



# VERMONT AND THE VERMONT MARKET REGION

A REPORT SUBMITTED TO THE SCHOOL OF NATURAL RESOURCES AT  
THE UNIVERSITY OF VERMONT  
BY THE OUTDOOR RECREATION AND  
WILDERNESS ASSESSMENT GROUP, SOUTHERN RESEARCH  
STATION, USDA FOREST SERVICE, ATHENS, GEORGIA

Primary Authors:  
Ken Cordell, Gary T. Green,  
Carter J. Betz, and Matthew Owens

March, 2004

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## EXECUTIVE SUMMARY

Between 1999 and 2004, the National Survey of Recreation and the Environment (NSRE) was accomplished by interviewing approximately 90,000 Americans aged 16 and over in random-digit-dialing telephone samplings. The primary purpose was to learn about the outdoor recreation activities of people aged 16 and over in the United States. They were asked about their participation in approximately 80 specific outdoor recreation activities.

### Market Segments

One of the most important results of the NSRE is the division of the U.S. population into groups with similar recreation interests. Very often people that share an interest in one recreation activity also share interests in others. Therefore, individuals who participate in human powered outdoor recreation also participate in other types of outdoor recreation. Eight interest patterns were identified. The separate patterns suggest that people in different segments are seeking different kinds of experiences from outdoor recreation. The groupings, therefore, should be meaningful for marketing of outdoor recreation services and equipment. The eight identified market segments were Sports Hogs, Water Babies, Nature Watchers/Visitors, Active Nature Watchers, Fishin' and Huntin' Avids, Do Nothings, Passives, and Do Little's.

Sports Hogs like individual sports, winter sports, snow and ice sports, horseback riding, boating of all kinds, swimming, snorkeling, and fishing. There are 17.5 million Sports Hogs in the country. They like many activities, and they pursue them with gusto.

Water Babies enjoy nearly all water and boating sports, snow and ice sports, developed camping and fishing. There are 17.5 million Water Babies in America. They particular like water sports and participate in them frequently.

Nature Watchers/Learners are very much into the viewing and photographing activities such as viewing birds, flowers, natural scenery and fish. They also enjoy visiting nature centers, historic and prehistoric sites, sightseeing, and driving for pleasure. There are 30.1 million of them.

Among the favorite activities of Active Nature Watchers are visiting prehistoric, historic, and wilderness sites or areas, viewing or photographing birds, flowers, other wildlife, fish, and day hiking. About 35.3 million Americans over age 16 are Active Nature Watchers.

Fishin' and Huntin' Avids share interests in fishing, hunting, camping, and visiting nature/historic centers. They enjoy nature, but their interest leans toward use of wildlife and fish rather than toward viewing and understanding alone. There are 16.7 million of them.

The Do Little's tend to get out a little and enjoy driving for pleasure and sightseeing. They also enjoy picnicking, family gatherings and walking for pleasure. There are 29.5 million of them.

Passives visit the outdoors for picnicking, getting together with family and friends, and visiting nature centers. They seldom engage in more vigorous pursuits, but they do enjoy viewing and photographing natural scenery, and visiting a beach. There are 31.0 million Passive's in America over age 16.

Do Nothings are one of the largest groups (36.4 million) of Americans over age 16. Their rates of participation in all outdoor recreation activities are extremely low. They mainly enjoy walking for pleasure and family gatherings.

### **Mass Markets in Outdoor Recreation**

Results show that 97.6 percent of Americans participated in at least one of the surveyed forms of outdoor recreation in 2003. That percentage translates into 213.1 million participants nationwide. Walking is the single most popular activity, with about 175 million participants. Other activities with over 100 million participants include family gatherings, picnicking, gardening, and driving for pleasure.

Activities with 60 to 99 million participants include attending outdoor concerts, yard games, bicycling, day hiking, and visiting a wilderness area. Those with 40 to 60 million participants are visiting a farm, developed camping, and mountain biking. Activities with 30 to 40 million participants are primitive camping and driving off road.

A wide range of activities ranging from hunting, to rock climbing attracted less than 25 million participants. Even windsurfing, the least popular of all the activities listed, attracted more than 1 million participants. Thus, there are mass markets for over 60 individual recreation activities. Many activities with less than 15 million participants—such as caving and mountain climbing—require specialized equipment and training.

### **Outdoor Recreation Trends Since 1982**

Since 1982, the population of the nation has increased and the proportion of people participating in at least one activity has risen from 89 to 97.6. percent. As a result, numbers of participants have increased for almost all activities.

In addition, in the 2000-04 survey a greater variety of activities were included because of their growing popularity. These activities include orienteering, mountain climbing, rock climbing, caving, and specific kinds of nature viewing. Since 1994, more such specialized activities have become more visible. Future surveys should anticipate this growing trend toward specialized outdoor activities.

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# CHAPTER 1: INTRODUCTION

## Introduction

This report is the first in a series of State Reports that describes the results of the 1999-2004 National Survey on Recreation and the Environment (*NSRE*). The *NSRE*, in general, was conducted to discover and describe: (1) participation by Americans in outdoor recreation activities, (2) opinions concerning management of both public and private forests and grasslands, (3) the importance and value of our natural environment, (3) uses and values of wildlife and wilderness, (4) people's lifestyles, and (5) recreational trips people take away from home. The *NSRE* data will be used by a variety of public and private organizations for both management and research purposes.

## History of the NSRE

The 1999-2004 National Survey on Recreation and the Environment (*NSRE*) is the latest in a series of national surveys that was started in 1960 by the Outdoor Recreation Resources Review Commission (ORRRC). The federal government (ORRRC) initiated this National Recreation Survey (NRS) to assess outdoor recreation participation in the United States. Since that first in-the-home survey in 1960, six additional NRSs have been conducted -- 1965, 1970, 1972, 1977, 1982-83 and 1994-95. Over the years, the NRS surveys have changed in their methodology, composition, funding, and sponsorship.

In 1960, interviews were done in person over the four seasons of the year. In 1965, interviewing was done only in early fall. The 1970 survey instrument was a brief mailed supplement to the National Fishing and Hunting Survey. The 1982 survey was conducted in person in cooperation with the National Crime Survey, and the 1977, 1994, and 1999-2002 surveys were conducted by telephone.

In 1994 the NRS was renamed the National Survey on Recreation and the Environment (*NSRE*). This new name was introduced to reflect the growing interest and emphasis of the U.S. population about their natural environment. Accordingly, the *NSRE* was expanded to include questions concerning peoples' wildlife and wilderness uses, environmental values, and attitudes regarding public and management issues. Additional information pertaining to the recreational needs of people with challenging and disabling conditions was also included.

*NSRE* is the eighth in the continuing series of U. S. National Recreation Surveys. Although similar to the previous national surveys, *NSRE* explores the outdoor recreational needs and environmental interests of the American people in greater depth. The growth of the *NSRE* reflects the continuing growth of interest in our nation in outdoor recreation and our natural environment.

*NSRE* is an in-the-home phone survey of over 90,000 households across all ethnic groups throughout the United States. Questions from the *NSRE* broadly address such areas as outdoor recreation participation, demographics, household structure, lifestyles, environmental attitudes, natural resource values (for example, concerning Wilderness), constraints to participation, and attitudes toward management policies.

The funding and responsibility of the NRS's have also changed quite considerably over the years. Initially the Outdoor Recreation Resources Review Commission, which did the first

survey in 1960, recommended that subsequent surveys be completed at five-year intervals, but consistent funding and responsibility were not created. From 1965 through 1977, the research was done by the Bureau of Outdoor Recreation and its successor, the Heritage Conservation and Recreation Service. Those agencies were abolished in 1981, and responsibility fell to the National Park Service in the U.S. Department of the Interior (USDI). The National Park Service coordinated the development of a consortium that included itself, the Forest Service in the U.S. Department of Agriculture (USDA), the Department of Health and Human Service's Administration on Aging, and the USDI's Bureau of Land Management.

