# CHAPTER V

# *OUTDOOR RECREATION PARTICIPATION TRENDS*

**H. Ken Cordell**[1]
**Barbara L. McDonald**
**R. Jeff Teasley**
**John C. Bergstrom**
**Jack Martin**
**Jim Bason**
**Vernon R. Leeworthy**

Invited Papers:

Deborah J. Chavez, USDA Forest Service
Richard J. Bowers & Richard R. Hoffman, American Whitewater Affiliation
Paul J. Baicich, Gregory S. Butcher, & Paul Green, American Birding Association
Cassandra Johnson, USDA Forest Service
Patricia L. Winter & Deborah J. Chavez, USDA Forest Service
J.M. Bowker, D.B.K. English, & G. Bhat, USDA Forest Service & University of Georgia
Richard Stenger, Free Lance Journalist
Daniel McLean, Indiana University
D.B.K. English & D. Marcoullier, USDA Forest Service & University of Wisconsin
Joseph O'Leary, Purdue University
Elwood Shafer, Pennsylvania State University
David J. Humphreys, Recreation Vehicle Industry Association
Alan Lane, United Four Wheel Drive Association
Jeffrey A. Yeager, American Canoe Association
Molly Chaffinch, American Horse Council
Gary MacFadden, Adventure Cycling Association
Barbara J. Turner
Celeste McCaleb and BASS Inc. Staff, Bass Anglers Sportsman Society
Adena Cook, BlueRibbon Coalition
Sally Moser and Sam Davidson, The Access Fund
Eric J. Lundquist, American Motorcyclist Association

Acknowledgments:
The National Survey on Recreation and the Environment (NSRE) has been a collaborative effort involving many along the way. This chapter is intended as the final national summary report on findings from the NSRE. Sponsoring organizations include:

[1]H. Ken Cordell is a research forester and project leader, USDA Forest Service, Athens, GA; Barbara L. McDonald is a research scientist, USDA Forest Service, Washington, D.C.; R. Jeff Teasley is a research coordinator, John C. Bergstrom is a professor, Jack Martin is an administrative director, and Jim Bason is a research coordinator, University of Georgia, Athens, GA; and Vernon R. Leeworthy is chief economist, National Oceanic and Atmospheric Administration, Washington, D.C.

USDA Forest Service (Research, RPA Recreation and Wildlife Divisions) (FS)
The University of Georgia (UGA)
USDI Bureau of Land Management (BLM)
DOD Corps of Engineers (COE)
The Sporting Goods Manufacturers Association (SGMA)
The Environmental Protection Agency (EPA)
DOC National Oceanic and Atmospheric Administration (NOAA)
USDA Economic Research Service (ERS)
USDI National Park Service (NPS)

Key individuals contributing (in addition to the authors) include:

Sandy Briggs, SGMA
Burt Lewis, Mt. Olive College
Morgan Miles, Georgia Southern University
Bill Hausen, COE
Jay McConnell, FS (retired)
Greg Super, FS
Merle Van Horne, NPS
Alan Watson, FS
Mary Jo Keely, (formerly EPA)
Dan Hellerstein, ERS
Del Price, BLM (retired)
Hal Hallett, BLM
Andrew Schretter, Duke University
Rita Peacock, UGA
Shela Mou, FS
Bob Leeworthy, NOAA
Ed Hamilton, Indiana University
Cindy Swanson, FS

## INTRODUCTION

As part of this national assessment of outdoor recreation trends, we have taken a look at participation patterns and levels of participation across activities and across segments of our society. The primary source of data is the National Survey on Recreation and the Environment (NSRE). The NSRE is the latest in the continuing series of National Recreation Surveys conducted by the federal government since 1960 (Cordell, 1995). The NSRE covers participation in over 80 activities, ranging from casual walking outdoors to more challenging activities such as rock climbing and white water canoeing.

This chapter on outdoor recreation participation first looks at national participation in land-, water-, and snow- and ice-based recreation activities. Long-term trends are covered, tracking some activities back to the original national survey done in 1960. To examine geographic patterns, differences in population percentages across Census regions and divisions are explored, with a focus on activities with the greatest differences. To further explore geographic patterns, selected activities are mapped at county scale to show more detailed patterns of participation across and within regions. Intensity of participation is described using days and trips away from home as the measure of involvement in outdoor activities. Participation differences among social groups in American society are examined, and constraints to participation described.

The closing sections of this chapter include descriptions of visits to federal and state recreation areas, international tourism in the United States, outdoor recreation consumer spending trends, and economic effects of outdoor recreationists' spending.

# NATIONAL PARTICIPATION ESTIMATES

Design, collection, and analysis of data for the National Survey on Recreation and the Environment are covered in Technical Appendix V.[2] Generally, the raw data from the survey were weighted to adjust for disproportionate representation of people 16 years old or older in the NSRE sample relative to the distribution in the population by age, sex, and racial stratum as estimated in the 1990 Census of U.S. Population and Housing.

## General Types of Participation

Thirteen basic types of outdoor recreation participation were surveyed (Table V.1). An estimated 94.5 percent of the population reported that during the 12 months just prior to their interview for the NSRE in 1994-95, they participated in one or more of the activities included in the survey activity list. This percentage, referred to as "global" participation, amounts to over 189 million people age 16 or older. Level of participation and activities pursued, as would be expected, varied greatly among different social strata within the sample. In the 1982-83 National Recreation Survey, 89 percent indicated participation in one of more of the 36 activities listed in that survey (Van Horne, Szwak, & Randall, 1986). While it appears that participation in the U.S. overall has been increasing in recent years, one suspected reason for the magnitude of difference between the global estimates in 1982-83 and 1994-95 is the longer list of activities used in the more recent survey.

Across all of the 13 types of participation, the four most popular single activities were:

| | |
|---|---|
| Walking | 66.7 percent |
| Viewing a beach or waterside | 62.1 percent |
| Family gatherings outdoors | 61.8 percent |
| Sightseeing | 56.6 percent |

The most popular types of outdoor participation, as measured by the number of people reporting they had participated in one or more of the activities of those types, include viewing- and learning-oriented activities, such as bird watching (almost 153 million participants); trail, street, and road activities such as biking (nearly 137 million participants); social activities such as picnicking (136 million); spectator activities outdoors such as attending an outdoor concert (118 million); and swimming in pools and natural waters, sometimes with a snorkel or scuba gear (approaching 109 million). For the most part, these types of activities are relatively low cost, can be pursued without a great deal of physical exertion, and do not require special equipment or skills. Most of these types of activities remain popular among Americans past the age of 60.

**Table V.1: Percent and Number of People 16 Years and Older in the U.S. Participating in 13 Types of Outdoor Recreational Activities, 1994-95**

| Type of outdoor activity | Percent of population 16 or older | Number in millions |
|---|---|---|
| Participated in any type of activity | 94.5 | 189.3 |
| Trail/street/road activities | 68.3 | 136.9 |
| Individual sports | 22.0 | 44.1 |
| Team sports | 26.4 | 53.0 |
| Spectator activities | 58.7 | 117.6 |
| Viewing/learning activities | 76.2 | 152.6 |
| Snow and ice activities | 18.1 | 36.3 |

[2]This technical appendix is available in table form from the USDA Forest Service, Outdoor Recreation and Wilderness Assessment Group, 320 Green Street, Athens, GA 30602-2044. Herein all references to Technical Appendices shall be abbreviated as TAs.

Table V.1 Cont.

| Type of outdoor activity | Percent of population 16 or older | Number in millions |
|---|---|---|
| Camping (all overnight) | 26.3 | 52.8 |
| Hunting | 9.3 | 18.6 |
| Fishing | 28.9 | 57.9 |
| Boating/floating | 29.0 | 58.1 |
| Swimming | 54.2 | 108.6 |
| Outdoor adventure activities | 36.8 | 73.6 |
| Social activities | 67.8 | 135.9 |

Source: 1994-95 National Survey on Recreation and the Environment, USDA Forest Service and the University of Georgia, Athens, Georgia. The NSRE is the most recent of the series of National Recreation Surveys begun nationally in 1960.

Individual and team sports constitute another category of participation. Team sports, including baseball, football, and soccer, are participated in at least once annually by 53 million people. Soccer is a particularly fast-growing sport, but many of the players are less than 16 years old—too young to be included in our sample. Individual sports include tennis and golf. Just over 44 million people are estimated to have participated at least once in the past 12 months in individual sports. Both individual and team sports typically require some sort of specially designed site for participation, such as tennis courts or baseball fields. Most of these facilities are provided by local government or the private sector.

Camping is a traditional form of outdoor recreation. In the U.S. during the 1994-95 survey period, an estimated 52.8 million people 16 or older went camping overnight at least once. This number is just over one fourth of the population of that age. Camping includes staying overnight near roads in developed campgrounds such as those provided on national forests or national parks, and especially those in state parks. Camping also includes staying overnight in more primitive settings lacking most of the amenities of a developed campground. For most primitive camping, one must carry water and provide all camping facilities, such as a table.

Consumptive wildlife (terrestrial) or fish activities include various forms of hunting or fishing. Hunting, as will be shown later, is one of the few steadily declining activities in this country. Cultural shifts and the difficulty of finding places to hunt seem to be the primary reasons for this decline. Just over nine percent of the U.S. population over 15 participates in this seasonal activity, mostly in the middle to late fall of the year. Fishing is much more popular, and opportunities to do it are more abundant because many lakes, rivers, and ocean fronts have numerous boat ramps and fishing piers for public access. Fishing includes saltwater and warm and cold freshwater settings. Coldwater fishing includes fishing for salmon and other anadromous (migratory) species.

Motorized and nonmotorized boating and floating on water are participated in by just over 58 million people. Introduction of jet skis has dramatically changed the nature of boating in America since the last national survey done in the early 1980s. Floating includes tubing (inner tubes or manufactured floating tubes) and rafting, where oars or paddles are used mainly for steering. Commercial floating outfitters are becoming more numerous.

When the phrase "outdoor recreation" is mentioned, many think of activities like mountain climbing and backpacking in remote areas. We have classed these more challenging activities as outdoor adventure. They generally involve physically challenging settings away from roads and developed sites. Nearly 74 million, over one-third of the population, participate in outdoor adventure activities.

## Land-Based Activities

Activities that occur primarily on land, rather than on water or snow and ice, constitute the largest single category of outdoor recreational participation in the country. Trail, street, and road activities; viewing and learning activities; camping of various forms; hunting; outdoor adventure; and a limited number of social activities are discussed below as they occur primarily on land.

### *Trail, Street, and Road Activities*

By far the single most popular activity in the United States is walking outdoors. An estimated 133.7 million, two thirds of all of the 200 million people in the U. S. 16 or older (at time of survey), participated one or more times per year (Table V.2). Participation can occur on neighborhood streets and walking trails, as well as in more remote settings such as at Bureau of Land Management recreation sites. Biking is the next most popular trail, street, and road activity with over 57 million participants. Of people who bike, an estimated 6.4 million bike long distances and participate in bike touring. This activity occurs on roads and highways all across the United States. Running and jogging has over 52 million participants, over 26 percent of the population 16 and older. Serious runners make up a much smaller proportion than this percentage, which includes many who are casual joggers putting in a mile or two once every few days.

**Table V.2: Percent and Number of People 16 Years and Older in the U.S. Participating in Land-Resource-Based Outdoor Activities, 1994-95**

| Type of outdoor activity | Percent of population 16 or older | Number in millions |
|---|---|---|
| **Trail/Street/Road Activities** | | |
| Running/jogging | 26.2 | 52.5 |
| Biking | 28.6 | 57.4 |
| Long distance biking | 3.2 | 6.4 |
| Walking | 66.7 | 133.7 |
| **Viewing/Learning Activities** | | |
| Visiting a nature center | 46.4 | 93.1 |
| Visiting a visitor center | 34.6 | 69.4 |
| Visit a prehistoric site | 17.4 | 34.9 |
| Visit a historic site | 44.1 | 88.4 |
| Bird-watching | 27.0 | 54.1 |
| Wildlife viewing | 31.2 | 62.6 |
| Other wildlife viewing | 13.8 | 27.5 |
| Sightseeing | 56.6 | 113.4 |
| **Camping** | | |
| Developed area | 20.7 | 41.5 |
| RV developed camping | 8.6 | 17.3 |
| Tent developed camping | 14.6 | 29.4 |
| Primitive area | 14.0 | 28.0 |
| RV primitive camping | 3.5 | 7.1 |
| Tent primitive camping | 10.7 | 21.5 |
| Other camping | 2.1 | 4.2 |
| **Hunting** | | |
| Big game | 7.1 | 14.2 |
| Small game | 6.5 | 13.0 |
| Migratory bird | 2.1 | 4.3 |
| **Outdoor Adventure** | | |
| Hiking | 23.8 | 47.8 |
| Hiking to a summit | 8.3 | 16.6 |
| Orienteering | 2.4 | 4.8 |

Table V.2 Cont.

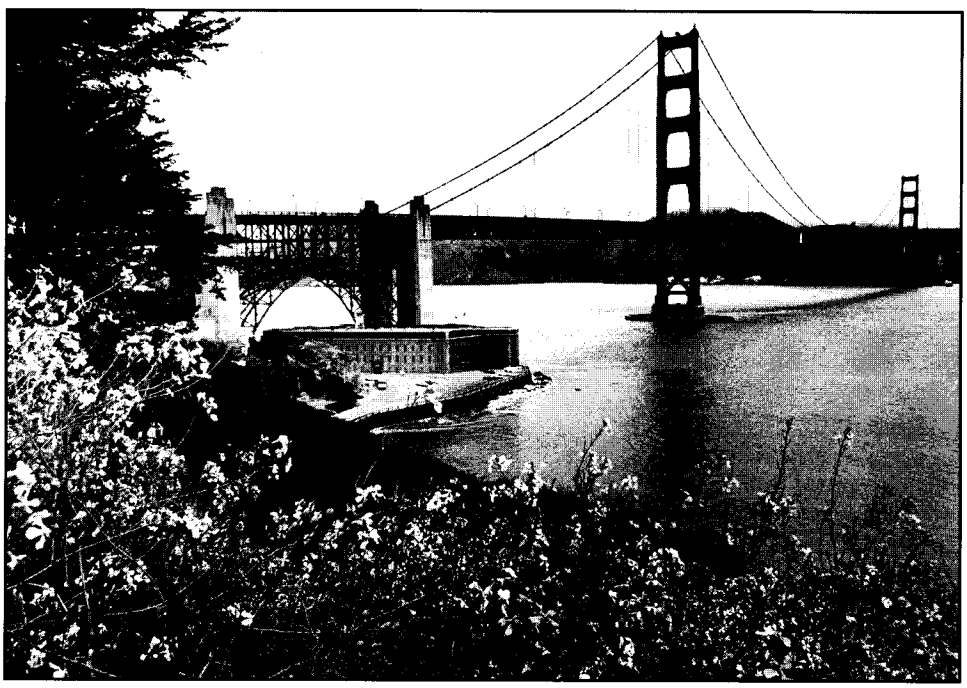
| Type of outdoor activity | Percent of population 16 or older | Number in millions |
|---|---|---|
| Backpacking | 7.6 | 15.2 |
| Backpacking to a summit | 3.3 | 6.6 |
| Mountain climbing | 4.5 | 9.0 |
| Rock climbing | 3.7 | 7.5 |
| Caving | 4.7 | 9.5 |
| Off-road driving | 13.9 | 27.9 |
| Horseback riding | 7.1 | 14.3 |
| Horseback riding on trails | 5.2 | 10.4 |
| **Social Activities** | | |
| Picnicking | 49.1 | 98.3 |
| Family gathering | 61.8 | 123.8 |

Source: 1994-95 National Survey on Recreation and the Environment, USDA Forest Service and the University of Georgia, Athens, Georgia. The NSRE is the most recent of the series of National Recreation Surveys begun nationally in 1960.

### *Viewing and Learning Activities*

Visiting sites of interest and viewing wildlife are rapidly growing types of land-based outdoor recreation. Sightseeing, a loosely defined activity, is also a part of this type of participation, and it is the most popular of viewing and learning activities. As an outdoor activity, sightseeing is usually thought of as driving to interesting places to see whatever is there or whatever is going on. Sightseeing might include driving along the Blue Ridge Parkway in western North Carolina or driving the coast of Oregon when the fog is in, always with the hope of seeing seals or whales. Sightseeing can also include driving in cities or other highly–developed settings to see the sights, for example, azaleas in bloom in the spring in Madison, Georgia.

Nature centers, visitor centers, and other outdoor-oriented education facilities are popular in the United States. Over 93 million visit nature centers, many of which are local to most people's communities, and almost 70 million visit visitor centers, such as the Mt. St. Helens Visitor Center on the Mt. Baker-Snoqualmie National Forest in Washington. In addition, over 88 million visit historic sites, designated and undesignated. Historic sites might include a national battlefield, a preserved settler's cabin, or the Liberty Bell. Nearly 35 million are estimated to visit prehistoric sites such as Pueblo ruins or some of the Native American mounds in the eastern part of the country. Learning about the culture, natural environment, and history of sites is a significant outdoor recreation motivation if participation estimates are any evidence.



*Fort Point National Historic Site, constructed in 1861 to guard the entrance to San Francisco Bay, is dwarfed by the Golden Gate Bridge. The Civil War fortress is a national historic site and is part of the Golden Gate National Recreation Area. Photo courtesy of USDI National Park Service. Photo by Richard Frear.*

Viewing, feeding, and photographing birds and other wildlife have long been popular across all ages and social strata. Almost 63 million people in the U.S. over the age of 15 view mammals and reptiles. Just over 54 million watch birds, including song birds, raptors, sea birds, and waders. As will be shown later, appreciation of wildlife is one of the most rapidly growing forms of outdoor recreation.

### *Camping*

Camping is something that quickly comes to mind when one is thinking about outdoor recreation trips. Most people have camped at one time or another in their lives. As shown in Table V.2, camping can occur in a variety of ways. In developed campgrounds, the most distinguishing characteristic is whether it involves an RV (recreational vehicle) or a tent. Across the country, over 41 million people camp at least once a year in a developed campground that includes restrooms, showers (usually), a campsite with table and fireplace, water, paved or gravel roads, and individual parking spaces. Over 17 million people camp in an RV, many of which are quite large and require hookups for electricity, water, and increasingly, phone and cable TV. See contributed paper by Humphreys on RV market at the end of this chapter. More people, over 29 million in 1994-95, however, pitch tents in campgrounds. By nearly a ratio of two to one, tent campers outnumber RV campers.

Camping in primitive settings is an activity of 28 million people, about 14 percent of Americans age 16 or older. These areas usually lack restrooms, hookups, and most facilities and services. Much primitive camping occurs along forest roads, at secondary road pulloffs, or at other places where access is possible. By a ratio of three to one, primitive campers use tents rather than RVs. This preference is of course to be expected since most RVs require hookups and nearly level parking.

### *Hunting*

Three types of hunting are listed in Table V.2: big game, small game, and migratory birds. An estimated 14 million people hunt big game species, including deer, turkey, elk, and other large birds or mammals. Some 13 million hunt small game species, including squirrels, rabbits, and other small mammals. Just over four million hunt migratory birds, primarily ducks and geese. Overall, hunting is a declining activity in the United States.

### *Outdoor Adventure*

Among the outdoor adventure types of activities shown in Table V.2, hiking is the most popular in terms of number of participants on an annual basis. Almost 24 percent of the population 16 years and older, about 48 million people, went hiking once or more during the 1994-95 survey period. Among hikers, over 16 million took their hike to reach a summit. Hiking is one of the principal uses of the massive system of trails in the United States. Backpacking differs from hiking in that it involves one or more nights camping on a trail and the need to carry food, shelter and utensils in a backpack. Over 15 million went backpacking; nearly seven million of those backpacking had a summit as a destination. Backpacking is one of the major uses of trails into remote public land.

Along with hiking and backpacking, many also use trails or go cross-country on horseback (over 14 million) or using off-road vehicles, such as motorcycles, four-wheel drive vehicles, or three-wheel ATVs (almost 28 million). Of the 14 million who went horseback riding, over 10 million did so on trails. Road shoulders, pastures, and rinks are also used for horseback riding. Off-road driving can be done in specially designated areas on public or private land, often where there are challenging hills and uneven terrain, or it can occur on the cleared rights-of-way along highways, on private cleared land, in power-line rights-of-way, or in many other venues. (See contributed paper on four-wheel recreation by Alan Lane at the end of this chapter.)

### *Social Activities*

Table V.2 shows participation in outdoor picnics and family gatherings. Nearly half of the 200 million people 16 or older in the U.S. participate in picnicking. This experience can be as casual as a single person taking lunch in the nearby local park, or as elaborate as a full gourmet spread of cheeses, wines, pickles, and breads among friends. Often associated with picnicking are family gatherings outdoors. Throughout this country, group shelters and multiple family picnic sites have been developed to facilitate this very popular activity—124 million, or 62 percent of the population. Family gatherings frequently involve annual or less frequent reunions of relatives. Almost always they involve cooking outside, covered dishes brought from home, and sharing of memories.

## Water-Based Activities

Boating and floating, fishing, swimming, and viewing activities are the types of water-based activities summarized in Table V.3.

### *Boating*

By far the most popular boating activity is motor boating with 47 million participants, nearly 24 percent of the population 16 and older. Motor boats have gotten larger and more powerful engines in excess of 200 horsepower, often driving boats ranging well over 20 feet in length. Motor boating is very popular on Corps of Engineers, Bureau of Reclamation, and Tennessee Valley Authority reservoirs; on large rivers and in sounds; and on the ocean. Associated with motor boating is waterskiing, in which almost 18 million participate. Jet skiing is another form of engine-powered boating. Jet skiing is a relatively new activity brought about by jet water propulsion technology that has been marketed for fewer than 20 years. Its popularity has reached almost 10 million participants already. Jet skis and jet boats can be used in water not formerly accessible to conventional propeller-driven boats, such as river rapids, ocean surf, shallows, and narrow reaches of rivers and reservoirs.

Wind-powered boating (including sailboarding and windsurfing) is less popular than motorized forms of boating. Almost 10 million people sail and 2.2 million sailboard or windsurf. Sailing using a yacht can be very expensive, but it also can be done at relatively low cost (by renting or using smaller craft). Sailing usually requires large bodies of water with stretches that are not limited by low bridges or shallow water. Along with sailboarding and windsurfing, sailing a boat requires a relatively high amount of skill.

Muscle-powered boating and floating activities include canoeing, kayaking, rowing, and floating or rafting. Most of the 14 million canoeing participants use open-top canoes (13.5 million). Fewer than one million use closed-top canoes, typically designed and used for running stretches of whitewater rivers. Used almost exclusively for whitewater and ocean use, kayaks are used by 2.6 million. Kayaks are favored typically because of their maneuverability in confined places and in steering a course through rapids. (See contributed paper on paddlesports by Yeager at the end of this chapter.) A significant industry has developed to facilitate rafting and other floating on whitewater and other fast-moving streams. Raft rentals, shuttle services, and river guides are services provided mostly by the private sector on many popular stretches of rivers. Some outfitters have begun renting tubes for floating less dangerous stretches of rivers. This form of recreation outfitting seems to be growing rapidly.

**Table V.3: Percent and Number of People 16 Years and Older in the U.S. Participating in Water-Resource-Based Outdoor Activities, 1994-95**

| Type of outdoor activity | Percent of population 16 or older | Number in millions |
|---|---|---|
| **Boating/Floating** | | |
| Sailing | 4.8 | 9.6 |
| Canoeing | 7.0 | 14.1 |
| Open-top canoeing | 6.8 | 13.5 |
| Closed-top canoeing | 0.4 | 0.8 |
| Kayaking | 1.3 | 2.6 |
| Rowing | 4.2 | 8.4 |
| Floating, rafting | 7.6 | 15.2 |
| Motor-boating | 23.5 | 47.0 |
| Water skiing | 8.9 | 17.9 |
| Jet skiing | 4.7 | 9.5 |
| Sailboarding/windsurfing | 1.1 | 2.2 |
| **Fishing** | | |
| Freshwater | 24.4 | 48.8 |
| Saltwater | 9.5 | 19.0 |
| Warmwater | 20.4 | 40.8 |
| Coldwater | 10.4 | 20.8 |
| Ice | 2.0 | 4.0 |
| Anadromous | 4.5 | 9.1 |
| Catch and release | 7.7 | 15.5 |

Table V.3 Cont.

| Type of outdoor activity | Percent of population 16 or older | Number in millions |
|---|---|---|
| **Swimming** | | |
| Surfing | 1.3 | 2.6 |
| Swimming/pool | 44.2 | 88.5 |
| Swimming/non-pool | 39.0 | 78.1 |
| Snorkeling/scuba | 7.2 | 14.5 |
| **Viewing Activities** | | |
| Fish viewing | 13.7 | 27.4 |
| Visiting a beach or waterside | 62.1 | 124.4 |
| Studying nature near water | 27.6 | 55.4 |

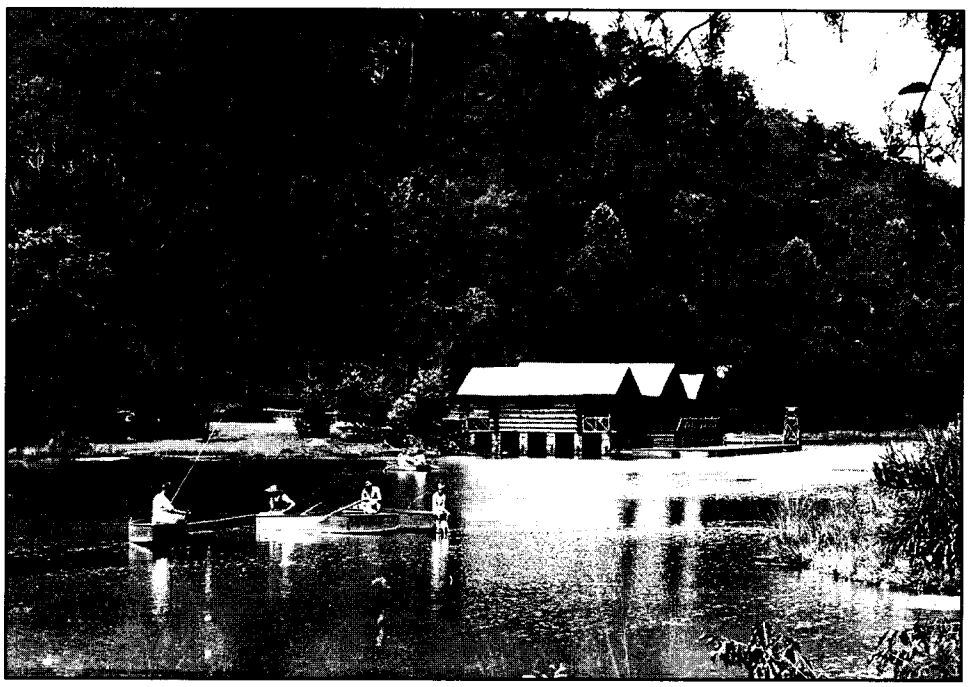
Source: 1994-95 National Survey on Recreation and the Environment, USDA Forest Service and the University of Georgia, Athens, Georgia. The NSRE is the most recent of the series of National Recreation Surveys begun nationally in 1960.

## *Fishing*

Fishing remains popular throughout the country. Sale of boats, fishing gear, bait and other related fishing supplies is an important source of revenue for many small stores as well as for numerous large-scale equipment manufacturing companies.

Fishing occurs in lakes, streams, and oceans. The type of water determines, in large part, the species sought and thus the type of fishing pursued. Of the nearly 58 million people in the U. S. who fish, nearly 49 million fish in fresh water. Among those who fish in fresh water, most, about 41 million, fish in warm water, a category of water bodies that includes most lakes, reservoirs, large rivers, and ponds. Bass, crappie, and other species are the most familiar and sought after. About 21 million age 16 and older fish for coldwater species, such as trout and northern pike. A special category of coldwater fishing is anadromous fishing for migratory species such as salmon. Just over nine million people fish for anadromous species.

It is further estimated that 19 million people fish in salt water including oceans (from shore and by boat), ocean inlets and sounds, tidal estuaries, and inland saltwater lakes. Along ocean saltwater shorelines, many private and public fishing piers have been constructed, and a large number of fishing guide and excursion businesses are in operation. In northern reaches of the country where lakes, rivers, and saltwater bodies freeze over in winter, ice fishing is enjoyed by an estimated four million people.



*Fishing has long been a favorite American leisure time activity. This photo shows recreationists near East Point, Georgia, circa 1930s. Photo courtesy of the Hargrett Rare Book and Manuscript Library, University of Georgia Libraries.*

In saltwater and freshwater, by choice or by state regulation, an estimated 15.5 million people fish by the catch-and-release method. Catch and release is regulated both by species and by size.

### *Swimming*

Of the estimated 109 million people who swim out of doors, over 88 million are estimated to do at least some portion of their swimming in pools. Just over 78 million swim in "natural" waters such as streams, lakes, ponds, and oceans. Over 14 million are estimated to go snorkeling or scuba diving one or more times over the course of a year, and 2.6 million surf on conventional surfboards.

### *Viewing and Learning*

Over three quarters of people over 15 participate in some form of viewing or learning activities. Water-related viewing or learning is an important part of this pursuit. Over 124 million people visit a beach or other waterside during the course of a year. For many, these visits are numerous. Studying nature near water is also popular, with over 55 million people participating. An activity just recently included in recreation participation studies is fish viewing. Over 27 million participate in some form of fish viewing, from watching trout in alpine lakes to observing fish in outdoor aquariums and fish hatcheries.

## Snow–and Ice–Based Activities

Skiing, skating, and snowmobiling are the three types of snow and ice activities presented in Table V.4. Of the 36 million who participate in some form of snow and ice activity(ies), nearly 17 million ski, over 20 million sled, and 4.5 million snowboard downhill. Snowboarding is a relatively new activity that is rapidly growing in popularity. Snowboards are similar to skateboards or surfboards in concept. Snowboards afford a great deal more maneuverability than traditional long skis. Snowboarding and sledding do not require as much maintenance as downhill skiing slopes, but snowboarders benefit greatly from use of the lifts at skiing areas.

**Table V.4: Percent and Number of People 16 Years and Older in the U.S. Participating in Snow- and Ice-Based Outdoor Activities, 1994-95**

| Type of outdoor activity | Percent of population 16 or older | Number in millions |
|---|---|---|
| Downhill Skiing | | |
| Snowboarding | 2.3 | 4.5 |
| Sledding | 10.2 | 20.5 |
| Downhill skiing | 8.4 | 16.8 |
| Cross Country Skiing | | |
| On groomed trails | 2.7 | 5.4 |
| On ungroomed trails | 2.8 | 5.7 |
| Back country | 1.9 | 3.7 |
| All forms | 3.3 | 6.5 |
| Ice skating | 5.2 | 10.5 |
| Snowmobiling | 3.6 | 7.1 |

Source: 1994-95 National Survey on Recreation and the Environment, USDA Forest Service and the University of Georgia, Athens, Georgia. The NSRE is the most recent of the series of National Recreation Surveys begun nationally in 1960.

Cross-country skiing occurs on or off trails and can be on either groomed or ungroomed trails. Overall, 6.5 million people ski cross country, most of them in a variety of venues. An estimated 3.7 million ski cross-country in backcountry areas (self-defined), 5.7 million ski on ungroomed trails, and 5.4 million ski on groomed trails. Some 10.5 million ice skate and over 7 million snowmobile.

## Days and Trips Taken for Recreational Activities

In addition to the percentages and numbers in the population who participate, it is highly useful to know how much participation is involved. In the NSRE, participants were asked how many trips 15 or more minutes away from home were taken for the primary purpose of participating in outdoor recreation and how many different days during the year participants engaged in various activities. In the sections that follow, recreation trips away from home and participation days are reported by the activity that was the primary motivation for participation. In addition to the mean number of trips and days on which participation occurred, estimates of total trips and days by activity are provided.

### *Land-Based Participation*

Land-based recreational trips and days are shown in Table V.6. Mean number of trips specifically for participating in the activities listed range from a low of 1.7 for caving to a high of 13.2 for ORV driving. Most are in the range of four to eight trips per year to participate in the activities covered. Just behind off-road driving in mean number of trips per person per year are wildlife viewing (10.7), biking (9.6), sightseeing (9.1), and hiking (9.1).

**Table V.6: Mean and Total Trips and Days per Year During that People 16 Years Older in the U.S. Participated in Land-Resource-Based Activities, 1994-95**

| Activity | Mean number of trips per participant per year[1] | Total trips per year for the U.S. (millions) | Mean number of days per participant per year[1] | Total days per year for the U.S. (millions) |
|---|---|---|---|---|
| **Trail/Street/Road Activities** | | | | |
| Biking | 9.6 | 553.02 | 39.0 | 2237.0 |
| Bike touring | —[2] | —[2] | 19.6 | 126.0 |
| Walking | —[2] | —[2] | 107.6 | 14381.4 |
| **Viewing/Learning Activities** | | | | |
| Visit a prehistoric site | 2.8 | 96.13 | 5.0 | 175.6 |
| Visit a historic site | 3.0 | 264.31 | 5.5 | 482.4 |
| Bird-watching | 7.1 | 385.51 | 87.8 | 4749.2 |
| Wildlife viewing | 10.7 | 670.74 | 36.9 | 2307.9 |
| Sightseeing | 9.1 | 1036.90 | 18.0 | 2036.3 |
| **Camping** | | | | |
| Developed area | 4.7 | 196.78 | 10.7 | 442.4 |
| Primitive area | 4.8 | 134.50 | 9.2 | 258.6 |
| Hunting | | | | |
| Big game | 8.1 | 115.72 | 14.3 | 204.0 |
| Small game | 8.8 | 113.79 | 13.8 | 178.8 |
| Migratory bird | 5.7 | 24.44 | 7.8 | 33.5 |
| **Outdoor Adventure Activities** | | | | |
| Hiking | 9.1 | 434.23 | 16.8 | 804.7 |
| Orienteering | —[2] | —[2] | 6.3 | 30.6 |
| Backpacking | 4.5 | 68.47 | 8.6 | 129.7 |
| Mountain climbing | 3.0 | 27.25 | 4.4 | 39.8 |
| Rock climbing | 3.5 | 26.10 | 5.1 | 37.7 |
| Caving | 1.7 | 15.83 | 2.4 | 22.3 |
| Off-Road driving | 13.2 | 368.83 | 24.6 | 685.5 |
| Horseback riding | 8.7 | 124.32 | 23.6 | 336.3 |
| **Social Activities** | | | | |
| Picnicking | 5.3 | 518.74 | 8.8 | 861.9 |
| Family gathering | 6.3 | 778.45 | 8.8 | 1084.5 |

[1] Means for trips and days include only participants in the activity and are not computed on the basis of total population count.
[2] Trips were not asked in the National Survey on Recreation and the Environment for some activities.

Because some activities have large numbers of participants (see Table V.2), total trips per year across all participants is a very large number for some activities. From highest to lowest, the five activities with the most total trips include:

| | |
|---|---|
| Sightseeing | 1,037 million |
| Family Gatherings | 778 million |
| Wildlife viewing | 671 million |
| Biking | 553 million |
| Picnicking | 519 million. |

Viewing and learning activities, such as visiting historic sites, wildlife viewing, and sightseeing, are among the nation's highest participation activities in terms of total number of trips taken to enjoy them. Many outdoor adventure activities, such as rock climbing, are among the lowest in total number of trips per year. These activities require either skill, specialized equipment, physical exertion, or all of the above.

The number of different days during which participants engaged in each activity is another measure of activity popularity. As referenced in the NSRE, days of participation are defined as the number of different days on which the activity was done, whether that participation was only for a few minutes or for the entire day.

The activity with the highest mean number of days was walking for exercise or pleasure, with nearly 108 days per person per year. Next were bird watching (88 days), biking (39), wildlife viewing (37), off-road driving (25), and horseback riding (24). (See contributed paper on the horse industry by Chaffinch at the end of this chapter.) The activities with the lowest mean number of days per participant per year were caving (just over two days) and mountain climbing (four). Among activities typically occurring on trails, streets, and roads, viewing and learning have the greatest mean numbers of days per participant per year.

Across all participants in the activities listed in Table V.6, large numbers of total days of participation are shown to have occurred during the 1994-95 survey period. The six activities with over one billion activity days during that period include:

| | |
|---|---|
| Walking | 14.4 billion |
| Bird watching | 4.7 billion |
| Wildlife viewing | 2.3 billion |
| Biking | 2.2 billion |
| Sightseeing | 2.0 billion |
| Family gathering | 1.1 billion. |

The activities with the lowest total days of participation are the outdoor adventure activities, which have both lower numbers of participants and lower average days of participation per person per year.

Trips and days of participation in water-based activities are shown in Table V.7. Although the number of participants is relatively small, number of trips per participant is highest for surfing at almost 22 trips per year. Next highest in trips per participant per year is freshwater fishing (12 trips), warm water fishing (12), and visiting a beach or waterside (12). Lowest in number of trips is rowing, with just over 2 trips per year. Participants tend to take more trips for fishing, swimming, and viewing and learning activities than they take for boating and floating.

**Table V.7: Mean and Total Trips and Days per Year During Which People 16 Years Older in the U.S. Participated in Water-Resource-Based Activities, 1994-95**

| Activity | Mean number of trips per participant per year[1] | Total trips per year for the U.S. (millions) | Mean number of days per participant per year[1] | Total days per year for the U.S. (millions) |
|---|---|---|---|---|
| **Boating/Floating** | | | | |
| Sailing | 5.0 | 48.37 | 8.1 | 77.8 |
| Canoeing | 2.8 | 38.95 | 5.3 | 74.6 |
| Kayaking | 3.0 | 8.02 | 7.3 | 19.3 |
| Rowing | 2.3 | 19.45 | 5.3 | 45.0 |
| Floating, Rafting | 3.1 | 47.10 | 5.1 | 77.3 |
| Motorboating | 7.3 | 344.53 | 14.9 | 699.9 |
| Waterskiing | 5.4 | 95.97 | 9.7 | 173.1 |
| Jet Skiing | 3.1 | 29.33 | 7.6 | 72.3 |
| Sailboarding/windsurfing | 2.7 | 5.91 | 6.1 | 13.5 |
| **Fishing** | | | | |
| Freshwater | 12.4 | 606.17 | 18.1 | 886.1 |
| Saltwater | 8.7 | 165.32 | 13.1 | 249.3 |
| Warmwater | 12.0 | 487.65 | 17.8 | 725.8 |
| Coldwater | 7.7 | 160.28 | 11.3 | 234.5 |
| Anadromous | 7.7 | 69.41 | 9.4 | 85.1 |
| Catch and release | —[2] | —[2] | 18.40 | 284.7 |
| **Swimming Activities** | | | | |
| Surfing | 21.8 | 56.93 | 30.5 | 79.5 |
| Swimming/pool | 8.0 | 710.31 | 27.6 | 2438.9 |
| Swimming/non-pool | 6.9 | 542.08 | 15.9 | 1241.4 |
| Snorkeling/Scuba | 3.9 | 57.19 | 7.2 | 105.1 |
| **Viewing Activities** | | | | |
| Fish viewing | —[2] | —[2] | 17.30 | 475.4 |
| Visiting a beach or waterside | 11.6 | 1438.11 | 25.6 | 3187.9 |
| Studying nature near water | 5.8 | 322.12 | 24.4 | 1352.9 |

[1] Means for trips and days include only participants in the activity and are not computed on the basis of total population count.
[2] Trips were not asked in the National Survey on Recreation and the Environment for some activities.

Because of large numbers of participants and high mean numbers of trips per year, estimated total number of trips for water-based activities shows four water-based activities with over 500 million trips per year:

| | |
|---|---|
| Visiting a beach or waterside | 1,438 million |
| Swimming in a pool | 710 million |
| Freshwater fishing | 606 million |
| Swimming in lakes or streams | 542 million. |

As with trips, the activity with the highest mean number of days per participant is surfing with over 30 days per year. Nearly as many days per participant are associated with pool swimming (28 days), visiting a beach or waterside (26 days), and studying nature near water (24). These high levels of participation resulted in these three activities being the most popular water-based activities surveyed based on total days of participation, with swimming in rivers, lakes, and oceans following as the fourth most popular activity as follows:

| | |
|---|---|
| Visiting a beach or waterside | 3.2 billion |
| Swimming in pools | 2.4 billion |
| Studying nature near water | 1.4 billion |
| Swimming in rivers, lakes | 1.2 billion. |

Participants devote many fewer days to boating and floating than to fishing, swimming, and viewing.

### *Snow and Ice Participation*

For snow and ice activities, modest mean and total numbers of trips and days are shown in Table V.8. While mean trips and days are of similar magnitude among the activities of downhill skiing, cross-country skiing, and snowmobiling, totals are much different, with downhill skiing generating about three times as many trips and over two times as many days of participation per year.

**Table V.8: Mean and Total Trips and Days per Year During Which People 16 Years Older in the U.S. Participated in Snow/Ice-Resource-Based Activities, 1994-95**

| Activity | Mean number of trips per participant per year[1] | Total trips per year for the U.S. (millions) | Mean number of days per participant per year[1] | Total days per year for the U.S. (millions) |
|---|---|---|---|---|
| **Snow and Ice Activities** | | | | |
| Downhill skiing | 4.5 | 75.47 | 7.5 | 126.5 |
| Cross-country skiing | 3.8 | 24.64 | 7.5 | 49.0 |
| Snowmobiling | 3.2 | 23.06 | 9.3 | 65.8 |

[1] Means for trips and days include only participants in the activity and are not computed on the basis of total population count.
[2] Trips were not asked in the National Survey on Recreation and the Environment for some activities.

## The Most Active Participants

While over 94 percent of the U.S. population participates in some form of outdoor recreation over the course of a year, a group that we term *enthusiasts* accounts for most of the participation days. In Table V.9, participation days for enthusiasts, the one third of participants for each activity who are most active, are summarized. In column one, the percentages of the population 16 years and older who are the enthusiasts are shown. These percentages range from a low of 0.2 percent for kayaking to a high of 21.4 percent for walking. Even though these percentages are small relative to the whole population, column three indicates that enthusiasts account for most of the total participation days across all participants. Percentage of total participation days accounted for by enthusiasts ranges from a low of 58 percent for caving to a high of 94 percent for horseback riding.

**Table V.9: Percent of Population, Days Annually and Percent of Total Days by the One-Third of Participants Who Are the Most Active by Activity and Age Group, 1994-95**

| Activity[1] | Percent of U.S. population classified as enthusiasts | To be classified as an enthusiast, an individual had to participate at least this number of days annually | Percent of total participation days by enthusiasts | Percent of enthusiasts by Age Group 16-24 | 25-49 | 50 and over |
|---|---|---|---|---|---|---|
| **Fitness Activities** | | | | | | |
| Biking | 7.4 | 30 | 80 | 24.4 | 56.9 | 18.7 |
| Walking | 21.4 | 112 | 76 | 15 | 45.4 | 39.6 |
| **Viewing Activities** | | | | | | |
| Visit a prehistoric site | 4.3 | 3 | 75 | 17.2 | 53.1 | 29.7 |
| Visit a historic site | 11.8 | 4 | 72 | 14.7 | 55.9 | 29.4 |
| Bird-watching | 9.1 | 50 | 91 | 4.9 | 44.3 | 50.8 |
| Wildlife viewing | 9.6 | 12 | 92 | 10.6 | 57.7 | 31.8 |
| Fish viewing | 3.7 | 10 | 85 | 9.5 | 58.3 | 32.2 |
| Sightseeing | 17.4 | 12 | 78 | 13.1 | 50.5 | 36.4 |
| Visiting a beach or waterside | 19.7 | 15 | 84 | 20.4 | 57.6 | 22.0 |
| Studying nature near water | 8.5 | 10 | 89 | 12.3 | 58.8 | 28.8 |
| **Snow and Ice Activities** | | | | | | |
| Downhill skiing | 2.6 | 6 | 74 | 35.8 | 53.6 | 10.6 |
| Cross-country skiing | 0.9 | 6 | 73 | 16.8 | 54.4 | 28.8 |
| Snowmobiling | 1.1 | 5 | 84 | 22 | 62.6 | 15.5 |
| **Camping (overall)** | | | | | | |
| Developed area | 6.3 | 8 | 76 | 15 | 59.7 | 25.2 |
| Primitive area | 4.1 | 7 | 76 | 24.2 | 60 | 15.9 |
| **Hunting** | | | | | | |
| Big game | 2.4 | 12 | 74 | 20.8 | 64.6 | 14.6 |
| Small game | 1.9 | 10 | 77 | 18.6 | 64.6 | 16.8 |
| Migratory bird | 0.6 | 7 | 71 | 20.2 | 57.1 | 22.8 |
| **Fishing** | | | | | | |
| Freshwater | 7.1 | 15 | 79 | 16.5 | 55.7 | 27.7 |
| Saltwater | 2.6 | 7 | 85 | 17.2 | 57.4 | 25.4 |
| Warmwater | 6.2 | 14 | 82 | 18.7 | 54.7 | 26.5 |
| Coldwater | 2.3 | 10 | 76 | 13.2 | 55.9 | 30.9 |
| Anadromous | 1.0 | 6 | 80 | 16.6 | 57.2 | 26.2 |
| Catch and release | 3.9 | 15 | 80 | 19.3 | 58.2 | 22.5 |
| **Boating** | | | | | | |
| Sailing | 1.4 | 5 | 81 | 23.4 | 49.8 | 26.8 |
| Canoeing | 1.8 | 4 | 73 | 27.6 | 49.4 | 23.1 |
| Kayaking | 0.2 | 5 | 78 | 22.5 | 71.3 | 6.2 |
| Rowing | 1.1 | 3 | 79 | 15.5 | 51.3 | 33.1 |
| Floating, Rafting | 1.9 | 4 | 75 | 37.1 | 55.5 | 7.5 |
| Sailboard/windsurfing | 0.3 | 4 | 81 | 24.5 | 56.6 | 18.8 |

Table V.9 Cont.

| | | | | | | |
|---|---|---|---|---|---|---|
| **Swimming Activities** | | | | | | |
| Surfing | 0.3 | 15 | 89 | 54.2 | 38.6 | 7.1 |
| Swimming/pool | 13.0 | 25 | 80 | 26.9 | 55 | 18.1 |
| Swimming/non-pool | 11.9 | 13 | 78 | 27 | 58.7 | 14.3 |
| Snorkeling/Scuba | 1.8 | 5 | 77 | 20.2 | 68 | 11.9 |
| **Outdoor Adventure Activities** | | | | | | |
| Hiking | 7.1 | 10 | 83 | 24.4 | 58.3 | 17.3 |
| Orienteering | 0.6 | 5 | 75 | 32.2 | 55 | 12.8 |
| Backpacking | 2.4 | 5 | 81 | 33.4 | 56 | 10.7 |
| Mountain climbing | 1.3 | 3 | 74 | 29.5 | 55.6 | 14.8 |
| Rock climbing | 1.0 | 3 | 78 | 45.5 | 48.4 | 6.2 |
| Caving | 1.1 | 2 | 58 | 34.4 | 54.6 | 11 |
| Off-road driving | 4.5 | 14 | 87 | 25.6 | 57 | 17.3 |
| Horseback riding | 2.3 | 6 | 94 | 36.8 | 52.6 | 10.5 |
| **Social Activities** | | | | | | |
| Picnicking | 15.0 | 7 | 73 | 13.5 | 64.0 | 22.6 |

[1]This table includes only activities for which the number of days participated was asked.

