIS PAGE IF YOU WOULD LIKE TO MAKE ANY FURTHER COMMENTS ABOUT SEASONAL HOME ISSUES OR CONCERNS.

COMMENTS: If you would like to express any other opinions about seasonal home issues, please make them here. We will distill the comments from all survey respondents and provide them in a summary form to potential users of the study results.

THANK YOU FOR YOUR PARTICIPATION IN THIS SURVEY. PLEASE RETURN THE COMPLETED QUESTIONNAIRE BY MAIL IN THE ENCLOSED POSTAGE PAID BUSINESS REPLY ENVELOPE .

Printed on recyclable paper.

Stynes, Daniel J.; Zheng, JiaJia; Stewart, Susan I.
1997. **Seasonal homes and natural resources: patterns of use and impact in Michigan**. Gen. Tech. Rep. NC-194. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Forest Experiment Station. 39 p.

Describes patterns of seasonal home ownership and use in northern lower Michigan, including recreational use of nearby public and private lands and potential use of the seasonal home as a retirement home. Estimates economic impacts associated with seasonal home related spending in the 33 counties of northern lower Michigan.

KEY WORDS: Outdoor recreation, retirement, economic impact, tourism.

Our job at the North Central Forest Experiment Station is discovering and creating new knowledge and technology in the field of natural resources and conveying this information to the people who can use it. As a new generation of forests emerges in our region, managers are confronted with two unique challenges: (1) Dealing with the great diversity in composition, quality, and ownership of the forests, and (2) Reconciling the conflicting demands of the people who use them. Helping the forest manager meet these challenges while protecting the environment is what research at North Central is all about.