By the late 1980's, it was clear that the National Park Service would no longer assume the financial and organizational demands of such a large survey. Park Service Officials asked the Forest Service to assume its coordinating role for the next National Recreation Survey. The Outdoor Recreation and Wilderness Assessment Group, a part of the research branch of the Forest Service, assumed this role jointly with the National Oceanic and Atmospheric Administration (NOAA). This joint role between the Forest Service Outdoor Recreation and Wilderness Assessment Group in Athens, GA and NOAA has continued to the present day and includes responsibility for the current *NSRE* survey.

The present list of sponsoring agencies for the *1999-2004 NSRE* effort includes the USDA Forest Service, NOAA, the USDA's Economic Research Service, the U.S. Environmental Protection Agency, USDI Bureau of Land Management, the National Park Service, the University of Georgia, and the University of Tennessee. In addition, valuable assistance and resources were also provided by the American Horse Council, the American Motorcyclist Association, the American Recreation Coalition, B.A.S.S., Inc., the Carhart Wilderness Training Center, the Corps of Engineers, the Forest Service (specifically the Carhart Wilderness Training Center, Ecosystem Management Coordination, Recreation Staff, the Rocky Mountain Research Station, and Wildlife Staff), the Motorcycle Industry Council, the National Association of Recreation Resource Planners, the National Association of State Outdoor Recreation Liaison Officers, the National Environmental Education & Training Foundation, the Natural Resources Conservation Service, the Outdoor Recreation Coalition of America, the Rails-to-Trails Conservancy, the Recreation Vehicle Industry Association, the Snow Sports Industries of America, the U.S. Orienteering Federation, and the Wilderness Society.

### **Instrumentation**

The *NSRE* is not one survey but several versions of a survey. For instance, each version of the *NSRE* consists of approximately five modules of questions. In every version of the *NSRE* one module of questions always pertains to people's participation in recreation activities and a second module always pertains to their social-demographic characteristics (i.e., age, income, education level, etc). However, the three remaining modules of questions in each version could pertain to a myriad of topics from wilderness use, environmental opinions, attitudes to land management policies, wildfires, private lands, etc. Furthermore, each version of the *NSRE* has a target of 5,000 completed interviews. Once 5,000 interviews have been collected, a new version of the *NSRE* (with recreation participation, demographic, and three other modules) is constructed and operated.

## **Survey Methods**

### Computer-Aided Telephone Interviewing System(CATI)

The CATI system has two primary functions: (1) it facilitates the dialing and interviewing process; and (2) it manages the administrative functions associated with interviewing. For each interview, the CATI system randomly selects numbers for an interviewer, who then instructs the computer to dial that number.

The phone numbers for the *NSRE* survey were obtained from Survey Sampling, Inc (SSI). SSI subjects all their numbers to extensive cleaning and validation to ensure that all exchanges are currently valid. SSI provided the *NSRE* with a random-digit-dial (RDD) sample using a database of “working blocks.” A block is a set of 100 contiguous numbers identified by the first two digits of the last four numbers (e.g., in number 559-4200, “42” is the block). A block is termed to be working if one or more listed telephone numbers are found in that block. Numbers are generated from all eligible blocks in proportion to their density of listed telephone households. As numbers are pulled, they are marked as used and are not available again during a nine-month period. Once numbers are selected, they are entered into the computer-aided telephone interviewing system (CATI).

Once the CATI system has randomly selected and dialed a telephone number, the interviewer, upon hearing someone answer, identifies the survey, its main purpose, and the name of the research laboratory (Presser, Blair, & Triplett, 1992). The interviewer then inquires how many people in the household are 16 years or older, and asks to speak to the person 16 or older who had the most recent birthday (Link & Oldendick, 1998; Oldendick, Bishop, Sorenson, & Tuchfarber, 1988). Upon reaching an appropriate person and receiving agreement to an interview, the interviewer reads the survey questions as they appear on the computer screen. Using a computer to control the survey, skip patterns are executed as intended, responses are within range, there are no missing data, and data entry occurs as the survey is administered. As responses are fed through the programmed data entry and management system, they are reviewed to assure they are within the permissible range of values and missing data problems are resolved. If no person is contacted or an answering machine is obtained, the interviewer enters a code (e.g., busy or no answer). If the timing of the call is inconvenient, a call back is scheduled for another date and time (Presser et al., 1992).

### Sampling

Sampling across the country’s population and locations was designed to provide a minimum number of interviews for each state so that individual state reports on participation across all activities could be generated and so that reliable estimates of activity participation could be computed for activities with less than a 10% national participation rate. To achieve these objectives, a sampling strategy for a national sample of 50,000 completed interviews was developed. The strategy combined proportional nationwide population sampling aiming for 29,400 completed interviews and a quota sample distributing 400 interviews to each state and totaling 20,600 completed interviews. Sampling occurred throughout the year(s) during which the *NSRE* was being conducted to minimize seasonal recall bias to the extent possible.

## Data Issues

### Weighting Procedures

As blocks of interviews were completed and compiled, they were examined to identify differences in demographic profiles between those surveyed and the overall population of the country as described in Bureau of Census website reports. Indeed, sufficient differences are typically found to require weighting adjustments for over or under sampling. Weighting was achieved using a composite of multi-variate and multiplicative weights to account for age, race, gender, education, and urban/rural differences. This composite weighting helped adjust estimates of recreation participation and other **NSRE** estimates to better represent what those estimates would have been had the sample been truly proportionately distributed across social strata.

This type of weighting procedure, referred to as *post-stratification* (Holt & Smith, 1979), is the most widely accepted method for adjusting sample proportions to mirror population distributions (Zhang, 2000). Post-stratification has been successfully applied in similar national surveys in the U. S. and in other countries (Thomsen & Halmoy, 1998). For **NSRE**, a total of 60 strata (6 age x 2 gender x 5 race) were identified to match identical strata in the U.S. Census. Each individual strata weight,  $Sw_i$ , is the ratio of the Census population proportion to the **NSRE** sample proportion:

$$Sw_i = P_i / p_i$$

where  $P_i$  = U.S. Census proportion for strata  $i$   
 $p_i$  = NSRE 2000 sample proportion for strata  $i$

A weight  $Sw_i > 1.0$  indicated that the particular strata was a smaller proportion of the sample than of the U. S. population based on Census estimates. Likewise, weights with a value less than 1.0 indicated that the strata was randomly sampled in greater numbers than its proportion of the U.S. population age 16 and over. A unitary weight (i.e., no adjustment) means the sample strata was sampled at the same rate as its proportion of the population. Each individual respondent was assigned to one and only one of the 60 age-gender-race strata and thus assigned an  $Sw_i$  for that strata.

We took an additional step to account for the sampling proportions of two other socioeconomic strata: educational attainment and place of residence (rural/urban). Weights for each of these were calculated separately in a similar fashion to the age-gender-race weight. The education weight,  $Ew_i$ , is the ratio of Census: sample proportions for nine different levels of educational attainment, ranging from “8<sup>th</sup> grade or less” to “Doctorate Degree.” The residence weight,  $Rw_i$ , is simply the ratio of the percentage of the U.S. population living either in metropolitan statistical areas or not divided by their counterparts in the **NSRE** data. This was adjusted for the fact that urban or metropolitan residents were slightly under sampled in the survey. A single weight,  $W_i$ , for each individual survey respondent was then calculated as the product of the three intermediate weights:

$$W_i = Sw_i \times Ew_i \times Rw_i$$

The largest composite weights, therefore, were applied to respondents whose numbers were under represented in the total sample. The smallest weights were applied to strata which were over represented. The sample had a potential total of 1,080 (60 x 9 x 2) unique weights, with each individual assigned a weight,  $W_i$ , depending on his or her combination of the three intermediate weights.

## Sources of Error

There are many potential sources of error or bias in a large survey of human subjects. The principal sources of bias for the **NSRE** include recall and digit preference among the response biases, and refusal, avidity, and incomplete listings among the non-response biases. As with any survey, regardless of scope or complexity, bias is a reality to be recognized and dealt with early on to the extent affordable through design of the sample and survey content. Brief descriptions of principal anticipated sources of bias in the **NSRE** are presented below.