Enthusiasts account for 70 to 89 percent of total participation days for individual activities. These percentages tend to be highest for viewing and learning, fishing, and outdoor adventure activities. The activities for which enthusiasts are most likely to be between the ages of 16 to 24 are downhill skiing, canoeing, floating and rafting, surfing, swimming, orienteering, backpacking, mountain climbing, rock climbing, caving, off-road driving, and horseback riding. (See contributed paper on main streaming of rock climbing by Moser and Davidson at the end of this chapter.) Activities for which enthusiasts are most likely to be over the age of 50 include walking, bird watching, wildlife viewing, fish viewing, sightseeing, and coldwater fishing.

## NATIONAL TRENDS IN PARTICIPATION

The primary measures of outdoor recreation market shifts include trends in percentages and numbers of participants in activities, as well as in number of days during which people pursue those activities. Analysts often focus on the percentages of people who report participation. While this information is important, this chapter focuses on trends in numbers of people who participate as the more telling growth indicator. Numbers of participants account for both general popularity shifts (changes in the percentage of the population who participate) and changes in the population base, which has grown over 65 percent since the first national recreation survey in 1960.

Below are the estimated millions of people 12 years old or older in the United States during annual periods covered by the four National Recreation Surveys for the United States:

| | |
|---|---|
| 1960 | 131 million |
| 1965 | 144 million (10 percent more than 1960) |
| 1982-83 | 188 million (44 percent more than 1960) |
| 1994-95 | 216 million (65 percent more than 1960). |

The following sections examine long-term trends in number and percentage of participants since 1960 for activities common to the 1960, 1965, 1982-83, and 1994-95 national surveys. Recent trends for a larger set of activities common to the 1982-83 and 1994-95 surveys also are presented.

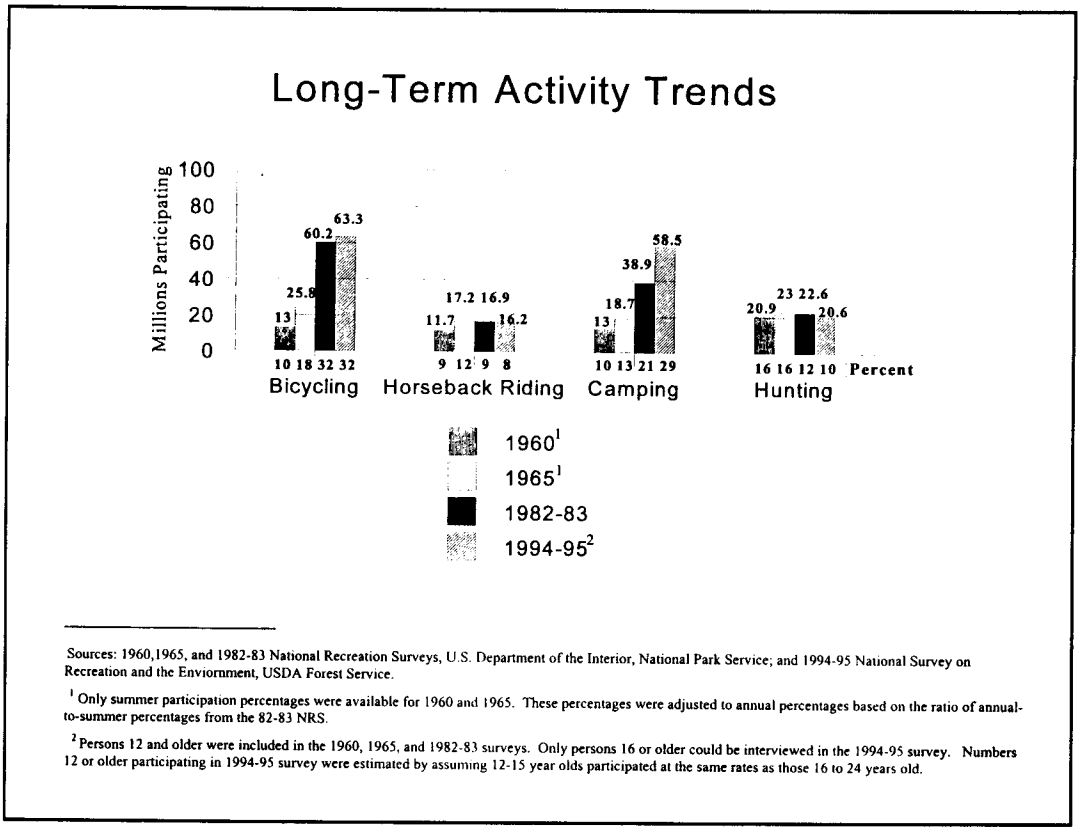
### Long-Term Trends

#### *Land-Based Activities*

Four land-based activities have been tracked since the original National Recreation Survey (Figure V.1). For two of these activities, bicycling and camping, there has been growth in numbers of people who partici-

pate. It is obvious when visiting a bicycle shop that the technology for biking has changed dramatically over the 35 years spanning the first and last surveys. The days of the large balloon-tired Schwinn single speed with Bendix brakes have passed. The ones that remain are mounted on the walls of nostalgia-themed restaurants. When the 1960 survey was being conducted, 10-speed bikes were just beginning to appear. In 1960, about 13 million people 12 years or older reported that they had gone bicycling one or more times during the past year. By 1965, that number had jumped to nearly 26 million 12 years or older—a doubling of the number participating. The increase was driven partly by the improvements in technology represented by the 10-speed bike. (See contributed paper by MacFadden on cycling issues at the end of this chapter.)

**Figure V.1: Long-Term Trends in Millions and Percent of Population 12 Years and Older Participating Annually in Four Representative Land-Resource-Based Activities, 1960-1995**




Sources: 1960,1965, and 1982-83 National Recreation Surveys, U.S. Department of the Interior, National Park Service; and 1994-95 National Survey on Recreation and the Enviornment, USDA Forest Service.

[1] Only summer participation percentages were available for 1960 and 1965. These percentages were adjusted to annual percentages based on the ratio of annual-to-summer percentages from the 82-83 NRS.

[2] Persons 12 and older were included in the 1960, 1965, and 1982-83 surveys. Only persons 16 or older could be interviewed in the 1994-95 survey. Numbers 12 or older participating in 1994-95 survey were estimated by assuming 12-15 year olds participated at the same rates as those 16 to 24 years old.

In 1982-83, just over 60 million reported they had participated in bicycling, over $3^1/_2$ times as many as in 1960. During the 1980s and especially in the 1990s, technology has transformed biking into a recreational pursuit as diverse as the people who ride those bicycles. Mountain bikes are among the more notable advancements. Mountain bikes with their lightweight but rugged construction and all terrain tires enable riders both to traverse very difficult and challenging terrain and to commute to class on university campuses (see feature article by Chavez that follows later in this chapter). Mountain bikes, lightweight racing bikes with 20 or more speeds, and many other variations of bike designs have helped stimulate an increase to nearly 63 million biking participants at the time of the 1994-95 survey. An estimated 6.9 million people (3.2 percent of the population) reported that some of their biking activity was long-distance touring.

While the most recent survey indicates a constant percentage of people who participate in some form of biking between the 1980s and 1990s, the increase in numbers of participants driven by population growth and new technology translates into continued slow growth in this market. In the early 1980s, the bicycle riding craze was at its height, and the high level of participation observed at that time may be more a reflection of a fad than a true long-term growth trend.

Camping is another activity with long-term growth. The character of camping, like bicycling, has changed noticeably over the 35 years covered by the national surveys. In the 1960s, much of the camping was in developed campgrounds set up to accommodate families, most of whom were camping in tents. In the 1960s there would have been some, but relatively few, pop-up tent trailers and pickup trucks with camper inserts. There would have been even fewer car-towed, rigid-construction trailers, such as the famous Air Stream, which now is considered by many to be among the elite of camping trailers.

In 1960 about 13 million people 12 or older reported camping one or more times during the previous 12 months. In 1965, the equipment and options for camping were largely unchanged from 1960, but camping was drawing nearly 19 million participants, a 44-percent increase. By 1982-83, camping had more than tripled in numbers of people participating and more than doubled in the percentage of the population reporting one or more camping trips during the year.

In 1994-95, over 58 million people 12 or older had participated in camping in the previous 12 months. This number is about 350 percent growth in 35 years since the first national survey in 1960. The nature of camping, like bicycling, has changed as much as the numbers in that time span. While camping with the family is still popular, few camping parties anymore are families with young children. Now there are many more retirees with expensive motor homes, many more singles traveling with friends and camping to keep lodging costs down, and groups camping together as a way of gaining access to other recreational opportunities or unique features, such as the Devil's Tower in South Dakota. All of these increasingly diverse groups are to be found in increasing numbers in the 1990s.

In addition to camping in developed campgrounds, both public (government managed) and commercial, many are choosing to camp in more primitive settings, where few if any facilities and amenities are provided. Primitive camping is more convenient and comfortable in the 1990s than it was even as recently as the early 1980s. Better and more weather-resistant tents, recreation vehicles that are easier to set up and much more self-contained, and more functional camping equipment (such as gas–cook stoves) can make primitive camping nearly as comfortable as developed site camping. Below are the participation statistics for people 12 or older for 1982-83 and 1994-95 for developed and primitive camping:

| | 1982-83 | | 1994-95 | |
|---|---|---|---|---|
| Activity | Percent | Millions | Percent | Millions |
| **Developed** (all) | 17 | 33 | 21 | 47 |
| With an RV | — | — | 9 | 20 |
| Tent camping | — | — | 15 | 34 |
| **Primitive** | 10 | 18 | 14 | 31 |
| With an RV | — | — | 4 | 8 |
| Tent camping | — | — | 11 | 24 |
| **Other camping** | 4 | 8 | 2 | 4 |

While developed camping grew about 42 percent, primitive camping grew by about 72 percent. The "other camping" category is ill-defined, but it is important because it includes camping styles that respondents feel did not fit the offered categories. Other camping includes activities like group camping and canoe camping. The "other camping" category has shown a decrease over the survey periods.

The other two activities that could be compared back to the 1960 survey were horseback riding and hunting. Both of these activities require access to relatively large areas of land and trails. Horseback riding has decreased in both percentage of the population and number of people participating. The number of horseback riding participants peaked in the 1960s. Since then it has decreased steadily to its current level of just over 16 million participants. An estimated 5.2 percent of the population—69 percent of horseback riders—does some of their riding on trails.

Hunting also is a declining activity. The estimated number who hunted in 1994-95 is less than the estimated number in the 1960s. The proportion of the population that hunts decreased in these 35 years from 16 percent in 1960 to 10 percent in the 1990s. Over seven percent of the population 12 or older hunts big game, 6.5 percent hunts small game, and 2.1 percent hunts migratory bird species, mainly ducks and geese. Obviously, many hunters participate in all three of the forms of hunting just mentioned.

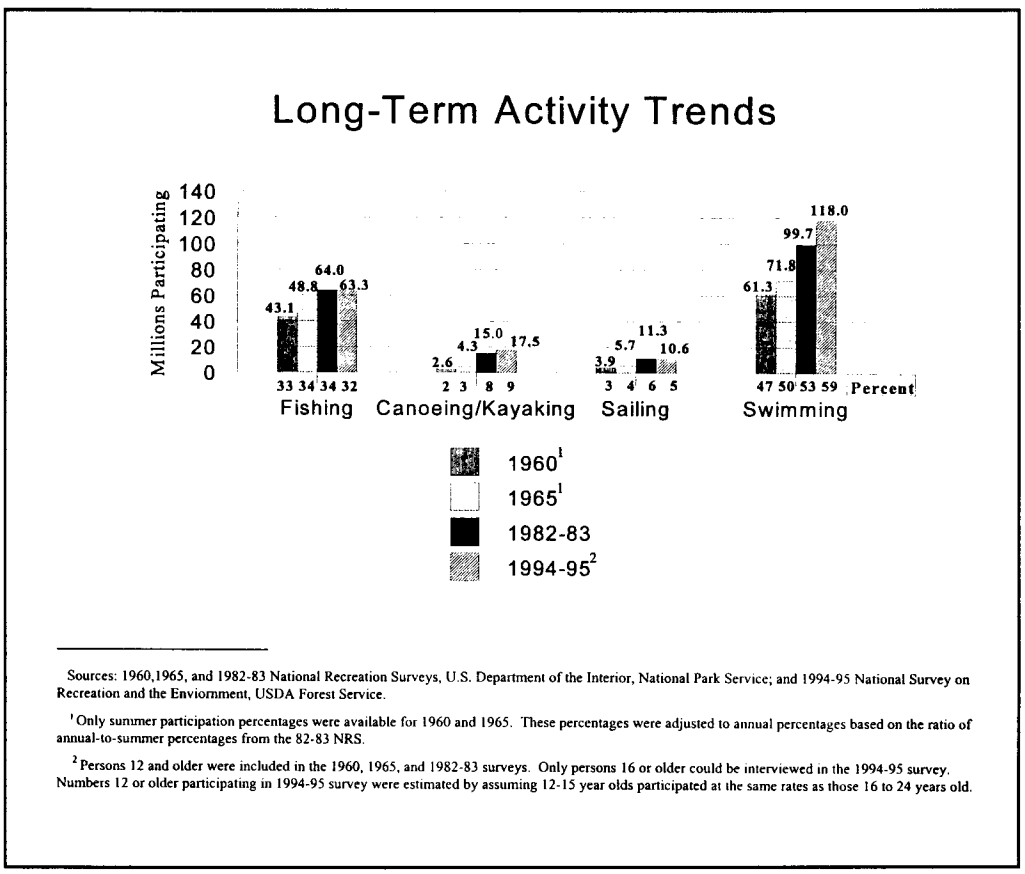
Gaining access to land or water areas for hunting is becoming increasingly difficult. In the 1960s there was more undeveloped land area in the country and fewer people to compete for its use. In many rural areas, permission was not needed to hunt on someone else's land. In the 1990s, the undeveloped land area is smaller, while the population is much larger. In addition, social pressures against hunting are rising, and increasing numbers of people have grown up totally in an urban environment where hunting was never introduced to

them. These and many other factors are the likely contributors to the decline in the popularity of hunting in the United States.

## Long-Term Trends—Water-Based Activities

Among the four water-based activities with comparable statistics in the four National Recreation Surveys, two have decreased in numbers of participants and two have increased (Figure V.2). Numbers of participants and percentages of the population who fish and sail decreased between 1982 and 1994. The percentage of the population that fishes was between 33 and 34 percent in 1960, 1965, and 1982-83; the percentage dropped somewhat to 32 percent in 1994-95. This percentage decrease was large enough to affect a decrease in the number of people 12 and older participating in fishing, even though population increased nearly 15 percent during that 13-year period. (See contributed paper by McCaleb on fishing trends at the end of this chapter.)

**Figure V.2: Long-Term Trends in Millions and Percent of Population 12 Years and Older Participating Annually in Four Representative Water-Resource-Based Activities, 1960-1995**




Sources: 1960,1965, and 1982-83 National Recreation Surveys, U.S. Department of the Interior, National Park Service; and 1994-95 National Survey on Recreation and the Enviornment, USDA Forest Service.

[1] Only summer participation percentages were available for 1960 and 1965. These percentages were adjusted to annual percentages based on the ratio of annual-to-summer percentages from the 82-83 NRS.

[2] Persons 12 and older were included in the 1960, 1965, and 1982-83 surveys. Only persons 16 or older could be interviewed in the 1994-95 survey. Numbers 12 or older participating in 1994-95 survey were estimated by assuming 12-15 year olds participated at the same rates as those 16 to 24 years old.

Sailing increased substantially between 1960 and the 1980s from nearly four million to over 11 million participants. During this period, the percentage of the population participating nearly doubled. Between the 1982-83 survey and the 1994-95 survey, however, estimates of both the percentage and number of participants decreased.

Participation increased in the more physically active water activities of canoeing and kayaking and swimming. Canoeing and kayaking can be done on still water or white water. Participants in canoeing and kayaking grew from an estimated 2.6 million in 1960 to approximately 15 million in 1982-83. The estimated number of participants in 1994-95 was 17.5 million. Of those reporting participation, 91 percent went canoeing, 20 percent went kayaking, and 11 percent went both canoeing and kayaking during 1994-95. The estimated percentage of canoeists and kayakers who used their boats in white water in 1994-95 was 21.1. Canoeing and kayaking were not treated as separate activities in previous surveys.

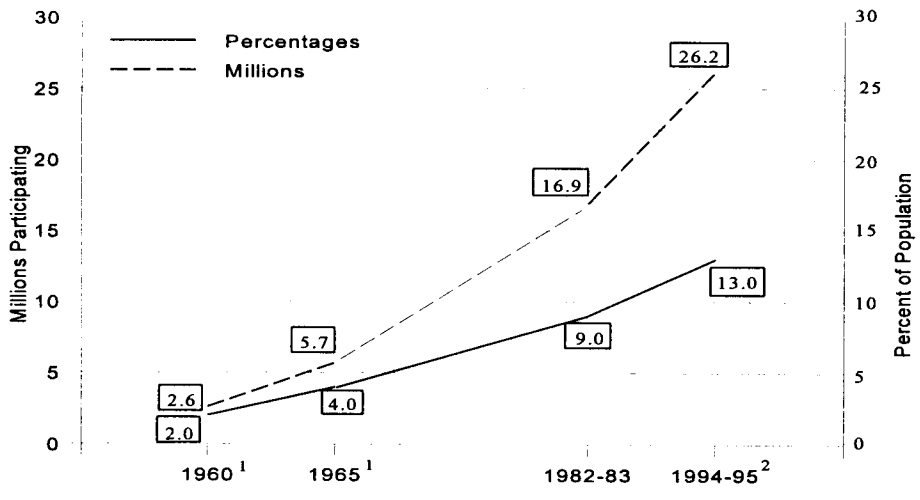
White water activities have been supported by advancements in the technology of the equipment, boats as well as paddles, floatation inserts, spray aprons, and other items. From the aluminum and wooden boats in the 1960s and before, the new equipment has evolved rapidly toward more durable plastic boats that can withstand impacts from obstacles and torque from twisting through rapids. New hull designs make these boats more maneuverable as well as durable.

Swimming was enjoyed by almost one-half the population in 1960, and its popularity has continued to grow. In 1960, swimming was an activity of 47 percent of people 12 and older; currently the estimated percentage participating is 59 percent. The growth of this percentage combined with population expansion has resulted in a near doubling of numbers of participants in just over 35 years, from 61 million in 1960 to 118 million in 1994-95. In 1982-83, 80 million went swimming in a pool and 59 million went swimming in a lake, pond, stream, or ocean. In 1994-95, 96 million went pool swimming and 85 million went swimming in an impoundment, river, or ocean.

## Long-Term Trends—Snow Skiing

In the 1960 and 1965 national surveys, downhill and cross-country skiing were not distinguished as separate activities. In the five years separating these surveys, the estimated percentage participating in snow skiing grew from two to four percent (Figure V.3). This use represented an increase of over three million participants from 2.6 to 5.7 million. In the 17 years up to the 1982-83 survey, numbers of skiers rose to almost 17 million, nearly a threefold increase. In 1982-83, an estimated nine percent of the population participated in some form of skiing—2 million downhill and six million cross-country. By the 1994-95 survey, over 26 million participated in skiing, 19 million downhill, and seven million cross-country. Between 1982-83 and 1994-95 there was a 50–percent increase in downhill skiing participants and a 176–percent increase in cross–country participants.

**Figure V.3: Long-Term Trends in Millions and Percent of Population 12 Years and Older Participating Annually in Snow Skiing, 1960-1995**




Sources: 1960,1965, and 1982-83 National Recreation Surveys, U.S. Department of the Interior, National Park Service; and 1994-95 National Survey on Recreation and the Enviornment, USDA Forest Service.

[1] Only winter participation percentages were available for 1960 and 1965. These percentages were adjusted to annual percentages based on the ratio of annual-to-winter percentages from the 82-83 NRS.

[2] Persons 12 and older were included in the 1960, 1965, and 1982-83 surveys. Only persons 16 or older could be interviewed in the 1994-95 survey. Numbers 12 or older participating in 1994-95 survey were estimated by assuming 12-15 year olds participated at the same rates as those 16 to 24 years old.

## Recent Trends

Table V.10 shows recent trends in 29 activities common to both the 1982-83 and 1994-95 surveys. Because the most recent survey focused on people 16 years and older, estimates of the numbers of participants for each of the two time periods covered do not include people 12 to 15 years old. Activities are grouped by the type of resource involved (land, water, etc.) and ranked from highest to lowest percentage growth in numbers of participants within each resource type.

Of the 13 land-resource-based activities in Table V.10, 11 show increases in numbers of participants. Only horseback riding and hunting decreased. Bird watching, by casual as well as by avid participants, has the highest percentage growth rate of any activity listed (an increase of over 155 percent). Bird watching also had one of the highest rises in millions of participants (32 million), second only to walking, which had an increase of 40 million.

**Table V.10: Millions and Percentage Change of Persons 16 Years or Older Participating at Least Once in 12 Months in Land, Water, Snow/Ice, and Other Activities in the United States, 1982-83 and 1994-95**

| Resource Base and Activity | Number in Millions | | Percent Change |
|---|---|---|---|
| | 1982-83 | 1994-95 | |
| **Land-resource-based activities** | | | |
| Bird watching | 21.2 | 54.1 | +155.2 |
| Hiking | 24.7 | 47.8 | +93.5 |
| Backpacking | 8.8 | 15.2 | +72.7 |
| Primitive area camping | 17.7 | 28.0 | +58.2 |
| Off-road driving | 19.4 | 27.9 | +43.8 |
| Walking | 93.6 | 133.7 | +42.8 |
| Sightseeing | 81.3 | 113.4 | +39.5 |
| Developed area camping | 30.0 | 41.5 | +38.3 |
| Picnicking | 84.8 | 98.3 | +15.9 |
| Running/jogging | 45.9 | 52.5 | +14.4 |
| Bicycling | 56.5 | 57.4 | +1.6 |
| Horseback riding | 15.9 | 14.3 | -10.1 |
| Hunting | 21.2 | 18.6 | -12.3 |
| **Water-resource-based activities** | | | |
| Motorboating | 33.6 | 47.0 | +39.9 |
| Swimming/river, lake, or ocean | 56.5 | 78.1 | +38.2 |
| Swimming/pool | 76.0 | 88.5 | +16.4 |
| Water skiing | 15.9 | 17.9 | +12.6 |
| Fishing | 60.1 | 57.8 | -3.8 |
| Sailing | 10.6 | 9.6 | -9.4 |
| **Snow & ice-resource-based activities** | | | |
| Downhill skiing | 10.6 | 16.8 | +58.5 |
| Snowmobiling | 5.3 | 7.1 | +34.0 |
| Cross-country skiing | 5.3 | 6.5 | +22.6 |
| Sledding | 17.7 | 20.5 | +15.8 |
| Ice skating | 10.6 | 10.5 | -0.9 |
| **Outdoor sports & spectator activities** | | | |
| Attending an outdoor concert or play | 44.2 | 68.4 | +54.7 |
| Attending a sports event | 70.7 | 95.2 | +34.7 |
| Golf | 23.0 | 29.7 | +29.1 |
| Outdoor team sports | 42.4 | 53.0 | +25.0 |
| Tennis | 30.0 | 21.2 | -29.3 |

Sources: 1982-83 National Recreation Survey, U.S. Department of the Interior and 1994-95 National Survey on Recreation and the Environment, USDA Forest Service.

The next four activities after bird watching are hiking, backpacking, primitive area camping, and off-road vehicle driving. All of these activities occur on trails or in other settings that lack developed facilities and amenities. The number of hiking participants 16 or older nearly doubled in the 13 years between the surveys, reaching nearly 50 million who participated one or more times per year by 1995. The number of backpackers increased to over 15 million in this period, and for the first time surpassed the number of horseback riders. Hiking and backpacking are the two primary on-foot recreational uses of trails.

Primitive area camping grew nearly as much as developed camping in millions of new participants 16 or older. As mentioned earlier, improvements in camping equipment have made camping outside of developed campgrounds more convenient and comfortable. Off-road driving of vehicles ranging from dune buggies and all-terrain vehicles (ATVs) to dirt bikes and trail motorcycles increased by more than eight million participants in the 13 years between surveys. Difficulty in finding appropriate places to ride these vehicles may have limited growth in this activity. ATVs are also increasingly used for work purposes, such as herding, inspecting fence lines, and accessing remote work sites without roads. (See contributed paper on motorized vehicles by Cook and the paper on motorcycling by Lundquist at the end of this chapter.)

The remaining six land-based activities that grew in numbers of participants occur mostly on streets and trails near the homes of the participants or near roadways or developed recreation sites. While bird watching, hiking, backpacking, and primitive camping grew at faster rates, some of these more slowly growing land-based activities expanded more in absolute numbers of participants because the base number of participants in 1982-83 was much larger than for other activities. Walking participants, for example, increased by about 43 percent, but this use represented over 40 million added participants. Sightseeing grew by nearly 40 percent, but this growth added 32 million participants. Picnicking grew by nearly 14 million. These activities are low cost and require little skill, but they appeal to a broad range of people.

Developed camping and picnicking are traditional family activities that, because of changes in the structure of our society, are becoming somewhat less family oriented. Increasingly, the participants in camping and picnicking include greater proportions of singles and groups of unrelated individuals. Running, jogging, or bicycling are more physically demanding than camping and picnicking and often are fitness-motivated activities. They are participated in by roughly one-quarter of the population.

When ranked by increase in numbers of participants, walking, bird watching, sightseeing, hiking, picnicking, and developed camping grew more than other activities. These activities utilize facilities and spaces that are easily accessible to most people.

There are, of course, many more land-based activities than the 13 discussed above. Unfortunately, these 13 are the only ones available for direct comparison between 1982-83 and the most recent 1994-95 survey. However, they do represent a spectrum of activities from ones enjoyed mainly in developed settings to those enjoyed mainly in backcountry settings. They also cut across the activity types from very passive to highly active.

There are six water-resource-based activities that are comparable between the surveys. Among these, motorboating grew by the largest percentage between surveys, followed by swimming and water skiing. Fishing and sailing both decreased in numbers of participants. Swimming in rivers, lakes, or oceans and swimming in pools grew by almost 22 million and by over 12 million participants, respectively. Across all forms of outdoor recreation, swimming ranks among the top five in overall popularity. Swimming is obviously a lifetime activity that need not be abandoned with age.

Both hunting and fishing are classified as consumptive activities, i.e., where something is physically removed or "harvested" from the site of participation. These forms of outdoor recreation are becoming less popular in American society. In fact, hunting, is protested by some organizations and individuals. While harder-to-gain access is one of the reasons for declining hunting, fishing access has remained about constant. Popularity of wildlife and fish viewing is increasing. These may be among the activities former hunters and anglers are moving toward.

Snow– and ice–based activities generally involve relatively small percentages of the country's population. Of the five activities shown in Table V.10, all but ice skating increased. Downhill skiing was the fastest growing of these activities, increasing over 58 percent in the number of participants. The estimated increases in the number of participants may not result in overall greater revenues at ski slopes because new skiers may not be skiing as often as experienced skiers. In a section presented later, it is shown that the estimated percentages of downhill skiers who ski 11 or more days per year dropped between 1982 and 1995.

Snowmobiling and cross-country skiing each had about 5.3 million participants in 1982-83. By 1995, those numbers had increased to 7.1 million for snowmobiling and 6.5 million for cross-country skiing. Both of these activities may take place on the same backcountry roads and trails. At times there may be conflicts between these different users of roads and trails in winter, as there are between motorized users and hikers in summer. Increasingly, cross-country skiing occurs on trails groomed specifically for this activity. Participa-

tion in ice skating remained nearly constant between the two surveys at between 10 and 11 million participants.

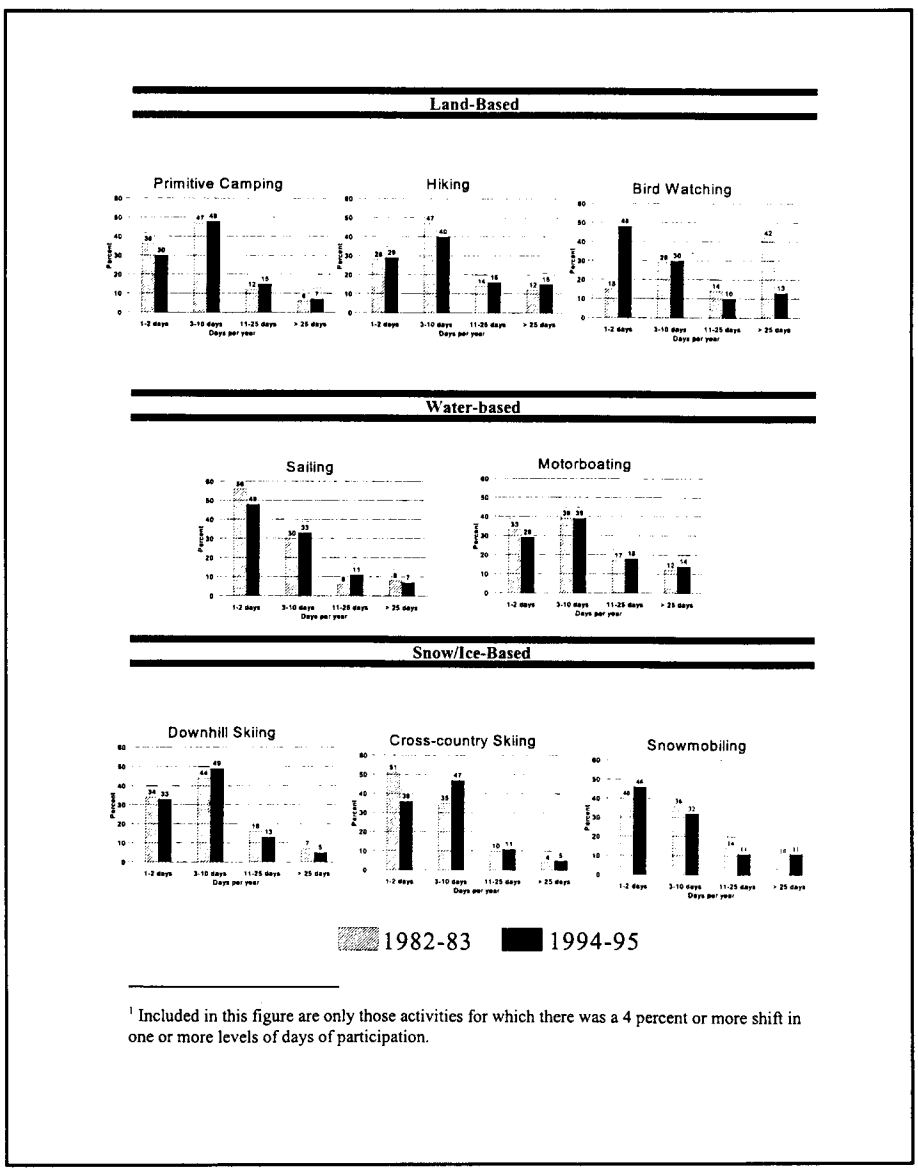
Five outdoor sports or spectator activities were comparable between the 1980s and 1990s surveys. Attending outdoor concerts or plays and attending outdoor sports events increased at more than twice the rate of population growth during that period. These activities also had some of the largest growth in absolute numbers of participants–over 24 million people each. The percentage of the population that attends outdoor sporting events is nearing 50 percent.

Golf grew in participation by just over 29 percent and participation in outdoor team sports grew 25 percent. Only tennis showed a decline in participation since the 1980s, from an estimated 30 million in 1982-83 to just over 21 million in 1994-95.

## Trends in Participation Days

Trends in percentages of people who choose various activities and numbers of participants are important indicators of change in outdoor recreation participation. However, these indicators tell only part of the story. Presented below are estimated percentages of participants in selected activities by the number of days per year during which they participated in 1982-83 and in 1994-95. Only activities for which there has been a four-percent or greater shift in number of participation-days are included in Figure V.4.

**Figure V.4: Percentages of Participants in Eight Outdoor Recreational Activities by Number of Days of Participation and Year of Survey, 1982-83 and 1994-95**




[1] Included in this figure are only those activities for which there was a 4 percent or more shift in one or more levels of days of participation.

Activities that did not have a four-percent shift included bicycling, horseback riding, pool swimming, swimming in natural waters, canoeing or kayaking, backpacking, developed camping, and off-road vehicle driving. Among these activities, proportions of participants by the number of days on which they participated remained fairly constant, meaning that numbers of people by days of participation has increased or decreased at each level of participation roughly proportionate to the overall increase or decrease of participants in the activity.

Among the land-based activities, the greatest shift in participation days was for bird–watching. Compared with number of people participating at the time of the 1982-83 survey, over 33 million people added bird watching on one or more days per year to their outdoor activity agenda. From the estimates of the percentages of bird–watching participants among the four levels of participation days, it is obvious that most of the 20 million "new" bird watching participants engaged in the activity infrequently, on less than three days per year. As the percentages of bird–watchers participating for one-two and three-10 days per year grew, the percentage participating over 11 days per year decreased. The percentage participating 25 or more days per year fell from 42 percent in 1982-83 to 13 percent in 1994-95.

For primitive camping, the shifts were in the opposite direction, with a smaller percentage camping one-two days and a larger percentage camping 11 or more days. A similar pattern occurred with hiking, for which the shift was from fewer to more days per year. This pattern also held true for the water-based activities of sailing and motorboating.

Shifts in percentages of participants between levels of participation per year were mixed for snow and ice activities (Figure V.3). Percentages of participants downhill skiing 11-25 days and more than 25 days per year dropped, while the percentage of skiing three-10 days rose. The percentage cross-country skiing just one-two days per year dropped dramatically, while the percentage doing so for three-10 days rose. The opposite pattern occurred for snowmobiling with decreases in percentages participating three to 25 days and an increase in percentage snowmobiling only one-two days. The percentage of participants snowmobiling more than 25 days per year remained about the same.

## FROM CITIES TO WHITEWATER ADVENTURE: THREE FEATURE ARTICLES

The following articles were invited from national experts to cover in more depth a range of recreation interests from passive to active participation.

### Trends and Issues in Birding

(By Paul J. Baicich, Gregory S. Butcher, and Paul Green, American Birding Association, Colorado Springs, CO)

From the mid-1980s to the mid-1990s, the numbers of people actively watching birds increased 155.2 percent, outstripping the second and third fastest growing activities in the same category—hiking (up 93 percent) and backpacking (up 72.7 percent). Just how many birders are there in the U.S. today? Annually, those with an interest in birds spend $2.5 billion on bird seed, feeders, baths, and nest boxes (USDI, 1993). These backyard birders may not step beyond their own yard fence to look at birds. Still, we know that an estimated 24.7 million people annually take trips to watch wild birds (USDI, 1993). Winnowing down these numbers certainly means getting closer to some better, more accurate figure for the numbers of serious birders in the U.S. Kellert (1985) estimated that 0.5 percent of the people with feeders in their yards could identify at least 100 bird species. If that figure were applied to the 63.1 million residential bird feeders, the number of skilled backyard birdwatchers would be 315,500. If one took that same figure of 0.5 percent and applied it to the 24.7 million "traveling birdwatchers," one could reasonably reach the figure of 123,500 serious birders, a figure that corresponds closely with our estimate of the total number of members of local bird clubs.

We know that "committed birders" annually spend on average $2,000 each year on birdwatching, with half that amount on travel (Wiedner & Kerlinger, 1990). If that $2,000 figure were applied to the 123,500 dedicated birders, it would yield a minimum "dedicated birder GNP" of $247 million. Moreover, birder spending, or so-called "avitourism," is only recently being appreciated. Part of what it reveals is that refuges and parks cannot be perceived as economic sinks, since they often stimulate local economies (Kerlinger & Eubanks, 1995). For example, at Cape May, New Jersey, more than 100,000 birders visit the area, contributing a cumulative impact of nearly $10 million (Kerlinger & Wiedner, 1991). During a five-week spring migration period, High Island, Texas, had more than 6,000 birders visit in 1992, spending $2.5 million in the area surrounding the isolated Gulf Coast town (Eubanks, Kerlinger, & Payne, 1993). About 50,000 people visit the raptor migration "hotspot" every year at Hawk Mountain, Pennsylvania, directly spending about $4 million in the local economy (Kerlinger & Brett, 1994). The mecca for crane watchers is the area around Grand Island,

*Birdwatchers view waterfowl at Delaware Bayshores Bioreserve in New Jersey. Photo courtesy of the Nature Conservancy. Photo by Connie Gelb.*

Nebraska, on the Platte River, where at least 80,000 avitourists visit annually. They spend more than $15 million, which has been estimated to stimulate as much as $40 million in overall business activity (Lingle, 1991).

Another measure of the growth of relatively skilled birders can be found through the numbers of participants in the annual National Audubon Society Christmas Bird Counts (CBCs). As Figure V.5 indicates, CBC participants have increased dramatically over the past few decades.

Birders are a heterogenous group seeking a wide range of experiences. Scott, Thigpen, Kim, and Kim's (1996) analysis of birders who visited the 1995 Rockport Hummerbird Festival revealed four groups that differed significantly in terms of their "behavioral involvement." Ordered in declining behavioral involvement, they named their four groups as "undifferentiated birders," "outdoor recreationists," "generalists and water seekers," and "heritage recreationists and comfort seekers." The members of each group had distinct characteristics. Members of the first two groups owned more field guides and bird books, belonged to more organizations, could identify more birds by sight and sound, owned more birding equipment, went on more birding trips within and beyond the state, traveled more miles to go birding, and spent more money on birding trips.

**Figure V.5: Change in the Number of National Audubon Society Christmas Bird Counts from 1900-1990**

**Christmas Bird Counts**

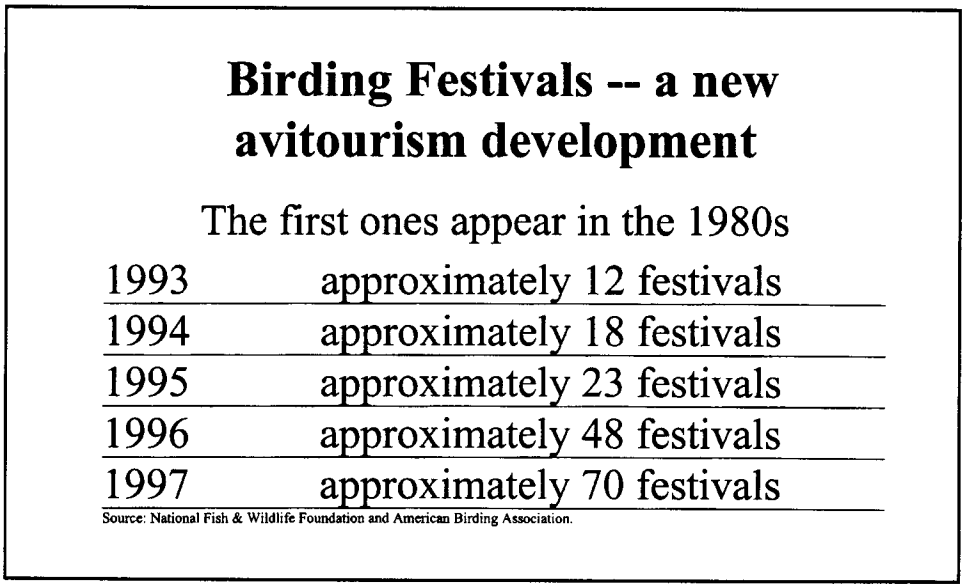
| | |
|---|---|
| ✔ 1900 | 27 participants |
| ✔ 1930 | 679 participants |
| ✔ 1940 | 2,100 participants |
| ✔ 1950 | 4,600 participants |
| ✔ 1960 | 8,100 participants |
| ✔ 1970 | 15,000 participants |
| ✔ 1980 | 32,000 participants |
| ✔ 1990 | 43,000 participants |

Source: Winging It, October 1996, Greg Butcher (author).

In terms of future behavior, comparisons between "undifferentiated birders" and "generalists and water seekers" revealed extreme differences. Members of the first group predicted that they would, on average, go birding 53 days in 1996, compared with 15 days for the second group. One reason for these studies was to understand what facilities Texas Parks and Wildlife should be providing to encourage birding as an economic activity. Because this study was an analysis of people visiting a festival, it does not include one other economically important group, namely the garden bird feeders.

We expect the growth in birding to continue in the near and distant future as baby boomers grow older. Besides the NSRE figures, we can see some important shifts in the past decade and a half. Three examples include the growth of birding specialty stores, birding magazines, and birding festivals. Figure V.6 provides details of these shifts, including starting dates for bird franchise stores and for popular birding magazines.

**Figure V.6: Birding Festivals from 1993-1997**




To make a wildlife or bird-viewing area attractive to birders, land managers, businesses, and conservationists are beginning to better understand the constituency they are attempting to reach. Many surveys have indicated that the birders are overwhelmingly middle class, well educated, and highly motivated (Payne, 1991; Kerlinger, 1993; Kerlinger & Eubanks, 1995). One recent survey (Scott, Stewart, & Cole, 1997) revealed that 27 percent of a sample of the American Birding Association (ABA) members had annual household incomes of over $100,000, and 42 percent had graduate or advanced degrees. These findings are generally in line with an earlier, more extensive membership survey that showed 32 percent had annual household incomes of over $75,000 and 43 percent had a postgraduate degree (Bartels, 1994). Fourteen per cent of the springtime birding visitors to High Island, Texas, had an annual family income of $120,000 or more (Eubanks, Kerlinger, & Payne, 1993).

There is consideration of creating a new funding base, possibly modeled after the 60-year-old Pittman-Robertson Act authorizing a user-based excise tax for conservation uses. An excise tax on the manufacturers' price of binoculars, birdseed, feeders, bird houses, bird baths, spotting scopes, field guides, and other outdoor equipment, including camping equipment, is currently identified with the campaign "Teaming with Wildlife." This campaign is aimed at providing a coordinated network of projects and goals, such as "Partners in Flight," which is designed to reverse the decline in migratory bird species. The Partners in Flight conservation effort addresses multiple needs in bird conservation as identified by experienced birders, ornithologists, conservationists, and land managers, but as yet has no formal funding mechanism.

New and recent technologies have an increasing impact on personal activities of birders. Listers and rarity seekers now have beepers to tell them where the next interesting bird can be seen. Local and national list-servers e-mail the latest bird news to subscribers, and provide forums for discussions of birding issues. Interactive data-gathering computer systems, such as Bird Source and Bird Net are being developed by the National Audubon Society, the Cornell Lab for Ornithology, and others. These systems may soon allow individuals to submit their observations and to view group results on their screen, such as patterns of migration.