Recall bias is simply an inability of a respondent to recall accurately or to recall at all whether they participated in recreational activities or to recall the number of or places where these activities were undertaken. There is no conclusive evidence regarding optimum recall period (one week, one month, six months, etc.) or methods of correcting recall bias. Digit preference bias is related to recall bias, but more specifically is a participation rounding bias. For example, for activities of frequent participation, such as walking or running/jogging, respondents often round to the nearest five or ten, such as twenty-five, thirty, or forty, rather than accurately reporting actual number of occasions, such as twenty-eight times during the past twelve months.

Principal sources of non-response bias include avidity and incomplete phone listings. Avidity bias is the tendency of persons who do not participate or who participate only infrequently in outdoor leisure activities to refuse participation in the survey. Left unaccounted for, avidity bias can result in seriously inflated estimates of population participation rates and biased estimates of participation differences by social group. Incomplete phone listings, like any other incomplete sampling frame, can occur for many reasons. More frequently encountered reasons include institutionalization, persons not having a phone, and persons having access only to pay phones or other non-individualistic arrangements. For the **NSRE**, an attempt to estimate avidity and listing bias was made by asking two key questions of persons who refuse the survey. Those questions are age and whether or not the respondent participated in outdoor recreation in the last twelve months. Additionally, the sex of the respondent was recorded when recognizable. The estimated proportions of non-respondents, relative to respondents, was combined with weights derived from the 2000 U.S. Census of Population to weight each observation to correct for over or under representation by social group characteristics in the sample.

The **NSRE** included a more comprehensive listing of outdoor recreation activities than any of the previous national surveys. The activities list for the **NSRE** included seventy explicitly named activities. Some of these listed activities have always been relatively vague. Examples are sightseeing and walking for pleasure. Others are much more specific and have relatively precise technical definitions. Examples of specific activities include snorkeling and rock climbing. Respondents are left to determine, by their own definition of the activities listed, whether or not they have participated. For the **NSRE**, several new activities were listed, largely driven by newly available or vastly improved technologies, such as jet skiing, rock climbing, and orienteering. To the extent that respondents understand the activities they are being asked about, valid responses are recorded. However, little exists in the literature to guide or control for this potential source of error in collecting data on participation.

Sources of bias were addressed through data weighting and other approaches as necessary. For example, equally distributing a quota of 400 across the 50 states results in over-sampling of rural areas (e.g., 65% Urban, 25% Near Urban, and 10% Rural). Thus, we used a sampling strategy that combined the quota of 400 per state with a proportional nationwide sample (e.g., 64.6% Urban, 27.4% Near Urban, and 8.0% Rural). In addition, random digit dialing reaches a

random sample of telephone numbers, rather than of people. Affluent families are virtually certain to have a telephone number (97%), often more than one. At the other end of the scale, many low-income households do not have a telephone (ranging from 8 to 23% depending on geographic area). As a result, affluent people are likely to be somewhat over represented in the survey sample (Bowen, 1994; Groves, 1990; Tucker, Lepkowski, Casady, & Groves, 1992). To compensate for these types of sampling biases, the **NSRE** data set was weighted based on comparisons with 2000 Census data.

Another source of bias comes from language barriers through the undesirable but unavoidable exclusion of people who cannot speak either English or Spanish. According to the 2000 Census, 12.5 % of the U.S. population is Hispanic. For the non-English speaking segment of the Hispanic population, the **NSRE** was conducted in Spanish. The most difficult part of this process was getting the translation generic enough for overall comprehension by all the various Hispanic dialects. Other non-English speaking U.S. residents were excluded from the survey. The complexity of the translation and interviewing processes made interviewing in all languages prohibitively costly.

All results provided within this paper are based upon the number of **NSRE** survey's completed at the time the analysis for this paper was conducted. As of the writing of this report, data collection for the **NSRE** was still on-going. Obviously, then, as more data are collected final estimates of the percentages and numbers of people participating in different activities may change slightly from those reported in this paper.

In viewing the results presented in this report, it is important to remember that individuals were asked about their personal participation in specific recreation activities. To date, versions one to twelve of the **NSRE** have been completed, which means participants have answered questions pertaining to approximately 80 outdoor recreation activities. For analysis and description of results, it was useful to place these activities into 12 groups. For simplicity, each activity was placed in only one category. In many cases, however, activities could have been placed in more than one category. Hiking, for example, was classed as an individual activity, which it is for many people. For others, however, hiking might best be classed as a backpacking and camping activity.

### Social Implications

Like the rest of the United States, the Vermont region represents a diversity of cultures. This report has been generated with respect to various social characteristics namely: gender, age, race, education, income, and employment status. The different divisions of these categories are described in chapter 2.

Also, please note that with a maximum sample of approximately 603 respondents in Vermont alone not all combinations of social characteristics may be present in the analyses investigated in this study or statistically significant. The weighting will help compensate for this by correcting for over or under representation by the respondent's social group in the sample

### **Activities Covered (see following table)**

|  |  |  |
|--|--|--|
| <b><i>Individual Activities</i></b>                      | Riding motorcycles for pleasure on a highway   | Visit historic sites, buildings, or monuments        |
| Bicycling  |  | Visit a farm or other rural land setting             |
| Mountain biking  | <b><i>Viewing or Photography</i></b>   |  |
| Walking for exercise or pleasure                         | Viewing, identifying, or photographing birds   | <b><i>Traditional Activities</i></b>                 |
| Horseback riding   | Viewing, identifying, or photographing fish  | Gathering of family or friends                       |
| Day hiking   | Viewing, identifying, or photographing other wildlife                                  | Picnicking   |
| Running or jogging                                       | Viewing, identifying, or photographing wildflowers, trees, or other natural vegetation |  |
| Golf   | Viewing, identifying, or photographing natural scenery                                 | <b><i>Outdoor Team Sports</i></b>                    |
| Tennis outdoors  |  | Softball or baseball                                 |
| Gardening or landscaping                                 | <b><i>Hunting</i></b>  | Football   |
| In-line skating or rollerblading                         | Big game   | Basketball outdoors                                  |
| Orienteering   | Small game   | Soccer outdoors                                      |
|  | Waterfowl  | Handball, racquetball, or squash outdoors            |
| <b><i>Snow and Ice Activities</i></b>                    |  | Yard games – horseshoes, badminton, croquet, Frisbee |
| Swimming in streams, lakes, or the ocean                 | <b><i>Fishing</i></b>  | Attend outdoor sports events as a spectator          |
| Swimming in an outdoor pool                              | Fishing in coldwater such as mountains, rivers or streams                              | Volleyball outdoors                                  |
| Snorkeling   | Fishing in warm waters and lakes   |  |
| Scuba diving   | Ice fishing  | <b><i>Boating/Floating/Sailing</i></b>               |
| Visiting a beach   | Saltwater fishing  | Sailing  |
| Visiting a waterside                                     | Fishing for migratory fish like salmon, shad or other spawning fish                    | Canoeing   |
|  |  | Kayaking   |
| <b><i>Driving for Pleasure</i></b>                       | <b><i>Visiting Educational Sites</i></b>   | Rowing   |
| Sightseeing  | Visiting nature center, nature trail, visitor center, or zoo                           | Motor boating  |
| Driving for pleasure on country roads or in a park       | Attend outdoor concerts, plays or other outdoor performances                           | Water skiing   |
| 4-Wheel drive, ATV, or motorcycle driving off-road       | Visit prehistoric structures or archaeological sites                                   | Personal water craft such as jet skis, wave runners  |
|  |  | Sail boarding or windsurfing                         |
| <b><i>Outdoor Adventure Activities</i></b>               |  | Rafting, tubing, or other floating                   |
| Exploring caves  |  | Surfing  |
| Backpack camping on trails                               |  |  |
| Camping at developed sites                               |  |  |
| Camping at primitive sites                               |  |  |
| Visiting a wilderness, or other primitive, roadless area | Gather mushrooms, berries, firewood, other natural products                            |  |
| Mountain climbing  | Rock climbing  |  |
|  |  |  |

### Participation Questions and Possible Responses

Because the NSRE will be used for many different purposes, the level of detail needed to describe participation in the activities varied. For each activity, a categorical yes/no answer recorded whether or not the respondent participated in the activity at least once in the past twelve months. For designated activities, the number of days of participation during the past year was recorded. Similarly, for designated activities, the number of trips taken to primarily participate in an activity was recorded to determine the various levels of participation. A primary purpose trip is defined as a trip taken, at least 15 minutes from your home, for the primary purpose of participated in a single activity.