There is a perceived need for increased access to appropriate habitats and locations so that recreational birders can see more birds. The more popular "hotspots" in North American birding are becoming crowded at

specific times of year, for example, Cape May, Point Pelee, Madera Canyon, and High Island. Improving access and providing facilities is one way to accommodate the growing number of birders while protecting the birds themselves.

The promotion of birding festivals (Figure V.6) is linked to the popularization of birding as a pastime. Studies have estimated that 260,000 participated in less than three dozen birding festivals in 1996 (Romero & Stangel, 1997). As the number of such events grows (to more than 60 in 1997) and link up with communities near birding "hotspots," the link between the growing ranks of birders and the preservation of bird habitat will become clearer. Expressed simply, "more habitat means more birds means more birders spending more money in the local community" (Romero & Stangel, 1997).

There is continuing growth in interest in birding. Many more people are becoming birders as they reach their 40s, 50s, and 60s, as their children grow older and as they start looking for new hobbies. Indeed, with baby boomers nearing retirement, increases may be quite large. Adult education and Elderhostel courses have been successful in reaching out to people in older age groups as well as to their grandchildren. Birding vacations become much more affordable to people in their 40s, 50s, and 60s as they reach the peak of their earning power.

In the last *Analysis of the Outdoor Recreation and Wilderness Situation in the United States 1989-2040* (Cordell, Bergstrom, Hartmann, & English, 1990), it was predicted that "wildlife observation and photography" (including birding) was going to increase by an estimated 82 percent by 2040, with trips afield increasing substantially. This assessment predicts a rise by 61 percent of participants in wildlife observation and a rise of 97 percent in participation days by 2050 (Chapter VI).

## Mountain Biking—A Rapidly Growing Sport

(By Deborah J. Chavez, Research Social Scientist, USDA Forest Service, Riverside, CA)

Statistics on mountain biking indicate strong growth in participation (Sporting Goods Manufacturing Association [SGMA], 1991), intensified sales (Bicycle Institute of America, 1993; Keller, 1990), and the accelerated use of mountain bikes off-road (Brown, 1988). The SGMA estimated that participation levels for mountain biking increased over 100 percent between 1987 and 1989, from 1.5 million to 3.2 million total days. Additionally, frequent participation (52 or more days per year) rose by over 150 percent during that time. While use occurs nationwide, most is in the western United States with California and Colorado in the lead (SGMA, 1991).

Managers from the Bureau of Land Management (Chavez, Winter, & Baas, 1993a), the Forest Service (Chavez, et al., 1993a; Chavez, 1996a), and the National Park Service (Tilmant, 1991) have all noted that mountain biking use is increasing on their trails. In one study, managers who had only minimal to moderate use stated that the popularity of the sport was growing (Chavez, et al., 1993a). In another study, about half of Forest Service managers reported that mountain biking is a growth sport (Chavez, 1996a).

Studies of mountain bike riders (Hollenhorst, Schuett, Olson, & Chavez, 1995; Hollenhorst, Schuett, Olson, Chavez, & Mainieri, 1995) show patterns that indicate the growth of the sport, especially on trails. Data collected in 1992 from riders at six national forests in the United States indicated an average of 10 years experience bicycling and four years of mountain bike riding experience, with an average 67 rides per year. The same people reported that they rode most often on forest trails and abandoned roads. A study of members of the International Mountain Biking Association (IMBA) in 1994 indicated they had been mountain bike riding for an average of six years, and averaged 95 rides per year. These riders also expressed a desire for trail riding and felt that the trails should be shared with hikers and equestrians.

Profiles of mountain bike riders suggest the riders are most often Anglo/European males. Most riders are 30 or more years of age, have some college education, and earn above $30,000 per year. For most, mountain biking is a day-use activity. This finding may have implications for local economies if they can provide services and amenities for mountain bike riders before and after their rides.

### *Mountain Bike Rider Studies*

Mountain bike riders appear to be a committed group. Various measures indicate that these riders often own more than one bike, and that they have invested sizable amounts of money and time in their sport. Most of the mountain bike riders contacted rode their mountain bike for enjoyment, fun, a love of mountain biking, or for exercise. Many riders reported that mountain biking was one of the most important things they did and that mountain bike riding "said a lot about who they were" and even that their life was "organized around" mountain bike riding. Most rode with their friends, but many belonged to groups, either local or national, and

many riders took part in mountain biking events. Nonetheless, these riders also recognized some of the issues associated with their sport. Several reported that the major issues for trail riding included access to trails, impacts to natural resources, conflicts with other groups, trail etiquette, and safety.

Studies of various forest users by Chase (1987), Chavez et al. (1993a), Jacoby (1990), Tilmant (1991), Viehman (1990), and Watson, Williams, and Daigle (1991) found that conflict related to mountain bike use was an important issue. Often, the mountain bike riders are seen as interlopers on trails that were previously used by others. Watson et al. (1991) found evidence of asymmetrical conflict: although one-quarter of the mountain bike riders viewed hikers as a problem, almost two-thirds of the hikers viewed mountain bikers as a problem. Tilmant (1991) found that hiker complaints about mountain bike riders included esthetics, personal beliefs, and desire for solitude. Equestrian groups raised concerns related to safety.

### *Likely Trends in Mountain Biking*

Studies of mountain biking on public land predict expansion of the sport (Chavez, et al., 1993a; Chavez, 1996a; Tilmant, 1991). This expansion can take several directions. It appears that mountain bike riders are committed to the sport and will continue to participate. While the number of mountain bike riders may eventually peak, those who ride may do so more often and go to more places for new recreational experiences.

Many recreation sites that had been traditionally used for other activities are now also used for mountain biking. The best example is the move to use downhill skiing sites for mountain bike riding in the non-snow months. This use can have positive economic impacts for these areas in the "off season." Also, some mountain bike riders are participating in snow-related events such as mountain bike snow races. Thus, mountain bikes are being used in new places and ways.

Many mountain biking events have been held in the past few years, and they are drawing hundreds of participants and thousands of viewers. Since many of these events are held in natural environments, there are implications for the management of those events as well as for local economies.

Mountain bikers who belong to clubs and organizations plan to continue their membership and participation in those groups, in part because these groups have assisted in gaining access to sites and are perceived as giving a collective voice for the rights of mountain bike riders.

Management appears to rely mostly on indirect strategies of getting information to the riders (signs, posters). These techniques will continue to be utilized, because resources for managing natural sites are decreasing. Another tool—bridge building—may become increasingly important. This strategy includes personal involvement by managers and site users.

## Whitewater Recreation Trends in the United States

(By Richard J. Bowers and Richard R. Hoffman, American Whitewater Affiliation, Silver Spring, MD)

Reflective of larger societal trends, interest in outdoor recreation across the U.S. is growing and changing as well (ORCA, 1997). In the era of downsizing, global markets and the information superhighway, today's workforce is required to do more with less and must manage increasing amounts of information. Hectic work schedules and stress have created a greater demand for recreational pursuits and more challenging sports that provide excitement, community, and some degree of risk (Hart, 1991).

Whitewater boating is one of the fastest growing human-powered outdoor recreation sports (President's Commission on the Outdoors, 1987), (*Canoe Magazine*, 1993) and is attracting new participants because it incorporates many skills and needs. Whitewater boating allows for both individual accomplishment as well as companionship. While challenging the physical and mental skills of the individual, river running also takes place in groups and helps build teamwork and friendship. Since good paddling depends more on technique than strength, it also attracts more women and young adults.

Whitewater boaters can experience solitude. Even on urban rivers, they can quickly become removed from crowds once on the water. Whitewater is also a sport with some degree of risk characterized by personal achievement and freedom, which often are popular attributes for a recreation activity.

### *Changes Affecting Whitewater Rivers and Access*

Like other outdoor recreation interests, whitewater boating depends on the quality and quantity of available opportunities. Our legacy of heavy development of river resources for hydropower, water supply, and flood control has taken a toll on river resources. In addition to altering habitat and restricting free flowing rivers, this development has reduced the number of river miles available for swimming, boating, fishing, and other human use. Today, less than one percent of the river miles in the United States has whitewater rapids

rated at Class II or better (American Whitewater Affiliation, 1990). Often, these are the upstream, headwater portions of our rivers, and some of the most sensitive, critical, and visually appealing of riverine environments.

Obtaining public access to whitewater rivers continues to be a challenge. Legal issues such as access across private land to reach the rivers and the right to travel downstream, in addition to concerns about liability for accidents or injuries, affect the availability of both private and public rivers for recreation. Even where access is not denied outright, rules and regulations have resulted in restrictions on some whitewater rivers, especially on public land. For example, whitewater boaters are banned from all rivers in Yellowstone National Park. In the Grand Canyon National Park, perhaps the premier whitewater destination in the United States, noncommercial boaters must wait up to 10 years for a permit. On the "numbers" section of the Arkansas River in Colorado, the most heavily used whitewater river in the nation, there has been no legal public access in recent years. Increased fees are now being proposed for a host of other rivers, including the Chattooga, Middle Ocoee, and Nantahala in the Southeast, the Rogue and South Fork American in California, and the Upper Youghiogheny in Maryland. Access to rivers is often restricted by the federal government, state agencies, local counties, and private landowners as well.

Increasingly, the supply of quality whitewater opportunities can be attributed in part to the whitewater sport itself. Overcrowding is a concern on popular whitewater rivers like the Ocoee (TN), the Lower Youghiogheny (PA), and the South Fork American (CA). Overcrowding often results in use quotas and lowered experience quality.

### *Issues and Direction*

Seeking to conserve whitewater opportunities, American Whitewater has worked on the following programs:

- The *conservation* of scarce river resources is a high priority. Recreational users are playing a greater role in river conservation as the economic, social, and environmental benefits of whitewater boating are becoming more visible. Whitewater boating will benefit from the permanent protection of nationally significant whitewater rivers like the Clavey in California and the Blackwater in West Virginia.
- A significant opportunity exists to restore whitewater resources through *relicensing of hundreds of existing privately-owned hydropower dams*. Hydro relicensing offers the unique chance to open up whitewater rivers that have been dry for decades. Over the last five years, the dam relicensing process has successfully restored and improved over 80 miles of whitewater. This number includes rivers such as the Black and Beaver (NY), Kern (CA), Nisqually (WA), Tallulah (GA), Pemigewasset (NH), Deerfield (MA/VT), and many others. Between now and the year 2015, another 515 dam projects will also seek new licenses, providing further opportunities to restore river flows.
- Whitewater-related user groups, like paddlers, anglers, and climbers, are working together to negotiate *access and fee policies* with federal, state, and local land managers, and to improve state laws on landowner liability. For example, American Whitewater Affiliation (AWA) works to improve access at regulated hydropower projects, to obtain fair allocations of use between commercial and private boaters on newly regulated rivers, and to cooperate with national, regional, and local land trusts, canoe clubs, and statewide river organizations to acquire rights to streamside lands. Recently, AWA purchased critical access lands to the Blackwater (WV) and Watauga (NC).
- Whitewater user groups are pursuing the right to travel and to portage around obstacles in canoes, kayaks, and other recreational water craft on the waters of rivers that can be navigated by small recreational craft. Confusion about the respective rights of riparian landowners and recreationists has caused conflict in many states with outstanding whitewater.
- *Educating whitewater boaters* about personal responsibility, special hazards, and safety techniques is important. The American Whitewater Safety Code is the most comprehensive and widely distributed source of safety information for whitewater boaters and has been published widely in guidebooks and instructional books around the U.S. and the world. To maintain an "institutional knowledge" base for whitewater safety, AWA provides a database of serious whitewater-related accidents. Maintenance of these data has become difficult due to growth of the sport and the present legal climate. AWA also produces waterproof flash cards that serve as refresher courses on rescue and safety techniques.
- Whitewater groups have organized a variety of *river celebrations* across the country such as whitewater rodeos, new kinds of races, and film festivals. One example is the Gauley River Festival (WV), the largest collection of whitewater boaters in the country outside of racing and Olympic events. There are more than 20 whitewater rodeo events around the nation that emphasize local river conservation and access issues and include local boaters in these issues.

### *The Future of Whitewater Recreation*

Whitewater boating, and indeed all outdoor recreation, will be pressured in the future by declining access and resources and increased demand. Perhaps less obvious, but equally critical, are changes in fees, rules, and regulations. While less tangible than dams or barbed wire fences, these issues are highly significant.

The allocation of access and use rights among competing uses will also be a key discussion point in the future. Besides various forms of human-powered whitewater boating, the wildest rivers are increasingly attracting new user groups, and the most obvious groups are jet boats and jet skis (The Water Skier, 1996). Motorized use in whitewater recreation is already prominent on the Lower Gauley and New River (WV), the Upper Kern (CA), Hells Canyon (ID), and the Skagit (WA). River resources should be available to a wide variety of users, but there are several reasons why motorized use is a problem in whitewater recreation. First, it detracts from the solitude sought by muscle-powered boaters on wild and wilderness rivers. Second, it poses safety hazards to human-powered recreationists. There is little concern over the noise levels of jet boats and jet skis, since it is almost impossible to hear them over large waves and through protective helmets. There is concern for safety of motorized operators as well in that some 2,500 collisions (almost half of all reported water crashes) were attributed to jet-skies in 1994.

Only one percent of our nation's rivers contain Class 2 and above whitewater, including rivers affected by dams, pollution, and other development. This one percent also includes many rivers that have sufficient water flow for boating only a few days per year. Compared to the estimated 2,100 man-made lakes managed and owned by the federal government (National Recreation Lakes Study, 1996), whitewater is a small and declining resource.

## PARTICIPATION DIFFERENCES AMONG SOCIAL GROUPS

(By Cassandra Johnson, Social Scientist, USDA Forest Service, Athens, GA)

Population experts predict that the demographic composition of the U.S. population will change significantly over the next 30 years. One of the most notable changes will be a general aging of the population. Trends have already shown that median population age has been steadily increasing since the turn of the century. In 1900, the median age was 24. By 1980, it was 30 and is expected to increase to 36 by the year 2000 and to 41 by 2025 (USDA Forest Service, 1994).

These changes in the age structure have implications for outdoor recreation managers because participation by older individuals tend to increase with successive generations. While participation generally decreases with advancing age, English and Cordell (1985) report that age alone does not sufficiently explain changes in participation. Cohort and period effects should also be considered. For example, the much discussed baby boomers, those born between 1946 and 1964, were introduced at a young age to a wider array of outdoor recreation opportunities than were their parents. Most experts agree that as baby boomers age, they will maintain an interest in many outdoor recreation activities, such as sightseeing, walking for pleasure, and picnicking (Cordell, et al., 1990). The full impact of this maturing generation on outdoor recreation supply has yet to be felt. Moreover, the coming baby bust cohort, those born between 1965 and 1976, and the baby boomlet generation, born between 1977 and 1995, are expected to introduce increasing demands for relatively new activities such as mountain biking, ORV use, rollerblading, snowboarding, and other activities not yet envisioned.

The population is also expected to diversify even more with respect to ethnic and racial background. In 1995, the racial and ethnic composition of the U.S. was estimated at 74 percent white; 12 percent African American; 10 percent Hispanic; three percent Asian/Pacific Islander; and less than one percent American Indian (U.S. Census Bureau, 1994). However, projections of demographic trends indicate that populations of racial and ethnic minorities are growing faster than the U.S. population as a whole. Consider the following: the overall U.S. population is predicted to increase by 70 million between 1980 and 2025, with about 25 million coming from Hispanic groups, 17 million from African Americans, and 14 million from other ethnic groups. Thus, 80 percent of the growth is expected to come from groups that are currently minority populations (Murdock, Backman, Colberg, Hoque, & Hamm, 1990; USDA Forest Service, 1994).

Natural resource management policies could be impacted by these cultural and ethnic changes. It may be that recent Hispanic and Asian/Pacific Islander immigrant groups, as well as some racial and ethnic groups that have been in the U.S. for generations, hold an environmental ethic or orientation different from the North American model based on resource conservation (Simcox, 1993; Hutchison, 1993; Woo, 1996). Resource management agencies, such as the USDA Forest Service, are responding to some of these demographic changes by initiating research to learn more about ethnic recreation behaviors. These initiatives are raising

*Snowboarding is gaining popularity among post-baby boom snow and ice recreationists. Photo courtesy of the National Ski Areas Association.*

questions about forest use among different racial/ethnic and immigrant groups and about why some of these groups make relatively little use of national forests. For example, studies have established that African Americans are less likely than European Americans to recreate in dispersed settings or to travel to regional recreation areas. Also, Hispanic visitors tend to be more family- and group-oriented when visiting outdoor recreation areas (Dwyer, 1994).

The following sections describe the influences of age, race, sex, income, household size, and education level on outdoor recreation participation. The data source is the 1994-1995 NSRE.[3]

## Participation Among Sociodemographic Groups by Types of Activities

### *Fitness Activities: Running or jogging, biking, walking*

Approximately 77 percent of Americans in the 16-24 age group participate in fitness activities (Table V.11). This rate remains fairly constant over the next several age categories, but decreases substantially for the 60-and-over age group. Even for this oldest age group, about 50 percent reported participation. There is virtually no difference in fitness participation for younger groups (16-24 and 25-29) and those in their thirties and forties. Data show that roughly 70 percent of whites participated in fitness activities, compared to about 60 percent for African Americans and other racial and ethnic groups. Walking was most popular for all three racial or ethnic groups.[3] Running or jogging was the second most popular activity for African Americans and others, and biking was the second most frequently mentioned activity for whites.

Men and women participated to a similar extent in fitness activities, 70 percent and 67 percent, respectively.[3] Walking was mentioned most often by both sexes, followed by biking and running or jogging. Participation in most fitness activities also increased with rising income.[3] The only exception was walking. Respondents with annual incomes more than $100,000 were slightly less likely than those with incomes between $75,000 and $100,000 to participate in walking. Participation in fitness activities also varied by number of people in the household. As the number of household members increased, participation increased as well.[3] However, with five or more household members, participation decreased. This value was true for both biking and walking. People with more education tended to participate more in fitness activities.[3] Participation declined, however, for running or jogging among high school graduates and those with some college or technical school training and then increased again for respondents who had completed college.

[3]This information is available in table form from the USDA Forest Service, Outdoor Recreation, 320 Green Street, Athens, GA 30602-2044.

**Table V.11: Percent of U.S. Population Participating in Fitness Activities by Age Group, 1994-95**

| Activity | 16-24 | 25-29 | 30-39 | 40-49 | 50-59 | Over 60 |
|---|---|---|---|---|---|---|
| Fitness Activities | 77.2 | 74.7 | 76.1 | 72.0 | 64.0 | 49.7 |
| Running/Jogging | 50.4 | 33.2 | 28.3 | 23.3 | 17.4 | 8.1 |
| Biking | 37.9 | 36.2 | 37.4 | 30.7 | 21.9 | 10.6 |
| Walking | 68.1 | 72.4 | 74.6 | 71.9 | 64.0 | 49.7 |

Source: 1994-95 National Survey on Recreation and the Environment, USDA Forest Service and the University of Georgia, Athens, Georgia. The NSRE is the most recent of the series of National Recreation Surveys begun nationally in 1960.

### *Individual Sport Activities*

About 32 percent of people 16 to 24 years old participated in individual sport activities such as golf and tennis. Participation decreased steadily for the remaining age categories. Golf was the most frequently mentioned individual sport activity for whites (17 percent), and tennis was mentioned more often by African Americans (7.8 percent) and others (12.8 percent). Men were more likely than women to participate in individual sport activities. Golf was mentioned more often by men, and women and men were about as equally likely to participate in tennis. As with fitness activities, participation in individual sports also increased with income. Respondents with annual earnings more than $100,000 participated four times as much as respondents earning less than $15,000 per year. Golf participation, in particular, increased dramatically with rising income. As with fitness activities, participation increased steadily up to four household members and then declined for households with five or more members. This value was also true for both golf and tennis. Roughly 18 percent of those with some high school education participated in individual sports. This rate dropped to about 16 percent for those who had completed high school, and increased again for those with college-level education.

### *Outdoor Team Sport Activities: Baseball, softball, football, basketball, soccer, volleyball, handball*

For these generally vigorous activities, participation was highest for the youngest age cohort. About 40 percent of the 25-29 age group participated, 33 percent of the 30-39 group, and 22 of the 40-44 cohort. One-quarter of whites participated in outdoor team sport activities, one-third of African Americans did so, and about 30 percent of others participated in these activities. Volleyball and softball were mentioned most often by whites, and basketball and volleyball were the two most popular outdoor team sports for African Americans and others. Again, men were more active than women in outdoor team sports. Basketball and softball were most popular among males, and volleyball and softball were most popular for females.

Participation in outdoor team sports increased steadily for household incomes up to $74,999 per year and then remained constant for the $75,000 to $99,999 income group and increased again for the $100,000 plus income groups. Basketball, softball, and volleyball participation actually decreased for the highest income category (over $100,000). Participation increased steadily with increasing income. This trend was true for all activities within outdoor team sports. For many of these activities, the educational group with highest participation was the group with less than high school education. This finding is probably due in part to the greater prevalence of such activities among adolescent groups involved in high school and community sports activities.

### *Outdoor Spectator Activities*

Participation in outdoor spectator activities, such as outdoor concerts and sporting events followed a pattern similar to those of most other activities. The youngest age cohort reported the greatest amount of participation, followed in decreasing order by older groups. Within categories of outdoor spectator activities, just over 40 percent of the youngest age cohorts attended concerts. This rate decreased to about 36 percent for those aged 30-49. Attendance at sporting events was fairly high for all categories except the over-60 group. Males were more likely than females to engage in all kinds of outdoor spectator activities (Table V.12). Attending sporting events was the type of outdoor spectator activity mentioned most often by all three racial and ethnic groups and by men and women. Participation in outdoor spectator activities also increased steadily with rising income. Participation in individual spectator activities increased steadily up to four household members and then either declined or remained constant for households with five or more members. More highly educated respondents also tended to participate more in outdoor spectator activities.

**Table V.12: Percent of U.S. Population Participating in Outdoor Spectator Activities by Sex, 1994-95**

| Activity | Male | Female |
|---|---|---|
| Outdoor spectator activities | 63.8 | 54.0 |
| Concerts | 35.7 | 32.8 |
| Attending sporting events | 53.6 | 41.9 |

Source: 1994-95 National Survey on Recreation and the Environment, USDA Forest Service and the University of Georgia, Athens, Georgia. The NSRE is the most recent of the series of National Recreation Surveys begun nationally in 1960.

### *Viewing Activities: Nature and visitor centers, prehistoric and historic sites, birdwatching, wildlife and fish viewing, sightseeing, beach or waterside, water-based nature study*

About 80 percent of respondents in the first four age cohorts said they participated in a viewing activity.[4] This rate decreased to 56 percent for those over 60. For many of these less strenuous activities, such as bird watching, wildlife viewing, and sightseeing, participation increased with advancing age, but then declined for the last two age categories. Approximately 80 percent of whites reported participating in viewing activities. Sixty-two percent of African Americans and about 67 percent of other groups did so. Visiting a beach or waterside was the most frequently mentioned viewing activity for all racial and ethnic groups, and viewing activities were just about as popular for men as for women.

Income generally had a positive influence on participation in most viewing activities. Participation in bird watching, however, was less affected by income. About 20 percent of those earning less than $15,000 per year reported bird–watching activities. The rate increased to 30 percent for those in the next highest income category and was constant over higher income groups. Participation in viewing activities increased for all household sizes up to five members. As with other activities, participation increased steadily up to four household members and then declined for households with five or more members. This was the case for all viewing activities. Viewing activities also varied positively with increasing education.

### *Snow and Ice Activities: Ice skating, snowboarding, sledding, downhill skiing, cross-country skiing, snowmobiling*

About 25 percent of the 16-24, 25-29, and 30-39 age cohorts reported participation in snow and ice activities. Participation decreased steadily for the remaining age groups. Sledding and downhill skiing were the most frequently mentioned activities in this category. Whites were much more likely than either African Americans or others to engage in snow and ice activities. This is a typical pattern reported in the recreation literature (Dwyer, 1994). While whites reported greater participation than blacks in snow and ice activities, they were similar to African Americans in terms of participation patterns. For example, sledding was the most frequently mentioned activity in this category by both whites and blacks. Downhill skiing was reported most often for other groups. Men were more likely than women to participate in snow and ice activities, and sledding and downhill skiing were the top two activities for both men and women.

Annual income also affected participation in snow-related activities. Downhill skiing increased the most with rising income. Again, participation varied positively with increasing household members up to four and then declined for households with five or more members. About 15 percent of those with the least amount of education reported participation in these activities. The rate decreased slightly for those with a high school diploma, and increased again for respondents with some college or a college degree.

### *Camping: Developed and primitive camping*

Roughly 37 percent of respondents in the 16 to 24 age group participated in some kind of camping. Approximately 33 percent of respondents in the next two age groups participated in camping activities; 28 percent of those age 40-49 did so; 19 percent of those age 50-59; and about 11 percent of those 60 and over participated in camping. Higher proportions of respondents engaged in developed, rather than in primitive, camping. Whites and others camped more frequently than African Americans. Men were also more likely than women to camp, particularly in primitive settings. Camping increased with income up to the middle-income

[4]This information is available in table form from the USDA Forest Service, Outdoor Recreation, 320 Green Street, Athens, GA 30602-2044.

groups, then decreased for the two highest income categories. Participation varied positively with number of people in the household, and a greater education level was associated with increasing participation in camping, except for those with a college degree.

### *Hunting: Big game, small game, migratory bird*

Hunting was more popular for younger age groups, and big and small game hunting were the most popular forms. Hunting was also more popular with whites than either African Americans or others, and all forms of hunting were predominantly male activities. Overall, hunting participation for the highest income group was nearly twice the rate for the lowest income group. Hunting also varied positively with number of household members. However, for households of five or more, participation decreased somewhat for migratory bird hunting. Overall, hunting declined after the high school level of education. The only exception was for migratory bird hunting.

### *Fishing: Freshwater, saltwater, warmwater, coldwater, ice, anadromous, catch and release*

Participation in fishing remained fairly steady over the first four age groups (between 31 percent and 35 percent) and then dropped to about 25 and 17 percent, respectively, for the last two categories. Freshwater and warmwater fishing were the two most popular forms for all age groups. Ice fishing was reported least. Fishing was reported by about 31 percent of whites, about 19 percent of African Americans, and roughly 24 percent of others. Freshwater fishing was the most popular kind of fishing for each racial or ethnic group (Table V.13). A much greater proportion of women participated in fishing than in hunting. Like men, women were more likely to engage in freshwater and warmwater fishing.

**Table V.13: Percent of U.S. Population Participating in Fishing Activities by Race/Ethnicity, 1994-95**

| Activity | White | African-American | Other (including Hispanic) |
|---|---|---|---|
| Fishing_ | 30.6 | 19.1 | 49.7 |
| Freshwater fishing | 26.3 | 15.0 | 16.8 |
| Warmwater fishing | 21.9 | 12.8 | 13.6 |
| Ice fishing | 2.3 | 0.3 | 0.6 |
| Anadromous fihsing | 4.8 | 3.2 | 3.1 |
| Catch and release fishing | 8.5 | 3.9 | 5.2 |

Source: 1994-95 National Survey on Recreation and the Environment, USDA Forest Service and the University of Georgia, Athens, Georgia. The NSRE is the most recent of the series of National Recreation Surveys begun nationally in 1960.

As with most other activities, fishing participation also increased with rising income. However, for three kinds of fishing—warmwater, ice, and catch and release, participation either declined or remained constant for the highest income group. The number of people in the household influenced fishing participation as well. For many of the activities within this category, participation increased for households with four or fewer members and then decreased for households with five or more people. All kinds of fishing decreased for people with a college degree.

### *Boating, sailing, canoeing, kayaking, rowing, floating and rafting, motorboating, water skiing, jet skiing, sailboarding, and windsurfing*

Overall, boating activities were reported most often by the 25-29 and 16-24 age groups. Motorboating was the most popular form for all age and ethnic groups, followed by waterskiing and canoeing. Boating activities were more popular among whites than African Americans and others. Roughly one-quarter of women, compared to about one-third of men, reported participation in some form of boating activity. Motorboating was the most popular boating activity for both males and females.

Boating participation was affected greatly by level of income (Table V.14). This relationship is not surprising given that equipment and storage for such activities can be quite costly. Sailing and waterskiing were about four times higher for the highest as for the lowest income group; and canoeing and motorboating were about three times higher. Jet skiing increased most dramatically from two percent participation for persons earning less than $15,000 per annum to 13 percent for those earning over $100,000 per year. All income groups reported the greater levels of participation in motorboating than in other activities.

Overall boating participation is lower for households with five or more members; however, canoeing, kayaking, and rowing participation steadily increased over household size. Also, more educated Americans tended to engage more in boating activities.

**Table V.14: Percent of U.S. Population Participating in Boating Activities by Household Income, 1994-95**

| Activity | <$15,000 | $15,000-24,999 | $25,000-49,999 | $50,000-74,999 | $75,000 or more |
|---|---|---|---|---|---|
| Boating | 19.0 | 29.0 | 39.0 | 48.0 | 52.0 |
| Sailing | 3.0 | 3.0 | 5.0 | 9.0 | 12.0 |
| Canoeing | 4.0 | 6.0 | 9.0 | 14.0 | 13.0 |
| Motorboating | 15.0 | 23.0 | 33.0 | 39.0 | 43.0 |
| Waterskiing | 5.0 | 8.0 | 12.0 | 15.0 | 18.0 |
| Jet skiing | 2.0 | 4.0 | 6.0 | 8.0 | 12.0 |

Source: 1994-95 National Survey on Recreation and the Environment, USDA Forest Service and the University of Georgia, Athens, Georgia. The NSRE is the most recent of the series of National Recreation Surveys begun nationally in 1960.

### *Swimming activities: Surfing, pool swimming, lakes, rivers, and ocean swimming, snorkeling and scuba diving*

Over one-half of all Americans engage in some type of swimming. These activities were among the most popular activities for all age groups. Close to 70 percent of the younger groups participated in some kind of swimming activity. Pools and lakes, rivers, and ocean swimming are the most popular forms of swimming activity for all age, racial, and ethnic groups. Both males and females report high participation in swimming.

Generally, higher income groups reported greater participation in swimming than lower income groups. This value was true for all swimming activities except pool swimming, where the highest income group reported slightly less participation than the second highest group. Income varied most with snorkeling and scuba activities. Nearly seven times as many in the highest, compared to the lowest income group, participated in snorkeling and scuba diving. Swimming participation also decreased for households with five or more members, and swimming participation increased steadily with increasing levels of education.

### *Outdoor adventure activities: Hiking, orienteering, backpacking, mountain climbing, rock climbing, caving, off-road driving, horseback riding*

About half of all respondents in the 16-24 and 25-29 age groups participated in outdoor adventure activities. Participation rates were approximately 44 percent for the 30-39 age group; 40 percent for the 40-49 year-olds; 30 percent for the 50-59 year-olds; and just over 15 percent of those 60 and over. Hiking was the most popular outdoor activity for all age groups followed by off-road driving. Outdoor adventure activities were more popular among whites and Asian-Americans than among African Americans. Hiking, in particular, was cited more frequently by whites than other racial and ethnic groups. Outdoor activities were somewhat more popular for men than for women. Hiking and off-road driving were mentioned most often by both sexes. More highly educated Americans were also more likely to participate in these activities.

Income was also positively correlated with outdoor adventure activities. Horseback riding showed the greatest increase with rising income. Only five percent of those in the lowest income groups participated in horseback riding, while 16 percent of those earning over $100,000 per annum did so. Participation in outdoor adventure activities also increased steadily across all household sizes. Table V.15 shows the same was true for education levels.

**Table V.15: Percent of U.S. Population Participating in Outdoor Adventure Activities by Household Education Level, 1994-95**

| Activity | Some High School | High School | Some College | Completed College |
|---|---|---|---|---|
| **Outdoor Adventure Activities** | | | | |
| Hiking | 29.8 | 31.2 | 40.1 | 42.4 |
| Backpacking | 18.3 | 17.5 | 25.8 | 31.1 |
| Mountain climbing | 4.6 | 3.5 | 4.9 | 4.9 |
| Rock climbing | 3.9 | 3.3 | 3.7 | 4.0 |
| Off-road driving | 14.1 | 14.2 | 16.6 | 11.0 |
| Horseback riding | 7.6 | 6.0 | 7.6 | 7.8 |

Source: 1994-95 National Survey on Recreation and the Environment, USDA Forest Service and the University of Georgia, Athens, Georgia. The NSRE is the most recent of the series of National Recreation Survey series begun nationally in 1960.

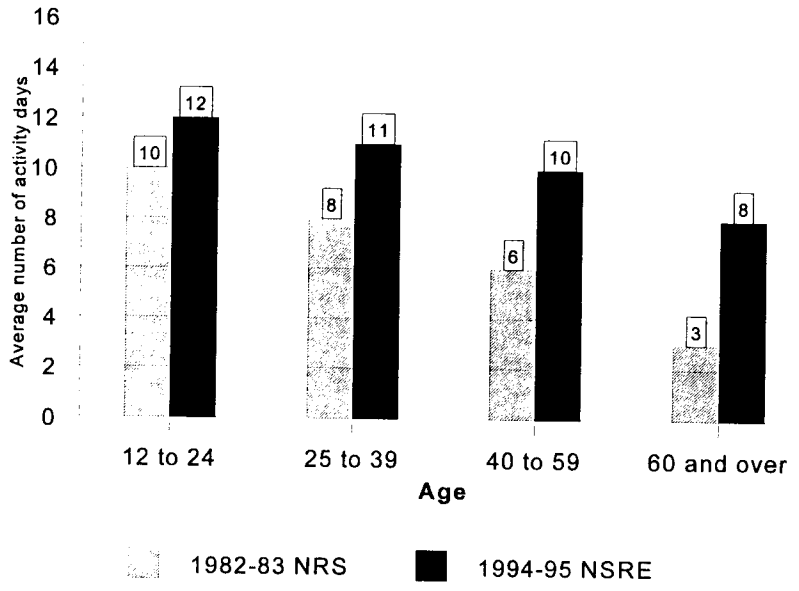
### *Social activities: Yard games, picnicking, family gathering*

Participation was at least 70 percent in every age category except the 50-59 and 60 and older groups. Family gathering was the most popular of these activities for all ages. Social activity participation was also high for all three racial or ethnic groups, with family gatherings again being the most popular activity, followed by picnicking and yard games. All forms of social activities were popular for males and females. Participation in social activities increased steadily with income up to the middle income range of $25,000 to $49,999 per year. Thereafter, participation remained steady at 85 percent for the three highest income groups. As earlier noted, outdoor activity participation tended to increase for one to four member households and then decrease for households with five or more members. Also, as education level increased, so did participation in social activities. This was particularly true for picnicking and family gathering.

## Participation Trends Among Demographic Groups

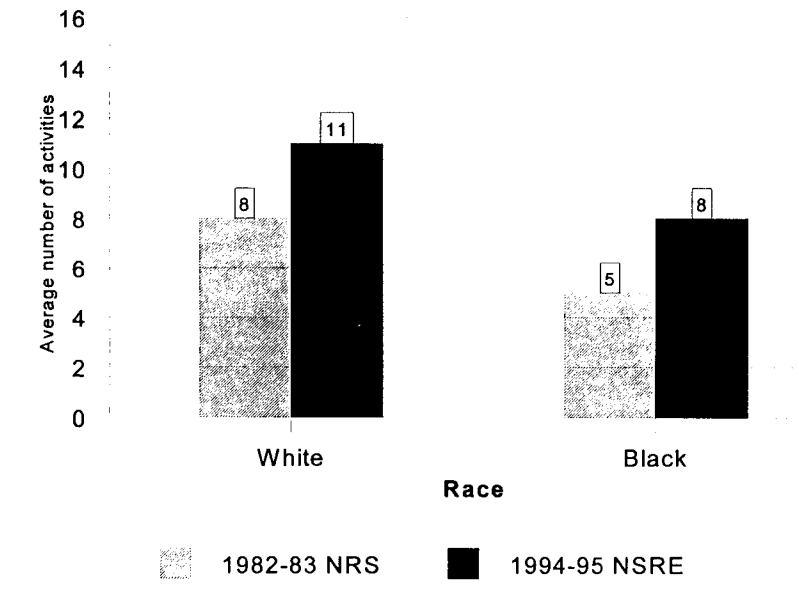
In examining participation, it is informative to look at the changes in participation rates for different groups across time. Information on participation trends can indicate possible future trends in demand for outdoor recreation activities. Figures V.7 through V.9 compare average number of activities per year by people age 16 or older by age, sex, race, household income, education level, and size of place of residence. These estimates are from the 1982-1983 National Recreation Survey (NRS) (which included persons 12 or older) and 1994-95 National Survey on Recreation and the Environment. Comparisons show that average number of activities people engaged in over the past 12 months increased across all demographic groups during the 12-year period between surveys.

**Figure V.7: Average Number of Activities by Age, 1982-83 and 1994-95**



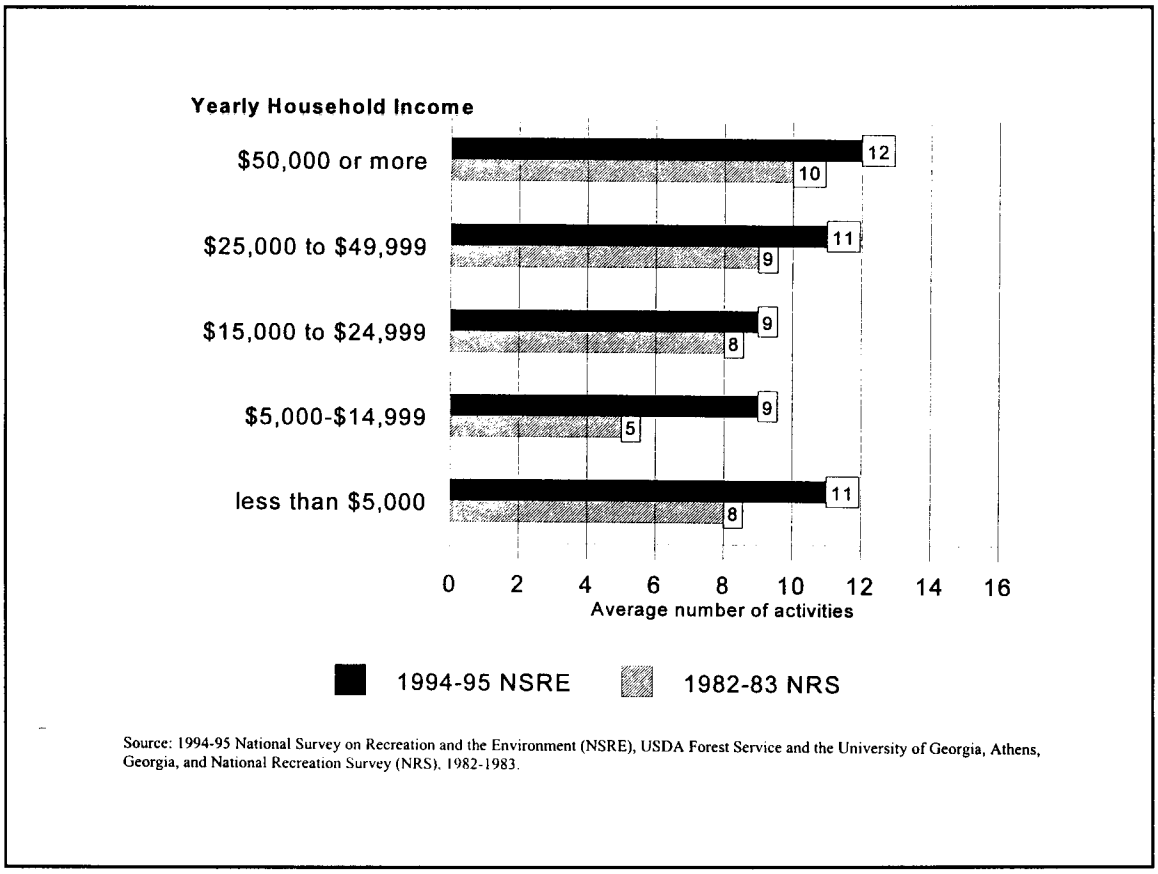

Source: 1994-95 National Survey on Recreation and the Environment (NSRE), USDA Forest Service and the University of Georgia, Athens, Georgia, and National Recreation Survey (NRS), 1982-1983.

**Figure V.8: Average Number of Activities by Race, 1982-83 and 1994-95**




Source: 1994-95 National Survey on Recreation and the Environment (NSRE), USDA Forest Service and the University of Georgia, Athens, Georgia, and National Recreation Survey (NRS), 1982-1983.

**Figure V.9: Average Number of Activities by Household Income, 1982-83 and 1994-95**




Source: 1994-95 National Survey on Recreation and the Environment (NSRE), USDA Forest Service and the University of Georgia, Athens, Georgia, and National Recreation Survey (NRS), 1982-1983.

Tables V.16 and V.17 present demographic breakdowns of average numbers of activity days and average numbers of trips, respectively, for bicycling, outdoor non-pool swimming, freshwater fishing, developed camping, and picnicking by age, sex, race, household income, education level, number of cars in household, and size of place of residence. These estimates are based on activity days and trips per year by participants.

**Table V.16: Average Number of Participation Days by Social Characteristic for Bicycling, Non-Pool Swimming, Freshwater Fishing, Developed Camping, and Picnicking**

| Social Characteristic | Average Number of Trips | | | | |
|---|---|---|---|---|---|
| | Bicycling | Non-pool swimming | Freshwater fishing | Developed camping | Picnicking |
| **Sex** | | | | | |
| Male | 42 | 16 | 21 | 10 | 8 |
| Female | 36 | 16 | 14 | 11 | 10 |
| **Age** | | | | | |
| 16-24 | 40 | 19 | 16 | 8 | 8 |
| 25-39 | 37 | 15 | 17 | 9 | 10 |
| 40-59 | 38 | 14 | 21 | 11 | 9 |
| 60 & over | 48 | 15 | 19 | 25 | 7 |
| **Race** | | | | | |
| White | 38 | 17 | 18 | 11 | 9 |
| Black | 42 | 8 | 19 | 7 | 7 |
| **Income** | | | | | |
| less than$5,000 | 24 | 16 | 11 | 5 | 8 |
| $5,000-$14,999 | 52 | 14 | 17 | 8 | 10 |
| $15,000- $24,999 | 47 | 16 | 23 | 12 | 10 |
| $25,000- $49,999 | 34 | 15 | 19 | 10 | 9 |
| $50,000 or more | 40 | 17 | 15 | 10 | 9 |
| **Education** | | | | | |
| less than high school | 41 | 15 | 16 | 9 | 10 |
| high school | 39 | 16 | 22 | 12 | 9 |
| less than college | 38 | 17 | 18 | 11 | 9 |
| college or more | 39 | 15 | 15 | 9 | 8 |
| **Car Ownership** | | | | | |
| 0 cars | 50 | 15 | 20 | 11 | 7 |
| 1 car | 44 | 15 | 18 | 8 | 9 |
| 2 cars | 37 | 15 | 17 | 10 | 9 |
| 3 cars | 36 | 17 | 20 | 14 | 8 |
| 4 or more cars | 39 | 18 | 20 | 11 | 9 |
| **Size of Residence** | | | | | |
| less than 5,000 | 33 | 9 | 17 | 10 | 12 |
| 5,000-24,999 | 30 | 16 | 25 | 13 | 9 |
| 25,000-49,999 | 41 | 14 | 20 | 10 | 7 |
| 50,000-999,999 | 40 | 16 | 18 | 11 | 9 |
| 1 million or more | 39 | 16 | 11 | 9 | 9 |

Source: 1994-95 National Survey on Recreation and the Environment, USDA Forest Service and University of Georgia, Athens, GA. The NSRE is the most recent of the series of National Recreation Survey series begun nationally in 1960.

**Table V.17: Average Number of Trips by Social Characteristic for Bicycling, Non-Pool Swimming, Freshwater Fishing, Developed Camping, and Picnicking**

| Social Characteristic | Average Number of Trips | | | | |
|---|---|---|---|---|---|
| | Non-pool Bicycling | Freshwater swimming | Developed fishing | camping | Picnicking |
| **Sex** | | | | | |
| Male | 27 | 11 | 11 | 5 | 6 |
| Female | 21 | 11 | 11 | 5 | 7 |
| **Age** | | | | | |
| 16-24 | 20 | 12 | 11 | 4 | 6 |
| 25-39 | 20 | 11 | 16 | 5 | 7 |
| 40-59 | 32 | 10 | 17 | 51 | 7 |
| 60 & over | 47 | 85 | 12 | 85 | 6 |
| **Race** | | | | | |
| White | 23 | 11 | 15 | 5 | 7 |
| Black | 28 | 7 | 18 | 2 | 5 |
| **Income** | | | | | |
| less than $5,000 | 11 | 16 | 9 | 5 | 8 |
| $5,000-$14,999 | 18 | 11 | 15 | 4 | 7 |
| $15,000- $24,999 | 27 | 11 | 19 | 52 | 8 |
| $25,000- $49,999 | 20 | 10 | 16 | 40 | 7 |
| $50,000 or more | 25 | 11 | 12 | 60 | 7 |
| **Education** | | | | | |
| less than high school | 23 | 10 | 12 | 4 | 7 |
| high school | 31 | 11 | 18 | 62 | 7 |
| less than college | 22 | 12 | 15 | 6 | 7 |
| college or more | 20 | 10 | 16 | 4 | 7 |
| **Car Ownership** | | | | | |
| 0 cars | 11 | 11 | 20 | 5 | 6 |
| 1 car | 25 | 11 | 16 | 4 | 7 |
| 2 cars | 27 | 10 | 14 | 5 | 7 |
| 3 cars | 21 | 11 | 16 | 6 | 6 |
| 4 or more cars | 22 | 11 | 15 | 6 | 7 |
| **Size of residence** | | | | | |
| less than 5,000 | 17 | 7 | 14 | 60 | 8 |
| 5,000-24,999 | 20 | 13 | 19 | 53 | 6 |
| 25,000-49,999 | 16 | 11 | 16 | 6 | 6 |
| 50,000-999,999 | 24 | 10 | 16 | 5 | 7 |
| 1 million or more | 29 | 12 | 71 | 3 | 7 |

Source: 1994-95 National Survey on Recreation and the Environment, USDA Forest Service and University of Georgia, Athens, GA. The NSRE is the most recent of the series of National Recreation Survey series begun nationally in 1960.