### Issue Specific Questions

As previously described, the NSRE surveyed many different groups of people on a variety of recreational activities. Aside from the specific activity participation information, the following specific issues were addressed in the questionnaire:

Persons with disabilities. A very significant issue in the United States is whether persons with challenging conditions are inappropriately restricted from access to outdoor recreation areas. In addition to general access concerns, the NSRE included a section on wilderness access for the physically challenged. Access questions were included to address both legislatively mandated and policy-driven programs to improve access to all United States citizens. Because this sample received the regular NSRE sections as well, the NSRE provides the most comprehensive national outdoor recreation profile of physically and otherwise challenged people in the United States.

Wilderness and wildlife resource policy issues. Despite numerous studies of wilderness users, the general public has been little studied with regard to its values and awareness of wilderness resources. Similarly non-economic wildlife values have been inadequately studied. Coupled with other sections of the questionnaire, for example, participation profiles and demographics, specifically tailored questions about these natural resources issues will provide much needed information to guide policy evaluation and management.

Favorite activities. Because individuals vary in what they enjoy and commit to outdoor recreation, a section of the survey asked about favorite activities. Included was a measure of commitment and setting preference for the identified favorite activity. Research has shown that the age of first exposure to an activity and mode of learning is related to level of enjoyment and commitment. Learning theory posits that self-directed learners may be different than other-directed learners. Variation in participation in formal, informal, and non-formal settings may be related to psychological and social states of the participant.

Barriers and constraints. Of interest to outdoor recreation managers are reasons for non-participation in outdoor recreation. The NSRE replicated and expanded the list of barriers and constraints from the 1982\_83 list and allowed open-ended response questions to capture any new or previously unidentified barriers and constraints. This section was asked in one of two situations: (1) for the respondent who reported they did not participate in any outdoor recreation, and (2) for respondents who reported they did not participate in their favorite activity as often as they would like.

## CHAPTER 2: THE POPULATION OF VERMONT AND THE SURROUNDING MARKET REGION

Two demographic statistics are provided: First is the 2000 census data for the State of Vermont and the Vermont market region, and second is the demographic data about the NSRE sample (i.e., people surveyed). Demographic information will be provided for each of the regions: (1) the surrounding market region, which encompasses Vermont and the states bordering Vermont and (2) the state of Vermont. The population of Vermont, the Vermont region and the NSRE sample are divided into numerous categories based on seven socio-demographic criteria (i.e., gender, age, education level, income, etc...). Information about the State of Vermont and its market region was obtained from the 2000 census, and information about the NSRE sample was obtained from respondents to the telephone survey.

### Demographic Characteristics

Below is a demographic description for residents 16 years of age or older for the State of Vermont and the Vermont market region. The market region consists of the adjoining states New York, Massachusetts and New Hampshire. The market region also includes Vermont. These results were calculated using 2000 census population results.

Table 2.1: Demographics of Vermont State residents and Vermont Market Region Residents. The Market Region includes Vermont and the adjoining states NY, MA and NH.

| <b>Demographic</b>               | <b>State of Vermont<br/>(2000 Census)<br/>(%)</b> | <b>Vermont Market Region<br/>(2000 Census)<br/>(%)</b> |
|----------------------------------|---|--|
| Male                             | 48.42   | 47.50  |
| Female                           | 51.58   | 52.50  |
| <b>Race/Ethnicity</b>            |   |  |
| White, Non-Hispanic              | 96.63   | 71.14  |
| Black, Non-Hispanic              | 0.41  | 10.75  |
| American Indian,<br>Non-Hispanic | 0.37  | 0.23   |
| Asian/PI, Non-Hispanic           | 0.81  | 4.88   |
| Hispanic                         | 0.80  | 11.02  |

|  |       |       |
|--|-------|-------|
| Age  |       |       |
| 16-24  | 17.12 | 16.62 |
| 25-34  | 15.27 | 18.13 |
| 35-44  | 20.86 | 20.64 |
| 45-54  | 19.21 | 17.14 |
| 55-64  | 11.66 | 11.11 |
| 65+  | 15.87 | 16.35 |
| Total Family Income                            |       |       |
| < \$15,000                                     | 7.81  | 10.78 |
| \$15k - \$24,999                               | 10.79 | 9.32  |
| \$25k - \$49,999                               | 33.04 | 25.52 |
| \$50k - \$74,999                               | 24.95 | 21.39 |
| \$75k - \$99,999                               | 12.03 | 13.57 |
| \$100k - \$149,999                             | 7.45  | 11.76 |
| \$150,000+                                     | 3.93  | 7.65  |
| Educational Attainment<br>(25 years and older) |       |       |
| Less than H.S.                                 | 13.58 | 19.04 |
| High School Graduate                           | 32.36 | 27.85 |
| Some College                                   | 24.61 | 24.25 |
| College Degree                                 | 18.34 | 16.72 |
| Post-Graduate Degree                           | 11.11 | 12.14 |
| Place of Birth/Citizenship                     |       |       |
| U.S. Citizen                                   | 96.18 | 82.63 |
| Foreign Born                                   | 3.82  | 17.37 |
| Place of Residence                             |       |       |
| Non-Metro Resident                             | 67.33 | 8.34  |

|                     |       |       |
|---------------------|-------|-------|
| Metro Area Resident | 32.67 | 91.66 |
|---------------------|-------|-------|

From the Gender section of the table, we can see the gender distributions throughout the State of Vermont and the Vermont market region. Both the region and state show more female residents than male. In comparing the State of Vermont to the Vermont market region, there is little difference in the percentage of males and females.

The race/ethnicity section of table 2.1 indicates that the State of Vermont and the Vermont market region both consist primarily of persons white, non-Hispanic, though the percent of white population is more dominant (96.63% vs. 71.14%) in the state alone. Higher percentages of other populations in the market region, including 10.34% more black, non-Hispanic, 4.07% more Asian/PI, non-Hispanic and 10.22% more Hispanic residents offset the lower region White, non-Hispanic percentage.

In regards to age, there is (across the six categories) a 2.86% difference or less in the State of Vermont and Vermont market region 2000 Census results. Approximately 54% of the residents in the state or region are 44 years of age or younger, with the highest percentage of Vermont state (20.86%) and market region (20.64%) residents falling into the 35-44 category.

Based on the census, there are seven income sub\_categories. These categories represented Total Family Income earning: less than (but not including) \$15,000, \$15,000 to \$24,999, \$25,000 to \$49,999, \$50,000 to \$74,999, \$75,000 to \$99,999, \$100,000 to \$149,999 and those earning over \$150,000 per year. The data in table 2.1 indicates that the highest percentage, both in the State of Vermont and the Vermont market region, earned from \$25,000 to \$49,999 per year. Family income of 18.6% of residents in the state and 20.1% of residents in the region is less than \$24,999 per year.

Regarding educational attainment, individuals 25 years of age or older were divided into five categories based on their highest level of education completed. Comparing state results to region, more people are high school graduates, have some college (24.61% to 24.25%) or a college degree. There are more individuals with less than high school and with post-graduate degrees in the Vermont market region. In the state and market region 13.58% and 19.04% of people 25 years of age and older are not high school graduates. An average of 11.63% in the region and state have a post-graduate degree.

Regarding citizenship/place of birth, over 96% of people in the state and 82.63% in the market region are U.S. citizens. Just over 91% of residents in the region are Metro Residents.