Eleven high-profile activities were also chosen to compare participant composition across time. These activities included bicycling, walking, outdoor swimming, attending outdoor sports, boating, fishing, hunting, developed camping, hiking, bird watching, and picnicking for the 1982-1983 NRS and 1995 NSRE, respectively.[5] The data address the question of the types of people who participate in a given activity, for example, "What kinds of people engage in walking for pleasure, developed camping, or picnicking in 1995?" This information was obtained by first identifying the respondents who said they participated in an activity and then determining what percentage were between the ages of 16-24; what percentage were women or men; or what proportion had less than high school education, etc. Generally, activity participation increased between the two time periods for each demographic category although there were some notable exceptions. For instance, 40 percent of walkers in 1982-83 were male. This rate increased to 47 percent in the 1994-95 NSRE. The proportion of walkers who were female decreased from 60 to 53 percent.

[5]This information is available in table form from the USDA Forest Service, Outdoor Recreation, 320 Green Street, Athens, GA 30602-2044.

## Participation in Outdoor Recreation Activities by Hispanic Americans, American Indians, and Asian Americans

We also looked more closely at the "other" racial category to determine what, if any, differences existed among Americans of Hispanic, American Indian (Native Americans), and Asian/Pacific Islander heritage. Hispanic Americans comprised about five percent (n=797) of the respondents to the NSRE and American Indians 155 and Asian Americans 240 respondents or about one percent each. This more in-depth analysis is important because much of the population increase over the next 50 years will come from these groups, particularly Hispanic Americans. Though there are readily identifiable cultural differences among groups within each of these categories, e.g, Mexican-Americans and Puerto Rican Americans, Japanese Americans and Korean Americans, and Plains Indians compared to Eastern Indian nations, we could not examine differences within each of these groups because of limited sample sizes.

*Hispanic American visitors complete a Forest Service questionnaire on visitor use at the San Bernadino National Forest in southern California. Photo courtesy of USDA Forest Service. Photo by Deborah Chavez.*

### *Fitness Activities*

Table V.18 shows the proportion of Hispanic Americans, American Indians, and Asian Americans who participated in 25 outdoor recreation activities. Roughly one-third of all Hispanic Americans and close to 40 percent of Asian Americans participated in running or jogging, compared to about 27 percent of American Indians. Roughly one-third of Hispanic Americans, American Indians, and Asian Americans reported biking activities, and about 60 percent of each racial or ethnic group participated in walking.

### *Individual Sport and Outdoor Team Sports*

Asian Americans were more likely than either Hispanic Americans or American Indians to participate in either golf or tennis. Asian Americans were also twice as likely as Hispanic Americans to participate in tennis and four times as likely as American Indians to report tennis participation. In fact, tennis was the most popular sport for Asian Americans. Basketball was mentioned most frequently by Hispanic Americans, while American Indians were more likely to participate in volleyball.

### *Outdoor Spectator and Viewing Activities*

Each racial group participated to a similar extent in concert going (between 31 and 34 percent). Roughly equal proportions also attended sporting events (between 40 and 45 percent). About 47 percent of Asian/Pacific Islanders visited nature centers and zoos. Slightly less participation was reported by American Indians (43 percent), and about 41 percent of Hispanic Americans visited nature centers and zoos. American Indians were more likely than the other two groups to bird watch, and Asian Americans and American Indians were more likely than Hispanic Americans to sightsee.

### *Camping, Hunting, Fishing, Boating, and Swimming*

About 28 percent of American Indians participated in developed camping; about 21 percent of Hispanic Americans and 18 percent Asian Americans did so as well. American Indians (21 percent) were also more

than three times as likely as Hispanic Americans to participate in any kind of hunting activity, and about four times as likely as Asian Americans to hunt. Forty-three percent of American Indians participated in fishing, compared to 29 percent for Asian Americans, and 25 percent for Hispanic American groups. Twenty-nine percent of American Indians engaged in boating, and roughly one-quarter of Asian Americans and Hispanic Americans did so. All groups participated to a similar extent in both pool and non-pool swimming.

### *Outdoor Adventure and Social Activities*

American Indians and Hispanic Americans were somewhat more likely than Asian Americans to day hike, and off-road driving was more popular among American Indians. Participation in social activities was very popular. American Indians were more likely than either Hispanic Americans or Asian Americans to participate in yard games. Americans Indians and Asian Americans were also more likely than Hispanic Americans to picnic, and Hispanic Americans reported slightly less participation than the other two groups in family gathering activities.

**Table V.18: Percent of Hispanic American, American Indian, and Asian Americans Participating in Outdoor Recreation Activities, 1994-95**

| Activity | Ethnic Group | | |
|---|---|---|---|
| | Hispanic American | American Indian | Asian American |
| **Fitness** | | | |
| Running/Jogging | 33.5 | 26.5 | 37.5 |
| Bicycling | 35.0 | 33.3 | 36.1 |
| Walking | 57.0 | 60.2 | 64.4 |
| **Individual Sport Activities and Outdoor Team Sports** | | | |
| Golf | 6.9 | 8.3 | 10.2 |
| Tennis | 12.2 | 6.4 | 24.2 |
| Basketball | 18.4 | 12.6 | 14.3 |
| Soccer | 11.0 | 3.5 | 7.0 |
| Volleyball | 16.2 | 23.8 | 14.7 |
| Handball | 17.4 | 10.2 | 7.2 |
| **Outdoor Spectator and Viewing Activities** | | | |
| Concerts | 30.5 | 34.0 | 33.0 |
| Attending sporting events | 43.0 | 44.5 | 39.7 |
| Visiting nature center | 40.6 | 42.9 | 47.3 |
| Bird watching | 19.0 | 36.5 | 19.5 |
| Sightseeing | 40.6 | 54.4 | 58.3 |
| **Camping, Hunting, Fishing, and Boating** | | | |
| Developed camping | 21.1 | 27.7 | 18.6 |
| Hunting | 6.4 | 21.1 | 4.6 |
| Fishing | 24.9 | 43.1 | 29.2 |
| Boating | 23.3 | 29.1 | 25.6 |
| **Swimming** | | | |
| Pool swimming | 42.1 | 38.3 | 39.1 |
| Non-pool swimming | 35.8 | 38.3 | 35.5 |
| **Outdoor Adventure Activities** | | | |
| Hiking | 27.0 | 30.0 | 24.3 |
| Off-road driving | 18.3 | 33.2 | 13.5 |
| **Social Activities** | | | |
| Yard games | 29.3 | 44.0 | 25.7 |
| Picnicking | 50.8 | 61.2 | 60.0 |
| Family gathering | 56.0 | 60.0 | 61.0 |

Source: 1994-95 National Survey on Recreation and the Environment, USDA Forest Service and the University of Georgia, Athens, Georgia. The NSRE is the most recent of the series of National Recreation Surveys begun nationally in 1960.

## Americans with Disabilities and Outdoor Activities

The number of Americans with physical or mental disabilities is estimated at more than 43 million. In 1990 Congress passed the Americans with Disabilities Act (42 U.S.C. 12101 [note]), which prohibits public entities from discriminating against individuals with physical or mental disabilities. The act also prohibits private entities from discriminating against this segment of the American population if any part of their operations involve commercial trade. Private concerns that provide recreation services are included.

The NSRE included questions about various kinds of disabilities, ranging from physical and mental challenges to chemical dependency. Roughly seven percent of respondents indicated some type of disability. We selected 21 activities covering a range of outdoor activity types to compare participation by people who identified themselves as disabled and those who did not indicate a disability. Table V.19 shows walking was the most popular activity for both disabled and nondisabled respondents, followed by family gathering and sightseeing.

**Table V.19: Percent of Disabled and Able-Bodied Americans Participating in Outdoor Recreation Activities, 1994-95**

| Activity | Disabled | Nondisabled |
|---|---|---|
| Running/Jogging | 12.0 | 26.2 |
| Basketball | 7.0 | 12.8 |
| Tennis | 6.1 | 10.6 |
| Concerts | 32.2 | 34.2 |
| Attending Sporting events | 40.3 | 47.5 |
| Visiting nature center | 44.1 | 46.4 |
| Hunting | 8.5 | 9.3 |
| Yard games | 33.2 | 36.7 |
| Fishing | 31.1 | 28.9 |
| Team sport | 15.5 | 26.4 |
| Biking | 25.8 | 28.7 |
| Walking | 59.7 | 66.7 |
| Bird watching | 34.4 | 27.0 |
| Sightseeing | 56.2 | 56.6 |
| Developed camping | 20.1 | 20.7 |
| Boating | 31.8 | 29.0 |
| Pool swimming | 38.2 | 44.2 |
| Non-pool swimming | 34.2 | 39.2 |
| Hiking | 19.2 | 23.8 |
| Picnicking | 53.0 | 49.1 |
| Family gathering | 59.5 | 61.8 |

Source: 1994-95 National Survey on Recreation and the Environment, USDA Forest Service and the University of Georgia, Athens, Georgia. The NSRE is the most recent of the series of National Recreation Surveys begun nationally in 1960.

## Generations of Outdoor Recreationists

(Portions of this section were reprinted by permission of B. McDonald and M. Van Horne, 1995.)

The determinants of outdoor recreation behavior are varied and multifaceted. One determinant overlooked in the literature is that of generational roles and personalities. Strauss and Howe (1991), in a comprehensive historical social analysis of American life since the late 1500s, uncovered four such generational roles and personalities that act, interact, and respond differently from one another during periods of social upheaval. These generational personalities occur in a fixed and cyclical order, and each influences the others in predictable ways that keep the cycle turning. For example, the oldest living American age cohort is the *GI generation*, those born between 1901 and 1924. The *silent generation* encompasses Americans born between

1925 and 1942. These are mostly Depression–era babies who lived during World War II. They have been described as restrained, deliberate, and conservative; and those in the workforce are considered to be loyal company employees who appreciate the job security offered by large business concerns.

Strauss and Howe (1991, pp. 299-316) also describe the *boom generation* (roughly equivalent to baby boomers) as that generation born between 1943 and 1960. The older members of this cohort were the radical college students of the 1960s who were pivotal in ushering in the new social movements centered around civil rights, women's rights, anti-war sentiments, and environmental ethics. In contrast, the group Strauss and Howe (1991, pp. 317-334) label as the *thirteenth generation* (born between 1961-1981) is depicted as politically apathetic, narcissistic, and without sincere direction. Members of this generation are much more likely than members of older generations to have been reared in a single parent home and are also more likely than prior generations to be "latchkey" kids. This cohort has also been referred to as *Generation X*, another title which alludes to the ill-defined character of this younger group of Americans (Coupland, 1991; Spiegler, 1996).

Strauss and Howe (1991) describe the *millennial generation* as children born between 1982 and 2004 (roughly). Some of these are today's children, a group that will have considerable social influence for the first half of the twenty-first century. The type of outdoor recreation these children learn as children and young adults will affect both outdoor recreation policy and natural resource policy into the 22nd century. A surprising number of outdoor interests and skills are acquired only, or mainly, in childhood. Certainly, many outdoor-related values are learned during youth. The kind of childhood the *millennial generation* experiences will profoundly impact their later outdoor recreation choices, as well as the way in which outdoor recreation resources are valued and managed.

We examined participation in a selected number of outdoor recreation activities for the *GI, silent, boom*, and *thirteenth generations* (Table V.20). We also looked at indirect participation in these activities for the *millennial generation*, that is, for families with children under six years of age. If we assume the activities to which these young children are exposed in their early, formative years will influence their choices for outdoor recreation as adolescents and adults, then we have an indication of the types of outdoor recreation that may be in demand in the next century.

Table V.20 shows that participation increased for most activities for each successive generation from *GI* to *thirteenth*. Some of this trend is undoubtedly attributed to age differences among generations. To get a better idea of generational effects, we compared the *thirteenth generation* or young adult cohort (16-34) from the 1994-95 NSRE with that of a similarly defined age group (18-44) in the 1960 National Recreation Survey (ORRRC 1962). The latter group is roughly equivalent to Strauss and Howe's *silent generation*. Percent of respondents from the two time periods participating in bicycling, walking, sightseeing, camping, hunting, fishing, boating, swimming, hiking, and picnicking were compared. Table V.21 shows participation increased markedly for each activity over the 35-year period. For instance, only six percent of young adults in 1960 reported biking. This compares with 51 percent in 1995. Moreover, 73 percent of today's young adults reported walking, whereas only 34 percent reported participation in 1960. These differences over time, while holding age group approximately equal, suggest that generational or societal changes, such as greater access to transportation and information and changing ideas about health and physical fitness over the past 37 years, have significantly influenced Americans' participation in outdoor recreation activities.

**Table V.20: Percent of Generations Participating in Outdoor Recreation Activities, 1994-95**

| | Generations of Outdoor Recreationists | | | | |
|---|---|---|---|---|---|
| Activity | GI | Silent | Boom | Thirteenth | Millennial |
| Running/Jogging | 5.0 | 12.6 | 26.2 | 43.0 | 29.9 |
| Bicycling | 7.3 | 21.7 | 43.4 | 50.5 | 33.9 |
| Walking | 43.6 | 61.7 | 74.8 | 73.2 | 72.2 |
| Tennis | 2.0 | 6.0 | 13.2 | 21.6 | 10.7 |
| Baseball | <1.0 | 2.4 | 7.7 | 12.7 | 9.1 |
| Basketball | <1.0 | 3.3 | 11.5 | 27.4 | 17.2 |
| Soccer | <1.0 | <1.0 | 4.4 | 10.4 | 6.2 |
| Concert going | 17.4 | 26.5 | 36.6 | 42.6 | 32.5 |
| Attending sporting events | 21.2 | 37.2 | 54.2 | 56.9 | 51.0 |
| Bird watching | 22.8 | 32.0 | 32.7 | 20.6 | 24.5 |

Table V.20 Cont.

| Activity | Generations of Outdoor Recreationists GI | Silent | Boom | Thirteenth | Millennial |
|---|---|---|---|---|---|
| Sightseeing | 34.6 | 55.4 | 66.3 | 58.6 | 57.7 |
| Downhill skiing | <1.0 | 2.7 | 10.8 | 18.7 | 8.2 |
| Snowmobiling | <1.0 | 2.0 | 4.5 | 7.5 | 4.7 |
| Camping | 6.2 | 17.4 | 33.1 | 39.1 | 30.8 |
| Hunting | 3.5 | 7.5 | 13.3 | 16.6 | 11.3 |
| Fishing | 13.8 | 25.7 | 38.4 | 41.7 | 33.7 |
| Boating | 14.3 | 28.5 | 40.2 | 45.9 | 30.6 |
| Swimming | 16.1 | 31.7 | 52.4 | 63.0 | 63.9 |
| Hiking | 6..3 | 14.6 | 31.1 | 33.5 | 25.6 |
| Driving ORV | 5.4 | 9.9 | 16.4 | 25.9 | 16.1 |
| Yard Games | 12.1 | 28.7 | 48.6 | 53.6 | 45.6 |
| Picnicking | 30.0 | 48.3 | 64.2 | 58.2 | 59.2 |
| Family gathering | 35.5 | 54.4 | 68.0 | 71.1 | 69.6 |

Source: 1994-95 National Survey on Recreation and the Environment, USDA Forest Service and the University of Georgia, Athens, Georgia. The NSRE is the most recent of the series of National Recreation Surveys begun nationally in 1960.

**Table V.21: Percent of Persons Participating in Selected Activities by 18-44 Year-Olds in 1960 and 16-34 Year-Olds in 1994-95**

| Activity | 1960 (18-44 year-olds) | 1994-95 (16-34 year-olds) |
|---|---|---|
| Bicycling | 6 | 51 |
| Walking | 34 | 73 |
| Sightseeing | 46 | 59 |
| Camping | 8 | 39 |
| Hunting | 4 | 17 |
| Fishing | 32 | 42 |
| Boating | 25 | 46 |
| Swimming | 57 | 63 |
| Hiking | 5 | 34 |
| Picnicking | 64 | 58 |

Source: 1994-95 National Survey on Recreation and the Environment, USDA Forest Service and the University of Georgia, Athens, Georgia, and ORRRC 1960.

### *Inner-city Poor*

(Portions of this section were adapted from an Urban Policy Brief issued from the Office of Policy Development and Research, U.S. Department of Housing and Urban Development, 1994.)

Having the opportunity to recreate has been said to be one of the best predictors of recreation participation (Lindsey & Ogle, 1972). It follows logically that most people would engage in most recreation activities if provided the services and facilities for doing so. However, such facilities and services are not equally distributed among various segments of American society. Americans who live in economically depressed inner-city settings may be at a particular disadvantage in terms of organized, outdoor recreation opportunities because agencies and services are sometimes reluctant to locate in these areas for fear of crime (Wilson, 1980; 1987). The plight of poor minority neighborhoods can be compounded if institutional practices fail to provide them opportunities and resources. Minority neighborhoods without government and business assistance can face further problems of deteriorated housing, inferior schools, inadequate access to services, crumbling infra-

structure, frayed social institutions, a lack of local employment opportunities, and civil unrest. For instance, the Kerner Commission Report (National Advisory Commission on Civil Disorders, 1968) on race riots in urban ghettos during the 1960s cited inadequate recreation facilities and programs as one of the major grievances of rioters.

According to reports from the Department of Housing and Urban Development, the dire situation in many inner-city areas has not improved much since the 1960s. The past two decades have witnessed an explosive growth in the number of areas of extreme poverty at the heart of most large cities. By 1990, approximately one in seven census tracts in the nation's 100 largest cities was classified as an area of extreme poverty (an area where at least 40 percent of the residents were poor). In cities such as Detroit and Miami, the percentage of these poverty tracts was much higher. Minorities, for whom residential choice is more likely to be constrained by racial segregation and housing discrimination, are invariably over-represented in these areas. One in four black residents of large cities lives in a high-poverty area. In these areas, black residents make up almost three-fifths of the population. Hispanic Americans are the fastest-growing group in these poor urban neighborhoods. They represented 24 percent of the local population in 1990, compared with less than 20 percent in 1980.

*The Urban Tree House program is an example of "reinvestment" efforts in inner-city neighborhoods. The Tree House is an Atlanta-based community project designed to bring an understanding of forestry concepts and careers to inner-city children. Neighborhood children participate in lessons that include storytelling and lectures by natural resource managers and researchers.*

**Table V.22: Percent of Inner-City Poor, Metropolitan, and Nonmetropolitan Respondents Participating in Outdoor Recreation Activities, 1994-95**

| | Residence and Outdoor Recreation | | |
|---|---|---|---|
| Activity | Inner-City Poor | Metropolitan | Nonmetropolitan |
| Running/jogging | 13.2 | 29.1 | 25.1 |
| Bicycling | 15.5 | 39.8 | 34.8 |
| Walking | 40.7 | 69.3 | 67.4 |
| Tennis | 3.1 | 14.9 | 10.9 |
| Baseball | 1.7 | 7.9 | 8.3 |
| Basketball | 3.1 | 15.2 | 14.6 |
| Soccer | 1.8 | 6.1 | 3.8 |
| Concert going | 14.3 | 37.2 | 28.3 |
| Attending Sporting Events | 16.6 | 49.2 | 48.2 |
| Bird watching | 17.5 | 26.6 | 28.6 |
| Sightseeing | 22.1 | 59.3 | 55.3 |
| Downhill skiing | 1.1 | 12.2 | 8.4 |

Table V.22 Cont.

| Activity | Residence and Outdoor Recreation | | |
|---|---|---|---|
| | Inner-City Poor | Metropolitan | Nonmetropolitan |
| Snowmobiling | 1.0 | 4.2 | 6.9 |
| Camping | 8.9 | 28.8 | 34.4 |
| Hunting | 4.1 | 9.6 | 22.8 |
| Fishing | 13.3 | 32.6 | 43.3 |
| Boating | 12.6 | 37.7 | 38.5 |
| Pool swimming | 15.6 | 51.2 | 42.5 |
| Hiking | 14.3 | 27.2 | 24.8 |
| Driving ORV | 5.9 | 16.4 | 23.0 |
| Yard Games | 12.5 | 43.2 | 44.3 |
| Picnicking | 28.3 | 55.8 | 55.6 |
| Family Gathering | 29.9 | 63.3 | 64.1 |

Source: 1994-95 National Survey on Recreation and the Environment, USDA Forest Service and the University of Georgia, Athens, Georgia. The NSRE is the most recent of the series of National Recreation Surveys begun nationally in 1960.

We constructed the category "inner-city poor" by restricting the analyses to individual respondents living in metropolitan counties where: (1) population was at least one million, (2) family income was less than $10,000 per year, (3) the education of the respondent was high school or less, and (4) the respondent was 25 or older. By these criteria, approximately two percent of NSRE respondents could be classified as inner-city poor. Table V.22 compares participation in 23 activities for inner-city poor, metropolitan, and non-metropolitan respondents. Results show that inner-city poor respondents are less likely than either metropolitan or non-metropolitan dwellers to participate in the 23 activities listed. For instance, metropolitan respondents are more than three times as likely as poor city dwellers to engage in a relatively inexpensive activity like pool swimming. This result suggests a lack of swimming facilities in inner-city areas. Participation in the most frequently mentioned activities (walking, picnicking, and family gathering) were the same for inner-city poor, other metropolitan dwellers, and nonmetropolitan dwellers.

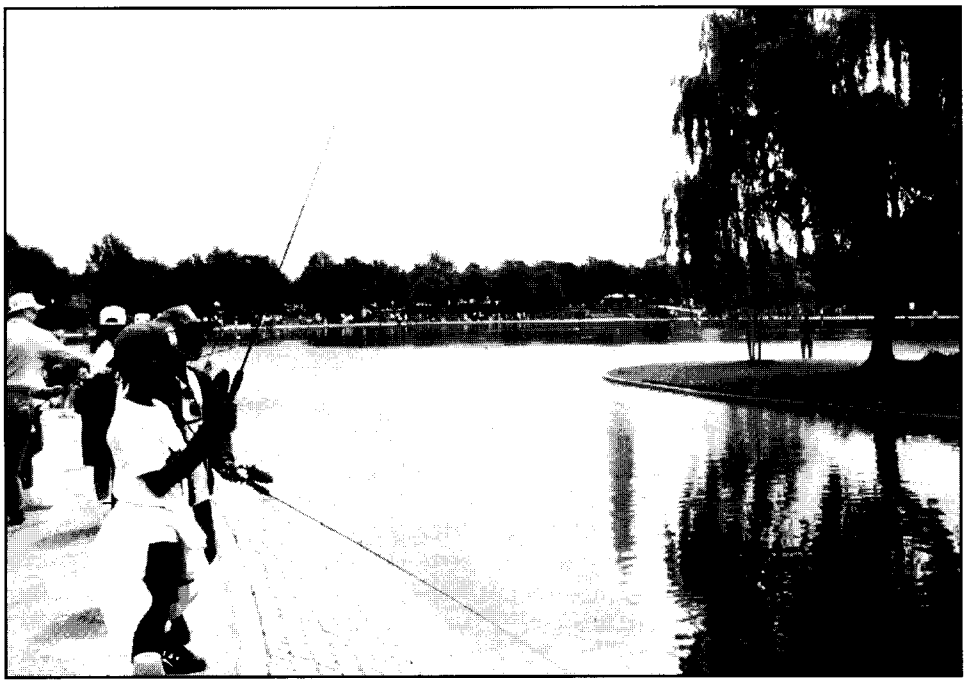
### *Metropolitan and Nonmetropolitan Populations*

A review of sociology literature suggests that differences in the attitudes of urban and rural people are diminishing due to factors such mass communication, an increase in nonagricultural industries, and the reorganization and merger of rural governments (Rogers, Burdge, Korshing, & Donnermeyer, 1988). However, Rogers et. al. (1988) also insist that "important rural-urban value differences still exist. These differences stem from historical, occupational, and ecological differences" (p. 12). For instance, studies have shown that rural and urban populations differ in their opinions about familial institutions and environmental pollutants (Lieberson & Wilkinson, 1976). Tremblay and Dunlap (1978) found that rural residents were less concerned than urban residents about environmental issues on the state or national level. Proshansky, Fabian, and Kaminoff (1983) also argue that one's *physical* environment (i.e., place-identity) is just as important a socialization agent in shaping one's self-identity as are intangible norms, values, and beliefs.

We examined participation by size of residence. The categories *metropolitan* and *nonmetropolitan* were more useful for our analyses than *urban* or *rural*. *Metropolitan* refers to counties with populations of at least 250,000. *Nonmetropolitan* counties have populations of 20,000 or less, either adjacent to a metropolitan county or in a rural area not adjacent to a metropolitan area (Butler, 1990). Table V.22 shows that walking for pleasure was the most popular activity for both metropolitan and nonmetropolitan populations. Similar to other groups, family gathering and sightseeing were also among the most popular activities. Not surprisingly, dispersed setting activities like hunting, fishing, and camping were more popular activities for nonmetropolitan than for metropolitan populations.

### *Participation Barriers*

Despite rapid advances in technology, many people still find that they have relatively little time or energy for recreation. We asked NSRE respondents who reported not engaging in recreation activities to tell us what factors prohibited their participation. Table V.23 shows the primary participation barriers for the general population to be not enough time and money, personal health limitations, not having a companion, and outdoor pests. About 20 percent cited inadequate information about outdoor recreation opportunities and crowding as constraining factors. Seventeen percent did not participate because of inadequate site facilities. Inadequate transportation, concerns about personal safety, and poorly maintained areas were a problem for about 14 percent of those who reported they do not recreate.



*This urban fishing program in Washington, D.C., sponsored by the U.S. Fish and Wildlife Service, introduces urban youth to nature-based recreation. Photo courtesy of the U.S. Fish and Wildlife Service.*

**Table V.23: Participation Barriers for the General Population, Whites, African Americans, Hispanic Americans, and Asian Americans, 1994-95**

| Barriers | General Population | White | African American | Hispanic | Asian |
|---|---|---|---|---|---|
| Lack of time | 63.8 | 62.5 | 65.4 | 77.1 | 70.9 |
| Lack of money | 42.5 | 40.8 | 49.8 | 49.1 | 33.9 |
| Personal health | 28.2 | 29.3 | 26.5 | 23.5 | 10.5 |
| No companion | 28.1 | 27.6 | 30.8 | 26.8 | 26.9 |
| Inadequate transportation | 14.8 | 12.1 | 24.3 | 31.3 | 11.4 |
| Crowded activity areas | 20.5 | 19.7 | 21.9 | 30.4 | 16.1 |
| Personal safety concerns | 14.0 | 11.6 | 23.5 | 21.1 | 13.3 |
| Inadequate facilities | 16.8 | 15.3 | 21.0 | 25.5 | 25.6 |
| Poorly maintained areas | 14.0 | 11.5 | 22.1 | 27.8 | 18.8 |
| Pollution problems | 13.0 | 11.1 | 19.2 | 23.1 | 11.0 |
| Inadequate information | 21.1 | 18.6 | 30.7 | 34.1 | 14.2 |
| No assistance for physical condition | 13.7 | 13.4 | 17.4 | 11.8 | 14.3 |
| Household member with disability | 6.0 | 13.4 | 5.5 | 5.4 | <1.0 |
| Outdoor pests | 27.7 | 26.7 | 35.6 | 21.5 | 19.2 |
| Other reason | 19.4 | 20.5 | 12.8 | 21.5 | 23.6 |

Source: 1994-95 National Survey on Recreation and the Environment, USDA Forest Service and the University of Georgia, Athens, Georgia. The NSRE is the most recent of the series of National Recreation Survey s begun nationally in 1960.

Insufficient time was the greatest barrier to participation for all racial groups, particularly Hispanic Americans and Asian Americans (Table V.23). A lack of money for recreation was cited by about one-half of African Americans and Hispanic Americans, compared to about 41 percent of whites and 34 percent of Asian Americans. Hispanic Americans and African Americans were more than twice as likely as either whites or Asian Americans to cite inadequate transportation. Also, Hispanic Americans and African Americans were hampered more than other groups by crowded activity areas.

Personal safety was much more of a constraint for African Americans and Hispanic Americans than for either whites or Asian Americans. Whites were less likely than the other racial or ethnic groups to cite inadequate facilities as a barrier. This result probably can be attributed in part to place of residence. African Americans and Hispanic Americans also are more likely than other racial or ethnic groups to live in inner-city areas or rural areas that lack adequate recreation facilities. Furthermore, Hispanic Americans and African Americans were also more likely than either whites or Asian Americans to cite poorly maintained areas as barriers to participation, and pollution is more of a problem for Hispanic Americans and African Americans.

Environmental justice and environmental racism have become major concerns to minority groups, which charge that hazardous waste and garbage disposal sites are located primarily in areas adjacent to low-income populations and populations with relatively little political clout (Bullard, 1995). More Hispanic and African Americans, compared to whites or Asian Americans, were constrained by lack of information about facilities and resources. Whites were more likely than the other groups to be constrained by a household member's physical disability, and outdoor pests were most limiting to African Americans.

Participation barriers for Hispanic and African Americans were more likely than for either whites or Asian Americans to include structural factors, such as pollution, lack of adequate transportation, safety, inadequate information, and poorly maintained facilities. This observation was also made by Washburne (1978), who wrote that minority "underparticipation" may be influenced to a great degree by barriers such as lack of discretionary funds, lack of transportation, and inadequate information about facilities. He referred to it as "marginalization theory." The theory asserts that marginal societal status experienced by racial minorities in America, particularly by African Americans, is largely responsible for the differences between white and nonwhite outdoor recreation participation.

Table V.24 shows constraints on visits by disabled respondents, inner-city poor, and metropolitan and nonmetropolitan populations. Not surprisingly, personal health limitations were the greatest constraint for disabled respondents (75 percent), followed by lack of assistance for physical limitations (54 percent). Just over 40 percent of disabled were constrained by money, and 33 percent did not recreate because of lack of time. About one-quarter of disabled respondents said they were hampered by either personal safety concerns, inadequate facilities, inadequate information, no companions, or annoying pests.

In addition to these more general recreation barriers, people with physical disabilities must also concern themselves with the degree to which recreation facilities are physically accessible to those using assistance devices such as wheelchairs and motorized scooters. Forty-two percent of those indicating some type of disability said physical barriers either limited or prevented their recreation participation. Approximately 37 percent said it is necessary for them to know in advance whether a site or activity is accessible, and about 43 percent said they would participate more in activities if those sponsoring such services would develop universal symbols indicating accessibility. About one-quarter said having either a wheelchair or power scooter at the site would enhance their recreation experience, and 20 percent indicated that large-print signs were helpful. Thirteen percent favored captioning in films or videos, and about 10 percent felt having braille signs and assisted-listening systems would enhance their recreation experiences.

The most frequently mentioned participation barrier for low-income, inner-city people was not enough money. Sixty percent of the respondents cited this factor as a hindrance to greater outdoor recreation participation. This response is not at all surprising given the population. In comparison, 43 percent of the general population cited money as a barrier to participation (Table V.23), and 41 percent of metro respondents did not visit for this reason. Personal health limitations were the second most often-mentioned participation constraint among inner-city respondents (50 percent), followed by inadequate transportation and personal safety concerns (37 percent). In comparison, safety concerns were mentioned by only 14 percent in the general population (Table V.23) and 15 and 12 percent, respectively, of metro and non-metro populations. Approximately 33 percent of inner-city poor did not visit because of outdoor pests, and roughly 30 percent were constrained by inadequate information or no assistance for physical condition. This compares with only 13 and 15 percent, respectively, for metro and nonmetro populations. Lack of time was the greatest constraint for both metropolitan and nonmetropolitan respondents, followed by lack of money, personal health concerns, and outdoor pests.

Table V.24: Percentage of Disabled, Inner-City Poor, Metro, and Nonmetro Populations by Participation Barriers, 1994-95

| Barriers | Disabled | Inner-city poor | Metro | Nonmetro |
|---|---|---|---|---|
| Lack of time | 33.2 | 29.6 | 64.4 | 61.7 |
| Lack of money | 44.1 | 60.0 | 41.4 | 46.2 |
| Personal health | 74.5 | 50.3 | 27.0 | 31.7 |
| No companion | 27.1 | 26.9 | 28.2 | 27.8 |
| Inadequate transportation | 20.6 | 37.1 | 15.2 | 13.1 |
| Crowded activity areas | 22.1 | 21.8 | 21.5 | 17.5 |
| Personal safety concerns | 24.3 | 36.9 | 14.7 | 11.7 |
| Inadequate facilities | 24.2 | 17.2 | 16.4 | 18.7 |
| Poorly maintained areas | 20.2 | 13.9 | 14.4 | 12.8 |
| Pollution problems | 19.9 | 16.2 | 13.9 | 9.8 |
| Inadequate information | 25.3 | 28.7 | 21.5 | 19.5 |
| No assistance for physical condition | 54.0 | 31.9 | 13.1 | 15.3 |
| Household member with disability | 6.9 | 10.0 | 5.7 | 7.4 |
| Outdoor pests | 25.3 | 33.2 | 25.9 | 33.4 |
| Other reason | 17.9 | 11.8 | 19.7 | 18.8 |

Source: 1994-95 National Survey on Recreation and the Environment, USDA Forest Service and the University of Georgia, Athens, Georgia. The NSRE is the most recent of the series of National Recreation Surveys begun nationally in 1960.

# RECREATION IN URBAN-PROXIMATE NATURAL AREAS

(By Patricia L. Winter, Ph.D. and Deborah J. Chavez, Ph.D., USDA Forest Service, Riverside, CA.)

Recreation in urban proximate wildland and wilderness areas and resulting management concerns and challenges have proven a fertile ground for social science research. As the demand for recreation opportunities adjacent to large urban centers has increased, so has the variety of recreational interests, patterns, and preferences, a reflection of the diverse recreationists visiting such areas.

## Diversity of Recreationists

Of interest is the degree to which ethnic and racial diversity in the United States is reflected among recreationists, particularly in urban-proximate recreation areas. Studies of day use on the San Bernardino, Angeles, and Los Padres National Forests, each within a one- to two-hour drive for over one million people, provide an opportunity to examine this question. On-site, self-administered questionnaires were provided to recreationists at day-use areas on each of the forests. Of the 168 respondents on the Angeles National Forest, 51 percent identified themselves as Anglo American, 15 percent as Mexican American, 15 percent at Hispanic American, nine percent as Asian American, and fewer than five percent each identified themselves as Central American, African American, or Native American (Chavez, Winter, & Mainieri, 1994). The second most diverse group was found on the Los Padres National Forest where, of the 159 respondents, 64 percent were Anglo, 22 percent were Hispanic, and fewer than five percent each identified themselves as either Asian American, African American, Native American or European (Chavez, et al., 1995). The San Bernardino National Forest had slightly less diversity of recreationists with 65 percent Anglo, 10 percent Mexican American, 10 percent Hispanic American, and fewer than five percent each of Central American, Asian American, African American, and American Indian descent (Chavez & Mainieri, 1994).

## Site Variations

Ethnic and racial diversity across the urban-proximate forests varies greatly between sites within a single forest. For example, at the Applewhite picnic area on the San Bernardino National Forest, more than three-quarters (78 percent) of the visitors were of Hispanic descent, while only seven percent were Anglo (Chavez & Winter, 1993). In contrast, respondents contacted at the Children's Forest were mostly Anglo (87 percent) (Chavez & Mainieri, 1994).

Similar types of sites may have a pattern of diversity, such as riparian or water-based recreation studied by Chavez (1992, 1993b), Chavez and Mainieri (1994), and Simcox and Pfister (1990). There is also some suggested variability around accessibility or proximity to the urban center, as seen in trailhead variations on the Angeles National Forest in Parker and Winter (1996). Less accessible wildernesses show very little ethnic and racial diversity (Chavez, 1993a; Winter, 1996). Recreation areas within the urban setting may offer even more ethnic and racial diversity, such as that found by Winter's study of recreationists' land ethics at state park, city park, and Forest Service sites. In this study, Anglos represented approximately 45 percent of the visitor population across all three site types. However, African Americans were only encountered at the city parks, and not at state park and Forest Service sites. Hispanics were the second largest majority at all three site types (Winter, 1996).

Variations can also be seasonal. At the Mecca Hills Recreation Area in the southern California desert, non-holiday visitors were primarily Anglo (64.1 percent), while holiday weekend visitors were primarily Hispanic (76.4 percent) (Chavez, Baas, & Winter, 1993). Each of these variations serves as a demonstration of the complexity of resource management and customer service. This complexity has importance in its implications for differences in perceptions of place, recreational activities, communication patterns and preferences, development preferences, and spill-over of city-based problems into the recreation setting. Each of these is addressed in the following sections. It is important to note, however, that variations in ethnicity and race are not the only socio-demographic considerations in customer service. Culture has a strong linkage to ethnicity and race, and many differences may be explained by culture rather than ethnicity or race. Geographic variation is another important consideration, in that recreation and its many corresponding variables may differ by region, state, or larger community. Finally, level of attachment or identification with culture and community may also serve to explain some of the variability seen within a specific subgroup. Degree of acculturation has been shown to be an important covariate in many ethnic and racial inquiries within the field of recreation (Baas, Ewert, & Chavez, 1993; Caro & Ewert, 1995; Simcox & Pfister, 1990).

## Perceptions of Place

Two studies revealed the special meaning that recreational places can have to individuals from Central America (Carr & Chavez, 1993) and Mexico (Chavez, 1996b), wherein an area was cited as reminding recreationists of their homeland. A single place may be viewed in many different ways and have varying expectations for activities that should be acceptable there, as well as services that might be offered. For example, Taylor and Winter (1994) found that respondents to a mailed recreation survey disagreed about whether an area was wilderness, national park, national forest, or city park. These place perceptions were correlated with expected degrees of development, perceptions of acceptable on-site activities, and perceptions of acceptable penalties for depreciative acts. Race and ethnicity were important covariates in these place perception interactions. Variations in place perceptions were also reported by Absher and Winter (1997), although in-depth analyses of these data remain incomplete.

Place perceptions may have some shared meanings when it comes to behavioral conventions or norms, as discussed by Heywood (1993). In his exploration of behavioral expectations at the Applewhite picnic area on the San Bernardino National Forest, people passing through someone's immediate picnic area, playing loud music, and the number of times such potential intrusions could occur before being perceived as bothersome varied by acculturation level of the respondent. Overall, Spanish-speaking recreationists appeared more tolerant of people passing through their picnic site, for example, but if they were English speaking their attitudes more closely emulated Anglo respondents.

## Recreational Activities

Recreational activity patterns and interests show similarities and differences among ethnic groups. While the majority of visitors to the Applewhite picnic area were there to picnic (79 percent) or relax (78 percent), how those activities were actually carried out varied (Chavez & Winter, 1993). An indicated interest

in group activities, reflecting the larger group sizes within which they have been found to recreate, was expressed at the Mecca Hills and at Applewhite (Chavez, et al., 1993; Chavez & Winter, 1993). Larger group size may be a reflection of cultural differences focusing greater importance on family and extended family (Chavez, 1996b; Chavez & Winter, 1994). While there are some significant differences in types of activities undertaken and those of interest, there are also many similarities (Chavez, 1995). An examination of the meaning of recreation itself reveals significant differences contrasting Anglos with Native Americans (McDonald & McAvoy, 1996).

## Communication Patterns and Preferences

Diversity among recreation site visitors is represented in the primary languages they read and speak. While approximately half of the visitors to the Applewhite picnic area read English most of the time, approximately one third reported speaking English, Spanish, or English and Spanish each (Chavez & Winter, 1993). Such variations affect management approaches to communication through signing and face-to-face contacts. Cultural differences add further challenges to the agency-visitor interaction, and are more critical than basic translation issues (Magill, 1995). While a majority of visitors to an area tend to learn about it through informal sources, such as family or friends, this trend is even more true for Hispanics than Anglos (Chavez, et al., 1993, Parker & Winter, 1996), and Anglos are more likely to contact the managing agency for information than are Hispanics (Parker & Winter, 1996). Hispanics have demonstrated a greater interest in information than Anglos (Parker & Winter, 1996), particularly in printed form. Topics of information that the agency deems most important, such as area rules, regulations, and safety messages, appear to be of less interest than other topics. On the Los Padres National Forest, respondents were much more interested in the forest's natural features (79 percent), other sites that were similar (74 percent), and things to see and do at the site (71 percent) than they were in area rules and regulations (48 percent) or safety messages (51 percent) (Chavez, Winter, & Mainieri, 1995). Hispanic visitors may have more interest in information about area rules and regulations (Parker & Winter, 1996). The type of site where recreation is occurring may have some influence on information interest levels, however. At the Imperial Sand Dunes in the southern California desert, OHVers were more interested in safety (50.7 percent) and area rules and regulations (44.6 percent) than they were in things to see and do (30.5 percent) (Chavez, Winter, & Bass, 1993b).

## Development Preferences

Variations in recreational patterns and activities, with Hispanics typically recreating in larger family groups, also play out in expressed preferences for degree of site development. At the Mecca Hills recreation area, Anglos indicated significantly greater importance of 10 of the 17 site items listed, including a picnic area, parking spaces, and toilets (Chavez, et al., 1993). A similar finding was revealed in the Applewhite study conducted by Chavez and Winter (1993), where the majority of recreationists were Hispanic and expressed a clear preference for the site rendering the most site development, approximating the characteristics of a regional park. A query of development preferences along the Sacramento River and Shasta Lake Recreation Areas (Winter, 1995) showed that very few additional site amenities were desired, and the majority visitor to these areas was Anglo (approximately 70 to 75 percent). When few additions are desired, water may still be listed as a desirable amenity, even by those expecting little else in site development (Chavez, et al., 1993b; Winter, 1995).

## The Spill-Over of Urban Problems into the Recreational Setting

Urban-proximate recreation areas show signs of urban-spillover, affecting recreationists' experience on-site. In one study conducted by Taylor and Winter (1994), a majority of visitors to day use areas reported seeing or experiencing litter (83 percent), carvings on trees (75 percent), other people making loud noises (71 percent), or playing loud music (68 percent) and seeing graffiti on natural or built features (66 percent). The majority of visitors were most bothered by spray paint and litter (between 86 to 90 percent). Although many reported picking up litter, very few reported taking any other intervention steps to end depreciative activities on-site.

Conflict between groups is rarely reported (Chavez, 1993b; Winter, 1995), although multiple use of trails presents an exception, as in the case of conflicts between mountain bikers and other users (Chavez, 1996a). It may be that norms for an area, or behavioral conventions, preclude many of the potential conflicts

that could occur in an area (Heywood, 1993), or that individuals have already excluded themselves from recreating in an area because of the fear of conflict (McDonald & McAvoy, 1997).

### Resulting Management Strategies

The diversity in ethnic, cultural, and recreational interest revealed in urban-proximate wildland areas has led to innovative management strategies. Forest Service managers are beginning to rely on collaborative efforts, or bridge-building methods, to ameliorate conflicts between various user groups (Chavez, 1996a). Communication complexities, as well as the desire to decrease environmentally depreciative acts, led resource managers to partner with the California Environmental Project to establish an on-site, face-to-face program involving urban youth as the messengers (Absher & Winter, 1997). Areas have been renovated, based on user interests and preferences collected through on-site studies (Chavez, Winter, & Larson, 1995). Diversity may add complexity to understanding the recreational experience and how to best serve customers, but it also provides an incredible learning environment that challenges us to take care in understanding the differences, similarities, and interests of our present and future customers.

## PARTICIPATION DIFFERENCES AMONG REGIONS

This section presents percentages of the population 16 years and older and mean numbers of trips and days per participant per year for four assessment regions and for nine forest regions in the United States. Total numbers of participants and total trips and participation-days per year for the four assessment regions are shown in Technical Appendix Table V.7. Percentages of population participating and millions of participants by activity for each of the nine forest regions are shown in Technical Appendix Table V.8.

### Comparisons Across Four Assessment Regions

The four assessment regions across which recreation participation is compared include the Pacific Coast states of Alaska, Washington, Oregon, Hawaii, and California; the 12 Rocky Mountain/Great Plains states from Nevada east to Kansas; the South, including 13 states from Texas to Virginia; and the North from Missouri to Maine (see Figure II.1 in Chapter II). These regions are the assessment regions used by the USDA Forest Service for this 10-year Forest and Rangeland Renewable Resources Assessment (see Foreword).

In Table V.25, the first level of comparisons across Assessment Regions is shown for 13 general types of recreation activities. Across the four regions, and relative to national percentages, few differences exist for trail, street, and road activities, individual sports, team sports, spectator sports, boating, swimming, and social activities. Regardless of differences in climate, landscapes, the nature of opportunities, and population size and culture, participation percentages are similar across regions. Numbers of participant are greatest for viewing and learning activities; trail, street, and road activities; social activities; spectator sports; and swimming. Smaller percentages participate in individual and outdoor team sports.

**Table V.25: Percentage of Population 16 Years and Older Participating Across 13 Types of Outdoor Activities by Assessment Region of the U.S., 1994-95**

| Type of Activity | Assessment Region[1] | | | | |
|---|---|---|---|---|---|
| | North | South | Rocky Mountain/ Great Plains | Pacific Coast | National |
| **Land** | | | | | |
| Trail/street/road | 69.2 | 65.9 | 69.9 | 69.7 | 68.3 |
| Viewing/learning | 76.7 | 73.8 | 79.8 | 77.7 | 76.2 |
| Camping | 24.3 | 22.6 | 37.8 | 34.4 | 26.4 |
| Hunting | 9.1 | 10.5 | 13.3 | 5.5 | 9.3 |
| Outdoor adventure | 34.8 | 32.9 | 47.5 | 45.1 | 36.8 |
| **Water** | | | | | |
| Boating/floating | 30.1 | 29.1 | 26.1 | 26.9 | 29.0 |
| Fishing | 27.9 | 32.4 | 31.0 | 23.9 | 28.9 |
| Swimming | 55.8 | 53.6 | 49.8 | 53.0 | 54.2 |

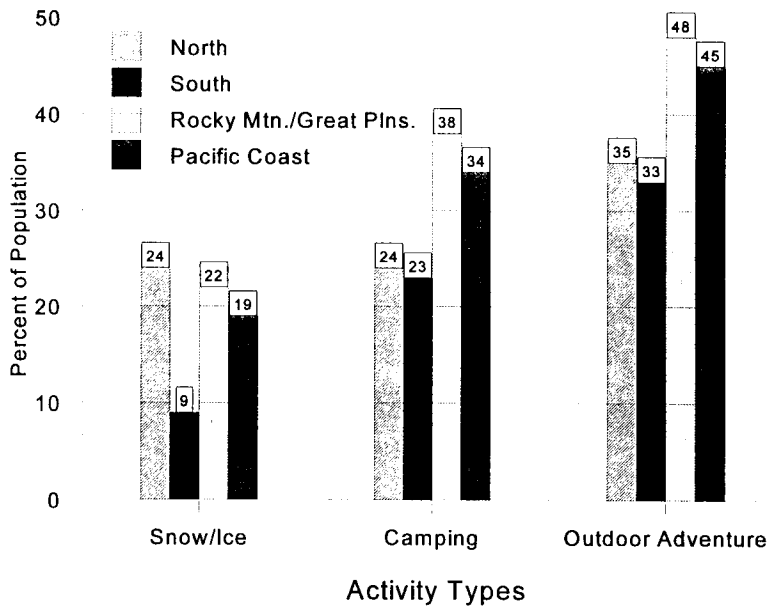
**Table V.25 Cont.**

| Type of Activity | Assessment Region[1] | | | | |
|---|---|---|---|---|---|
| | North | South | Rocky Mountain/ Great Plains | Pacific Coast | National |
| **Snow/ice** | | | | | |
| Skiing/sledding/ snowmobiling | 23.8 | 8.6 | 21.7 | 18.5 | 18.1 |
| **Other** | | | | | |
| Individual sport | 23.1 | 20.4 | 22.5 | 21.7 | 22.0 |
| Outdoor team sport | 27.3 | 26.1 | 24.8 | 25.3 | 26.4 |
| Outdoor spectator | 59.8 | 57.2 | 59.8 | 57.8 | 58.7 |
| Social activities | 69.3 | 64.8 | 71.3 | 68.0 | 67.8 |

[1]The North includes Connecticut, Deleware, Illinois, Indiana, Iowa, Maine, Maryland, Massachusetts, Michigan, Minnesota, Missouri, New York, New Jersey, New Hampshire, Ohio, Pennsylvania, Rhode Island, Vermont, West Virginia, and Wisconsin; the South includes Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, and Virginia; the Rocky Mountains/Great Plains include Arizona, Colorado, Idaho, Kansas, Montana, Nebraska, Nevada, New Mexico, North Dakota, South Dakota, Utah, and Wyoming; and the Pacific Coast includes Alaska, California, Haiwaii, Oregon, and Washington.

The activity types for which there are evident regional differences include viewing and learning activities, snow and ice activities, camping, hunting, fishing, and outdoor adventure activities. Differences in participation percentages are especially pronounced for snow and ice activities, camping, and outdoor adventure activities (Figure V.10). For snow and ice activities, the highest participation percentage in activities such as skiing is in the North; the second highest is in the Rocky Mountain/Great Plains region. As would be expected, the lowest is in the South where snow and ice activities are mostly restricted to the southern Appalachian Mountains in northern Georgia, western North Carolina, southwestern Virginia, and eastern Tennessee.

**Figure V.10: Regional Comparisons of Percentage of Population 16 Years and Older Participating in Snow/Ice, Camping, and Outdoor Adventure Activities, 1994-95**




Source: 1994-95 National Survey on Recreation and the Environment (NSRE), USDA Forest Service and the University of Georgia, Athens, Georgia.

Camping participation (Figure V.10) differs between the eastern and western regions. The North and South have 24 and 23 percent of their respective populations 16 or older participating, while the Rocky Mountain/Great Plains and Pacific Coast regions have 38 and 34 percent, respectively. The regional differences in participation in outdoor adventure activities are very similar to those for camping, with the two western regions having 48 and 45 percent of the population participating, while the eastern regions have 35 and 33 percent participating. These regional differences in participation can be attributed at least in part to differences in availability of natural resource opportunities for these activities between the West and the East.

Smaller regional differences were found for viewing, hunting, and fishing. For viewing activities, the region with the smallest percentage of people 16 or older participating is the South at 74 percent; the highest is the Rocky Mountain/Great Plains region with 80 percent. Hunting participation differences are most pronounced between the Rocky Mountain/Great Plains region at 13 percent, and the Pacific Coast region at six percent. For fishing, the region with the highest percentage is the South (32 percent), and the region with the lowest is the Pacific Coast (24 percent). Estimated numbers of participants for each of the four assessment regions by type of recreational activity are shown in Table V.26.

**Table V.26: Number of Persons 16 Years and Older Participating Across 13 Types of Outdoor Activities by Assessment Region of the U.S., 1994-95**

| Type of Activity | Assessment Region[1] | | | | |
|---|---|---|---|---|---|
| | North | South | Rocky Mountain/ Great Plains | Pacific Coast | National |
| **Land** | | | | | |
| Trail/street/road | 63.6 | 41.0 | 10.4 | 21.8 | 136.9 |
| Viewing/learning | 70.5 | 46.0 | 11.9 | 24.3 | 152.6 |
| Camping | 22.4 | 14.1 | 5.6 | 10.8 | 52.8 |
| Hunting | 8.4 | 6.5 | 2.0 | 1.7 | 18.6 |
| Outdoor adventure | 32.0 | 20.5 | 7.1 | 14.1 | 73.7 |
| **Water** | | | | | |
| Boating/floating | 27.6 | 18.1 | 3.9 | 8.4 | 58.1 |
| Fishing | 25.6 | 20.2 | 4.6 | 7.5 | 57.9 |
| Swimming | 51.2 | 33.4 | 7.4 | 16.6 | 108.6 |
| **Snow/ice** | | | | | |
| Skiing/sledding/ snowmobiling | 21.9 | 5.4 | 3.2 | 5.8 | 36.3 |
| **Other** | | | | | |
| Individual sport | 21.2 | 12.7 | 3.3 | 6.8 | 44.1 |
| Outdoor team sport | 25.1 | 16.3 | 3.7 | 7.9 | 53.0 |
| Outdoor spectator | 55.0 | 35.6 | 8.9 | 18.1 | 117.6 |
| Social activities | 63.6 | 40.4 | 10.6 | 21.3 | 135.9 |

[1]The North includes Connecticut, Deleware, Illinois, Indiana, Iowa, Maine, Maryland, Massachusetts, Michigan, Minnesota, Missouri, New York, New Jersey, New Hampshire, Ohio, Pennsylvania, Rhode Island, Vermont, West Virginia, and Wisconsin; the South includes Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, and Virginia; the Rocky Mountains/Great Plains include Arizona, Colorado, Idaho, Kansas, Montana, Nebraska, Nevada, New Mexico, North Dakota, South Dakota, Utah, and Wyoming; and the Pacific Coast includes Alaska, California, Haiwaii, Oregon, and Washington.

Tables V.27 through V.29 compare percentages of population participating, mean numbers of trips away from home, and participation days per person per year in specific activities among the four assessment regions. Across these regions, there are many notable differences across the three measures of participation. For land-based activities, the smallest differences are among activities that are least dependent on specific natural settings or features (Table V.27). Examples include running or jogging, biking, walking, visiting a visitor center, visiting a historic site, sightseeing, horseback riding, and picnicking.

Table V.27: Percentage of Population Participating and Mean Trips and Days per Participant 16 years or Older per Year by Assessment Region for Land-Resource-Based Activities, 1994-95

| ACTIVITY | NORTH | | | SOUTH | | | ROCKY MOUNTAINS | | | PACIFIC COAST | | | NATIONAL | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean | | | Mean | | | Mean | | | Mean | | | Mean | |
| | Percent | Trips | Days | Percent | Trips | Days | Percent | Trips | Days | Percent | Trips | Days | Percent | Trips | Days |
| **Trail/Street/Road** | | | | | | | | | | | | | | | |
| Running/Jogging | 24.2 | —[1] | —[1] | 27.6 | —[1] | —[1] | 27.5 | —[1] | —[1] | 28.5 | —[1] | —[1] | 26.2 | —[1] | —[1] |
| Biking | 30.3 | 9.5 | 37.9 | 24.4 | 8.5 | 39.5 | 30.5 | 10.0 | 39.8 | 31.4 | 11.6 | 40.8 | 28.6 | 9.6 | 39.0 |
| Long Distance Biking | 3.4 | —[1] | 22.5 | 2.4 | —[1] | 15.7 | 3.1 | —[1] | 17.9 | 4.4 | —[1] | 16.8 | 3.2 | —[1] | 19.6 |
| Walking | 68.1 | —[1] | 104.9 | 64.2 | —[1] | 109.8 | 67.2 | —[1] | 107.8 | 67.4 | —[1] | 111.0 | 66.7 | —[1] | 107.6 |
| **Viewing Activities** | | | | | | | | | | | | | | | |
| Visiting a Nature Center | 47.3 | 3.6 | —[1] | 42.8 | 3.3 | —[1] | 49.6 | 3.4 | —[1] | 49.7 | 3.7 | —[1] | 46.4 | 3.5 | —[1] |
| Visiting a Visitor Center | 34.8 | —[1] | —[1] | 33.1 | —[1] | —[1] | 36.9 | —[1] | —[1] | 36.1 | —[1] | —[1] | 34.6 | —[1] | —[1] |
| Visit a Prehistoric Site | 16.1 | 2.2 | 3.6 | 16.1 | 3.4 | 6.7 | 27.1 | 3.3 | 5.3 | 19.2 | 2.8 | 6.0 | 17.4 | 2.8 | 5.0 |
| Visit a Historic Site | 44.4 | 2.9 | 5.0 | 43.2 | 3.2 | 6.4 | 46.1 | 3.2 | 5.6 | 44.2 | 2.8 | 4.9 | 44.1 | 3.0 | 5.5 |
| Bird-Watching | 28.5 | 7.1 | 84.8 | 26.4 | 7.6 | 97.5 | 27.8 | 7.6 | 92.2 | 23.5 | 5.7 | 74.6 | 27.0 | 7.1 | 87.8 |
| Wildlife Viewing | 32.4 | 11.0 | 36.9 | 28.6 | 12.7 | 40.4 | 37.0 | 10.0 | 35.9 | 30.1 | 6.8 | 30.8 | 31.2 | 10.7 | 36.9 |
| Other Wildlife Viewing | 14.0 | —[1] | —[1] | 11.9 | —[1] | —[1] | 13.1 | —[1] | —[1] | 17.0 | —[1] | —[1] | 13.8 | —[1] | —[1] |
| Sightseeing | 57.0 | 8.4 | 17.3 | 54.4 | 9.5 | 17.9 | 58.3 | 9.3 | 18.8 | 59.3 | 10.4 | 19.6 | 56.6 | 9.1 | 18.0 |
| **Camping** | | | | | | | | | | | | | | | |
| Developed Area | 19.6 | 4.6 | 10.8 | 17.2 | 5.0 | 10.8 | 27.0 | 4.4 | 9.8 | 28.0 | 4.8 | 10.6 | 20.7 | 4.7 | 10.7 |
| RV Developed Camping | 8.4 | —[1] | —[1] | 6.86 | —[1] | —[1] | 12.08 | —[1] | —[1] | 11.4 | —[1] | —[1] | 8.6 | —[1] | —[1] |
| Tent Developed Camping | 13.7 | —[1] | —[1] | 12.1 | —[1] | —[1] | 18.9 | —[1] | —[1] | 20.7 | —[1] | —[1] | 14.6 | —[1] | —[1] |
| Primitive Area | 11.8 | 4.0 | 7.9 | 12.8 | 5.8 | 10.1 | 24.2 | 5.5 | 9.6 | 17.8 | 4.7 | 10.3 | 14.0 | 4.8 | 9.2 |
| RV Primitive Camping | 2.7 | —[1] | —[1] | 2.9 | —[1] | —[1] | 7.4 | —[1] | —[1] | 5.5 | —[1] | —[1] | 3.5 | —[1] | —[1] |
| Tent Primitive Camping | 9.5 | —[1] | —[1] | 9.9 | —[1] | —[1] | 17.1 | —[1] | —[1] | 12.8 | —[1] | —[1] | 10.7 | —[1] | —[1] |
| Other Camping | 2.0 | —[1] | —[1] | 1.7 | —[1] | —[1] | 3.0 | —[1] | —[1] | 2.8 | —[1] | —[1] | 2.1 | —[1] | —[1] |
| **Hunting** | | | | | | | | | | | | | | | |
| Big game | 7.2 | 7.7 | 14.5 | 7.8 | 9.5 | 15.7 | 10.3 | 5.5 | 9.5 | 3.7 | 7.7 | 13.7 | 7.1 | 8.1 | 14.3 |
| Small game | 6.3 | 9.4 | 14.8 | 7.8 | 7.7 | 13.0 | 8.5 | 9.0 | 12.1 | 3.4 | 10.2 | 13.6 | 6.5 | 8.8 | 13.8 |
| Migratory bird | 1.7 | 5.4 | 7.6 | 2.6 | 5.2 | 7.0 | 3.8 | 6.6 | 8.2 | 1.8 | 7.0 | 10.2 | 2.1 | 5.7 | 7.8 |

Table V.27 Cont.

| ACTIVITY | NORTH | | | SOUTH | | | ROCKY MOUNTAINS | | | PACIFIC COAST | | | NATIONAL | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean | | | Mean | | | Mean | | | Mean | | | Mean | |
| | Percent | Trips | Days | Percent | Trips | Days | Percent | Trips | Days | Percent | Trips | Days | Percent | Trips | Days |
| **Outdoor Adventure Activities** | | | | | | | | | | | | | | | |
| Hiking | 22.5 | 9.0 | 16.0 | 18.1 | 7.9 | 17.2 | 33.4 | 9.7 | 17.7 | 34.8 | 10.3 | 17.7 | 23.8 | 9.1 | 16.8 |
| Hiking to a Summit | 7.2 | —[1] | —[1] | 5.7 | —[1] | —[1] | 13.9 | —[1] | —[1] | 14.2 | —[1] | —[1] | 8.3 | —[1] | —[1] |
| Orienteering | 2.4 | —[1] | 4.8 | 2.1 | —[1] | 5.9 | 3.0 | —[1] | 6.5 | 2.7 | —[1] | 10.1 | 2.4 | —[1] | 6.3 |
| Backpacking | 6.5 | 5.0 | 9.0 | 5.8 | 3.7 | 6.9 | 11.8 | 4.3 | 8.2 | 12.1 | 4.6 | 9.6 | 7.6 | 4.5 | 8.6 |
| Backpacking to a Summit | 2.8 | —[1] | —[1] | 2.4 | —[1] | —[1] | 5.3 | —[1] | —[1] | 5.4 | —[1] | —[1] | 3.3 | —[1] | —[1] |
| Mountain Climbing | 3.4 | 2.9 | 3.8 | 3.6 | 2.3 | 3.3 | 9.8 | 4.2 | 6.5 | 6.9 | 3.2 | 5.2 | 4.5 | 3.0 | 4.4 |
| Rock Climbing | 3.2 | 2.8 | 4.5 | 2.8 | 2.6 | 3.5 | 6.5 | 7.0 | 8.6 | 5.5 | 3.5 | 5.7 | 3.7 | 3.5 | 5.1 |
| Caving | 4.4 | 1.3 | 1.7 | 4.4 | 2.0 | 2.9 | 6.2 | 1.6 | 2.6 | 5.7 | 2.2 | 3.0 | 4.7 | 1.7 | 2.4 |
| Off-Road Driving | 12.2 | 13.3 | 27.6 | 14.5 | 15.6 | 24.3 | 20.4 | 11.3 | 18.9 | 14.9 | 9.6 | 21.2 | 13.9 | 13.2 | 24.6 |
| Horseback Riding | 6.1 | 8.3 | 19.4 | 7.5 | 7.7 | 22.3 | 11.2 | 9.5 | 28.9 | 7.5 | 10.9 | 32.6 | 7.1 | 8.7 | 23.6 |
| Horseback Riding on Trails | 4.7 | —[1] | —[1] | 5.1 | —[1] | —[1] | 7.7 | —[1] | —[1] | 5.8 | —[1] | —[1] | 5.2 | —[1] | —[1] |
| **Social Activities** | | | | | | | | | | | | | | | |
| Yard Games | 40.9 | —[1] | —[1] | 34.1 | —[1] | —[1] | 35.1 | —[1] | —[1] | 30.5 | —[1] | —[1] | 36.7 | —[1] | —[1] |
| Picnicking | 51.2 | 5.1 | 8.6 | 44.0 | 5.1 | 8.6 | 54.6 | 5.5 | 8.8 | 50.4 | 6.0 | 9.5 | 49.1 | 5.3 | 8.8 |
| Family Gathering | 63.2 | 6.3 | 8.6 | 59.5 | 5.9 | 8.4 | 62.9 | 6.8 | 9.9 | 61.6 | 6.8 | 9.4 | 61.8 | 6.3 | 8.8 |

[1] Trips and days were not asked in the National Survey on Recreation and the Environment for some activities.
Source: 1994-95 National Survey on Recreation and the Environment, USDA Forest Service and the University of Georgia, Athens, Georgia.

Table V.28: Percentage of Population Participating and Mean Trips and Days per Participant 16 years or Older per Year by Assessment Region for Water-Resource-Based Activities, 1994-95

| ACTIVITY | NORTH | | | SOUTH | | | ROCKY MOUNTAINS | | | PACIFIC COAST | | | NATIONAL | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean | | | Mean | | | Mean | | | Mean | | | Mean | |
| | Percent | Trips | Days | Percent | Trips | Days | Percent | Trips | Days | Percent | Trips | Days | Percent | Trips | Days |
| **Viewing Activities** | | | | | | | | | | | | | | | |
| Fish Viewing | 13.0 | —[1] | 16. | 13.8 | —[1] | 19.7 | 12.6 | —[1] | 13.9 | 16.0 | —[1] | 17.0 | 13.7 | —[1] | 17.3 |
| Visiting a Beach or Waterside | 62.8 | 10.2 | 22.9 | 60.6 | 12.2 | 27.5 | 55.7 | 8.1 | 15.5 | 66.1 | 15.6 | 34.2 | 62.1 | 11.6 | 25.6 |
| Studying Nature near Water | 27.3 | 5.1 | 21.7 | 26.6 | 6.9 | 29.2 | 25.1 | 5.2 | 18.5 | 31.9 | 6.4 | 26.2 | 27.6 | 5.8 | 24.4 |
| **Fishing** | | | | | | | | | | | | | | | |
| Freshwater | 24.1 | 12.1 | 18.1 | 26.7 | 13.8 | 20.4 | 29.0 | 12.0 | 17.2 | 18.4 | 9.8 | 12.9 | 24.4 | 12.4 | 18.1 |
| Saltwater | 7.5 | 5.1 | 7.4 | 13.4 | 12.0 | 18.3 | 2.9 | 2.2 | 4.4 | 10.6 | 9.0 | 13.6 | 9.5 | 8.7 | 13.1 |
| Warmwater | 21.2 | 11.8 | 17.0 | 24.9 | 12.9 | 20.2 | 17.8 | 10.1 | 14.8 | 9.9 | 9.8 | 13.2 | 20.4 | 12.0 | 17.8 |
| Coldwater | 10.0 | 8.2 | 12.4 | 7.4 | 6.0 | 9.2 | 18.7 | 9.9 | 13.7 | 13.4 | 6.9 | 9.4 | 10.4 | 7.7 | 11.3 |
| Ice | 3.4 | —[1] | —[1] | 0.3 | —[1] | —[1] | 3.8 | —[1] | —[1] | 0.4 | —[1] | —[1] | 2.0 | —[1] | —[1] |
| Anadromous | 4.6 | 8.0 | 9.4 | 3.7 | 5.7 | 7.2 | 3.2 | 6.1 | 9.4 | 6.5 | 9.4 | 11.5 | 4.5 | 7.7 | 9.4 |
| Catch and Release | 6.8 | —[1] | 18.1 | 9.2 | —[1] | 20.3 | 11.8 | —[1] | 16.4 | 5.8 | —[1] | 13.5 | 7.7 | —[1] | 18.4 |
| **Boating** | | | | | | | | | | | | | | | |
| Sailing | 5.2 | 5.0 | 8.7 | 3.7 | 3.8 | 7.2 | 3.1 | 2.6 | 4.5 | 6.7 | 7.0 | 8.6 | 4.8 | 5.0 | 8.1 |
| Canoeing | 8.7 | 2.4 | 5.6 | 6.7 | 2.8 | 4.2 | 4.9 | 2.2 | 4.0 | 3.9 | 5.0 | 7.9 | 7.0 | 2.8 | 5.3 |
| Open-top Canoeing | 8.5 | —[1] | —[1] | 6.3 | —[1] | —[1] | 4.6 | —[1] | —[1] | 3.5 | —[1] | —[1] | 6.8 | —[1] | —[1] |
| Closed-top Canoeing | 0.3 | —[1] | —[1] | 0.5 | —[1] | —[1] | 0.3 | —[1] | —[1] | 0.5 | —[1] | —[1] | 0.4 | —[1] | —[1] |
| Kayaking | 1.2 | 1.6 | 6.2 | 1.1 | 3.2 | 8.8 | 0.7 | 10.1 | 11.2 | 2.3 | 3.6 | 6.7 | 1.3 | 3.0 | 7.3 |
| Rowing | 5.7 | 2.1 | 5.0 | 3.0 | 3.1 | 5.4 | 2.2 | 2.8 | 6.4 | 3.2 | 2.2 | 6.4 | 4.2 | 2.3 | 5.3 |
| Floating, Rafting | 7.5 | 2.9 | 5.1 | 7.9 | 3.2 | 4.9 | 7.7 | 3.9 | 5.8 | 7.5 | 2.9 | 4.9 | 7.6 | 3.1 | 5.1 |
| Motor-boating | 24.0 | 6.7 | 13.3 | 24.8 | 8.6 | 19.0 | 21.5 | 5.7 | 9.7 | 20.1 | 7.3 | 13.1 | 23.5 | 7.3 | 14.9 |
| Water Skiing | 8.2 | 4.3 | 9.1 | 9.7 | 6.8 | 10.9 | 10.2 | 5.4 | 8.3 | 8.9 | 5.3 | 9.2 | 8.9 | 5.4 | 9.7 |
| Jet Skiing | 4.0 | 3.8 | 7.6 | 5.7 | 2.1 | 8.3 | 4.2 | 4.5 | 7.3 | 4.5 | 3.2 | 6.0 | 4.7 | 3.1 | 7.6 |
| Sailboarding/windsurfing | 1.1 | 3.7 | 8.4 | 1.0 | 1.0 | 4.2 | 0.8 | 3.5 | 4.4 | 1.5 | 2.5 | 4.2 | 1.1 | 2.7 | 6.1 |
| **Swimming Activities** | | | | | | | | | | | | | | | |
| Surfing | 0.8 | 13.1 | 18.3 | 1.3 | 25.6 | 34.6 | 0.6 | 1.7 | 3.7 | 3.1 | 26.9 | 38.5 | 1.3 | 21.8 | 30.5 |
| Swimming/pool | 45.0 | 7.6 | 24.7 | 45.2 | 8.6 | 31.3 | 38.8 | 8.4 | 28.2 | 42.5 | 8.0 | 28.3 | 44.2 | 8.0 | 27.6 |
| Swimming/non-pool | 41.8 | 6.7 | 15.1 | 37.4 | 7.2 | 17.6 | 32.0 | 4.9 | 11.8 | 37.0 | 8.2 | 17.0 | 39.0 | 6.9 | 15.9 |
| Snorkeling/Scuba | 6.4 | 2.3 | 5.5 | 7.6 | 5.6 | 9.0 | 5.6 | 2.8 | 5.3 | 9.7 | 4.7 | 8.2 | 7.2 | 3.9 | 7.2 |

[1] Trips and days were not asked in the National Survey on Recreation and the Environment for some activities.

Source: 1994-95 National Survey on Recreation and the Environment, USDA Forest Service and the University of Georgia, Athens, Georgia.

**Table V.29: Percentage of Population Participating and Mean Trips and Days per Participant 16 years or Older per Year by Assessment Region for Snow/Ice-Resource-Based Activities, 1994-95**

| ACTIVITY | NORTH | | | SOUTH | | | ROCKY MOUNTAINS | | | PACIFIC COAST | | | NATIONAL | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean | | | Mean | | | Mean | | | Mean | | | Mean | |
| | Percent | Trips | Days | Percent | Trips | Days | Percent | Trips | Days | Percent | Trips | Days | Percent | Trips | Days |
| **Snow and Ice Activities** | | | | | | | | | | | | | | | |
| Ice Skating | 8.7 | —[1] | —[1] | 1.5 | —[1] | —[1] | 4.7 | —[1] | —[1] | 2.8 | —[1] | —[1] | 5.2 | —[1] | —[1] |
| Snowboarding | 2.7 | —[1] | —[1] | 1.1 | —[1] | —[1] | 2.4 | —[1] | —[1] | 3.2 | —[1] | —[1] | 2.3 | —[1] | —[1] |
| Sledding | 14.7 | —[1] | —[1] | 4.3 | —[1] | —[1] | 11.5 | —[1] | —[1] | 8.1 | —[1] | —[1] | 10.2 | —[1] | —[1] |
| Downhill Skiing | 9.1 | 4.7 | 8.0 | 5.0 | 1.9 | 4.2 | 11.6 | 5.9 | 8.6 | 11.6 | 5.6 | 8.7 | 8.4 | 4.5 | 7.5 |
| Cross-Country Skiing | 4.8 | 3.7 | 8.1 | 0.6 | 1.6 | 4.0 | 4.4 | 4.2 | 6.4 | 3.5 | 4.8 | 7.1 | 3.3 | 3.8 | 7.5 |
| Cross Country Skiing on Groomed Trails | 4.0 | —[1] | —[1] | 0.4 | —[1] | —[1] | 3.5 | —[1] | —[1] | 2.9 | —[1] | —[1] | 2.7 | —[1] | —[1] |
| Cross Country Skiing on Ungroomed Trails | 4.2 | —[1] | —[1] | 0.4 | —[1] | —[1] | 3.8 | —[1] | —[1] | 3.1 | —[1] | —[1] | 2.8 | —[1] | —[1] |
| Backcountry Cross country Skiing | 2.7 | —[1] | —[1] | 0.3 | —[1] | —[1] | 3.0 | —[1] | —[1] | 2.1 | —[1] | —[1] | 1.9 | —[1] | —[1] |
| Snowmobiling | 5.4 | 3.1 | 10.3 | 1.2 | 1.1 | 3.1 | 5.1 | 4.2 | 8.9 | 2.1 | 5.3 | 8.2 | 3.6 | 3.2 | 9.3 |

[1] Trips and days were not asked in the National Survey on Recreation and the Environment for some activities.
Source: 1994-95 National Survey on Recreation and the Environment, USDA Forest Service and the University of Georgia, Athens, Georgia.

Prominent examples of activities with substantial differences in regional participation include visiting prehistoric sites, primitive area camping, hiking, backpacking, mountain climbing, and off-road vehicle driving. A regional difference pattern for specific activities emerges that is very similar to that summarized above for aggregations of activities by type. Generally, participation percentages are higher in the two western regions and lower in the two eastern regions. However, comparing number of trips per year across the highly resource-dependent activities reveals relatively little difference between regions in number of trips participants take away from home to pursue their chosen activities. Mean number of days during which participants engaged in the activities is mixed in order of magnitude across regions, except that the most general observation for many of the land-based activities is that participation days are somewhat lower in the eastern than in the western regions.

Percentages of population and mean trips and days per participant per year for water-based activities are presented in Table V.28. As a generalization, participation percentages are lower in the drier western regions. An exception is surfing in the Pacific Coast region. Whether viewing, fishing, boating or swimming, percentages of the population participating is higher in the East. Between the eastern regions, participation in viewing activities is greater in the North, fishing participation is greater in the South, non-motorized boating is greater in the North, motorized boating is greater in the South, and swimming is about the same for the two eastern regions.

Differences in mean trips per year across regions are very mixed and difficult to generalize. Except for stream-based activities, trips per year are generally lowest in the Rocky Mountain and Great Plains region and highest in the North and South regions. Ocean and saltwater trips are obviously lowest in the Rocky Mountain and Great Plains region. Number of warmwater fishing trips is higher in the North and South, while mean number of coldwater fishing trips is greater in the Rocky Mountains. More participation days generally are devoted to water-based activities in the North and South than in the other regions. Notable exceptions are greater mean participation days for coldwater fishing in the Rocky Mountain and Great Plains region, greater anadromous fishing in the Pacific Coast, greater kayaking participation days in the Rocky Mountains, and much higher participation days of surfing in the Pacific Coast.

Participation in snow and ice activities is shown in Table V.29. As noted earlier, percentages of the population are lowest in the South and greatest in the North. Between the western regions, participation percentages are greater in the Rocky Mountain and Great Plains than in the Pacific Coast region. Residents of the two western regions, however, tend to take more activity trips away from home for downhill skiing, cross-country skiing, and snowmobiling than residents of the North. Residents of these two western regions also devote more days to downhill skiing than the residents of the North. However, more participation days are devoted to cross-country skiing and snowmobiling in the North than in the two western regions.

## Comparison Across Nine Forest Regions

There are nine forest regions in the United States, which coincide with the nine administrative regions of the National Forest System of the U.S. Forest Service. Percentages of the population, number of participants, and numbers of trips and days for some of the 13 activity types discussed earlier in this chapter and for individual activities vary substantially across the nine forest regions (Appendix Table V.8). Activity types for which forest regional differences vary relatively little include fitness, individual sports, outdoor team sports, outdoor spectator sports, and social activities. Participation in these activity types is not as dependent on access to and the character of the local natural landscape.

Activity types that are heavily dependent on the natural landscape and access to it are listed below. Shown also is the name of the forest region with the lowest participation percentage, the national participation percentage (a measure of the overall interregional participation mode), and the name of the forest region with the highest participation percentage.

| Types of Activities | Lowest Region | National Percentages | Highest Region |
|---|---|---|---|
| Viewing | South | 76.2 | Pac. NW |
| Snow and Ice | South | 18.1 | Alaska |
| Camping | South | 26.4 | Alaska |
| Hunting | Pac. SW | 9.3 | N. Rockies |
| Fishing | Pac. SW | 28.9 | Alaska |
| Boating | S. Western | 29.0 | Alaska |
| Swimming | Alaska | 54.2 | S. Western |
| Outdoor Adventure | South | 36.8 | Alaska |

Across activity types, percentages of the population participating appear to be lower in the South than in other regions. Participation percentages are highest for Alaska for five of the activity types.

# COUNTY PARTICIPATION PATTERNS FOR LAND, WINTER, AND WATER-BASED ACTIVITIES

(By J. M. Bowker, D. B. K. English, and G. Bhat, USDA Forest Service, Athens, GA)

In this section we illustrate national patterns of participants per square mile for three broad types of outdoor recreation–land-based, winter-based, and water-based activities. As the names indicate, these types are determined by resource setting.

The procedure used to estimate county participation per square mile involved multiple steps. First, logistic models (Greene, 1993) were developed for each activity aggregate in each of the four assessment regions. The models extend concepts used in earlier RPA assessments (Hof & Kaiser, 1983; Walsh, Jon, McKean, & Hof, 1992) to the regional level. For each regional cross-sectional model, participation in an aggregate activity by an individual aged 16 or older was modeled as a function of age, age squared, household income, race, gender, population density, and a relevant index of the available supply of the resource supporting the activity (see Chapter VI for a more detailed description of the models and variables). Models were estimated using the NSRE data set (Cordell, McDonald, Lewis, Miles, Martin, & Bason, 1996) and the NORSIS Data Base (see Chapter IV).

Next, county-level estimates of total participation for each activity aggregate were obtained by combining parameter estimates for each regional participation model with county-level demographic data (Woods & Poole, 1997; USDA Forest Service, 1996) and county population totals for residents 16 years and older. These estimates were in turn divided by county area to obtain estimates of participants per square mile.

Maps are presented for each of the activity aggregates with county and state boundaries. Each county is shaded according to estimated participants per square mile. For clarity, counties are classified as falling into one of three participant-per-square-mile intervals based on the estimated distribution for all counties. The intervals are the bottom 25 percent, the middle 50 percent, and the top 25 percent. The distribution of county-level estimates for participants per square mile is different for each activity aggregate, thus the numbers delineating the above percentiles differ.

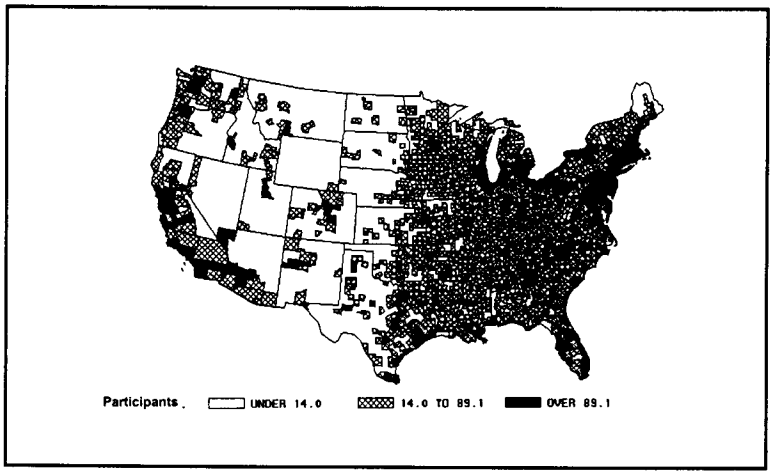
## Land-Based Recreation Activities

The land-based activity type consisted of participation in any of the following specific outdoor activities: biking, horseback riding, picnicking, family gathering, dayhiking, orienteering, backpacking, developed camping, primitive camping, mountain climbing, rock climbing, caving, birdwatching, wildlife viewing, other nature study, big game hunting, small game hunting, migratory bird hunting and visiting a zoo, interpretation center, historic site, or archeological site.

Across all four regions, participation in land-based outdoor recreation was positively influenced by income and relative availability of public and private land suitable for recreation. Race and gender were also important factors in explaining participation, with whites and males being more likely to engage in the recreation forms listed above. Population density had mixed effects across the regions. In the more rural South and Rocky Mountain regions, population density had a positive effect, suggesting that those living in and immediately around metropolitan centers were the most likely participants, while in the more densely populated North and Pacific regions, the effect was opposite. Age and age squared had mixed effects across regions.

The national map for land-based activity participation per square mile shown in Figure V.11. Estimated participants per square mile ranged from almost zero to over 1000. One fourth of the counties had fewer than 14 participants per square mile. For the most part, these counties are in the sparsely populated parts of the Rocky Mountains and the Great Plains, although sections of Northern Minnesota, Michigan, and Maine, along with pockets in the South, also fall into this category.

**Figure V.11: Participants per Square Mile for All Land-Based Outdoor Recreation Activities by County, 1995**




The middle 50 percent of all counties fall into a participant-per-square-mile range of 14.0 to 89.1. These counties are represented by the cross-hatched areas in Figure V.11. Generally, these counties are considered rural and often have significant agricultural or forestry sectors in their economies.

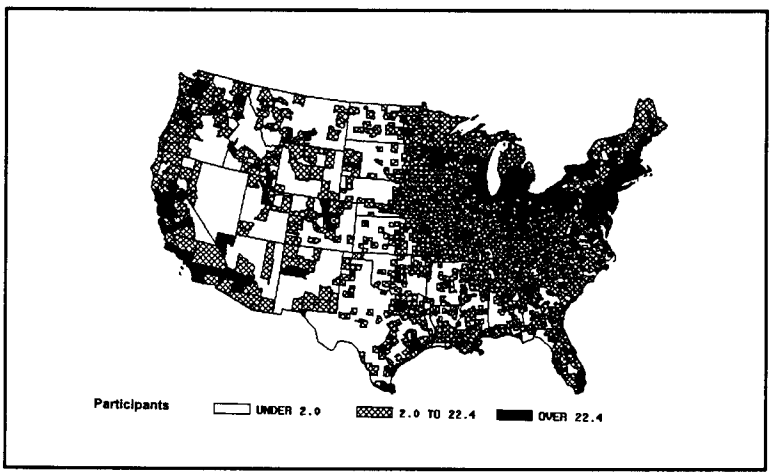
The upper 25 percent of the counties, represented by the blackened areas, are those with more than 89.1 participants per square mile. These counties envelop major metropolitan centers around the country along with densely populated suburban areas. Not surprisingly, these are the areas from which most of the recreation-use pressure on natural resources originates.

## Winter-Based Recreation Activities

Winter-based activities are ice-skating, snowboarding, downhill skiing, cross-country skiing, snowmobiling, and sledding. Unlike some of the general land-based activities above, participation in any of the winter-based activities requires a fair amount of physical exertion. This fact, coupled with the seasonal and geographic constraints, leads to a national distribution of county-level participants per square mile in winter-based activities, which is much lower than the very broad land-based activity aggregate.

We estimate that 25 percent of the nation's counties produce fewer than two participants per square mile, while the middle 50 percent of the counties represent between two and 22.4 participants per square mile. The remaining 25 percent of the counties produce more than 22.4 participants per square mile. The pattern for participation in the winter-based activity aggregate is presented in Figure V.12.

**Figure V.12: Participants per Square Mile for Snow- and Ice-Based Outdoor Recreation Activities by County, 1995**




The top 25 percent of the counties in this activity type are similar to the top 25 percent for the land-based activity type. Notable exceptions can be found in the upper Midwest and northern New England. Be-

cause the measure used in this section is unaffected by frequency of participants, most population centers around the country fall into the top 25 percent.

A noticeable difference between the winter-based and land-based participation patterns occurs for the middle 50 percent to the counties in each category. For example, considerably more counties in the Great Plains and Rocky Mountain regions fall into the middle of the county-level distribution for the winter-based activities. Correspondingly, fewer rural Southern counties fall into the mid-range of winter-based activities than for land-based activities.

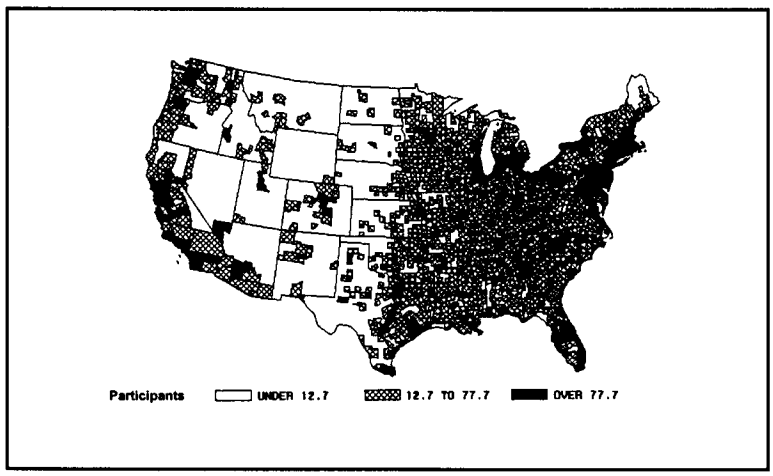
Among the factors influencing participation, income has a strong positive influence as does relative availability of winter-sport opportunities. Race and sex are also important factors with nonwhites less likely to participate and females less likely to participate. Unlike general land-based sports, age is a more prominent factor in explaining participation. Participation initially increases with age and then after peaking begins to decline. This trend is probably due to the physical nature of most sports in this activity type.

## Water-Based Activities

The water-based activity type includes participation in any of the following activities: visiting a beach or waterside, freshwater fishing (including warmwater, coldwater, catch and release), saltwater fishing, motorboating, sailing, canoeing, kayaking, rowing, floating, water skiing, jet skiing, rafting, windsurfing, surfing, nonpool swimming, and scuba diving.

Participation patterns for water-based activities are very similar to those for the land-based activities. One-fourth of the nation's counties produce fewer than 12.7 participants per square mile in any water-based activity, while 50 percent fall between 12.7 and 77.7 participants per square mile (Figure V.13). Twenty-five percent of the counties produce in excess of 77.7 participants per square mile, extending up to a maximum of over 3000 participants per square mile.

**Figure V.13: Participants per Square Mile for Water-Based Outdoor Recreation Activities by County, 1995**




Income, race, and gender are important factors explaining participation in water-based activity participation. As with other activity types, income had a positive influence on participation, while nonwhites and females were in general less likely to participate. Population density adversely affected participation in the North, but it had no effect in the other regions. In the North, participation diminished with age while in the other regions, age had no significant effect on participation. Finally, the index of relative water availability had no significant effect in any region. This relationship is most likely due to the fact that annual participation, irrespective of the intensity, was assessed.

Overall, for land and water-based recreation activities, it appears that pressure on the resources in the form of the number of annual participants emanates from the nation's population centers. This is not surprising. For winter-based activities, pressure per square mile across the country is notably less with 75 percent of the counties producing fewer than 22.4 participants per square mile annually. As expected, participation is noticeably more sparse in the rural South.

Across all regions and activities, income, race, and gender affected participation. Holding other factors constant, nonwhites were less likely to participate in any of the activity types. The same is true for females. If

this trend continues into the future it will mitigate, to a certain extent, pressure on resources as the proportion of nonwhites in the population increases. However, if nonwhites and females develop a greater affinity for the outdoor recreation activities included in the categories above, then the pressure on resources supporting these activities could be substantially more than that brought on by population growth alone.

## TRENDS IN VISITS TO FEDERAL AREAS

(By Richard Stenger, freelance journalist, Athens, GA)

The former annual Federal Recreation Fee Report (USDI, 1974-1992) tabulated and described public recreation visits to land and recreation sites under the jurisdiction of the seven federal land managing agencies. These agencies include the Tennessee Valley Authority, Fish and Wildlife Service, Bureau of Reclamation, Bureau of Land Management, National Park Service, Corps of Engineers, and Forest Service. Since the Annual Fee Report was discontinued in fiscal year 1993, some of these agencies have continued to compile statistics on visits. Others, for example the Tennessee Valley Authority and the Bureau of Reclamation, have discontinued visit reporting due to budget constraints or shifting priorities. Others, for example the Corps of Engineers and Bureau of Land Management, have revised their methods of collecting and reporting visit statistics, making comparisons with data from previous years difficult. Visitations are typically reported as visitor days and visits. A visitor day is simply an accumulated 12 hours of recreation use by one or more people and may be reported by activity or across all activities. A visit is entrance into and use of an area under agency jurisdiction or into a specifically designated recreation site for any amount of time. For this outdoor recreation assessment, visitor days and visits have been adjusted where possible to account for changes in counting methods among the agencies for the years shown.

For some agencies, like the TVA and Forest Service, trends show significant annual increases in both visitor days and visits (Tables V.30 and V.31). For other agencies, such as the National Park Service and the Bureau of Reclamation, reported visits fluctuated between 1986 and 1996. Overall, visits to federal sites and areas increased by over 40 percent (Figure V.14). The bulk of this increase (some 222 million visitor days) occurred on Forest Service, Corps of Engineers, and Bureau of Land Management land and water areas.