Below is a socio-demographic description for the State of Vermont utilizing the NSRE sample and the Vermont market region. The NSRE sample comes from telephone survey results and data for the Vermont market region comes from the 2000 census.

Table 2.2: Demographics of Vermont State residents in the NSRE Sample and Vermont Market Region Residents in the 2000 Census. The Market Region includes Vermont and the adjoining states NY, MA and NH.

| <b>Demographic</b> | <b>State of Vermont<br/>(NSRE Sample)<br/>(%)</b> | <b>Vermont Market Region<br/>(2000 Census)<br/>(%)</b> |
|--------------------|---|--|
| Gender             |   |  |

| <b>Demographic</b>                                     | <b>State of Vermont<br/>(NSRE Sample)<br/>(%)</b> | <b>Vermont Market Region<br/>(2000 Census)<br/>(%)</b> |
|--|---|--|
| Male   | 49.82   | 47.50  |
| Female   | 50.18   | 52.50  |
| <b>Race/Ethnicity</b>                                  |   |  |
| White, Non-Hispanic                                    | 92.15   | 71.14  |
| Black, Non-Hispanic                                    | 0.97  | 10.75  |
| American Indian, Non-Hispanic                          | 1.10  | 0.23   |
| Asian/PI, Non-Hispanic                                 | 1.45  | 4.88   |
| Hispanic   | 4.33  | 11.02  |
| <b>Age</b>   |   |  |
| 16-24  | 17.90   | 16.62  |
| 25-34  | 13.90   | 18.13  |
| 35-44  | 21.04   | 20.64  |
| 45-54  | 17.91   | 17.14  |
| 55-64  | 12.95   | 11.11  |
| 65+  | 16.31   | 16.35  |
| <b>Total Family Income</b>                             |   |  |
| < \$15,000   | 8.50  | 10.78  |
| \$15k - \$24,999                                       | 17.25   | 9.32   |
| \$25k - \$49,999                                       | 36.97   | 25.52  |
| \$50k - \$74,999                                       | 18.34   | 21.39  |
| \$75k - \$99,999                                       | 11.30   | 13.57  |
| \$100k - \$149,999                                     | 4.05  | 11.76  |
| \$150,000+   | 3.59  | 7.65   |
| <b>Educational Attainment<br/>(25 years and older)</b> |   |  |
| Less than H.S.   | 10.11   | 19.04  |

| <b>Demographic</b>                | <b>State of Vermont<br/>(NSRE Sample)<br/>(%)</b> | <b>Vermont Market Region<br/>(2000 Census)<br/>(%)</b> |
|-----------------------------------|---|--|
| High School Graduate              | 30.30   | 27.85  |
| Some College                      | 28.13   | 24.25  |
| College Degree                    | 22.25   | 16.72  |
| Post-Graduate Degree              | 9.20  | 12.14  |
| <b>Place of Birth/Citizenship</b> |   |  |
| U.S. Citizen                      | 97.29   | 82.63  |
| Foreign Born                      | 2.71  | 17.37  |
| <b>Place of Residence</b>         |   |  |
| Non-Metro Resident                | 53.23   | 8.34   |
| Metro Area Resident               | 46.77   | 91.66  |

Although the NSRE sample and the census data for the Vermont market region are similar, there are some differences. The census shows fewer females and more males in the four state region than the NSRE Vermont sample. The NSRE sample is over-represented by white, non-Hispanics (92.15%) compared to the region (71.14%), but under-represented by black, non-Hispanics (0.97%) compared to the region (10.75%). There are 6.69% more Hispanic individuals in the region as compared to the state.

An examination of age within the state and region indicates the largest portion of the population in the state and region consists of individuals 35-44. Both the census market region data and the NSRE sample indicate the lowest percentage being 55-64 year olds. Results for both samples are within 2% similarity for each category, with the exception of a 4.23% difference in 25-34 year olds.

More families fall within the \$25k - \$49,999 total family income range, in both the state and region, than any other category. \$50k - \$74,999 is the second most popular range, with 18.34% indicating this as total family income in the State of Vermont, and 21.39% indicating within the market region. Family incomes exceeding \$150,000 are made by the lowest percentage (3.59% and 7.65%) of those reporting in both the state and region.

Just over 19% of individuals in the four state market region have less than a high school degree. Over 12% in the region have post-graduate degrees, as do 9.20% in the Vermont alone. In regard to place of birth, both the state and region show US citizens as the most overwhelming percentage, with only 2.71% foreign born in Vermont. Comparatively, 17.37% of those in the market region were foreign born. NSRE state results show a closer split between non-metro residents and metro area residents (53.23% to 46.77%), while market region data reveals a more divisive 8.34% non-metro 91.66% metro result.

Table 2.3: Demographics of Vermont Residents in the NSRE Sample and 2000 Census

| <b>Demographic</b>            | <b>State of Vermont<br/>(NSRE Sample)<br/>(%)</b> | <b>State of Vermont<br/>(2000 Census)<br/>(%)</b> |
|-------------------------------|---|---|
| <b>Gender</b>                 |   |   |
| Male                          | 49.82   | 48.42   |
| Female                        | 50.18   | 51.58   |
| <b>Race/Ethnicity</b>         |   |   |
| White, Non-Hispanic           | 92.15   | 96.63   |
| Black, Non-Hispanic           | 0.97  | 0.41  |
| American Indian, Non-Hispanic | 1.10  | 0.37  |
| Asian/PI, Non-Hispanic        | 1.45  | 0.81  |
| Hispanic                      | 4.33  | 0.80  |
| <b>Age</b>                    |   |   |
| 16-24                         | 17.90   | 17.12   |
| 25-34                         | 13.90   | 15.27   |
| 35-44                         | 21.04   | 20.86   |
| 45-54                         | 17.91   | 19.21   |
| 55-64                         | 12.95   | 11.66   |
| 65+                           | 16.31   | 15.87   |

| Total Family Income                         |       |       |
|---|-------|-------|
| < \$15,000                                  | 8.50  | 7.81  |
| \$15k - \$24,999                            | 17.25 | 10.79 |
| \$25k - \$49,999                            | 36.97 | 33.04 |
| \$50k - \$74,999                            | 18.34 | 24.95 |
| \$75k - \$99,999                            | 11.30 | 12.03 |
| \$100k - \$149,999                          | 4.05  | 7.45  |
| \$150,000+                                  | 3.59  | 3.93  |
| Educational Attainment (25 years and older) |       |       |
| Less than H.S.                              | 10.11 | 13.58 |
| High School Graduate                        | 30.30 | 32.36 |
| Some College                                | 28.13 | 24.61 |
| College Degree                              | 22.25 | 18.34 |
| Post-Graduate Degree                        | 9.20  | 11.11 |
| Place of Birth/Citizenship                  |       |       |
| U.S. Citizen                                | 97.29 | 96.18 |
| Foreign Born                                | 2.71  | 3.82  |
| Place of Residence                          |       |       |
| Non-Metro Resident                          | 53.23 | 67.33 |
| Metro Area Resident                         | 46.77 | 32.67 |

Although the NSRE sample and the census data for the State of Vermont are similar, again there are some differences. For instance, in regards to gender, the NSRE sample has a higher percentage of males and a lower percentage of females than the State of Vermont. However, there is a greater percentage of females than males in both the NSRE sample and the data for the state of Vermont.

In examining race/ethnicity the census data has a higher percentage of white, non-Hispanic people (96.63%) than the NSRE sample for Vermont (92.15%), but a lower percentage of black, non-Hispanics (0.41% compared to 0.97%). In regards to age, the NSRE sample is slightly under-represented by people aged 55-64 and slightly over-represented by people aged 35-44. In both the NSRE sample and the data for the State of Vermont the majority of people are under 44 years of age.

Overall, a greater percentage of people according to the NSRE sample earn < \$15,000 per year than is shown by the census data for the State of Vermont. However, the Vermont census data shows a greater percentage of people earning \$50k - \$74,999 than the NSRE sample. In both the Vermont data and the NSRE sample the largest percentage earned \$25k - \$49,999 per year.