**Table V.30: Thousands of Visitor Days of Recreation Use to Federal Recreation Sites by Year and Agency and Growth Index (in Parentheses) from Base Year 1986**

| | Fiscal Year (October to September) | | | | | |
|---|---|---|---|---|---|---|
| Agency | 1986 | 1988 | 1990 | 1992 | 1994 | 1996 |
| Tennessee Valley Authority | 599.3 | 768.4 | 826.2 | 1,136.8 | 1,161.2 | 1,207.6 |
| | (100) | (128) | (138) | (190) | (194) | (202) |
| Fish and Wildlife Service | 5,558.6 | 6,734.3 | 4,410.3 | N/A | N/A | N/A |
| | (100) | (121) | (79) | | | |
| Bureau of Reclamation | 24,705.8 | 24,470.2 | 23,365.2 | 22,427.2 | 22,298.0[b] | 27,342.9 |
| | (100) | (99) | (95) | (91) | (90) | (111) |
| Bureau of Land Management | 23,678.5 | 38,447.4 | 43,171.8 | 46,939.5 | 40,196.3 | 72,793.7 |
| | (100) | (162) | (182) | (198) | (170) | (307) |
| National Park Service | 111,013.5 | 114,849.7 | 110,203.5 | 115,847.1 | 111,196.9 | 104,286.2 |
| | (100) | (103) | (99) | (104) | (100) | (94) |
| Corps of Engineers | 144,170.2 | 197,795.0 | 189,820.7 | 203,434.0 | 204,905.4 | 212,008.7 |
| | (100) | (137) | (132) | (141) | (142) | (147) |
| Forest Service | 226,532.7 | 242,315.7 | 263,050.6 | 287,690.6 | 330,348.4 | 341,204.0 |
| | (100) | (107) | (116) | (127) | (146) | (151) |
| Totals | 536,258.6 | 625,380.7 | 634,848.3 | 677,475.2 | 710,106.2 | 758,843.1 |
| | (100) | (117) | (118) | (126) | (132) | (142) |

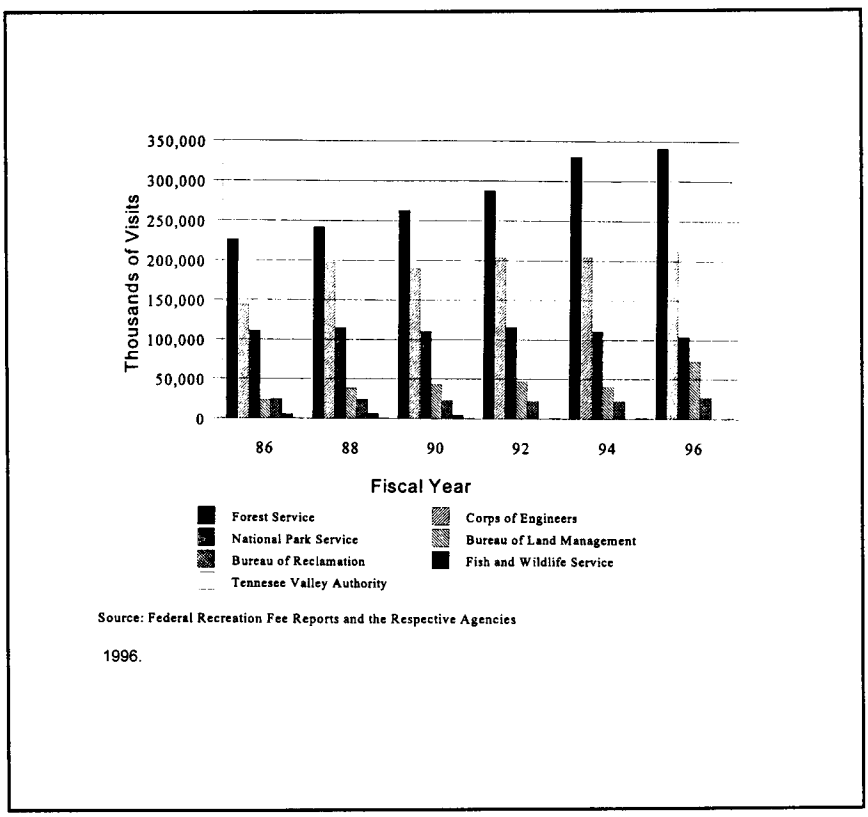
Source: Federal Recreation Fee Reports and the Respective Agencies.
BLM changes from FY94 to 96 may not reflect differences in visitation, but new counting methods.
BOR statistics for FY93 and 96 are unofficial estimates and exclude BOR units managed by other federal agencies.
TVA figures are for fee-charging areas only and are calender years.
[b]FY93 figures.

**Table V.31: Thousands of Visits to Federal Recreation Sites (and Index to 1988) by Agency and Year, 1988-1996**

| Agency | Fiscal Year 1988 | 1990 | 1992 | 1994 | 1996 |
|---|---|---|---|---|---|
| Tennessee Valley Authority | 411.5 | 447.1 | 568.4 | 580.6 | 603.8 |
| | (100) | (116) | (138) | (141) | (147) |
| Fish and Wildlife Service | 25,307.5 | 27,878.9 | 29,964.6 | 27,091.7 | 29,468.1 |
| | (100) | (110) | (118) | (107) | (116) |
| Bureau of Reclamation | 41,833.4 | 40,736.4 | 38,583.7 | 38,242.0[b] | 38,280.0 |
| | (100) | (97) | (92) | (91) | (92) |
| Bureau of Land Management | 57,841.5 | 71,821.0 | 69,418.0 | 50,743.0 | 58,922.9 |
| | (100) | (124) | (120) | (88) | (102) |
| National Park Service | 286,160.7 | 259,767.9 | 273,298.1 | 268,636.2 | 265,796.2 |
| | (100) | (91) | (96) | (94) | (93) |
| Corps of Engineers | N/A | 396,157.9 | 413,456.2 | 380,357.7 | 375,722.3 |
| | | (100)[c] | (104) | (96) | (95) |
| Forest Service | N/A | 597,609.9[a] | 691,180.5 | 829,839.8 | 859,210.0 |
| | | (100)[c] | (116) | (139) | (144) |
| Totals | 411,554.6 | 1,394,419.1 | 1,516,469.5 | 1,595,491.0 | 1,628,003.3 |
| | | (100)[c] | (109) | (114) | (117) |

Source: Federal Recreation Fee Reports and the Respective Agencies.
BLM changes from FY94 to 96 may not reflect differences in visitation, but new counting methods; BOR statistics for FY93 and 96 are unofficial estimates and exclude BOR units managed by other federal agencies; TVA figures are for fee-charging areas only and are calender years.
[a]FY91 figures.
[b]FY93 figures.

**Figure V.14: Visitation Trends at Areas Managed by Federal Agencies by Agency and Year, 1986-1996**



Since the last national assessment in 1987, the status of outdoor recreation on federal land has become uncertain. Reduction of the federal deficit, shifting of priorities for federal funding, and reductions of agency staffing have all contributed to an increase in the difficulty of maintaining federal statistics. While uncertainty still exists about the future role of federal land and of management for outdoor recreation on this land, there has been a recent resurgence of interest in and commitment to improving data and information about federal outdoor recreation. For example, the Forest Service is currently conducting a national pilot of sampling approaches for improving estimates of recreation visits across a variety of recreational settings. The Bureau of Land Management is expected to join in that pilot project in 1998. Reports from local management units upward to national offices have proven very uneven for the agencies, and different approaches are being attempted.

Aside from questions about the quality and completeness of recreation reporting, there are many additional indications that public recreation interest in federal land continues to be strong. Local managers typically report that visitor pressures are continuing to mount. At some popular destinations, visits are rising more rapidly than the services and capacity can be expanded. At some of the more popular national parks, fees have been increased and mass transit and visitor load limits are being instituted.

## TRENDS IN VISITS TO STATE PARKS

(By Daniel McLean, Indiana University, Bloomington, IN)

State Park visits, traditionally termed attendance, are reported separately for day and overnight use and for fee and non-fee areas. These reporting categories are not the same as those for federal areas. The day vs. overnight and fee vs. non-fee distinctions are important. Day use includes outings by individuals arriving and departing from a state park the same day. Overnight use involves a stay of at least one night and may be indoors (lodges, cabins, etc.) or outdoors (camping).

Overnight visitation is reported by the type of overnight accommodations used: campsites, cabins and cottages, lodges, group facilities, and other. The extent to which overnight accommodations are used is measured by "rental nights" and reported separately for campsites, cabins and cottages and lodge rooms. A rental night is a single night's use of a single rental unit of a given overnight facility, regardless of the size of the party occupying that rental unit. Thus, a party occupying a campsite for a full week would represent seven "rental nights."

Fee areas refer to parks where entrance fees are charged. Estimates of visits to fee areas are usually quite reliable because entrance to the park is tied to fee collection. Not included in these estimates of visits are persons paying fees for services or special sites within state parks, e.g., restaurant or campsite use. Non-fee areas are parks or other managed areas where no general entrance fee is charged. At these parks, attendance must be estimated through sampling or other means—even though such parks and other similar areas may contain facilities (such as golf courses or riding trails) that do require specific use charges.

### Visits to State Parks

Tables V.32 through V.35 report total visits to state park-administered areas by assessment region. One of the most difficult issues to deal with in summarizing visits to state parks is compiling attendance data collected using different methods and assumptions. Some states provide data that are consistent from year to year. Others may have measured use by a variety of methods over time for estimating visits.

Indications are that visits to state parks are increasing. Between 1992 and 1996 there was a modest increase nationally in the number of visits, averaging 1.4 percent, or 10 million new visits annually. Only the Pacific region showed a decline in attendance between 1992 and 1996. The variability of the reporting and attendance estimates across state parks is high. While the five-year report shows an increase, the year with the most visits was in 1995 (see Table V.32). The five-year mean for attendance was 730 million visits annually, with the high occurring in 1995. There was less than a one percent drop between 1995 and 1996, and that drop was the first one in the five-year reporting cycle. The overall reported trend, however, has been steady growth in visits to state parks. Unusually hot or wet summers can account for small changes. It appears that 1996 may have been an anomaly, or it may be a result of adjustments in counting systems in individual states.

Day use is much greater than overnight use in state parks (Table V.33). Of all visits in 1996, only 7.9 percent were overnight. In 1992, the percent of visits that were overnight was 8.0 percent, suggesting a

*Golfing and sightseeing are two of the many outdoor activities available in the Georgia State Park system. Photos courtesy of Georgia State Parks and Historic Sites.*

consistency over time in the share of overnight visits who spent the night. The actual number of visits overnight, however, has increased over the five-year period as overall visits have increased. Data are not available on occupancy rates of state park campgrounds, cabins, or group sites, nor are data available to indicate whether the level of use of lodges is exceeding the capacity of those lodges.

Fee area visits accounted for 40 percent of the use of state parks in 1996 (Table V.34). At fee areas, 15.2 percent of the visitors stayed overnight, as opposed to only three percent in non-fee areas. The proportions of all areas that do and do not charge fees are not known at the national level. Only seven states report not having any type of entrance fee. It appears, however, that there are a number of additional areas not accounted for in reporting of visits because they do not have entrance fees. Twelve states reported not having any non-fee area visitors, implying that 38 states have some non-fee areas.

Growth in visits to state park fee areas grew 8.2 percent between 1992 and 1996, while visits to non-fee areas grew 6.1 percent. It appears that fee areas are becoming somewhat more heavily used, but reasons for these increases are difficult to ascertain without better information. One statistic that is somewhat revealing is that in 1996 there were a reported 1,998 areas with some type of entrance fee among an overall total of 5,091 operated areas. If accurate, these totals indicate that about 39 percent of state parks charge some type of fee. It should be noted that the estimate of 1,998 areas charging fees is a composite of data reported for individual and vehicle entrance fees. In instances where both fees exist, there may be some double counting. Table V.35 shows the regional distribution of day and overnight visits by assessment region. Day use of non-fee areas is approximately 32 times greater than overnight use in such areas.

Table V.36 presents the number of overnight visits to state parks by type of facilities used. Campers, as previously reported, make up 85.5 percent of overnight visitors. Actual reported camping visits decreased by 1.4 percent between 1992 and 1996, and visits to lodges decreased 11.6 percent. A number of factors can mitigate these findings, including weather, cost, andquality of the experience. Overall there was less than one percent growth in use of overnight facilities between 1992 and 1996.

**Table V.32: Number of Visits to State Park Systems by Year and by Region 1992-1996**

| Region | Year | | | | | |
|---|---|---|---|---|---|---|
| | 1992 | 1993 | 1994 | 1995 | 1996 | 5-Yr. Avg. |
| Western | 48,993,133 | 52,563,543 | 54,270,796 | 58,920,897 | 58,817,036 | 54,713,081 |
| Pacific | 179,632,907 | 182,500,018 | 174,251,064 | 173,109,546 | 176,034,153 | 177,105,538 |
| Southern | 162,928,762 | 164,129,174 | 167,731,504 | 168,974,442 | 152,267,607 | 163,206,298 |
| Northern | 312,219,684 | 325,606,818 | 329,270,357 | 351,261,412 | 358,482,921 | 335,368,238 |
| Total | 703,774,486 | 724,799,553 | 725,523,721 | 752,266,297 | 745,601,717 | 730,393,155 |
| Percent Change from Previous Year | | 2.99% | 0.10% | 3.69% | -0.89% | 1.47% |

**Table V.33: Day, Overnight, and Total Number of Visits to State Park Systems by Region, 1996**

| Region | Visits | | |
|---|---|---|---|
| | Day | Overnight | Total |
| Western | 47,163,798 | 11,653,238 | 58,817,036 |
| Pacific | 164,906,658 | 11,157,003 | 176,034,153 |
| Southern | 139,505,878 | 12,734,445 | 152,267,607 |
| Northern | 334,906,223 | 23,576,653 | 358,482,921 |
| Total | 686,482,557 | 59,121,339 | 745,601,717 |

**Table V.34: Number of Visits to Areas Charging Fees for Use by Region. 1996**

| Region | Visits | | |
|---|---|---|---|
| | Day | Overnight | Total |
| Western | 42,136,123 | 10,597,620 | 52,733,743 |
| Pacific | 22,931,911 | 8,562,111 | 31,494,022 |
| Southern | 63,216,832 | 8,450,833 | 71,667,665 |
| Northern | 124,853,618 | 17,863,676 | 143,317,294 |
| Total | 253,138,484 | 45,474,240 | 299,212,724 |

**Table V.35: Day, Overnight, and Total Number of Visits to State Park Systems by Region, 1996**

| Region | Visits | | |
|---|---|---|---|
| | Day | Overnight | Total |
| Western | 5,027,675 | 1,055,618 | 11,593,948 |
| Pacific | 141,974,747 | 2,594,892 | 144,569,639 |
| Southern | 76,289,046 | 4,283,612 | 80,572,658 |
| Northern | 210,052,605 | 5,712,977 | 215,765,582 |
| Total | 433,344,073 | 13,647,099 | 452,501,827 |

**Table V.36: Number of Visits by Type of Accommodation Used at State Parks by Region, 1996**

| Region | Type of accommodation | | | | | |
|---|---|---|---|---|---|---|
| | Campers | Cabins | Lodges | Group Facilities | Other | Total |
| Western | 10,571,514 | 265,259 | 110,042 | 50,224 | 649,037 | 11,916,076 |
| Pacific | 10,480,919 | 20,770 | 109,802 | 507,676 | 37,836 | 11,157,003 |
| Southern | 7,237,853 | 1,399,408 | 1,114,118 | 491,725 | 0 | 10,243,101 |
| Northern | 20,391,952 | 1,594,524 | 896,896 | 664,084 | 100,439 | 23,647,635 |
| Total | 48,682,238 | 3,279,961 | 2,230,858 | 1,713,709 | 787,312 | 56,963,815 |

The available data indicate steady but modest growth in visits to state parks. Too little data are present to determine if 1996 attendance is an aberration or if it signals a downward trend. Some adjustments can always be anticipated in the data. However, whether the trend is up modestly or more, it remains apparent that recreational use of state parks is extremely important to many Americans. Total number of visits to state parks is three times that to the National Park System, even though the overall area in state parks is substantially less. The availability of natural resources with a variety of activities close to people's homes is obviously important and attractive to many.

## RECENT TRENDS IN CONSUMER SPENDING AND INDUSTRY SALES

(By Richard Stenger, Freelance Journalist, Athens, GA)

Estimating spending by Americans on outdoor recreation is difficult for several reasons. First, isolating spending that is specifically for outdoor recreation is subjective. For example, how does one count a trip to the local supermarket before a summer vacation? Second, there are few sources of adequate consumer spending data, especially sources that are specific to outdoor recreation and that are not proprietary information held by industry. Some recent industry statistics are on target, but they are far from complete and generally do not go back many years. A third difficulty is that different economic studies use different computational methods and accounting stances, even though they investigate nearly identical consumer markets. Interest in better data on consumer spending on outdoor recreation is rising, however, and this interest seems to be leading to development of better data sources.

Some of the key estimates of expenditures in specific segments of the outdoor recreation market are summarized below:

- $67.9 billion spent by hunters and anglers in 1996 (U.S. Fish and Wildlife Service, National Survey on Fishing, Hunting, and Wildlife-Related Expenditures)
- $29 billion spent by bird watchers in 1996 (U.S. Fish and Wildlife Service, National Survey on Fishing, Hunting and Wildlife-Related Expenditures)
- $25.3 billion spent by the horse industry primarily for recreation and showing annually (American Horse Council)
- $24 billion spent on fishing annually (Bassmaster Magazine, 1997)
- $17.8 billion retail spending on new and used boats and related goods and services in 1996 (National Marine Manufacturers Association)
- $15.8 billion spent for shipments of recreational vehicles (new, used, rental) to retailers in 1995 (Recreational Vehicle Association)
- $12 billion spent by recreationists at U.S. Corps of Engineers projects for trip-related items in 1995 (Tourism Works for America, 1997)
- $9.4 billion spent on snow sport-related expenditures, such as skiing, snowboarding, travel, entertainment, equipment, accessories, and real estate during the 1994-1995 season (National Ski Areas Association)
- $6.5 billion spent on food and lodging while visiting national wildlife refuges yearly (Tourism Works for America, 1997)
- $6.4 billion spent while on visits to national parks in 1995 (National Park Service, Tourism Works for America, 1997)
- $3.25 billion total expenditures (equipment, clothing, accessories, lodging, food, and fuel) for snowmobiling in 1996 (International Manufacturers Association)
- $2.0 billion spent for rentals at commercial campgrounds in 1995 (National Association of RV Parks and Campgrounds)
- $1.8 billion retail spending for sailboats and related equipment and services in 1996 (Inter/port, 1997)
- $532 million in revenues by state parks in 1994 (National Association of State Park Directors)

The above are taken from a number of different sources and cover different activities. Thus, they cannot be summed to look at the overall magnitude of consumer spending on outdoor recreation in this country. There are several recent industry studies, however, that have provided estimates of total annual expenditures on at least some segments of outdoor recreation-related goods retailing.

First, the Outdoor Recreation Coalition of America estimated that, in 1996, a total of $4.3 billion was spent on retail sales for human-powered outdoor recreation equipment, apparel, and accessories (Table V.37).

The survey involved interviews of 634 randomly selected retailers across all 50 states. Recreation was narrowly defined to include only hiking, camping, backpacking, mountain biking, and in-line skating. Snowboarding and skiing, which in a strict sense do not rely on human power, were not included in the study.

Other findings from this study indicated that sales were growing vigorously. Sales for 1996 were $400 million higher than in 1995. Fifty-seven percent of responding retailers indicated sales were up an average of 16.9 percent. Overall sales were up in each region of the country, including associated consumer spending for items such as travel, permits, fees, outfitters, and guides that reached $35 billion.

**Table V.37: Annual Total Spending for Human Powered Recreational Equipment by Type of Equipment, 1997**

| Type of Equipment | $ Millions | Type of Equipment | $ Millions |
|---|---|---|---|
| **Land-based activities** | | **Rock/Ice/Snow-based activities** | |
| Apparel | 1600.0 | Rock/Ice Climbing Equipment | 108.2 |
| Footwear | 1200.0 | Skiing/Snowboard Equipment | 2100.0 |
| Backpacks | 222.5 | Total | 2208.2 |
| Camping | 299.6 | **Geographic Region** | |
| Tents | 180.5 | Northeast | 971.8 |
| Sleeping Bags | 183.3 | South | 1000.0 |
| Total | 3685.9 | North Central | 954.6 |
| **Water-based activities** | | Rockies | 602.0 |
| Paddle Sports | 200.1 | Far West | 752.5 |
| | | Total | 4280.9 |

Source: Leisure Trends Group, Boulder, CO, and ORCA, 1997.Table V.38–Wholesale value of annual manufacturers' shipments in the United States by type of equipment and year (in millions of dollars).

The Sporting Goods Manufacturing Association (SGMA) produced a Recreation Market Report for 1994/95 in which it estimated industry-wide sales for outdoor leisure products at the wholesale level. In addition to covering human-powered products, SGMA also covered motorized recreation vehicles like motorcycles, boats, snowmobiles, and goods and equipment used for organized amateur sports. Based on information from sporting goods companies, trade associations, and market research, SGMA concluded that the wholesale value of manufacturer's shipments for all sporting goods and equipment in the United States totaled $57 billion in 1995, a $2.9 billion increase over 1994.

By removing indoor recreation categories such as aerobics, bowling, and ice hockey equipment, the total was $51.0 billion, a $3.3 billion rise over the wholesale total for the same goods and equipment in the previous year (Table V.38). During 1995 and 1994, respectively, wholesale values for outdoor-recreation-related sports equipment were $9.2 and $8.8 billion, for sports apparel $16.2 and $15.4 billion, for athletic footwear $7.9 and $7.1 billion, and recreational transport $17.8 and $16.5 billion.

**Table V.38: Wholesale Value of Annual Manufacturers' Shipments in the United States by Type of Equipment and Year (in Millions of Dollars)**

| Type Sports Equipment | 1995 | 1994 | Type Sports Apparel | 1995 | 1994 |
|---|---|---|---|---|---|
| Baseball/Softball | 348 | 348 | Socks | 933 | 875 |
| Camping | 1508 | 1375 | Swimwear | 1235 | 1118 |
| Footballs & Sets | 125 | 125 | Sports Shirts | 4790 | 4280 |
| Firearms & Hunting | 1675 | 1781 | Shorts | 1632 | 1569 |
| Total Golf | 2130 | 1993 | Ski | 358 | 327 |
| In-line skates & accessories | 725 | 605 | Sweat Pants | 970 | 962 |
| Skateboards | 63 | 60 | Sweat Shirts | 1905 | 1845 |
| Scuba & Skin Diving | 298 | 274 | Sweat Suits | 800 | 931 |
| Snow Skiing, Alpine | 347 | 359 | Parkas/Jackets, Non-Ski | 680 | 627 |
| Snow Skiing, X-Country | 37 | 36 | Team | 475 | 475 |

Table V.38 Cont.

| Type | 1995 | 1994 | Type | 1995 | 1994 |
|---|---|---|---|---|---|
| **Sports Equipment** | | | **Sports Apparrel** | | |
| Soccer, Balls/Accessories | 40 | 45 | Miscellaneous | 2375 | 2375 |
| Fishing | 1500 | 1400 | Total Sports Apparel | 16153 | 15384 |
| Tennis | 235 | 259 | | | |
| Water Sports | 140 | 127 | | | |
| Total Sports Equipment | 9171 | 8787 | | | |
| **Athletic Footwear** | | | **Recreational Transport** | | |
| Basketball | 1825 | 1725 | Bicycle & Accessories | 1813 | 1800 |
| Cross-Training/Fitness | 1450 | 1325 | Motorcycles & ATVs | 1300 | 1320 |
| Golf | 230 | 230 | Pleasure Boats and Motors | 6292 | 5125 |
| Cleated | 300 | 285 | Recreational Vehicles | 7032 | 7249 |
| Running/Jogging | 615 | 685 | Snowmobiles | 290 | 300 |
| Tennis | 470 | 52 | Water Scooters | 1068 | 675 |
| Other Court | 35 | 40 | Total | 17795 | 16469 |
| Walking | 1075 | 900 | **All Categories** | | |
| Other | 240 | 300 | Sports Equipment | 9171 | 8787 |
| Hiking/Outdoor | 625 | 485 | Sports Apparel | 16153 | 15384 |
| Children | 1020 | 1120 | Athletic Footwear | 7885 | 7147 |
| Total Athletic Footwear | 7885 | 7147 | Recreational Transport | 17795 | 16469 |
| | | | Total | 51004 | 47787 |

Source: Sporting Goods Manufacturing Association, 1996.

Besides goods and equipment, travel expenses make up a major part of outdoor recreation-related expenditures. However, this category of spending is the most elusive to quantify because of a lack of explicit accounting for recreation-related travel. For example, what portion of expenses associated with a business trip should be counted as outdoor recreation expenses if the business traveler rents a car to visit a national park?

Based on findings from travel researchers, a rough estimate is provided for travel expenses related to outdoor recreation. Overall, during 1995 domestic and foreign travelers spent $421.5 billion for travel in the United States, a 5.8 percent increase over the 1994 total of $398 billion. Using the estimate that 11.04 percent of all travel in the U.S. in 1995 was for outdoor recreation (Travel Industries Association, Research Department, International Trade Administration and Tourism Industries, 1996), and assuming that total spending per recreation traveler is the same as for all other travelers, a total of $46.53 billion for recreation travel was estimated for 1995.

Determining long-term trends in outdoor recreation spending also is constrained by the small number of studies that have been done in the recent past. Propst, Gavrilis, Dimitris, Cordell, and Hansen (1985) examined outdoor recreation-related expenditures for much of the 1970s and early 1980s, in part relying on the landmark work Outdoor Recreation Statistics (Clawson & Van Doren, 1984). Other more recent studies comparable to this one are not available.

The U.S. Bureau of Economic Analysis (BEA) compiles data summarizing recreation and other spending in its Personal Consumer Expenditures survey. The report, however, relies in large part on estimates provided by the industries themselves. The Consumer Expenditures Survey from the U.S. Bureau of Labor Statistics, which compiles similar statistics on spending patterns in America, uses information directly from consumers. Its total spending estimates tend to be about one third less than those from the BEA's Personal Consumer Expenditures report.

With some exceptions, total consumer spending on goods and services related to outdoor recreation increased steadily in the 10-year period beginning in 1985 (Table V.39). In 1995, the figure stood at $35.6 billion dollars, an $8.1 billion increase over the $27.4 billion in 1985. After 1985, every year selected for this review experienced a spending increase until 1995, in which spending fell slightly from $36.3 billion in 1993.

From $455 million in 1985, the annual amount spent on winter sports equipment rose to as high as $529 million in 1987 before falling to $389.4 million in 1995. The total for water-related expenditures also dropped over the same decade, from $8.4 billion to $7.5 billion. Such variations may not accurately reflect

changes in spending because of the risk of sampling errors—the total figures are official projections based on interviews with a limited number of consumers—and because the Bureau of Labor Statistics periodically revises how it classifies expenditures.

Adjusted for inflation using the Consumer's Price Index for sporting goods and equipment, outdoor recreation expenditures still demonstrated a general rise between 1985 and 1995. Based on the Consumer Price Index section dealing with recreation, and inflating all figures to 1995 dollars, $32.4 billion were spent on outdoor recreation related items in 1985, $33.4 billion in 1987, $36.7 billion in 1990, $37.3 billion in 1993, and $35.6 billion in 1995.

**Table V.39: Consumer Spending on Outdoor Recreation in Millions of Dollars from 1985 to 1995**

| Type of Spending | 1995 | 1993 | 1990 | 1987 | 1985 |
|---|---|---|---|---|---|
| Men's active sportswear | 1,044.7 | 1,159.6 | 1,080.2 | 966.9 | 846.9 |
| Boy's active sportswear | 231.8 | 659.3 | 572.1 | 413.3 | 409.3 |
| Women's active sportswear | 2,801.2 | 2,299.1 | 2,108.1 | 2,307.6 | 1,391.7 |
| Girl's active sportswear | 1,173.4 | 824.4 | 723.4 | 510.3 | 549.4 |
| Recreation expenses, out of town trips | 2,185.1 | 2,052.0 | 1,708.6 | 1,505.5 | 1,328.5 |
| Fees for recreational lessons | 5,966.1 | 5,466.7 | 4,744.6 | 3,992.9 | 3,815.3 |
| Trailer and other attachable campers | 2,514.8 | 2,579.3 | 2,777.2 | 1,680.6 | 2,503.3 |
| Purchase of recreation vehicles | 3,407.0 | 4,882.4 | 6,110.0 | 1,795.4 | 2,012.5 |
| Rental of recreational vehicles | 149.4 | 122.1 | 225.9 | 81.9 | 54.9 |
| Athletic gear | 5,185.2 | 4,729.3 | 3,521.9 | 2,988.3 | 2,820.0 |
| Bicycles | 1,297.1 | 1,491.7 | 1,199.5 | 1,287.0 | 935.7 |
| Camping equipment | 670.7 | 458.2 | 392.7 | 349.3 | 332.4 |
| Hunting equipment | 875.7 | 699.3 | 846.0 | 772.0 | 1,378.0 |
| Rental, repair of misc. sports equipment | 169.0 | 156.1 | 175.5 | 220.3 | 203.3 |
| Land subtotal | 27,671.2 | 27,579.5 | 26,185.7 | 18,871.4 | 18,581.2 |
| Outboard motors | 37.1 | 121.1 | 290.9 | 316.3 | 311.3 |
| Boat without motor and boat trailers | 380.2 | 1,762.9 | 1,207.3 | 515.9 | 321.4 |
| Purchase of boat with motor | 4,568.1 | 3,654.8 | 3,508.3 | 5,615.1 | 4,907.6 |
| Boat and trailer rental, out of town trips | 203.0 | 151.1 | 109.6 | 107.3 | 162.1 |
| Docking and landing fees | 462.6 | 802.4 | 387.9 | 505.6 | 417.5 |
| Fishing equipment | 875.7 | 699.3 | 846.0 | 772.0 | 1,378.0 |
| Water sports equipment | 975.6 | 1,059.5 | 1,110.3 | 953.7 | 913.8 |
| Water subtotal | 7,502.2 | 8,251.0 | 7,460.2 | 8,786.1 | 8,411.6 |
| Winter sports equipment | 389.4 | 475.2 | 500.4 | 529.1 | 455.1 |
| Totals | 35,562.9 | 36,305.8 | 34,146.3 | 28,186.6 | 27,447.9 |
| Totals adjusted to 1995 dollars* | 35,562.9 | 37,322.4 | 36,707.3 | 33,372.9 | 32,416.0 |

Fishing and Hunting figures are unofficial estimates. The land subtotal, in categories like active sportswear, most likely includes some spending in other subtotals, but could not be broken out from that classification.
Source: U.S. Bureau of Labor Statisics, Consumer Expenditure Surveys
*based on relevent subsets of the BLS's annual Consumer Price Index.

# LOCAL JOBS AND INCOME FROM OUTDOOR RECREATION

(By D. B. K. English and D. Marcoullier, USDA Forest Service and University of Wisconsin, respectively, Athens, GA, and Madison, WI)

## Introduction

A key issue in natural resource management concerns the number and types of jobs that are associated with various uses of the resources being managed. This issue is especially important for publicly owned re-

sources. Many public agencies, such as the Forest Service, now include the effects of management decisions on resource-dependent rural communities as an explicit consideration in their planning processes (USDA Forest Service, 1995).

With regard to recreational use of these natural resources, jobs and income accrue primarily from the expenditures made by nonresident visitors who come to use the resources as a place to engage in recreation activities (English & Bergstrom, 1994). The majority of the expenditures made by recreation visitors falls into one of four economic sectors: lodging (including hotels, motels, campgrounds, and inns), food (mostly restaurants, rather than grocery stores), retail stores, and recreation/amusement services. In rural areas near large public land holdings, it is not uncommon for a large portion of the economic activity in these sectors to be caused by tourists and other visitors to the area. However, some of the jobs and income in these sectors is caused by local residents' spending. Some is also caused by visitors on trips for purposes other than outdoor recreation, such as for business, or for family matters. It is not always easy to determine what portion is due to recreation visitation, especially since visitation figures are often unavailable.

Our task was to develop an estimate of the amount of recreation-related jobs (both full-time and part-time) and income for the four economic sectors listed above for each of the 2260 nonmetropolitan counties in the continental United States. In doing so, we follow the procedures of published research in the fields of regional science and rural development. Nonmetropolitan counties were excluded to simplify the analysis and to be able to focus more closely on the types of areas where recreation-related tourism is likely to be tied most directly to natural resources.

We performed the analysis separately for each region. The idea behind this method was to allow the greatest flexibility in accounting for differences in visitation and economic structure patterns across the country. However, there were only 78 nonmetropolitan counties in the Pacific Coast region, too few for a separate analysis. We combined these with the Rocky Mountain region and analyzed the Western region.

## Methods

Our analysis consisted of four steps, each described briefly. Greater detail can be found in the technical appendix available from the author.[6] Our first step was to summarize a large number of variables that describe the natural resource base or recreation facilities in a county into a smaller set of comprehensive yet distinct variables using a technique called *principal components analysis*. A *principal component* is a summary measure that is a linear combination of resource measures that are correlated across counties. The components are statistically independent of each other and are interpreted as representing distinct types of rural resource-dependent tourism. These components were needed in a later portion of the analysis. The interested reader can find more information on the types of components that were defined for each region in the technical appendix.

The second step was to group counties in each region that were similar in their population density, distance from metropolitan areas, and percentage of land area in forests, cropland, mountains, and pasture/rangeland. This process was done through a technique called cluster analysis. Counties are assigned to a group, or cluster, according to their values on the set of important measures. Clusters are defined in such a way as to minimize the differences among members of a single group, while maximizing differences between groups. Eight clusters resulted for each region (see maps in the technical appendix), which included between 12 and 374 counties.

The next step in moving toward an estimate of recreation-related economic activity was to account for the proportion of activity that was due to local residents' spending. Economic theory indicates that spending by local residents in tourism sectors is not usually considered when defining the amount of activity that is associated with recreation visitation. We chose to do this following the minimum requirements technique (Leatherman & Marcouiller, 1996). In essence, this method determines the minimum amount of activity needed to support the county's population and subtracts that from the total activity in each sector. The remainder is assumed to be attributable to nonresidents.

Some of the nonresident-caused economic activity in tourism sectors is due to nonrecreation travelers. Business and family visits are presumed to be the primary reasons underlying this nonrecreation travel. We assume that the amount of these types of travel in a county is directly proportional to the county's population. We developed an estimate of the recreation-related portion through a regression analysis, where population is

[6]This technical appendix is available in table form from the USDA Forest Service, Outdoor Recreation and Wilderness Assessment Group, 320 Green Street, Athens, GA 30602-2044. Herein all references to Technical Appendices shall be abbreviated as TAs.

used to represent the nonrecreation portion of export activity, and recreation components developed in the first step represent the recreation-related portion.

## Results

According to our estimates, there are approximately 300,000 jobs in eating and drinking establishments in nonmetropolitan counties across the country that result from outdoor recreation trips (Table V.40). Somewhat more than 40 percent of these are in rural counties in the North, and about 27 percent in the South and Rocky Mountains region. About five percent of the jobs are in the 78 rural counties in the Pacific Coast. Overall, these jobs generate almost $3.5 billion in employee and proprietor earnings. This income is distributed across the regions roughly equal to the number of jobs, with somewhat less than 40 percent in the North, and about 27 percent each in the South and Rocky Mountains regions. Our estimates indicate that about 23 percent of all jobs in eating and drinking establishments in rural counties are due to nonlocal recreation visits.

**Table V.40: Jobs (1000's) and Income ($ Millions) Generated by Non-Local Recreation Visitation, by Region and Sector**

| Sector | Region | | | | |
|---|---|---|---|---|---|
| | North | South | Rocky Mountain | Pacific Coast | U.S. Total |
| **Eating/Drinking** | | | | | |
| Jobs | 126 | 78 | 82 | 14 | 300 |
| Income | 1333 | 981 | 944 | 197 | 3455 |
| **Accommodations** | | | | | |
| Jobs | 61 | 24 | 67 | 19 | 171 |
| Income | 1098 | 484 | 1474 | 422 | 3478 |
| **Retail Trade** | | | | | |
| Jobs | 65 | 53 | 47 | 6 | 171 |
| Income | 944 | 781 | 552 | 89 | 2366 |
| **Recreation Services** | | | | | |
| Jobs | 51 | 23 | 44 | 7 | 125 |
| Income | 833 | 404 | 1099 | 175 | 2511 |
| **Total, Recreation Sectors** | | | | | |
| Jobs | 303 | 178 | 240 | 46 | 767 |
| Income | 4208 | 2650 | 4069 | 883 | 11810 |
| **Recreation Total as % of region total for all economic sectors** | | | | | |
| Jobs | 3 | 1.8 | 6.2 | 3.4 | 3.1 |
| Income | 1.3 | 0.8 | 3.3 | 1.9 | 1.5 |

About 171,000 jobs in lodging businesses can be attributed to outdoor recreation by nonlocal visitors. This number represents just over 46 percent of all jobs in lodging businesses. Nearly forty percent (about 67,000) of the recreation-related jobs are in rural counties in the Rocky Mountain region. Undoubtedly, the concentration of recreation resources, especially those owned by federal agencies, accounts for that high proportion. Another 35 percent are in rural counties in the North. About 14 percent (24,000) are in the South and the remaining 11 percent (19,000 jobs) are in the Pacific Coast region. Recreation-related jobs in this sector account for almost $3.5 billion in income to employees and business owners, or about 46 percent of all income generated in this sector in rural counties across the country. Income is distributed across the regions in much the same proportions as are the jobs.

In the retail trade sector, about 171,000 jobs and $2.3 billion in income are attributable to recreation-related visitation. These estimates represent roughly 23 percent of all jobs and income in retail trade in rural counties across the United States. Of the recreation-related jobs, about 39 percent of both are in the North and about 31 percent of both are in the South. The Rocky Mountain region accounts for slightly more than 27 percent of the jobs, but only about 23 percent of the income. The Pacific Coast contains just under four percent of both jobs and income.

Nationally, about 39 percent of all jobs and about 41 percent of income in rural counties in the recreation services sector are attributable to nonresident recreation visitation. The South accounts for about 17 percent of both the rural recreation-related jobs and income in this sector. Although over 41 percent (51,000) of the recreation-related jobs in rural counties are located in the North, these jobs account for only one-third of the income. Relatively higher paying jobs are found in the Rocky Mountain region, where 44,000 jobs (about 35 percent of the recreation related total) account for over 44 percent of the income.

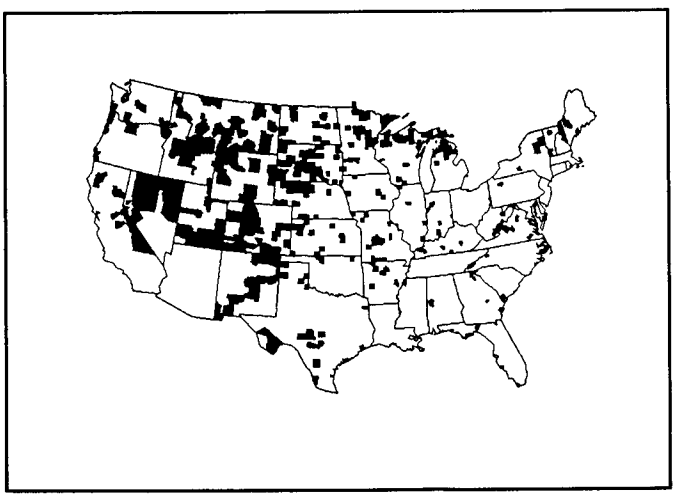
Across all four sectors, we estimate that there are 767,000 jobs that result from recreation trips made by nonresident visitors to the rural counties. These jobs add some $11.8 billion in income to employees and business owners in these counties. Over $4 billion in income accrues to people in rural counties in both the North and Rocky Mountain region, about $2.6 billion in the South, and only $0.9 billion for people in the Pacific Coast.

For two of the sectors, Eating/Drinking and Retail Trade, recreation "exports" (the purchase of recreation-related services by nonresidents) account for approximately one-quarter of the economic activity in each sector. Although recreation can be an important force in generating jobs and income in these sectors, it appears that other factors, including demand by residents, are more important determinants. For these two sectors, each job generates about $12,000 in income. The level of income per job is low most likely because a significant proportion of these types of jobs are part-time and/or seasonal. In the Accommodation and Recreation Services sectors, recreation 'exports' account for almost twice as high a proportion of the total activity, over 40 percent. In addition, income per job is over $20,000 in these sectors.

In some rural counties, there is not enough nonresident recreation visitation to have any economic effect. In others, more than half of all jobs and income are tied to the recreation industry. Across the country, jobs and income generated by recreation 'exports' make up about 3.1 percent and 1.5 percent, respectively, of all jobs and income in nonmetropolitan counties. However, these percentages are not the same for all four regions. In the South, fewer than two percent of all jobs in nonmetropolitan counties serve nonresident recreation visitors. In addition, fewer than one percent of all employee and proprietor income in the rural South is due to nonresident recreation visitation. Rural counties in the Rocky Mountain region are far more dependent on recreation visitation. The jobs that serve the needs of nonresident recreation visitors make up over six percent of all jobs in rural counties in this region. That number is over twice the national percentage, and over three times the proportion for the South. Over three percent of income comes from serving these visitors, also more than twice the national average and over four times the proportion found in the South.

There were 472 rural counties (about 21 percent of the total) wherein over six percent (double the national average) of the total number of jobs were due to nonresident recreation visitation. In 372 counties (about 16 percent of the total) the percentage of income due to nonresident recreation visitation was at least three percent of the total income, or at least double the national average. As one could expect, many of these counties (338) were more than double the national percentage for both jobs and income. These are the counties that are most dependent on recreation. The majority of these recreation-dependent counties are located in mountainous portions of the West (Figure V.15). Other concentrations occur in coastal areas, and near Forest Service, National Park Service, or other large public landholdings in the eastern half of the country.

**Figure V.15: Rural Counties Where the Percentage of Both Income and Jobs from Recreation Visitation Are at Least Twice the National Average**



The figures presented here only reflect our estimates of the jobs and income *directly related* to nonresident visitation in the sectors most closely tied to that activity. Visitors also affect other types of businesses, such as gas stations, travel agents, real estate services, and grocery stores, although to a lesser extent than for the sectors examined here. In addition, there can be other types of businesses that support those that are directly tied to recreation. Examples could include laundry or cleaning services for hotels or restaurants, insurance services, or wholesale suppliers. Jobs and income in these types of businesses can also be wholly or partly due to nonresident recreation visitors. As a result, the figures presented here are likely a conservative baseline estimate of the economic effects of recreation in rural counties in the United States.

## INTERNATIONAL TOURISM IN THE UNITED STATES

(By Joseph O'Leary, Purdue University, W. Lafayette, IN)

Tourism is a major economic activity throughout the United States and the world. There are literally millions throughout the world who choose to take a pleasure trip or to visit friends and family and pursue resource-based recreation activities. Their travel creates significant economic activity to the point that many international tourism experts suggest that tourism is the largest industry in the world. The U.S. Department of Commerce currently identifies tourism as the third largest industry in the United States.

Many of the resource-based recreation areas that are managed by resource agencies at every level represent the important "pull factors" that influence traveler choices of destinations. Thus, resource agencies that provide resource-based recreation opportunities are in the tourism business and will increasingly be concerned about current and changing travel patterns of tourists.

### Recent Trends

In the last ten years international tourism to the United States has grown about 66 percent, going from 27.8 million visitors in 1987 to an estimated 46.2 million in 1997 (Table V.41). Receipts from travel to the United States also grew significantly during this period, expanding from $30.5 billion in 1987 to a projected $88.9 billion in 1997 (Table V.42) (International Trade Administration, 1996). In the United States these numbers have created quite a stir since they represent a positive balance of trade.

Canada leads the 1996 international arrivals to the United States with 15.3 million. Following are Mexico (8.5 million), Japan (5.0 million), the United Kingdom (3.1 million), and Germany (1.9 million), which complete the "top five" countries of origin for international travel to the U.S. This visitation is distributed at varying levels across states (Table V.43). Coastal and border states rank highest in the number of arriving international visitors.

### Current Situation and New Developments

Travel is changing. In the U.S., international travel slowed in the mid-1990s, but now appears to be increasing again primarily driven by overseas visitors. U.S. visits from Canada appeared to have reached a peak in 1991 and then declined. At the same time this trend was occurring, Mexican travel to the U.S. also grew sharply and then declined. For Canadians, many trips were to border states with some shift away from travel to states farther away.

In the 1990s, travel to the U.S. from overseas countries has generally grown with only one year of decline, 1994. This growth seems to be related to the economy of these various countries and exchange rates. Economic changes throughout the world have caused a slowdown in travel from major international markets like Germany and Japan.