Those attaining a college degree are over-represented in the NSRE survey (22.25%) compared to Vermont census data (18.34 %). However the NSRE survey shows under-representation in less than high school(10.11% to 13.58 %), and the post-graduate degree (9.20% to 11.11%) sample compared to census data. Roughly 60% of the NSRE sample and roughly 70% of Vermont census data show some college or higher.

In regards to place of birth and place of residence, the NSRE sample has just over 1% more U.S. citizen (97.29%) than the Vermont census data (96.18%) and just over 1% less Foreign born (2.71%) than the State of Vermont data (3.82%). In both the NSRE sample and the data for the State of Vermont the majority (53.23% and 67.33%) of people are non-metro residents.

**CHAPTER 3:  
OUTDOOR RECREATION  
THE BIG PICTURE**

Table 3.1: VT State Nature-Based Land activities (percent and number)

| <b>Activity</b>                       | <b>Percent Participating</b> | <b>Number of Participants</b> |
|---------------------------------------|------------------------------|-------------------------------|
| Walk for Pleasure                     | 90.9                         | 435,625                       |
| Family Gathering                      | 79.3                         | 380,057                       |
| Gardening or Landscaping for Pleasure | 76.3                         | 365,679                       |
| Driving for Pleasure                  | 66.7                         | 319,670                       |
| Picnicking                            | 60.5                         | 289,955                       |
| Yard Games, e.g., Horseshoes          | 56.6                         | 271,264                       |
| Attend outdoor Concerts, Plays, etc.  | 52.1                         | 249,697                       |
| Bicycling                             | 48.2                         | 231,006                       |
| Day Hiking                            | 45.9                         | 219,983                       |
| Visit a Wilderness or Primitive area  | 45.3                         | 217,107                       |
| Visit a Farm or Agricultural setting  | 37.0                         | 177,328                       |
| Mountain Biking                       | 35.0                         | 167,743                       |
| Developed Camping                     | 33.0                         | 158,157                       |
| Primitive Camping                     | 24.1                         | 115,503                       |
| Hunting                               | 21.4                         | 102,563                       |
| Backpacking                           | 21.0                         | 100,646                       |
| Big Game Hunting                      | 18.8                         | 90,102                        |
| Drive Off-Road                        | 18.8                         | 90,102                        |
| Mountain Climbing                     | 13.1                         | 62,784                        |
| Small game hunting                    | 8.9                          | 42,655                        |
| Horseback Riding (general)            | 8.2                          | 39,300                        |
| Horseback Riding on Trails            | 6.9                          | 33,069                        |
| Rock Climbing                         | 3.9                          | 18,691                        |

| <b>Activity</b>        | <b>Percent Participating</b> | <b>Number of Participants</b> |
|------------------------|------------------------------|-------------------------------|
| Migratory Bird Hunting | 3.0                          | 14,378                        |
| Orienteering           | 1.4                          | 6,710                         |

Table 3.1 shows that walking for pleasure is the most popular land activity within the State of Vermont, with more than 90% of people participating at least once a year. It is not surprising that walking for pleasure is the most popular activity as it requires little physical exertion, little or no cost, special equipment, skills or training and can provide opportunities to meet and socialize with other people. For many of the same reasons as walking for pleasure, family gatherings (79.3%), picnicking (60.5%) and yard games (56.6%) are popular. Activities such as bicycling (48.2%), day hiking (45.9%) and visiting a wilderness or primitive area (45.3%) are also popular activities with people that enjoy the outdoors and nature. Activities that need much physical exertion, special equipment, skills and/or training are less popular within the State of Vermont. We can see that rock climbing (3.9%), migratory bird-hunting (3.0%) and orienteering (1.4%) are the least popular of activities.

Table 3.2: VT State Nature-Based Water activities (percent and number)

| <b>Activity</b>                      | <b>Percent Participating</b> | <b>Number of Participants</b> |
|--------------------------------------|------------------------------|-------------------------------|
| Swimming in Lakes, Streams, Etc.     | 62.8                         | 300,978                       |
| Visit Beach                          | 48.2                         | 231,006                       |
| Fishing                              | 39.3                         | 188,351                       |
| Freshwater fishing                   | 37.8                         | 181,162                       |
| Motorboating                         | 28.4                         | 136,111                       |
| Visit other Waterside (beside beach) | 28.1                         | 134,673                       |
| Coldwater Fishing                    | 25.9                         | 124,130                       |
| Canoeing                             | 23.7                         | 113,586                       |
| Warmwater Fishing                    | 22.7                         | 108,793                       |
| Rowing                               | 10.3                         | 49,364                        |
| Ice Fishing                          | 8.8                          | 42,175                        |
| Sailing                              | 8.4                          | 40,258                        |
| Kayaking                             | 7.8                          | 37,383                        |
| Rafting                              | 7.7                          | 36,903                        |

| <b>Activity</b>    | <b>Percent Participating</b> | <b>Number of Participants</b> |
|--------------------|------------------------------|-------------------------------|
| Anadromous Fishing | 4.8                          | 23,005                        |
| Saltwater Fishing  | 4.4                          | 21,088                        |
| Jet Skiing         | 4.0                          | 19,171                        |

Table 3.2 shows nature-based water activities, which are activities that occur outdoors mainly in or around water. The most popular nature-based activity is swimming in lakes, streams, etc. (62.8%), followed by visit a beach (48.2%). Table 3.2 shows that fishing in general, whether freshwater, coldwater, or ice fishing is a popular activity for people of the State of Vermont. Of the activities that take place on the water, motor boating is the most popular (28.4%), followed by canoeing (23.7%), rowing (10.3%), sailing (8.4%) and kayaking (7.8%). The least popular nature-based water activity is jet skiing.

Table 3.3: VT State Nature-Based Snow & Ice activities (percent and number)

| <b>Activity</b>      | <b>Percent Participating</b> | <b>Number of Participants</b> |
|----------------------|------------------------------|-------------------------------|
| Snow/Ice activities  | 58.2                         | 278,932                       |
| Sledding             | 34.8                         | 166,784                       |
| Snowshoeing          | 24.0                         | 115,024                       |
| Cross Country Skiing | 22.7                         | 108,793                       |
| Snowmobiling         | 19.5                         | 93,457                        |

In comparison to the other tables, it should be remembered that the percent of people participating in snow and ice activities in the State of Vermont is somewhat lower, mainly because these activities are controlled by weather and the seasons. Overall, more than 58% of people participated in some form of snow or ice-based activity. The most popular activity was sledding (34.8%), followed by snowshoeing (24.0%). Over 22% participated in cross country skiing, representing 108,793 individuals.

Table 3.4: VT State Viewing/Learning activities (percent and number)

| <b>Activity</b>                 | <b>Percent Participating</b> | <b>Number of Participants</b> |
|---------------------------------|------------------------------|-------------------------------|
| View/Photograph Natural Scenery | 71.5                         | 342,674                       |
| View/Photograph other Wildlife  | 61.6                         | 295,227                       |
| Sightseeing                     | 59.3                         | 284,204                       |

|  |      |         |
|--|------|---------|
| View/Photograph Wildflowers, Trees, etc. | 52.2 | 250,176 |
| Visit Nature Centers, etc.               | 51.6 | 247,301 |
| Gather Mushrooms, Berries, etc.          | 49.4 | 236,757 |
| Visit Historic sites                     | 48.4 | 231,964 |
| View/Photograph Birds                    | 45.9 | 219,983 |
| Visit a Wilderness or Primitive area     | 45.3 | 217,107 |
| View/Photograph Fish                     | 21.4 | 102,563 |
| Visit Prehistoric/Archeological sites    | 17.8 | 85,309  |
| Boat Tours or Excursions                 | 17.0 | 81,475  |
| Caving                                   | 2.0  | 9,585   |

Table 3.4 shows that the most popular activity within the viewing and learning category for the State of Vermont is viewing and photographing natural scenery. More than 71% of individuals in the state view or photograph natural scenery. In fact, over 45% of the people in Vermont also view or photograph other wildlife, wildflowers, trees, etc. or birds at least once a year. Over 45% visit historic sites or nature centers, wilderness or primitive areas and just under 60% go sightseeing. By far the least popular activity is caving (2.0%) , which is understandable as caving may be too difficult or strenuous for many people.

Table 3.5: VT State Outdoor Sports Land-Based activities (percent and number)

| Activity                   | Percent Participating | Number of Participants |
|----------------------------|-----------------------|------------------------|
| Bicycling                  | 48.2                  | 231,006                |
| Mountain Biking            | 35.0                  | 167,743                |
| Downhill Skiing            | 18.1                  | 86,747                 |
| Horseback Riding (general) | 8.2                   | 39,300                 |
| Snowboarding               | 7.2                   | 34,507                 |

Table 3.5 shows that bicycling, by far, is the most popular land-based activity with 48.2% of the people of the State of Vermont biking. The least popular outdoor sport activity is snowboarding (7.2%), likely due to the seasonal and climactic nature of the sport, and the substantial amount of time needed to hone one’s skill level. Snowboarding is particularly difficult to master and requires substantial physical exertion and balance.

Table 3.6: VT State Outdoor Sports Water-Based activities (percent and number)

| <b>Activity</b>             | <b>Percent Participating</b> | <b>Number of Participants</b> |
|-----------------------------|------------------------------|-------------------------------|
| Swimming in an Outdoor Pool | 45.0                         | 215,669                       |
| Snorkeling                  | 7.0                          | 33,549                        |
| Waterskiing                 | 6.7                          | 32,111                        |
| Scuba Diving                | 1.6                          | 7,668                         |
| Windsurfing                 | 1.1                          | 5,272                         |
| Surfing                     | 0.1                          | 479                           |

Table 3.6 shows that swimming in an outdoor pool, by far, is the most popular water-based activity with 45% of the people in the state of Vermont stating that they swam at least once during the last year. The second most popular water-based activity was snorkeling (7.0%), followed by waterskiing (6.7%), scuba diving (1.6%), windsurfing (1.1%) and surfing (0.1%). One reason why windsurfing and surfing have such low participation rates is that these activities require substantial time spent in the water in order to hone one's skill level. These activities are difficult to master and also require substantial physical exertion and balance.

Table 3.7: VT State Outdoor Sports Individual activities (percent and number)

| <b>Activity</b>                  | <b>Percent Participating</b> | <b>Number of Participants</b> |
|----------------------------------|------------------------------|-------------------------------|
| Running or Jogging               | 37.3                         | 178,766                       |
| Ice Skating outdoors             | 24.4                         | 116,941                       |
| Golf                             | 19.4                         | 92,977                        |
| Inline Skating or Rollerblading  | 18.3                         | 87,705                        |
| Tennis outdoors                  | 10.7                         | 51,281                        |
| Handball or Racquetball outdoors | 10.4                         | 49,844                        |

Table 3.7 reveals that running or jogging (37.3%) are the most popular individual activities. One reason for their popularity is that people can run or jog almost anywhere, and they do not need a partner. On the other hand, though golf (19.4%) may be done individually, it is normally played with an opponent or several opponents and hence requires more planning, coordination and also more time than running or jogging. Ice-skating outdoors (24.4%) is the second most popular outdoor sports individual activity.

Table 3.8: VT State Outdoor Sports Team activities (percent and number)

| <b>Activity</b>              | <b>Percent Participating</b> | <b>Number of Participants</b> |
|------------------------------|------------------------------|-------------------------------|
| Attend outdoor Sports Events | 56.0                         | 268,388                       |
| Basketball outdoors          | 15.0                         | 71,890                        |
| Soccer outdoors              | 13.7                         | 65,659                        |
| Softball                     | 8.6                          | 41,217                        |
| Volleyball outdoors          | 8.3                          | 39,779                        |
| Baseball                     | 7.8                          | 37,383                        |
| Football                     | 4.3                          | 20,608                        |

Table 3.8 reveals that 268,388 people in the State of Vermont attended an outdoor sports event at least once last year. 15% of the residents played basketball, while 13.7% played soccer outdoors. Between 37,383 and 41,217 individuals participated in baseball, volleyball or softball outdoors. The least popular outdoor team sport was football.

### **Activity Groups and Activities for Region**

Identical to the activities for the State of Vermont, the activities below are also grouped under the same categories and headings, but here for the Vermont market region. The market region consists of the adjoining states New York, Massachusetts and New Hampshire. The market region also includes Vermont.

Table 3.9: VT Market Region Nature-Based Land activities (percent and number)

| <b>Activity</b>                       | <b>Percent Participating</b> | <b>Number of Participants (millions)</b> |
|---------------------------------------|------------------------------|--|
| Walk for Pleasure                     | 87.1                         | 18.505                                   |
| Family Gathering                      | 74.2                         | 15.764                                   |
| Gardening or Landscaping for Pleasure | 66.0                         | 14.022                                   |
| Picnicking                            | 54.3                         | 11.536                                   |
| Driving for Pleasure                  | 51.1                         | 10.856                                   |
| Attend outdoor Concerts, Plays, etc.  | 45.3                         | 9.624                                    |
| Bicycling                             | 41.8                         | 8.880                                    |
| Yard Games, e.g., Horseshoes          | 38.7                         | 8.222                                    |
| Day Hiking                            | 32.2                         | 6.841                                    |
| Visit a Farm or Agricultural setting  | 31.7                         | 6.735                                    |

|                                      |      |       |
|--------------------------------------|------|-------|
| Visit a Wilderness or Primitive area | 30.0 | 6.374 |
| Mountain Biking                      | 23.7 | 5.035 |
| Developed Camping                    | 23.1 | 4.908 |
| Drive Off-Road                       | 13.7 | 2.911 |
| Primitive Camping                    | 12.9 | 2.741 |
| Backpacking                          | 12.6 | 2.677 |
| Mountain Climbing                    | 8.3  | 1.763 |
| Horseback Riding (general)           | 6.8  | 1.445 |
| Hunting                              | 6.5  | 1.381 |
| Horseback Riding on Trails           | 5.3  | 1.126 |
| Big Game Hunting                     | 5.0  | 1.062 |
| Rock Climbing                        | 4.8  | 1.020 |
| Small Game Hunting                   | 3.4  | 0.722 |
| Orienteering                         | 2.3  | 0.489 |
| Migratory Bird Hunting               | 1.0  | 0.212 |

Table 3.9 shows that walking for pleasure is the most popular land activity within the Vermont market region, with more than 87% participating at least once a year. It is not surprising that walking for pleasure is the most popular activity as it requires little physical exertion, little or no cost, special equipment, skills or training, and can provide opportunities to meet and socialize with other people. For many of the same reasons as walking for pleasure, family gatherings (74.2%), picnicking (54.3%) and yard games (38.7%) are also very popular. Just over half of the residents in the region drive for pleasure a least once a year, and over a quarter of the region residents day hiked, visited a farm or agricultural setting or visited a wilderness or primitive area. Activities such as rock climbing, orienteering and migratory bird hunting and that require specialized training, equipment and physical exertion are less popular in the Vermont market region.