The leading edge of growth in travel in the world appears to be in Asia, certainly in terms of interregional activity. However, new destination areas have also emerged in the region that are providing competition for North American destinations. The U.S. also appears to be the first choice of Asian travelers when they look outside their own region for a place to visit. Between 1995-96, international travel from Asia increased by 12.2 percent to 7.4 million arrivals.

The International Pleasure Travel Market Studies, jointly sponsored by the Canadian Tourism Commission and the U.S. International Trade Administration, has conducted interviews in 24 countries throughout the world since 1986. This research is designed to gather information on actual and planned long-distance travel in terms of demographics, trip characteristics, psychographic profiles, comparative advantages, activi-

ties, and expenditures. We have done analysis on all surveys that have been completed to determine how travelers view forests, parks, and recreation-related activities in the U.S. Part of the interest is exploring the role parks and forests play as an attribute people think about when contemplating travel to the United States. Almost without regard to where travelers come from, outdoor-related activities, and particularly visiting parks and forests, are important for participation and in terms of why visitors want to come to the U.S. (O'Leary & Lang, 1994; Lang & O'Leary, 1990; Lang, 1996; Hsieh, O'Leary, & Morrison, 1994). When travelers are asked about important items they thought about when planning their trips, parks, forest, and historic places emerged as being very important. The importance of forests and parks in the decision process ranged from 91 percent for travelers from Venezuela to 70 percent for Japan. This intense interest in natural environments and outdoor recreation activities has persisted in the 10 years these studies have been conducted.

## Future Trends

The 1997 prediction by the Department of Commerce's Tourism Industries Group shows that travel to the United States will grow three to four percent over the next four years. Most of this change will occur as a result of travel from Asia (double-digit percentage growth) and South America (between six and nine percent increases). Canada and Mexico will also increase, but at a relatively modest two percent rate. Within the next two years, travel spending in the U.S. is expected to reach and possibly exceed the $100 billion mark. Natural resource management will be challenged in a number of ways.

There are two key issues that emerge from the investigations of international travelers. First, there are significant changes occurring in the origin, destination, and characteristics of travelers from other parts of the world. This is strongly evident in the increase expected from Asia and South America relative to the stability of the traditional European visitor market. These changes imply that there are new and changing markets that organizations in both the public and private sector will need to address. Addressing these changes can occur independently or as a partnership. In general, it seems that natural resource management will continue to be more influenced by greater numbers of visitors from other countries. Addressing this change is obviously best done collaboratively.

Natural resources and outdoor recreation play a major role in tourism in that they provide the settings and infrastructure for travel activities, experiences, and products. Perceptions about how this role should be handled ebb and flow depending on the leadership, and are made more difficult when organization and budgetary changes encounter new, growing demands for service and partnering.

Natural resource and cultural agencies in the United States have been uncertain in terms of defining their roles in tourism. Their role has seemed to vacillate between one of marketing to one of protectionism. The pattern exhibited is first interest in the international visitor as a customer and developing market research projects, followed by backing away entirely.

Oscillations toward and away from marketing have limited the ability of agencies to deal effectively with the tourist industry. As domestic North American travel markets change toward more fragmentation and diversity, with higher service requirements, agencies already strained by downsizing, reinvention, and policy shifts will be further strained.

Since advertising influences expectations, cooperative linkages between tourism, marketing, park, natural, and cultural resource agencies are essential. It is important to reach the international audience in advance to create appropriate expectations for all involved, including the visitor or guest, the marketer, the eventual host, and the destinations of choice.

Creation of better partnerships to address the changes in travelers will become a critical issue. First, it is clear that international visitors will create special communication challenges. In addition, for both international and domestic visitors, and for different reasons, there will be demands for special requirements from a nonuniform array of visitors that will stretch the talents of virtually all organizations and agencies. The activities international visitors will pursue will only rarely be within the purview of only one group.

Understanding the visitor and the nuances associated with travel behavior are critical. For example, research has been done on repeat travelers. People's perceptions of the country were different if they had been there once or more than once. These differences affect knowledge and experience, how people organize their trips, how they manage information, and what activities they choose. Although some of these issues make intuitive sense, the nature and directions of the changes make thinking about how to respond more complex.

The second issue of concern is better application and sharing of information. Many organizations are outside the "loop" of tourism information, particularly at the international level. In an effort to "engage the public," recreation groups, agencies, and destinations must expand their levels of communication beyond their organizational boundaries. Private and public tourism groups will need to reciprocate exchanges.

Changes that influence travel can have profound impacts on regions, states, and local communities. Natural resources often represent major attractions for tourists throughout North America and result in jobs for people in the local area. If travel behavior changes, the economic flows will also change. Understanding travel behavior is therefore critical to considering how to sustain local, tourism-based economies. A good example has been the reported decline in visitation to some natural parks during summer, 1997. Part of this visitation decline seems due to decreases in the number of international visitors. These types of shifts can profoundly change local economic conditions.

Although there is evidence that cooperation has occurred between heritage-related groups and the tourism industry, it seems more the exception than the rule. Organizations and agencies haven't always known whom to communicate with or what programs and products are being offered. For cooperative efforts to bear fruit, communication and information sharing must be the watchword for the day.

**Table V.41: Total Inbound International Arrivals in Thousands and Percentage Change to the United States by Year and by Origin, 1987-1997**

| Total arrivals and origin | Year 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996e[1] | 1997p[1] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Inbound Totals | 27834 | 33942 | 36365 | 39363 | 42674 | 47261 | 45779 | 44753 | 43318 | 44791 | 46216 |
| % Change | 7.6 | 21.9 | 7.1 | 8.2 | 8.4 | 10.7 | -3.1 | -2.2 | -3.2 | 3.4 | 3.2 |
| Overseas | 10534 | 12512 | 13999 | 15059 | 16155 | 17791 | 18662 | 18458 | 20639 | 22072 | 23371 |
| % Change | 18.9 | 18.8 | 11.9 | 7.6 | 7.3 | 10.1 | 4.9 | -1.1 | 11.8 | 6.9 | 5.9 |
| Canada | 12253 | 13700 | 15325 | 17263 | 19113 | 18598 | 17293 | 14974 | 14663 | 14713 | 15007 |
| % Change | 13.5 | 11.8 | 11.9 | 12.6 | 10.7 | -2.7 | -7 | -13.4 | -2.1 | -0.3 | 2 |
| Mexico | 5047 | 7730 | 7041 | 7041 | 7406 | 10872 | 9824 | 11321 | 8016 | 8008 | 7838 |
| % Change | -18.9 | 53.2 | -8.9 | 0 | 5.2 | 46.7 | -9.6 | 15.2 | -29.2 | -0.1 | -2.1 |

[1] e=estimated; p=projected.
Source: U.S. Dept. of Commerce Tourism Industries, International Trade Administration; Secretaria de Turismo (Mexico); Statistics Canada; Canadian Tourism Research Institute

**Table V.42: International Receipts and Percentage Change for All Travel to the United States by Year, 1987-1997**

| Travel Receipts | Year 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996e[1] | 1997p[1] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $ in Millions | 30566 | 38409 | 46863 | 58305 | 64237 | 71359 | 74486 | 75500 | 79671 | 84133 | 88928 |
| % Change | 17.7 | 25.7 | 22 | 24.4 | 10.2 | 11.1 | 4.4 | 1.4 | 5.5 | 5.6 | 5.7 |

[1] e=estimated; p=projected.
Source: U.S. Dept. of Commerce Tourism Industries, International Trade Administration, Bureau of Economic Analysis

**Table V.43: International Arrivals (in Thousands) to the United States by State and by Origin, 1995**

| States visited (Thousands) | Canada [1] (All Modes) | Canada Rank | Mexico [2] (Air Travel) | Overseas [3] (All Modes) | Overseas Rank | Total [4] Arrivals | Total Rank |
|---|---|---|---|---|---|---|---|
| Alabama | 49 | 45 | * | 83 | 35 | 134 | 42 |
| Alaska | 63 | 42 | * | 62 [5] | 38 | 129 | 43 |
| Arizona | 243 | 27 | 46 | 887 | 9 | 1,176 | 12 |
| Arkansas | 24 [5] | 50 | * | 41 [5] | 46 | 68 | 50 |
| California | 827 | 5 | 256 | 5,304 | 2 | 6,837 | 3 |
| Colorado | 111 | 36 | 37 [5] | 433 | 15 | 581 | 26 |
| Connecticut | 128 | 34 | 9 [5] | 227 | 25 | 368 | 32 |
| Delaware | 21 [5] | 51 | * | 62 [5] | 38 | 89 [5] | 48 |
| Dist. of Columbia (DC) | 119 | N/A | 35 [5] | 1,486 | N/A | 1,640 | N/A |
| Florida | 1,729 | 3 | 149 | 5,345 | 1 | 7,223 | 1 |
| Georgia | 396 | 18 | 15 [5] | 599 | 11 | 1,010 | 13 |
| Hawaiian Islands | 253 | 24 | * | 2,910 | 4 | 3,168 | 4 |
| Idaho | 224 | 28 | * | 62 [5] | 38 | 287 | 35 |
| Illinois | 391 | 19 | 71 | 1,115 | 7 | 1,577 | 8 |
| Indiana | 183 | 32 | * | 144 | 29 | 334 | 34 |
| Iowa | 80 | 40 | * | 62 [5] | 38 | 149 | 40 |
| Kansas | 36 [5] | 48 | 6 [5] | 62 [5] | 38 | 113 | 45 |
| Kentucky | 298 | 23 | * | 83 | 35 | 394 | 31 |
| Louisiana | 85 | 39 | 9 [5] | 413 | 17 | 507 | 29 |
| Maine | 797 | 6 | * | 103 | 33 | 901 | 14 |
| Maryland | 189 | 30 | * | 248 | 23 | 447 | 30 |
| Massachusetts | 499 | 14 | 24 [5] | 1,053 | 8 | 1,576 | 9 |
| Michigan | 1,432 | 4 | 15 [5] | 372 | 18 | 1,819 | 7 |
| Minnesota | 574 | 11 | * | 206 | 27 | 784 | 19 |
| Mississippi | 39 [5] | 47 | * | 62 [5] | 38 | 102 [5] | 46 |
| Missouri | 105 | 37 | * | 144 | 29 | 254 | 36 |
| Montana | 623 | 9 | * | 41 [5] | 40 | 666 | 21 |
| Nebraska | 58 | 43 | * | 21 [5] | 46 | 81 | 49 |
| Nevada | 632 | 8 | 62 | 1,858 | 5 | 2,552 | 5 |
| New Hampshire | 418 | 17 | * | 103 | 33 | 524 | 27 |
| New Jersey | 251 | 26 | 9 [5] | 599 | 11 | 859 | 17 |
| New Mexico | 40 | 46 | * | 144 | 29 | 193 | 39 |
| New York | 2,552 | 1 | 91 | 4,479 | 3 | 7,122 | 2 |
| North Carolina | 329 | 21 | * | 310 | 21 | 651 | 22 |
| North Dakota | 501 | 13 | * | 21 [5] | 50 | 522 | 27 |
| Ohio | 502 | 12 | 11 [5] | 351 | 19 | 865 | 16 |
| Oklahoma | 30 [5] | 49 | 7 [5] | 62 [5] | 38 | 103 [5] | 47 |
| Oregon | 311 | 22 | 13 [5] | 248 | 23 | 578 | 25 |
| Pennsylvania | 588 | 10 | 11 [5] | 599 | 11 | 1,198 | 11 |
| Rhode Island | 51 [5] | 44 | * | 62 [5] | 38 | 117 | 44 |
| South Carolina | 452 | 16 | * | 227 | 25 | 680 | 20 |
| South Dakota | 99 | 38 | * | 41 [5] | 46 | 140 | 41 |
| Tennessee | 336 | 20 | * | 268 | 22 | 608 | 23 |
| Texas | 253 | 25 | 213 | 867 | 10 | 1,333 | 10 |
| Utah | 130 | 33 | 12 [5] | 433 | 15 | 575 | 24 |
| Vermont | 786 | 7 | * | 83 | 35 | 875 | 15 |
| Virginia | 463 | 15 | * | 351 | 19 | 822 | 18 |
| Washington | 1,856 | 2 | 13 [5] | 599 | 11 | 2,468 | 6 |

Table V.43 Cont.

| States visited (Thousands) | Canada [1] (All Modes) | Canada Rank | Mexico [2] (Air Travel) | Overseas [3] (All Modes) | Overseas Rank | Total [4] Arrivals | Total Rank |
|---|---|---|---|---|---|---|---|
| West Virginia | 188 | 31 | * | 41 [5] | 46 | 229 | 38 |
| Wisconsin | 193 | 29 | 7 [5] | 144 | 29 | 344 | 33 |
| Wyoming | 65 | 41 | * | 165 | 28 | 230 | 37 |
| Guam | N/A | N/A | * | 1,238 | N/A | N/A | N/A |
| Puerto Rico | N/A | N/A | 16 [5] | 103 | N/A | N/A | N/A |
| Total Travel AIR ONLY | 3,712 | | 889 | N/A | | N/A | |
| Total Travel ALL MODES | 14,663 | | 8,016 [6] | 20,639 | | 43,318 | |

Source: Tourism: Tourism Industries (TI), International Trade Administration (ITA)
Note:*Estimates are not provided due to low sample size. N/A = Not Applicable
[1] Data were obtained from *Statistics Canada* and compiled from their International Travel Survey. All Canadian travelers to the U.S. for one night or longer are reported in these estimates.
[2] Visitation estimates only reflect the number of air travelers from Mexico to the U.S. These figures were obtained from the Tourism Industries report *In-Flight Survey of Mexican Air Travelers*, 1995, except where INS I-94 "first intended address" figures are greater than IFS. The total number of air travelers from Mexico to the U.S. in 1995 was 889,000. This total was obtained from the Tourism Industries report Summary of International Travelers to the U.S., 1995.
[3] Data were obtained from the Tourism Industries report *In-Flight Survey of International Travelers to the U.S.*, 1995. All overseas travelers to the U.S. for one night or longer are reported in these estimates.
[4] Data were obtained by totaling the Canadian, Air Travelers from Mexico, first intended address where applicable, estimates not provided due to low sample size, and Overseas arrivals.
[5] Reflects statistical instability due to very small sample size (less than 3%). Data should be used with caution.
[6] This figure was estimated from Banco de Mexico data and represents all Mexican arrivals to the U.S. including air travelers, and those traveling within the 40 kilometer frontier zone, for one or more nights. These estimates are also subject to yearly revisions.

## ECOTOURISM IN THE UNITED STATES

(By Elwood Shafer, Pennsylvania State University, College Station, PA)

Ecotourism is a relatively small but growing component of the total nature-based tourism industry in the United States. Nature tourism is travel and recreation for the appreciation of nature and the outdoors. Areas that attract nature tourists range from pristine wilderness to community parks.

Ecotourism has received much attention in recent years and there is considerable debate over what the term means or should mean (Western, 1993). Ecotourism is generally defined as travel and recreation that contributes substantially to a natural area's conservation and protection through education and the dedication of tourism dollars (Environmental Protection Agency, 1996). Most definitions of ecotourism involve the sustainable management of ecosystems with tourist attractions that draw tourist trade, which benefits local communities and interests. At times, these benefits may be substantial enough for local communities, conservation groups, and public or private interests to willingly comanage the ecosystem to maintain and perhaps improve its integrity as a natural system and its attractiveness as a tourist resource (Fennell & Smale, 1992; Go, Milne, & Whittles, 1992).

The concept of ecotourism probably stems from the widespread and growing interest in natural environments and a corresponding recognition of the importance of conserving them. The idea of visiting and experiencing high quality natural environments and also protecting them from harmful impacts is now an acceptable and marketable one.

As a result, ecotourism is among the travel industry's most explosive of growth areas. Within the next decade, tourism will likely become the world's largest industry. Ecotourism never will generate as much profit as traditional tourism, but it appears that it will become an increasingly important niche. In today's tourism market it is nearly impossible to pinpoint how many tourism dollars are spent on ecotourism (Boyd & Butler, 1996).

## Current Situation

Sustainable ecotourism depends primarily on sound ecosystem management (EM). But despite intense interest and activity in EM by the federal land management agencies, the problems that ecosystem management are supposed to solve are not clear. "Environmental problems are often framed narrowly in ecological terms, and social and cultural dimensions are mentioned only in passing" (Gerlach & Bengston, 1994). This seeming confusion about what ecosystem management is supposed to do has hampered this natural resource management paradigm.

On one hand, for example, Gordon (1994) proposed that EM "requires that all known contents of an ecosystem be included and considered when decisions and manipulations are made" in land management. On the other hand, Wenger (1997) stressed that "the first step in EM must be a specific description of the land to be managed. The land must be dealt with separately from the ecosystem concept," and for EM purposes, "inventories of natural environments should include only the plants and animals that can be manipulated economically." Trying to inventory the many species of plants and animals "down to bacteria and protozoa that occupy forest land would be extremely expensive and of no utility." (Wenger, 1997).

Despite the many articles that have been written on ecosystem management and ecotourism, there is no consensus in the natural resources community on the identity of the strategies most appropriate in ecosystem management. Nonetheless, generally there seems to be a fair amount of agreement on the following points:

- Resource management for ecotourism activities must be accomplished in such a manner as to assure the economic viability of an ecotourism experience. In this regard, local and legislative requirements affecting resource management may be essential for encouraging ecotourism economic activity within ecologically safe limits.
- Current livelihoods and customs of the human communities in areas with viable ecotourism markets must be sustained, including the aesthetic qualities of landscapes, cultural legacies, and townscapes of those local communities.
- Sustainable ecotourism management must include consideration of the limitations of health of the ecosystem(s) to satisfy both human and natural needs.
- Local ecological processes and interdependencies need to be clearly understood so that ecotourism activities are consistent with the resource's capacity. However, the difficulty of applying capacity concepts is that all changes have some effect that eventually may be detrimental to the ecosystem. Capacity is usually a supply-side consideration, but if ecotourism is to be successful, it must also be based on the perceptions and preferences of ecotourists.
- The need to maintain biological diversity is essential if a tourism destination is to appeal to the average ecotourist. Greater natural variation in the flora and fauna in the destination area is more likely to appeal to ecotourists.

## Examples

Ecotourism involves a wide range of environmental conditions and management strategies. Here are three brief examples in Pennsylvania that underscore ecotourism's heterogeneous characteristics (Shafer, Carline, Guldin, & Cordell, 1993).

### *Hawk Mountain*

The Hawk Mountain Sanctuary is a promontory atop the Kittatinny Ridge of the Appalachian Mountains. This 2,000-acre, private, member supported, nonprofit sanctuary is the world's first refuge created to protect and observe raptors. From mid-August through November, large numbers of raptors (hawks, falcons, ospreys, and eagles) migrate south above the mountain ridges. An average total count of raptors during the fall season is about 20,000 birds. Located on the common borders of Berks and Schuylkill Counties, the area is internationally known as a year-round conservation, education, and research center. Membership is about 6,700, and annual total travel to the site by visitors generates approximately $365,000 (1997 dollars) in spending in the local area.

### *Middle Creek Wildlife Management Area*

The Middle Creek Wildlife Management Area is a 5,200-acre state gameland in Lebanon and Lancaster Counties where visitors can observe 238 species of native and migratory waterfowl. Even though fees from

hunting license sales are the source of funding for maintaining this area, the Pennsylvania Game Commission provides other recreational opportunities such as hiking, bird watching, and wildlife photography. A visitor center features mounted waterfowl and displays of natural history, ecology, wildlife habitats, and wildlife management practices. The annual total travel expenditures by visitors is about $235,000 (1997 dollars).

### *Elk Viewing*

Elk viewing opportunities cover a 144-square-mile area of state forest and state game lands in Cameron and Elk Counties, where the public can observe from roadsides and trials the only elk herd in the state. It is the only area east of the Mississippi River where elk roam unrestricted. To maintain an annual herd of 130 to 140 elk and to help keep them away from adjoining agricultural areas, the Pennsylvania Game Commission and the Bureau of Forestry engage in special resource management activities, including periodically clear-cutting small patches to stimulate growth of woody browse, maintaining grassy open areas for grazing, and planting selected trees and shrubs to increase food variety. Annual total travel expenditures by visitors are approximately $116,000 (1997 dollars).

## Future Issues

Despite the interest in ecotourism by many local communities, state governments, and regional partnerships, many remain unconvinced that it will be a panacea that both protects the environment and supports local economic health. Considerable debate exists over whether ecotourism can be sustainable and which management strategies will minimize the negative impacts associated with human uses in natural ecosystems (Cater, 1993).

Ecosystem planning and development, and thus ecotourism, are usually evolutionary, not revolutionary (Orams, 1995). Integrating ecosystem management and ecotourism cannot be a static process with a definite beginning and ending; rather it must involve continuous evolution of concepts and principles through experience and science that are adaptive to changes in political, economic, and social conditions.

Funding for the maintenance, repair, and construction of the necessary infrastructure for ecotourism may not keep pace with increasing demand for quality experiences without concerted effort to strengthen old and build new public/private partnerships. Effective partnerships will be

*A youngster plants and tags a tree in Kern River, California (right), while a Nature Conservancy site visitor in Sycan Marsh, Oregon, records plant species (left). Photos courtesy of the Nature Conservancy. Photos by Rick Hewett (right) and Alan D. St. John (left).*

necessary for generating support and funding for expensive, environmentally sensitive construction and maintenance of infrastructure to accommodate, transport, and satisfy ecotourists.

Definitions and interpretations of ecosystem management abound, as do different perspectives on whether and how it will work. Many believe that ecosystem management, even though based on ecological principles, is primarily about people and their choices.

The most challenging aspect of ecotourism management will continue to be the creation of the appropriate coalitions of diverse interests and views such that problems of communication and understanding are overcome and collective needs are met. Sustainable ecosystem management can be better assured if stakeholders have a common understanding of what ecosystems are and common sense of how they are a part of those systems. "Humans interact with nature most significantly through culture, in symbolic ways not comprehended by biological or physical ecosystem models" (Gerlack & Bengston, 1994). Although it is recognized that ecotourism management aims to help sustain economies and other aspects of human welfare, it is concern also for the long-term integrity of ecosystems that will be necessary truly to achieve sustainable ecotourism. Innovative, sustainable development strategies that promote ecotourism will continue to be difficult and politically sensitive.

## REFLECTIONS

Across American communities and groups within society, outdoor recreation has remained enormously popular over the years. Although new forms of participating have appeared, an underlying, basic motivation for outdoor recreation participation still is to have the opportunity to experience nature by viewing it, traveling through it, and for a short time at least, living it.

Outdoor recreation is a basic part of our lifestyles that most of us as Americans have come to expect. The National Survey on Recreation and the Environment has shown that almost all in American society participate at some level in some form of outdoor pursuit. Traditional land, water, snow, and ice settings are very much in demand to satisfy the growing appetite both for traditional outdoor recreational activities as well as to serve demand for a growing list of new activities driven by better access and by rapidly evolving technology and information availability.

Over the years and still today, most in demand are places for casual activities such as walking, family gatherings, sightseeing, and visiting beaches, historic sites, and other sites of interest. These activities appeal to a wide spectrum of people from inner cities, the suburbs, and rural countrysides alike. Often, entertainment, fun, learning, and seeing are motivations for these activities. Viewing and learning, socially oriented activities outdoors, and swimming are the most popular forms of participation where natural and historical settings are significant components of the expectations of the recreationists.

Recreation participation in all types of settings are experiencing growth. Often, growth is occurring among a number of different activities that occur at the same sites and in the same settings, resulting in conflicts and needs for carefully considered management strategies that offer everyone opportunities. The increases in participation that are occurring are not just in the numbers of people participating on occasion, they also represent growth in the number of days and trips in total that people take for their preferred recreation. Total days and numbers of trips for outdoor recreation by the U. S. population portray a huge market for the goods, services, and access to places for participation.

Both long-term and short-term past trends point to continued growth in outdoor recreation across all segments of the population, some more than others. Growth seems particularly strong in viewing and learning activities and in new activities. If these trends continue, pressures for places to recreate and for recreation infrastructure to support recreation seekers will continue to build. There is evidence particularly of growing pressures on the public lands and the recreation opportunities those lands represent. Growing pressure is likely to take many forms and will require a variety of management responses. Level to decreasing public funding for outdoor recreation access, service, and facility development and maintenance will represent major challenges in the near as well as long-term future. These growing pressures and the challenges they represent will likely include:

- The more popular beaches, forest sites, parks, and special attractions will experience greater congestion at peak times in the year, and these congestion levels and the situations resulting from them will eclipse the experience background of most outdoor recreation managers.
- There will likely be more conflicts among recreationists who will be competing at the same times for use of some of the same areas and sites for different forms of outdoor recreation. Some of these activities are not incompatible with one another, but others are.

- Because of persisting rises in the popularity of outdoor recreation, policies, and management practices, including those on public land such as timber and range management that are not directly aimed at recreation opportunities, will increasingly affect larger numbers of people with increasingly diverse interests and social and economic characteristics, making resource management more challenging and calling for increasingly innovative, collaborative approaches.
- Public- and private-sector providers will need to continue to provide viewing and learning, social gathering, and swimming opportunities to meet the rising demand by the majority of the American public. Many of these types of opportunities can be provided near the urban places where many of those seeking such opportunities live. Development and resource extraction activities may increasingly be viewed as conflicting with recreation and nature conservation interests.
- Access to developed sites and dispersed areas will almost certainly be an increasingly important and difficult issue to resolve, especially when different types of activities conflict and where universal accessibility must be a significant concern. As management tools such as charging fees continue to evolve, the access implications of such tools will increasingly be issues viewed differently by different social groups and by different types of recreation participants.
- Especially heavy pressures are likely to occur at water sites that have always been a major attraction for a wide variety of outdoor recreational activities. These pressures will take on added significance with advances of technology making them accessible to jet-propelled water craft.
- Scenic quality will increasingly be an issue that managers of recreation areas and of natural lands in general must address as growth and interest in sightseeing, viewing and learning activities, and other activities drive the demand for aesthetically pleasing settings.
- Markets for outdoor activities are changing as new forms of participation are discovered, as the backgrounds, perspectives, and tastes of recreationists change, and as constraints and opportunities shift. In that these changes are in part determined by the opportunities that are available, public land management policies will be under increased scrutiny to determine how well they meet the needs of Americans across all social strata, while at the same time providing private sector business opportunities.
- Rapid increases in the diversity of the population in race, culture, age, income, and other factors will change the demand for outdoor recreation, but not diminish the size of the overall market. Increasing population diversity will result in different preferences, expectations, and ways of seeking and participating in outdoor recreation. Management policies and solutions of the past will only partially fit the emerging shifts in demand and new forms of recreation people will pursue.
- Because most forms of outdoor recreation participation depend so heavily on natural settings, which differ among regions of the country, and because most of these forms continue to grow in popularity, domestic tourism and associated recreation travel can be expected to continue growth as long as transportation remains as affordable and as convenient as today and access to land and water areas is available.
- Continued increases in visits to most federal and state forests and parks will put added pressures on public managers to adopt new management policies and practices. Fees and reservation systems will spread. Information will be more available. Greater attention will be paid to the unequal effects of these policies on lower income, less well educated, and place-confined segments of our population.
- Increasingly, international travel to the United States for outdoor recreation will add to pressures on the U.S. supply of outdoor opportunities, particularly at the most popular national parks and other tourist destinations. International effects will be great near border and coastal states.
- Increasing domestic and international travel and tourism in the U.S. will create opportunities for large-scale private businesses to provide services, accommodations, and information. As the interest in defining and managing for sustainability in communities and in natural systems grows, ecotourism is likely to become a popular and viable approach for achieving both.
- Outdoor recreation contributes substantially to the economies of rural counties, and this contribution is likely to grow both in terms of countywide income and jobs, but also in terms of share of income and jobs among economic sectors.
- Organized groups representing specific outdoor recreation interests will grow in number and constituency represented. As public agencies continue to open up the planning and decision processes to public involvement, these organized groups will have increasing voice in public land management and the recreation interests they represent are likely to grow in numbers. Increasingly, organized groups will be integrated as partners in helping manage and protect public lands, access rights, and unique resources.
- New technologies and better modes of accessing backcountry will continue to shift the nature of the demand for outdoor recreation. Most impacted by these shifts will be the more traditional passive forms

of outdoor recreation where quiet, natural settings for learning, reflection, and nature appreciation are sought. Also impacted will be traditional forms of active participation where new technology enables more and different users onto the resource, for example, whitewater canoeists experiences impacted by jet ski use.

- Concerns about availability of outdoor recreation to inner city disadvantaged groups will grow with the realization that these groups participate substantially less in all forms of recreation because they do not have opportunities that are affordable and close enough to where they live.
- Research will become increasingly important in helping to understand changes that will occur across many different fronts. Ongoing national participation surveys, on-site studies of various user groups and interests, linking recreation behaviors and preferences with social changes, enabling recreation providers to understand market shifts as or before they happen, and monitoring access equity are among the vital research roles that will be needed.

Improved data, monitoring systems, and well understood management objectives that are in touch with the recreation demand shifts constantly occurring in the United States and internationally will be necessary to manage outdoor recreation in the future successfully. The decline in data and information on recreation visitation, customer satisfaction, and economic impact information has proven to be a detriment to effective, timely management, and policy specification. Greater attention to reliable information on trends, emerging issues, and effectiveness in delivering service and opportunities must emerge as high priority activities.

# CONTRIBUTED PAPERS

## The Recreation Vehicle Market

(By David J. Humphreys, Recreation Vehicle Industry Association, Reston, VA)

With nine million recreation vehicles (RVs) on the road according to a recent study by the University of Michigan Survey Research Center (Curtin, 1994), and 25 million RV users based on estimates by Recreation Vehicle Industry Association (RVIA), the RV industry is a dynamic component of the overall outdoor recreation market.

The typical RV owner is a 48-year-old homeowner with a household income just under $40,000 who buys an RV to travel and camp. RVIA research indicates RVers annually travel an average of 5,900 miles per year and spend over 23 days on the road.

There are two major groups of RV owners: empty-nesters and families with children. Forty-four percent of America's RVers are age 55 and up, while 39 percent are between the ages of 35 and 54.

In addition to the growing numbers of RV owners, the RV industry consists of 170 vehicle manufacturers, 295 supplier companies, 3,000 RV dealers, and more than 16,000 public or private campgrounds across the nation with RV facilities.

RVIA is the national association of RV manufacturers and component parts suppliers that together produce 95 percent of all recreation vehicles manufactured in the United States. An RV is defined as a vehicle designed as temporary living quarters for travel, recreation, and camping. RVs are either motorized vehicles, such as motorhomes and conversion vehicles, or towable units, such as travel trailers, folding camping trailers, and truck campers.

### *The Current RV Market*

The RV market has enjoyed strong sales in the 1990s with shipments to retailers from 1994 to 1996 at their highest levels since the late 1970s. Most recently, 1996 saw RV manufacturers ship in excess of 466,000 new units. Retail sales of fifth-wheel travel trailers set a record in 1996 of nearly 45,000 units. Sales of upscale motorhomes were at an eight-year high of 36,500 units (RVIA, 1996).

The retail value of all RVs manufactured in 1996 exceeded $12.3 billion, the highest dollar volume in the industry's history. Including new and used unit sales, aftermarket components, and RV rentals, RVs are a $16 billion annual business.

Helping fuel this growth has been the aging of the baby boom generation with many consumers now beginning to reach prime RV-buying age; favorable economic trends such as strong consumer confidence, low inflation rates, and reasonable interest rates; and advances in RV technology and design.

## The RV Market Future

RVIA and other segments of the RV industry are working to ensure the vitality of the market into the next century. Key among these efforts is the creation of the Go RVing Coalition, an inclusive industry group comprised of manufacturers, suppliers, dealers, and campground operators.

The Coalition is focusing on programs to introduce a greater number of people to RVing and improve the RV experience for current and future RV owners.

### *Marketing Strategies*

The group recently launched a national advertising campaign, centered on the theme "Recreation Vehicles. Wherever You Go, You're Always at Home," to promote RV travel to baby boomer families.

The campaign was developed based on RV market research conducted by the University of Michigan Survey Research Center and Louis Harris and Associates that indicated baby boomer couples, who comprise 40 percent of the RV market, value the family time, stress reduction and convenience offered by RV vacations (Curtin, 1994). This campaign marks the first time the various segments of the RV industry united for an institutional advertising campaign.

### *The RVIA Seal*

To assure an acceptable level of compliance with applicable safety standards is met within the RV industry, RVIA conducts an inspection program. As a condition of membership, all manufacturer members are subject to periodic, unannounced plant inspections by RVIA representatives.

Those in compliance with more than 500 safety specifications for electrical, plumbing, heating and fire and life safety established by the American National Standards Institute (ANSI) A119.2 Recreation Vehicle Standard display RVIA's seal on their vehicles. Members who fail to maintain an acceptable level of compliance can be expelled from the association.

### *Certified RV Technician Program*

Through the Certified RV Technician Program conducted by RVIA and Recreation Vehicle Dealer Association (RVDA), the RV industry is working to create a nationwide network of well-trained, qualified service people to better serve the growing numbers of RV owners.

Since the program's inception in 1993, more than 500 technicians have been certified. To achieve certification, technicians must successfully complete a series of comprehensive tests. RVIA also conducts an industry education program to provide training to current and potential RV service technicians.

### *Public Land Usage*

With the nation's public lands being magnets for RV owners, the proper funding of national parks, forests, and other public sites is critical to keeping these areas maintained and open to RVers. To ensure this funding, RVIA is a proponent of permanent fee legislation that re-invests revenues in the sites where they are generated.

RVIA also supports campgrounds, whether federally managed or operated by concessionaires, to exist on public lands. To assists RVers interested in camping on public lands, it might be wise to implement a national reservation system for campgrounds on federal lands

## Future Trends Affecting the RV Industry

Over the next decade, the enormous baby boom generation will begin entering the highest ownership age group for RVs. This consumer group will continue to dominate the RV market for the next 20 years.

The University of Michigan Survey Research Center study shows that RV ownership rates rise significantly with age, peaking among 55 to 64-year-olds. This increase has significant long-term implications, considering the substantial growth potential within the prime RV ownership age groups. In the next 10 years, 12,000 Americans per day will turn 50 years old, bringing nearly 10 million more U.S. households into the ranks of prime RV prospects.

Interest in RV ownership is not confined to the 50-plus market, however. Research by Louis Harris and Associates found that more than half of those most likely to buy an RV in the future are 30 to 49 years old.

The University of Michigan study confirms this finding, also showing purchase intentions are strongest among younger age groups. Thirty percent of consumers age 18-34 expressed interest in buying an RV with 16 percent of those age 35-54 doing so.

Changes in the frequency and duration of vacations also favor the RV industry. Americans are traveling more often, but over shorter distances and with less planning. For RV owners, this is a natural travel pattern.

The growing American interest in outdoor recreation should positively impact the RV industry. A survey by the Recreation Roundtable in 1991 found that 77 percent of Americans view outdoor recreation as a priority in their lives, and 67 percent plan to increase their participation in camping. RVs are a natural focal point for many of these activities, especially camping.

With the growing interest in outdoor recreation, the impact of the baby boom generation and the industry's efforts to communicate the advantages of RV travel, RV sales and usage are expected to be robust through the remainder into the next century.

## Four Wheel Drive Trends

(By Alan Lane, United Four Wheel Drive Association, Shelbyville, IN)

### *Important Issues to Four Wheel Drive Recreation*

In 1991, the United Four Wheel Drive Association (UFWDA) commissioned a study of issues impacting the sport of "fourwheeling." Some of the major issues refined from a larger list of challenges submitted by fourwheelers from throughout the United States are off-highway recreation advocacy, public land recreational access and use protection, the right to operate older motor vehicles, and public funding for recreational trails on public lands.

The USDA Forest Service sponsored the National Access and Travel Conference in August of 1991 as a starting point for the "Report of the National Access and Travel Management Strategy Team, January, 1992." Various disciplines and interests were represented, including recreation, fisheries and wildlife, conservation, related businesses, associations, state and local governments, and federal agencies. From this conference, a strategy team developed 14 situation statements. These statements covered situations such as the common perception, both internally and externally, that inadequate travel management results in unacceptable resource impacts, and that loss of public access has a major impact on programs and use on National Forest System lands.

A survey of conference participants indicated that these statements represented the majority opinion of conference participants about travel management. These statements were used to develop six goals regarding appropriate access to national forest lands and accommodation of a variety of user needs and expectations within resource limitations.

### *Current Interests, Programs, and Directions*

As evidenced by responses to surveys and references made in reports, there is a continuing need to educate the public and four wheel drive enthusiasts regarding safe and proper use of their vehicles. This also entails working with land managers and decision makers to ensure an understanding of the needs of four-wheel-drive enthusiasts. Some programs have been in place to further the awareness of proper use and techniques in operating vehicles on varying terrain and areas where use is restricted. Two of the major programs being applied now are Tread Lightly! and Four Wheel Drive Safety Awareness Clinics.

Tread Lightly! is an educational program dedicated to increasing awareness of how to enjoy public and private lands while also minimizing impacts. Tread Lightly! emphasizes responsible use of off-highway vehicles, other forms of backcountry travel, and low impact principles in outdoor recreation. The Tread Lightly! program began in 1986 from the U.S. Forest Service and was later adopted by the Bureau of Land Management. A nonprofit corporation, Tread Lightly! Inc. was formed in 1990.

The Four Wheel Drive Awareness Program is another example that was adopted from the California Association of Four Wheel Drive Clubs, Inc. This safety and education program consists of two segments. The first is a classroom segment using workbooks and instructional videos, and the second is an outdoor, hands-on, instructional segment covering various driving techniques on a set course. These clinics are directed at the novice and at land managers and current enthusiasts wanting refresher training.

While these instructional courses are important tools, there are other approaches to working for access and use of public lands. Becoming involved in planning processes is one effective approach used to maintain a voice in decision making. Active participation in planning as well as collaboration in maintaining the resource and trails while recreating can be very helpful to understaffed land managers with tight budget constraints. In addition to working with local, state, or regional agencies, it has been effective and often necessary to share information and work with other user groups. Examples include agreements of mutual cooperation between users and agencies covering cooperation through volunteer work projects and promotion of educational and environmental programs.

Another example is formation of state recreational trail advisory boards as part of the requirement for funding from the National Recreational Trust Fund. These boards bring user groups together to generate new ideas—a sharing of purpose. Often the different groups represented identify similar goals that lead to shared corridors and multiple-use areas to meet a variety of user needs.

Another example that has been well-received by users and Forest Service personnel in the West is the Multiple Use/Shared Trail (MUST) Workshop. This Workshop brings public land users together to discuss ways they can share trails and other access opportunities. These diverse forest users include four wheelers, ATVers, equestrians, mountain bikers, motorcyclists, hikers, cross-country skiers, hunters, and snowmobilers. Classroom subjects include Adopt-A-Trail programs, agency expectations of user groups, public involvement in land management and project planning, wildlife habitat management, and official rules and regulations relating to off-highway recreation.

Field subjects would include concepts and examples from Tread Lightly!, rare/threatened/endangered (RTE) species identification, proper equipping of vehicles, shared trail ideas/demonstrations, and off-highway recreation user group demonstrations to include four wheel drive, ATVs, motorcycles, mountain bikes, hikers, cross-country skiers, snowmobilers, horses, and sportsmen.

### *Future Trends and Directions*

According to the U.S. Forest Service, off-road vehicle driving is an activity that 13.9 percent of the population, or 27.9 million people 16 years or older, have participated in at least once in the past 12 months (Cordell, et al., 1997). Participation in this activity is expected to grow to over 32 million by the year 2050 (see tables in Chapter 6).

Further educational programs relating to recreational use of our natural resources will continue to be important in the protection and conservation of our public lands.

With funding a growing concern, combined efforts will be used in seeking funds. The National Recreational Trails Funding Program will likely be of great importance in providing funding to states. Four-wheel-drive enthusiasts will continue working with the Coalition for Recreational Trails, state trail administrators, and trail advisory boards to assure the success of programs.

With the growing demand for more recreational activities, innovative and unique alternatives will be explored as ways to provide access. In some cases, there will be an increasing need for fees to offset maintenance costs as public funding remains level.

People are spending a lot on their outdoor endeavors. According to a U.S. Fish & Wildlife report in 1991, more than 76 million Americans watched, photographed, and fed birds and other wildlife in 1991, spending $18.1 billion. Equipment and other expenditures accounted for $10.6 billion of the $18.1 billion in direct expenditures. Of this amount, nearly a third was for off-road vehicles, tent trailers, motor homes, and pickup trucks. These types of expenditures will continue into the future, emphasizing the importance of four-wheel-drive recreation in particular and outdoor recreation in general in our American society.

## Paddle Sport Recreation in the United States

(By Jeffrey A. Yeager, American Canoe Association, Newington, VA)

Paddlesport includes canoeing, kayaking, and rafting. The National Survey on Recreation and the Environment (NSRE) released by the USDA Forest Service in 1996 indicated that 24.8 million Americans participate in these activities each year. The paddlesport industry consists of approximately 50 national paddle craft manufacturers that together sell an estimated 150,000 craft each year. There are an estimated one million privately owned paddle craft in the U.S.

Representing the interests of individual paddlesport enthusiasts are a number of national nonprofit organizations and approximately 500 local clubs around the country. The American Canoe Association (ACA), founded in 1880, is the largest and oldest of the nonprofit organizations serving the paddlesport community.

### *Current Trends*

Currently, the overall paddlesport market appears to be growing at a modest 5-percent rate. While some segments of the market, including open canoe sales, are static or decreasing, the sale of kayaks, particularly sea kayaks, is offsetting this decline with strong growth.

Factors currently effecting private paddling opportunities include increased competition with other user groups for limited water resources, regulation of access to natural waters, continued pollution and water quality problems, evolution of equipment, and expansion of the market that requires corresponding expansion of safety education programs and delivery systems.

In addition to the above factors, paddlesport has benefited from significantly increased media visibility in recent years. One indication of this benefit is the ability of the paddlesport organizations to secure outside corporate sponsors where none existed a decade ago.

### *Current Activities*

Organized paddlesport groups are emphasizing the following three activities in support of their membership. First, paddlers are pursuing enforcement actions under the Clean Water Act against polluters of the nation's rivers, lakes, and coastal waterways. Paddlers are also pursuing a coordinated legislative agenda on the federal, state and local level, which advocates for the interests of paddlers and protects the quality and enjoyment of the nation's recreational waterways.

Second, ACA and others are expanding emphasis on safety education to keep pace with market expansion and equipment design changes. This emphasis includes a curriculum of training for paddling instructors.

Third, paddlesport organizations are creating strategic alliances, particularly with the corporate sector, to generate new sources of financing and support.

### *Future Outlook*

With the aging of the American public and a growing environmental ethic, paddlesport seems well positioned for continued growth into the next century. Paddlesport can provide an accessible, economical and healthful form of "green recreation" for middle-aged families and older adults. On the other hand, paddlesport expects to face continuing and even increasing competition for access to water resources in the future. This may be particularly true of protection of pristine wilderness areas such as Minnesota's Boundary Waters Canoe Wilderness Area, which is already under heavy pressure from commercial groups to allow increased usage as well as motorized water craft.

Unfortunately, the environmental forecast is relatively pessimistic for the years ahead. One of the primary concerns is the likelihood that water quality in the nation's rivers, lakes and coastal waterways may decline from weakened governmental efforts to enforce the Clean Water Act. To address this concern, the ACA has initiated plans to undertake independent enforcement actions under the act on behalf of its members.

## The Horse Industry: Heading to the Next Century

(By Molly Chaffinch, American Horse Council, Washington, DC)

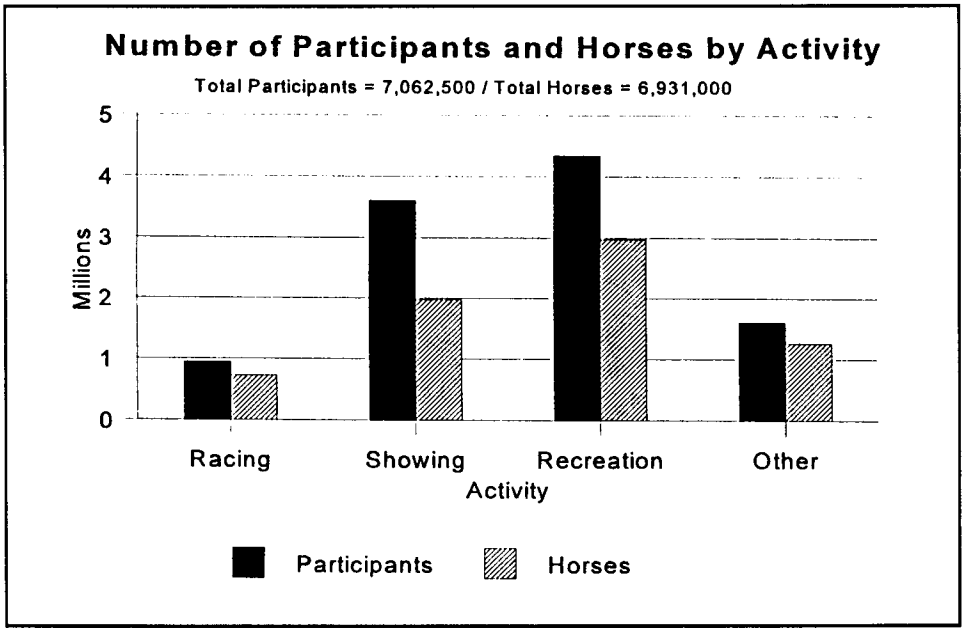
A decade after facing many changes prompted by economics, competition and a less agrarian society, the horse industry is showing signs of resurgence. Recreational use of horses in the United States is estimated at 2.97 million horses and 4.35 million participants, representing over $28.3 billion in annual economic impact. These figures reflect only the horseback riding segment of the industry, and do not incorporate the "professional" segments, which include horse racing, showing, polo, farm work, rodeos, and police work. Those activities are responsible for $83.8 billion in annual economic impact on the U.S. economy, generated by almost four million horses and 2.75 million participants, not including the millions of spectators at various horse events and their off-site spending when attending those events.