Table 3.10: VT Market Region Nature-Based Water activities (percent and number)

| <b>Activity</b>                      | <b>Percent Participating</b> | <b>Number of Participants (millions)</b> |
|--------------------------------------|------------------------------|--|
| Swimming in Lakes, Streams, etc.     | 49.0                         | 10.410                                   |
| Visit Beach                          | 48.7                         | 10.346                                   |
| Fishing                              | 27.1                         | 5.757                                    |
| Visit other Waterside (beside beach) | 25.1                         | 5.333                                    |

|                    |      |       |
|--------------------|------|-------|
| Motorboating       | 22.7 | 4.823 |
| Freshwater Fishing | 20.8 | 4.419 |
| Warmwater Fishing  | 14.4 | 3.059 |
| Canoeing           | 13.0 | 2.762 |
| Coldwater Fishing  | 12.0 | 2.549 |
| Saltwater Fishing  | 11.2 | 2.379 |
| Sailing            | 8.6  | 1.827 |
| Rafting            | 8.4  | 1.785 |
| Rowing             | 7.0  | 1.487 |
| Jet Skiing         | 7.0  | 1.487 |
| Kayaking           | 6.4  | 1.360 |
| Anadromous Fishing | 3.9  | 0.829 |
| Ice Fishing        | 2.2  | 0.467 |

Table 3.10 show nature-based water activities, which are activities that occur outdoors and mainly in or around water. The most popular water activity is swimming in lakes, streams, etc, with nearly 50% of region residents indicating they swam at least once a year. Visiting a beach falls just behind swimming, with 48.7% visiting. Fishing represents a popular regional activity, with 20.8% freshwater fishing, 14.4% warmwater fishing, 12.0% coldwater fishing and 11.2% saltwater fishing. Of the activities that take place on the water motorboating (22.7%) is the most popular, followed by canoeing (13.0%), sailing (8.6%), rafting (8.4%), rowing (7.0%), jet skiing (7.0%) and kayaking (6.4%). The least popular nature-based water activity is ice fishing (2.2%), which is not surprising as it is a seasonal activity and appeals to a select group.

Table 3.11: VT Market Region Nature-Based Snow and Ice activities (percent and number)

| <b>Activity</b>      | <b>Percent Participating</b> | <b>Number of Participants (millions)</b> |
|----------------------|------------------------------|--|
| Snow/Ice activities  | 38.9                         | 8.264                                    |
| Sledding             | 21.2                         | 4.504                                    |
| Snowmobiling         | 8.6                          | 1.827                                    |
| Cross Country Skiing | 8.0                          | 1.700                                    |
| Snowshoeing          | 5.0                          | 1.062                                    |

In comparison to other tables, it should be remembered that the percent of people participating in snow and ice-based activities is somewhat lower, mainly because these activities

are controlled by the weather and seasons. Overall, more than 35% of the of the people in the Vermont market region participated in some form of snow or ice-based activity. Sledding, with 21.2% participating, was the most popular activity. Under 10% participated in snowmobiling (8.6%), cross-country skiing (8.0%) or snowshoeing (5.0%).

Table 3.12: VT Market Region Viewing/Learning activities (percent and number)

| <b>Activity</b>                          | <b>Percent Participating</b> | <b>Number of Participants (millions)</b> |
|--|------------------------------|--|
| View/Photograph Natural Scenery          | 61.6                         | 13.087                                   |
| Visit Nature Centers, etc.               | 56.0                         | 11.897                                   |
| Sightseeing                              | 51.1                         | 10.856                                   |
| Visit Historic sites                     | 49.7                         | 10.559                                   |
| View/Photograph Wildflowers, Trees, etc. | 45.4                         | 9.645                                    |
| View/Photograph other Wildlife           | 42.8                         | 9.093                                    |
| View/Photograph Birds                    | 34.7                         | 7.372                                    |
| Visit a Wilderness or Primitive area     | 30.0                         | 6.374                                    |
| Gather Mushrooms, Berries, etc.          | 28.7                         | 6.097                                    |
| Boat Tours or Excursions                 | 23.6                         | 5.014                                    |
| View/Photograph Fish                     | 22.8                         | 4.844                                    |
| Visit Prehistoric/Archeological sites    | 18.9                         | 4.015                                    |
| Caving                                   | 2.6                          | 0.552                                    |

Table 3.12 shows that the most popular activity within the viewing and learning category for the Vermont market region is viewing/photographing natural scenery. Over 60% of the people in the region view or photograph natural scenery at least once a year. In fact, over half of the people in the Vermont market region chose to view or photograph natural scenery (61.6%), visit nature centers (56.0%) or sightsee (51.1%) at least once during the last year. One reason for these high percentages is that there has been a strong growth in people’s interest in the environment and in nature in recent years. Over a quarter chose to visit a wilderness or primitive area (30.0%), or gather mushrooms, berries, etc (28.7%). The least popular activity was caving (2.6%), which is understandable as caving may be too difficult, strenuous or inaccessible for many people.

Table 3.13: VT Market Region Outdoor Sports Land-Based activities (percent and number)

| <b>Activity</b> | <b>Percent Participating</b> | <b>Number of Participants (millions)</b> |
|-----------------|------------------------------|--|
|-----------------|------------------------------|--|

|                            |      |       |
|----------------------------|------|-------|
| Bicycling                  | 41.8 | 8.880 |
| Mountain Biking            | 23.7 | 5.035 |
| Downhill Skiing            | 12.5 | 2.656 |
| Horseback Riding (general) | 6.8  | 1.445 |
| Snowboarding               | 6.3  | 1.338 |

Table 3.13 shows that bicycling, by far, is the most popular land based sporting activity with over 40% of the people in the Vermont market region stating they biked at least once during the last year. 23.7% of region residents mountain biked. The third most popular land-based sporting activity was downhill skiing (12.5%), followed by horseback riding (6.8%) and snowboarding (6.3%).

Table 3.14: VT Market Region Outdoor Sports Water-Based activities (percent and number)

| Activity                    | Percent Participating | Number of Participants (millions) |
|-----------------------------|-----------------------|-----------------------------------|
| Swimming in an Outdoor Pool | 43.9                  | 9.327                             |
| Snorkeling                  | 7.8                   | 1.657                             |
| Waterskiing                 | 6.1                   | 1.296                             |
| Scuba Diving                | 1.9                   | 0.404                             |
| Windsurfing                 | 1.3                   | 0.276                             |
| Surfing                     | 1.0                   | 0.212                             |

Table 3.14 shows that swimming in an outdoor pool is, by far, the most popular water based sporting activity with almost 44% of the people in the Vermont market region stating they swam at least once a year. The second most popular activity was snorkeling (7.8%), followed by waterskiing (6.1%), scuba diving (1.9%), windsurfing (1.3%) and surfing (1.0%). A few of these less popular activities require specialized equipment, training, and physical exertion.

Table 3.15: VT Market Region Outdoor Sports Individual activities (percent and number)

| Activity                        | Percent Participating | Number of Participants (millions) |
|---------------------------------|-----------------------|-----------------------------------|
| Running or Jogging              | 29.6                  | 6.289                             |
| Inline Skating or Rollerblading | 17.9                  | 3.803                             |
| Golf                            | 15.7                  | 3.335                             |
| Ice Skating outdoors            | 12.0                  | 2.549                             |

|                                  |      |       |
|----------------------------------|------|-------|
| Tennis outdoors                  | 11.2 | 2.379 |
| Handball or Racquetball outdoors | 10.2 | 2.167 |

Table 3.15 reveals that running or jogging (29.6%), followed by inline skating or rollerblading (17.9%), are the regions most popular individual activities. One reason for their popularity is that people can run or skate almost anywhere and do not need a partner. Handball or racquetball outdoors is the least popular (3.0%) activity.

Table 3.16: VT Market Region Outdoor Sports Team activities (percent and number)

|                              | <b>Percent Participating</b> | <b>Number of Participants (millions)</b> |
|------------------------------|------------------------------|--|
| Attend outdoor Sports Events | 43.4                         | 9.220                                    |
| Basketball outdoors          | 12.1                         | 2.571                                    |
| Softball                     | 9.9                          | 2.103                                    |
| Volleyball outdoors          | 9.3                          | 1.976                                    |
| Soccer outdoors              | 8.7                          | 1.848                                    |
| Baseball                     | 7.3                          | 1.551                                    |
| Football                     | 7.3                          | 1.551                                    |

Table 3.16 reveals that well over 9 million people in the Vermont market region attended an outdoor sports event at least once in the last year. 12.1% participated in basketball outdoors. The third most popular team activity was softball with 9.9% participating, followed by volleyball (9.3%), soccer (8.7%), baseball (7.3%) and football (7.3%).