### *The Horse Industry*

Almost two million Americans own horses, and more than five million others work in the industry. This industry is more diverse than most sporting and recreational opportunities. This diversity includes polo, rodeo, training, showing, recreational riding, and viewing the thousands of public horse events. Horse racing, which is conducted daily in 41 states across the nation, has tens of millions of spectators and millions more visit horse shows, rodeos and other horse competitions.

Every state has a horse "economy," and, in many instances, horses are a key part of a state's recreational base and a magnet for tourism. Consider, for example, states like Kentucky, Maryland, New York, California, Ohio, and Arizona, which host world-famous races, shows, and expositions.

Figure V.16: Number of Participants and Horses Involved in Four Areas of Activity




### *Horse Owners*

Horse ownership has been commonly considered a pursuit of the wealthy, but current industry demographics dispute that notion, and indicate a trend that has led to a flourishing market for leisure expenditures on horses. A 1996 economic analysis of the industry sponsored by the American Horse Council Foundation, a Washington, DC-based organization, indicates that the median income for horse-owning households is $60,000 annually and that 64 percent of horse owners have yearly incomes of less than $75,000. Horse ownership has clearly become a middle-class leisure activity, and one that is growing steadily among families.

Participation in horse activities, which historically was based on farm use, has now swung heavily toward recreational use. This is a meaningful trend for the industry due to the rising availability of leisure dollars and the growing interest in seeking interesting and unique outdoor activities.

The challenge before the industry, and one being recognized more and more by industry institutions and professionals, is to develop public awareness of horses and the recreational potential they represent. In a society that is less agrarian than at any time in its history, Americans are not as routinely acquainted with horses as they were in previous generations. Once brought into contact with the horse world, many Americans, especially young people, become genuine enthusiasts and get involved in a variety of equine activities. The goal of the various segments of the horse industry is to find ways of increasing public awareness of horses through marketing, special events, and public relations programs.

### *Involvement with Government*

The pleasure horse industry, while not regulated in the same way as racing, has found that it, too, must be more attentive to government. Areas such as tax policy, trails, use land management, environmental matters, use of government-owned parks and conservatories, agricultural regulations, and animal welfare concerns are among matters often of interest to horse enthusiasts in both the racing and pleasure areas. Industry groups have learned that it is often necessary to be pro-active in the legislative and regulatory arenas, rather than defensive, as has been the typical industry posture.

Recreational participants have long been quiet politically, but that is now changing. Issues such as trails, land management, and equine liability laws are driving pleasure horsemen to stand up and take action with legislative policies.

### *Learning to Act Collectively*

With greater political sensitivity comes an understanding of the need to act collectively. The horse industry, as large as it is, consists of thousands of small businesses scattered across the country. There are no large, concentrated production operations such as one would find in many industries of comparable scope. This lack of brand identification, lack of broad scale product marketing, has been a matter of growing concern to industry participants in recent years.

The pleasure horse world, being less event-driven and comprised of more disparate elements, has nonetheless developed a strong sense of an industry-wide need for product identity and exposure. Lacking the economic engine that exists in parimutuel wagering, pleasure horse organizations have had to work harder at developing corporate sponsors for events. This has led to greater participation in industry marketing initiatives by those who sell products and services to the industry.

By getting people to attend or watch equine events, there will be exposure for the various breeds and disciplines involved and for the idea of participation in equine activities. Both live attendance and television programming of horse events provide a forum for industry segments to emphasize the variety of ways people can enjoy horses, either as spectators or in recreational activities.

### *Moving Toward Marketing*

The evolution of information technology has seen rapid expansion of both print publishing and electronic information transmission. There are more than 200 equine publications in North America, not counting thousands of organizational newsletters, and the larger ones are now promoting web sites.

The horse industry is not unlike many other entertainment-driven entities in seeking to broaden its appeal. What is different is that industry participants are now acutely aware that the survival of their equine world may well depend upon their ability, and willingness, to market themselves and their horses to a bigger segment of the consuming public than ever before. There is much to like about horses—their beauty, athleticism, relationship to the outdoors and the nation's agricultural heritage—but in a society less in touch with its agrarian past than ever before, they have to be viewed as an entertainment and recreational commodity, and marketed as such.

## Cycling Issues and Futures in Outdoor Recreation

(By Gary MacFadden, Adventure Cycling Association, Missoula, MT)

### *Overview*

Bicycling is many faceted and includes racing, touring, mountain biking, commuting, motocross (BMX), day riding, local rides (like children visiting friends), and other lesser categories. Interest in these different styles of biking has fluctuated over the years. Recently, interest has been growing in mountain biking and racing and declining in long-distance touring. Day rides and BMX have remained strong for the past decade and show no signs of disappearing.

Local recreational riding and commuting have been on the upswing, partially due to an increased awareness of cycling in the transportation community and funding for bicycle routes through the Intermodal Surface Transportation Efficiency Act (ISTEA). According to a report by the Environmental Working Group in Washington, DC, more than 100 million Americans were expected to go bike riding in 1997. That study also notes that 10 million more Americans ride bikes today than in 1990, a 10 percent increase. Approximately four million adults ride their bikes to work, and 12 million more report they would ride to work if adequate cycling routes were available.

Changes in the Adventure Cycling Association (ACA) mirror general trends in cycling. The ACA began in 1974 as Bikecentennial to design the first cross-country bicycle route—the TransAmerica Bicycle Trail. Since then, ACA has identified and mapped nearly 23,000 miles of bicycle touring routes. Yet, as the interest changed in the late 1980s and early 1990s from road touring to mountain biking, the ACA began work on opportunities for off-pavement biking. There now are ACA trail systems in the Jackson Hole, Wyoming area, the Monongahela National Forest in West Virginia, and the Missoula, Montana region surrounding the organization's headquarters. Our newest long-distance route effort is the Great Divide Mountain Bike Route, taking cyclists from Canada to Mexico, paralleling the Continental Divide. This 2,500-mile route uses a mixture of jeep roads, abandoned rail beds, and single-track trails.

### *Recent Trends, Issues, and Forces Driving Change*

The average age of cycling enthusiasts is rising. A study commissioned by ACA in 1995 found that the average member is 47 years of age; 41 percent of the membership is 50 years of age or older. Meanwhile, only three percent of the membership between the ages of 18 and 29. According to this study, seven of 10 members expect to bicycle tour within any given year. Approximately 64 percent said that tour would be two to seven days in length, and 23 percent said the typical cycling vacation was 7 to 14 days. In the past, when the membership was younger, the average tour length was much longer. Cyclists today cite family and employment pressures as the primary reasons for shorter cycling vacations.

Another factor affecting touring is harder-to-find cycling venues. Rural America is not as easy to find as it was 20 or 30 years ago. In many areas,k intense development is occurring, and most of the new pavement is not designed for cycling. In many states it is illegal to bicycle on a freeway shoulder. Without access to enjoyable and safe places to bicycle, people may not be able to participate as much as they would prefer.

### *Current Policies and Programs*

The growing overlap of road touring and mountain biking has led directly to creation of the Great Divide Mountain Bike Route. Similar trends are at work in bicycle commuting. There is a fine line between the supposed drudgery of using a bicycle to commute to work and the enjoyment of following a well-designed bicycle path that carries one home without the stresses of automobile traffic. The bicycle industry in the early 1990s mounted a campaign to publicize the need for more safe places to ride. In response, federal officials included major funding for bicycle routes in ISTEA.

### *The Future*

In late 1997, the ISTEA transportation bill will be re-authorized, either with or without the bicycling components intact. Members of cycling and pedestrian groups have joined together to encourage continued funding for design and construction of trails and support ofinfrastructure.

A new way that cycling activists communicate is the Internet. This has proved effective in networking at an extremely low cost. Cyclists looking for information can choose from dozens of specialty sites on the Internet. General interest cycling sites include BikeNet (an America On-Line site operated by ACA), advocacy information at the League of American Bicyclist's site (http://www.bikeleague.org), and touring information at Adventure Cycling's Internet site (http://www.adv-cycling.org.).

## Family Campers and RVers

(By Barbara J. Turner)

Family Campers and RVers is a large, non-profit family camping association representing people interested in this form of outdoor recreation. FCRV is a member of American Recreation Coalition (ARC) and other associations that promote outdoor recreation and its expansion.

Recreation seems to be growing in importance in people's lives. In addition, recreation is big business, as evidenced by the billions of dollars of sales of outdoor clothing and equipment. There is a wide variety of camping and RV equipment now available. FCRV represents people using any type of camping equipment. Many other family camping groups tend to represent specific types of equipment or even particular brands. The RV industry is setting its sights on the target market of people in their 30s to 50s. These people are identified as potential first-time buyers, the target of the industry's new Go-RVing campaign. There will continue to be, however, large numbers of older campers and their numbers are even likely to increase.

Various recreation user groups hold festivals and events to promote their interests and to provide a setting for showing new equipment and social interaction. Each year FCRV holds a national rally called a Campvention. Traditionally, Campventions have been hosted by states or provinces, either individually or in combination with others. Beginning with 1998, Campvention will be rotated among regions to make it more accessible.

When looking at overall trends, issues, and the direction of family camping, one must first look at the trends of society. Leisure time and recreation seem to be increasing in importance in people's lives. Balancing work and vacation time and looking beyond work toward retirement are vital issues to people. Camping and RV recreation help provide recreational options at any stage in the lifecycle. As FCRV moves into the 21st century, the organization is striving to promote camping and RV recreation as a part of the RV industry in the United States.

## Trends in American Fishing

(By Celeste McCaleb and BASS Inc. Staff, Bass Anglers Sportsman Society, Montgomery, AL)

A primary goal of fishing organizations, such as the Bass Anglers Sportsman Society (BASS), is to ensure the environmental safety of fish habitats. In 1970, BASS resurrected the 1899 Refuse Act and filed lawsuits naming over 200 polluters ranging from laundromats to large industries in Texas, Tennessee, and

Alabama. In that same year, the society created Anglers for Clean Water, where concerned fishermen could make tax-deductible contributions toward conservation causes of interest. One of the most recent projects involves efforts to prevent the draining of Rodman Pool, a bass fishery located in Florida. An effective method to work for water resource conservation is close communication with federal, state, and conservation agencies.

Because most pollution problems are not national in scope, state-wide networks have sprung up to handle regional challenges. For example, in the late 1970s, this organization helped organize affiliated clubs into 25 state federations. Currently, there are over 2,700 clubs and 50,000 chapter members.

Perhaps the most significant fisheries legislation in the recent past was the 1984 Wallop-Breaux Amendment to the Dingell-Johnson Sportfish Restoration Act. Since 1986, over $1 billion from additional taxes on motorboat fuel and fishing tackle have flowed back to state fish and wildlife agencies for management programs. Fishing organizations lobbied to pass and protect key provisions in that act.

### *Fishing Trends*

Over the past few years, sportfishing has become more of a family activity than in the past. This may be the result of changing family structures and a desire to spend more time with the family. Two ways BASS has addressed this change is coordinating fishing programs and educational resources for children, and planning a theme park for fishermen and their families.

Another trend noted by sportfishing authorities is that anglers are participating more frequently than in the past (see chart). From 1989 to 1994, the annual number of anglers who fished only one to four days per year was declining, while the number of anglers who fished over 40 days increased. This increase and the fact that families are becoming more involved support strongly that bass fishing will continue to grow in the future.

## Outdoor Recreation Trends for Motorized Vehicles

(By Adena Cook, BlueRibbon Coalition, Pocatello, ID)

The BlueRibbon Coalition works to ensure recreational access for motorized users on public lands. Motorized use on public lands has been affected by numerous acts and regulations over the last 40 years. For example, the Wilderness Act of 1964 prohibited motorized vehicles from congressionally designated wilderness. Subsequent designations to the system after 1964 has further prohibited motorized uses. Unfortunately, the debate over which lands should be designated Wilderness has polarized backcountry non-motorized and motorized interests.

In 1972, Executive Order 11644 authorized the secretaries of interior and agriculture to designate administratively "the specific areas and trails on public lands on which the use of off-road vehicles may be permitted, and areas in which the use of off-road vehicles may not be permitted." It further required that such designations "be based upon the protection of the resources of public lands, promotion of the safety of all users of those lands, and minimizing of conflicts among the various uses of those lands."

In 1977, Executive Order 11989 added a paragraph to EO-11644 stating in part "the respective agency head shall, whenever he determines that the use of off-road vehicles will cause or is causing considerable adverse effects on the soil, vegetation, wildlife, wildlife habitat, or cultural or historic resources, immediately close such areas or trails to the type of off-road vehicle causing such effects until such adverse effects have been eliminated and that measures have been implemented to prevent future recurrence."

Motorized recreationists formed local clubs to address access concerns and to enjoy motorized sports as a family activity. Local clubs work to promote actively ethical behavior and responsible use, as well as to perform volunteer maintenance of trails and facilities.

Local organization and volunteerism were effective, but continuing concern for access led to formation of the BlueRibbon Coalition in 1987. The BlueRibbon Coalition provides the *BlueRibbon Magazine* with news and information about public land policy. The magazine addresses issues of rural communities, natural resource users, and public access. BlueRibbon's land use program works with land managers to maintain and expand state and federal recreation opportunities. The BlueRibbon Coalition promotes cooperation among users and prevention of closures or restrictive access policies.

In addition to work on local and regional issues, the coalition works to affect the national land management policy. Attending national conferences, maintaining contact with public land agencies, working with members of Congress, and a variety of other methods are used to affect public land policy.

In the National Recreational Trail Fund Act (NRTFA) of 1991, Congress recognized the need to fund and provide recreational facilities for motorized recreationists. Patterned after off-highway vehicle funds successful in several states, NRTFA sets aside a portion of the federal gas tax for trails and facilities for all recreationist interests.

Much information is available on how to provide motorized recreation opportunities that are rewarding, yet not in conflict with other recreationists and resource management. Federal agencies are working to develop strategies for accommodating motorized recreationists needs. For example, the Forest Service has formulated principles and an action plan in the "National Off-Highway Vehicle Activity Review" (USDA Forest Service, Washington Office, File Code: 1410/2350). This review has led to development of a trail system by land managing agencies as outlined in the National OHV Activity Review which requires modified design to provide vehicle access as well as access for other uses. Based on Recreation Visitor Day (RVD) data and appropriate mileage for each type of trail experience, it is estimated that OHV trails should make up a minimum of 64 percent of a forest trail system. Exclusive use trails for equestrian, hiking, and bicycling should make up a maximum of 17 percent, 15 percent and four percent of the trail system, respectively. Groups such as the BlueRibbon Coalition will continue to face challenges and to work collaboratively to meet these challengers of access to motorized sports.

## Technical Rock Climbing Trends in the United States

(By Sally Moser and Sam Davidson, The Access Fund, Boulder, CO)

### *Overview*

Technical climbing is gaining popularity as a mainstream recreational activity. It is generally defined as the use of specialized equipment, including shoes, ropes, harnesses, and safety anchors, to provide a margin of safety and facilitate the physical efforts required for ascending and descending vertical rock faces.

It occurs on both public and private lands throughout the United States in a variety of settings, including high altitude mountains, ice flows, snow fields, boulders, constructed rock walls, and overhangs. There are several distinct forms of technical climbing, including bouldering (climbing close to the ground, generally without ropes and safety anchors), free climbing (holding on and moving up using one's equipment only to catch the climber in case of a fall), aid climbing (using one's ropes and safety anchors to support one's weight and assist in the ascent of terrain too steep or featureless to be free climbed), and sport climbing (a gymnastic blend of free and aid climbing on steep rock, generally over terrain so difficult that multiple attempts are often needed to climb a route without weighting one's safety anchors).

Technical climbers seek to explore the limits of their physical and mental skills in settings sometimes shared by other users of the public lands. However, they must be distinguished from the general public, who occasionally scramble without equipment or knowledge onto rock faces and boulders and may be the victims of climbing accidents. Technical climbers usually are less likely to be injured, killed, or require a rescue than hikers, swimmers, or skiers.

In the last ten years, the number of technical climbers has grown, as have climbers' impacts on natural and administrative resources. In some climbing areas, these impacts have resulted in use restrictions, including short- and long-term prohibitions.

The future of technical climbing in America depends on preserving the vertical "wilderness" and the diverse experiences climbers find in these environments. Technical climbing, more than many other types of outdoor recreation, is defined by personal freedom, self-reliance, and a minimum-impact ethic. To preserve the freedoms and responsibilities at the heart of the climbing experience, climbing enthusiasts are attempting to help in the resolution of public land management issues.

To keep climbing areas open and to conserve the climbing environment, the Access Fund was incorporated in 1990 to preserve the diversity of climbing resources and opportunities in the United States. Critical issues facing technical climbers include finding a solution to the question of whether "fixed" (semi-permanent) safety anchors will be prohibited or properly managed in designated Wilderness areas; developing a coalition of commercial and non-profit interests to promote human-powered recreation; forming alliances with other environmentally concerned users; and providing funding for grassroots advocacy efforts, climber education, impact-mitigation projects, and outreach programs.

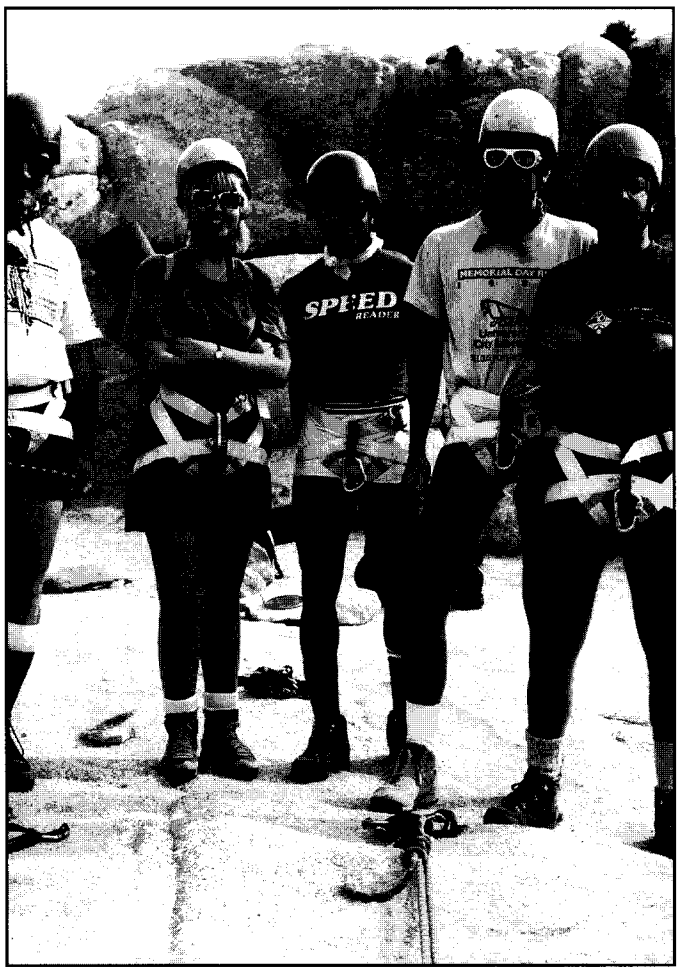
## *Current Trends*

### *Growth of Climbing*

The number of climbers in the United States has risen dramatically in the past ten years, due partly to the growing interest in outdoor recreation generally and partly to the advent and rapid spread of indoor climbing facilities. In 1986, there were no known indoor climbing gyms; currently there are over 200. The popularization of climbing in the mainstream media has also contributed to the sport's growth. The voluminous sales of books about mountain climbing are evidence of the rising public fascination with technical climbing. Current estimates by nationally distributed climbing magazines suggest 300,000 to 400,000 climbers are active today, compared to fewer than 100,000 ten years ago. The Access Fund now has more than 7,200 members, with 16-percent growth in membership between 1995 and 1996.

### *Increased Regulation*

As the number of active climbers continues to rise, public land management agencies have begun to pay more attention to climbing activities and impacts. On the federal level, the U.S. Forest Service, the National Park Service, the Bureau of Land Management, and the U.S. Fish & Wildlife Service all have developed or are considering new regulations as guidance for local authorities in managing technical climbing. Many state park systems now have climbing-specific policies as well. An emerging trend is for all public land units that have significant climbing resources to develop climbing management plans, which typically protect some traditional climbing freedoms but restrict others. Climbing management plans address the unique requirements and impacts of climbers, such as the use of fixed safety anchors, exploration of new routes, size of the climbing party, and commercial guide services. Other issues often addressed in climbing management plans are the protection of sensitive or rare plant and animal species and archeological or cultural sites.




*Rock climbers prepare to face the challenges of rock climbing and rappelling. Photo courtesy of USDA Forest Service. Photo by Alan Ewert.*

### *Liability Concerns*

As the popularity of technical climbing grows, so do the liability concerns of public lands managers, private landowners, and climbing equipment manufacturers, even though landowner or government liability is no greater for climbing than for other recreational uses. Without exception, the courts have supported this protection from liability in the few instances in which the government has been sued by climbers or their estates. There is no record of any private property owner in the United States being sued by a climber for liability. Organizations such as the Access Fund, along with outdoor recreation industry trade groups, are working to reduce liability concerns by publicizing the protections offered by state recreational user statutes and by standardizing climbing equipment labels and warnings by the equipment manufacturers.

### *Mitigation of Environmental Impacts*

Climbers are frequently in the vanguard of environmental activism, a trend that seems to grow in the outdoor recreation community. This activism derives from awareness that in order to preserve recreation opportunities, the natural resources that are the source and inspiration for these activities must also be safe-

guarded. This trend is evident in the increase numbers of volunteers who help with trail maintenance and clean-up projects. For example, in 1996, climbers logged over 500 volunteer days on Access Fund sponsored projects.

### *Policies, Programs, and Directions*

Working in cooperation with local climbers, other recreational users, public land managers, and private property owners, the Access Fund promotes responsible use and management of climbing resources throughout the United States. Some steps taken toward these ends by rock climbing organizations include:

- *Monitoring proposed federal policies* and responding to these initiatives through administrative procedural channels and direct communications with government officials. Reduced public lands management budgets could lead to restrictions on public access and legitimate uses of the public domain. Providing direct comments on all management plans and regulations that pertain to technical climbing.
- Given the declining budgets for managing public lands, public agencies are seeking *partnerships* with private organizations such as the Access Fund to help provide essential facilities and services. Climbing preservation grants from climbing organizations provide funding for projects such as trails, toilets, signage, scientific studies, and educational materials. Since 1990, the Access Fund has provided over $1 million for such programs.
- Developing and distributing *climber education programs* and materials, such as climbing newsletters and booklets, which provide practical information for minimizing resource impacts and promoting long-term stewardship of the climbing environment.
- *Grassroots activism* promotes individual responsibility and local initiative in the expression and protection of climber interests through actions like a regional volunteer activist network that communicates between national groups and local climbers.
- *Preserving and restoring access to climbing areas* often focuses on climbing areas, particularly on private lands, that have been closed or restricted due to concerns about resource impacts. Property donations and purchases sometimes take place to keep an area open to climbing.
- Major rock climbing groups have begun nurturing *partnerships with mainstream environmental organizations* such as the Sierra Club, the Wilderness Society, and the National Parks & Conservation Association. The Access Fund has developed in-depth ties with the International Mountain Bicycling Association and the American Whitewater Association International as the three groups organize the Recreational Access Summit of 1997. By joining forces with groups that share the same concerns, the climbing community is broadening its perspective and gaining partners to preserve the quality and diversity of our natural heritage.

### *Trends for the Years 2000 and 2005*

Trends that can have an affect on the climbing experience and management of climbing resources in the next five to eight years include:

It is expected that *the number of climbers will continue to grow,* but at a reduced rate, as many of those who learned to climb indoors move to the outdoors.

As the government seeks alternative ways of paying for the costs of managing outdoor recreation programs and resources, high-profile activities such as climbing will continue to be put under the microscope. Public lands management agencies will step up their cost-recovery efforts, especially with respect to rescues of stranded or injured climbers. *Special-use fees* to access parking areas, trails, and climbing resources will become standard or rise. Congressional appropriations for public lands administration will probably continue to decline if pilot user-fee programs prove successful, leaving individual national forests, parks, and land units to raise even more revenue at the local level.

As outdoor recreation in general becomes increasingly popular, there will be greater competition for access to limited resources. For example, there will be more interest in visiting popular designated wilderness areas, and land managers may respond by *imposing additional quotas* on day-use and overnight visitation. Climbers face the prospect of being required to reserve months in advance a day-use pass for national parks, and competing with other climbers for permits to explore new routes or even to climb established routes that are very popular.

As the climbing community expands and matures, it will become more cohesive and *increase its activism* in the continuing debate over how best to balance resource protection with recreational access. By the year 2005, for example, this organization expects membership to exceed 20,000 individuals and organizations.

# Riding into the Future: Motorcycling Recreation on the Road Ahead

(By Eric J. Lundquist, American Motorcyclist Association, Columbus, OH)

## *Introduction*

Except for competitive events in stadiums and arenas, recreational motorcycling depends on access to roads and open spaces. Broadly, there are three types of motorcycling categories: road riding (or touring), off-highway trail biking or all-terrain-vehicle recreation, and amateur or professional competition. Each of these groups is interested in a variety of outdoor recreation issues. For example, road-riding motorcyclists, many of whom enjoy camping and touring, have been highly supportive of the Federal Scenic Byways Program.

Off-highway enthusiasts are involved in land management planning activities and the American Motorcyclist Association (AMA) has successfully encouraged many to seek appointments to federal land advisory boards. These enthusiasts enjoy the same stimuli as other participants in strenuous trail-based recreation, such as the trail for the trail's sake, getting to the destination, viewing wildlife, scenic vistas, hunting, fishing, camping, and companionship.

Competition riders are interested in a variety of opportunities, from events at the Daytona International Raceway to small local tracks, to enduros, or to off-road endurance races traditionally held on public lands.

## *Forces Driving Significant Change*

A variety of forces are driving change in motorcycling and influencing the demographics of participants, their activities, the opportunities available to them, and the types of machines they use.

As the nation's population ages, so do participants in motorcycling and AMA members. Most are well educated and financially secure (Lundquist, 1995). There has been heightened interest in cycling by female riders.

Motorcycling experienced a flat market from the late 1980s to the early 1990s. Sales since then have shown a modest rise. Participation in motorcycling associations, however, has risen over the past decade. AMA membership went from 147,000 in 1988 to 213,000 in 1997. There has been a concurrent rise in the numbers taking part in other rider organizations such as state off-highway vehicle coalitions. Also a number of newer rider groups have come into existence in recent years, such as the Motorcycle Riders Foundation, the National Off-Highway Vehicle Conservation Council, and the BlueRibbon Coalition.

The AMA sanctions about 3,500 motorcycling events of all types each year. Other sanctioning organizations present many thousands of other events. Trends in such events are varied. In road-riding, there is more interest in destination events related to races held in Daytona Beach and Sturgis, South Dakota. Professional and amateur racing is continually evolving new types of competition. Vintage racing and events based around antique motorcycles are growing also. Non-competitive events such as dual-sport scenic touring and field meets are becoming more popular. A dual-sport tour uses motorcycles that are street-legal but off-highway capable. Athletic events such as motocross remain popular with several hundred thousand entrants every year.

The motorcycle industry itself is undergoing dramatic changes. Besides the traditional U.S., Japanese, and European manufacturers, new manufacturers from Europe, the former Eastern Bloc, China, and Southeast Asia are emerging. These groups are joined in this country by a variety of new producers of off-highway motorcycles and more than a dozen smaller manufacturers building machines similar to the most popular U.S. brand with after-market parts available. Growing requirements for vehicle emission controls in Asia and Europe are forcing innovation in motor types.

One traditional source of concern, motorcycle noise, is being addressed by the manufacture of machines that are much quieter (Lundquist & Chapin, 1996). Interest in ATV recreation remains high, and while the industry has not released recent ATV sales information, past trends indicate sales equivalent to street motorcycles.

## *Key Current Interests, Campaigns, Programs, and Directions*

### *Women and Motorcycling*

While still a male-dominated activity, the past decade has seen a heightened interest by women. In the summer of 1997, the AMA hosted a conference on women and motorcycling. Recent years have also seen several new magazines devoted to women riders and a growing number of women's motorcycling clubs.

### *Cooperation with Land Management Agencies*

Motorcycle organizations have encouraged their members to work locally with federal land management agencies. For example, the association developed a volunteer Trail Rider program with the Forest Service in 1988. A video advertising the program was funded with the Forest Service's first cost-share agreement. The program was upgraded in 1996 and has been modified to recognize participation with other state and federal agencies.

### *Safety and Education*

Most states now have street rider education courses developed at the insistence of enthusiasts. They are generally self-funded through registration and license fees. Reduction of fatalities have been dramatic, down from 4,564 in 1985 to 2,221 in 1995, and accidents were down 60 percent over this same period (Motor Industry Council, 1986-1996). Similar reductions in ATV deaths and injury since 1988 may also be partly attributed to the more widespread availability of safety training for those vehicles.

### *Government*

Motorcycling groups maintain a high interest in several areas, such as obtaining provisions against health insurance discrimination by employers in the Health Care Insurance Portability Act of 1996. Another of these interests is expressed through proposals in the 1997 reauthorization of the Intermodal Surface Transportation Efficiency Act relating to motorcycle safety, access to HOV lanes, cessation of federal mandates for states to require apparel, and funding for the National Recreational Trails Fund Act (the Symms Act).

One current focus is the push for "smart highways," which includes automated toll booths. Current state initiatives include promoting legislation authorizing off-highway vehicle management programs and the preservation of existing safety and education schemes.

## *The Future*

The next ten years may bring additional change to recreational motorcycling. Due to the ready availability of automobiles, motorcycling has not generally been seen as part of the personal transportation mix. Rather, it has been viewed as another competitor for disposable consumer dollars. There are other competitors for these dollars, such as home computers and entertainment systems.

One project that could serve as a model for future outdoor user partnerships is the Hatfield-McCoy project in West Virginia, which could provide up to several thousand miles of multiple use trail through agreements with private property owners. There is also interest in this project from adjoining counties in Kentucky and Virginia (American Motorcyclist Association, 1996). These agreements may become trendsetters in other areas of the country with interspersed public and private land. Tourism agencies are interested in findings that off-highway vehicle recreation generates $0.5 billion in Colorado and $3 billion annually in California (Lundquist, 1995).

Motor sports of all types are enjoying surging popularity. Attendance at such events as Supercross and road racing is at its highest level in recent history. The AMA is working to develop new venues for participation at the amateur level. Motorcyclists are by nature interested in technology. A substantial Internet presence already exists, which will likely grow and become more useful in planning races or recreation trips.

## REFERENCES

Absher, J., & Winter, P. L. (1997). *Evaluation of the 1995 Eco-Team Program*. Unpublished technical report supplied by the authors.

American Motorcyclist Association. (1996, Summer). West Virginia trail study completed.*The OHV Planner*, 1.

Baas, J. M., Ewert, A., & Chavez, D. J. (1993). Influence of ethnicity on recreation and natural environment use patterns: Managing recreation sites for ethnic and racial diversity. *Environmental Management, 17*(4), 523-529.

Bartels, S. (1994). *ABA survey of members*. Colorado Springs, CO: American Birding Association.

Bicycle Institute of America. (1993). *The Bicycle Institute of America reference book*. Washington, DC: Author.

Boyd, S., & Butler, R. W. (1996). Managing ecotourism: An opportunity approach. *Tourism Management, 8*, 557-566.

Brown, K. (1988). Wheels of fortune: Bicycle marketers shift into high gear to meet demand. *Adweek's Marketing Week, 29*(2), 2.

Bullard, R. (1995). *People of color environmental groups: 1994-1995 directory*. Flint, MI: Charles Stewart Mott Foundation.

Butler, M. (1990). *Rural-urban continuum codes for metro and nonmetro counties*. Washington, DC: United States Department of Agriculture, Economic Research Service, Agriculture and Rural Economy Division.

Caro, V., & Ewert, A. (1995). The influence of acculturation on environmental concerns: An exploratory study. *The Journal of Environmental Education, 26*(3), 13-21.

Carr, D. S., & Chavez, D. J. (1993). *Culture, conflict, and communication in the wildland-urban interface*. Boulder, CO: Westview Press.

Chase, J. (1987, January). Mountain bikes, the gnarly question of knobby tires. *Backpacker*, 36-37.

Chavez, D. J. (1992). Hispanic recreationists in the wildland-urban interface. *Trends, 29*(4), 23-25.

Chavez, D. J. (1993a). *Pilot studies of changing urban wilderness recreation use on the Cleveland National Forest: Past wilderness users and on-site wilderness users*. Unpublished report supplied by author.

Chavez, D. J. (1993b). *Visitor perceptions of crowding and discrimination at two national forests in southern California*. PSW-RP-216, Research Paper. Albany, CA: USDA Forest Service, Pacific Southwest Station.

Chavez, D. J. (1995). *Demographic shifts: Potential impacts for outdoor recreation management*. Proceedings of the International Outdoor Recreation and Tourism Trends Symposium and the 1995 National Recreation Resource Planning Conference, May 14-17, pp. 252-255. St. Paul, MN: University of Minnesota Press.

Chavez, D. J. (1996a). Mountain biking: Issues and Actions for USDA Forest Service managers. PSW-RP-226, Albany, CA: USDA Forest Service, Pacific Southwest Research Station.

Chavez, D. J. (1996b). *Leisure experiences of Hispanic families*. Abstracts from the 1996 Symposium on Leisure Research, held in conjunction with the 1996 Congress for Recreation and Parks, October 23-27, p. 67, Kansas City, MO.

Chavez, D. J., Baas, J., & Winter, P. (1993). *Mecca Hills: Visitor research case study*. Technical report BLM/CA/ST-93-005-9560, 31 pp. Sacramento, CA: California State University Press.

Chavez, D. J., & Mainieri, T. (1994). *Recreation day use series-report 1: San Bernardino National Forest, Summer 1992*. Unpublished report supplied by the authors.

Chavez, D. J., & Winter, P. L. (1993). *Report for the Applewhite picnic area, Cajon ranger district, San Bernardino National Forest*. Unpublished report supplied by the authors.

Chavez, D. J., & Winter, P. L. (1994). *The trappings of recreation: Is ethnicity the key variable?* Presented at the 36th annual conference of the Western Social Science Association, April 20-24, Albuquerque, New Mexico.

Chavez, D. J., Winter, P. L., & Baas, J. M. (1993a). Recreational mountain biking: A management perspective. *Journal of Park and Recreation Administration, 11*(3), 29-36.

Chavez, D. J., Winter, P. L., & Baas, J. (1993b). *Imperial Sand Dunes visitor research case study*. Technical report BLM/CA/ST-93-014-9560. Sacramento, CA: California State University Press.

Chavez, D. J., Winter, P. L, & Larson, J. (1995). *Managing recreation resources for changing urban populations*. Paper presented at the National Recreation and Park Administration Congress for Recreation

and Parks, San Antonio, TX.

Chavez, D. J., Winter, P .L., & Mainieri, T. (1994). *Recreation day use series-report 2: Angeles National Forest, summer 1993*. Unpublished report supplied by the authors.

Chavez, D. J., Winter, P. L., & Mainieri, T. (1995). *Recreation day use series-report 3: Los Padres National Forest, summer 1994*. Unpublished report supplied by the authors.

Clawson, M., & Van Doren, C. (1984). *Statistics on outdoor recreation*. Washington, DC: Resources for the Future, Inc.

Cordell, H. K., Bergstrom, J. C., Hartmann, L. A., & English, D. B. K. (1990). *An analysis of the outdoor recreation and wilderness situation in the United States: 1989-2040*. GTR RM-189. Fort Collins, CO: USDA Forest Service, Rocky Mountain Forest and Range Experiment Station.

Cordell, H. K., McDonald, B. L., Briggs, J. A., Teasley, R. J., Biesterfeldt, R., Bergstrom, J., & Mou, S. (1997). *Emerging markets for outdoor recreation in the United States*. North Palm Beach, FL: Sporting Goods Manufacturers Association, Outdoor Products Council.

Cordell, H. K., McDonald, B. L., Lewis, B., Miles, M., Martin, J. & Bason, J. (1996). United States of America. In G. Cushman, A. J. Veal, & J. Zuzanek (Eds.), *World leisure participation: Free time in the global village*. Oxford, England: CAB International.

Coupland, D. (1991). *Generation X*. New York: St. Martin's Press.

Curtin, R. T. (1994). *The RV consumer*. Ann Arbor, MI: The University of Michigan, Survey Research Center.

Dwyer, J. (1994). *Customer diversity and the future demand for outdoor recreation*. GTR: RM-252. Fort Collins, CO: USDA Forest Service, Rocky Mountain Forest and Range Experiment Station.

English, D. B. K., & Bergstrom, J. C. (1994). The conceptual links between recreation site development and regional economic impacts. *Journal of Regional Science, 34* (4), 599-611.

English, D., & Cordell, H. K. (1985). A cohort-centric analysis of outdoor recreation participation changes. In A. E. Watson (Ed.), *Southeastern recreation research proceedings*. February 28-March 1, 1985, Myrtle Beach, SC. Statesboro, GA: Georgia Southern College, Department of Marketing.

Environmental Protection Agency. (1996). *Nature-based tourism*. OSEC Issue Brief 1. Washington, DC: Author.

Eubanks, T., Kerlinger, P., & Payne, R. H. (1993). High Isle, Texas: A case study in avitourism. *Birding, 25*(6), 415-420

Fennell, D. A., & Smale, B. J. A. (1992). Ecotourism and natural resource protection. *Tourism Recreation Research, 17*(1), 21-32.

Gerlach, L. P., & Bengston, D. N. (1994). If ecosystem management is the solution, what's the problem? *Journal of Forestry, 92*(8), 18-21.

Go, F. M., Milne, D., & Whittles, L. J. R. (1992, Spring). Communities as destinations: A marketing taxonomy for the effective implementation of the tourism action plan. *Journal of Travel Research*, 31-37.

Gordon, J. C. (1994). From a vision to policy, a role for foresters. *Journal of Forestry, 32*(7), 16-19.

Greene, W. H. (1993). *Econometric Analysis* (2nd ed.). Englewood Cliffs, NJ: Prentice Hall.

Heywood, J. (1993). *Studying social order on urban proximate forest lands*. Unpublished cooperative agreement report supplied by the author.

Hof, J. G., & Kaiser, H. F. (1983). Long-term outdoor recreation participation projections for public land management agencies. *Journal of Leisure Research, 15(1),* 1-14.

Hollenhorst, S. J., Schuett, M. A., Olson, D., & Chavez, D. J. (1995). An examination of the characteristics, preferences, and attitudes of mountain bike users of the national forests. *Journal of Park and Recreation Administration, 13*(3), 41-51.

Hollenhorst, S. J., Schuett, M. A., Olson, D., Chavez, D. J., & Mainieri, T. (1995). *A national study of mountain biking opinion leaders: Characteristics, preferences, attitudes and conflicts*. Unpublished draft supplied by authors.

Hsieh, S., O'Leary, J. T., & Morrison, A. (1994, 1991). A comparison of package and non-package travelers from the United Kingdom. *Journal of International Consumer Marketing*, 6(3), 79-102 and *TTRA CENSTATES News, 8*(3), 9-10 ().

Hutchison, R. (1993). Among leisure and recreation activity. In P. Gobster (Ed.), *Managing Urban and High-Use Recreation Settings* (pp. 87-92). Chicago, IL: USDA Forest Service, North Central Forest Experiment Station.

Jacoby, J. (1990). Mountain bikes: A new dilemma for wildland recreation managers? *Western Wildlands, 16*(1), 25-28.

Keller, K. D. (1990). *Mountain bikes on public land: A manager's guide to the state of the practice.* Washington, DC: Bicycle Federation of America.

Kellert, S. R. (1985). Birdwatching in American Society. *Leisure Sciences 7*, 343-360.

Kerlinger, P. (1993). Birding economics & birder demographics studies as conservation tools. In D. Finch & P. Stangel (Eds.), *Proceedings: Status & management of neotropical birds.* General Technical Report. Fort Collins, Colorado: Rocky Mountain Forest & Range Experimental Station.

Kerlinger, P., & Brett, J. (1994). Hawk mountain sanctuary: A case study of birder visitation & birding economics. In R. Knight & K. Gutzmiller (Eds.), *Wildlife & recreationists: Coexistence through management & research.* Washington, D.C.: Island Press.

Kerlinger, P., & Eubanks, T. (1995). Birds & Bucks. *Birding, 27*(1), 21-23.

Kerlinger, P., & Wiedner, D. S. (1991). The economics of birding at Cape May, New Jersey. In J. A. Kusler, (Ed.), *Ecotourism & resource conservation*, (vol. 1). Second International Symposium, Ecotourism & Resource Conservation, Miami, FL.

Lang, C. T. (1996). *A typology of international travelers to nature-based tourism destinations.* Unpublished doctoral dissertation. Purdue University, Lafayette, IN.

Lang, C. T., & O'Leary, J. T. (1990, May). *International travel and tourism: Analysis of overseas travelers to national parks/historic sites.* A series of reports to the U.S. National Park Service and Tourism Canada.

Leatherman, J. C., & Marcouiller, D. W. (1996). Persistent poverty and natural resource dependence: Rural development policy analysis that incorporates income distribution. *The Journal of Regional Analysis & Policy, 26*(2), 73-94.

Lieberson, S., & Wilkinson, C. (1976). A comparison between Northern and Southern blacks residing in the North. *Demography, 13*(2),199-224.

Lindsey, J., & Ogle, R. (1972). Socioeconomic patterns of outdoor recreation use near urban areas. *Journal of Leisure Research, 4*(1),19-24.

Lingle, G. R. (1991). History and economic impact of crane watching in central Nebraska. *Proceedings of North American Crane Workshop, 6*, 25-29.

Lundquist, E. J. (1995). Demographics and contributions of the off-highway motorcycling community. In J. L. Thompson, D. W. Lime, B. Gartner, & W. M. Sames (Comps.), *Proceedings of the Fourth International Outdoor Recreation and Tourism Trends Symposium and the 1995 National Recreation Resource Planning Conference, May 14-17,* pp. 300-303. St. Paul, MN: University of Minnesota, College of Natural Resources and Minnesota Extension Service.

Lundquist, E. J. (1995). *Off-highway motorcycle and ATV enthusiast demographics.* Pamphlet. Westerville, OH: American Motorcyclist Association.

Lundquist, E. J., & Chapin, B. (1996). *Testing closed-course competition motorcycles for compliance with Michigan trail bike regulations.* Paper presented at the meeting of the American Motorcyclist Association Congress, Westerville, Ohio.

Magill, A. W. (1995). Multicultural wildland users: A growing communication challenge. *The Environmental Professional, 17*, 51-54.

McDonald, B. L., & Van Horne, M. (1995). The moralists and the millennial generation: The crafting of outdoor recreation in the 21st century. In J. L. Thompson, D. W. Lime, B. Gartner, & W. M. Sames (Comps.), *Proceedings of the Fourth International Outdoor Recreation and Tourism Trends Symposium and the 1995 National Recreation Resource Planning Conference*, May 14-17, 1995, St. Paul, MN. St. Paul, MN: University of Minnesota College of Natural Resources and the Minnesota Extension Service.

McDonald, D., & McAvoy, L. H. (1996). In countless ways for thousands of years: Native American relationships to wildlands and other protected places. *Trends, 33*(4), 35-40.

McDonald, D., & McAvoy, L. (1997). *Outdoor recreation, racism, and Native Americans.* Unpublished cooperative agreement report supplied by the authors.

Motorcycle Industry Council (1986-1996). *Motorcycle industry council statistical annuals, 1986 through 1996.* Costa Mesa, CA: Author.

Murdock, S. H., Backman, K. E., Colberg, E., Hoque, M. N., &. Hamm, R. R. (1990). Modeling demographic change and characteristics in the analysis of future demand for leisure services. *Leisure Sciences, 12*, 79-102.

National Advisory Committee on Civil Disorders. (1968). Kerner commission report: Grievances. In J. A. Nesbitt, P. D. Brown, & J. F. Murphy (Eds.), *Recreation and Leisure Services for the Disadvantaged*, (pp. 41-48). Philadelphia: Lea & Febriger.

National Marine Manufacturers Association. (1997). *Inter/port.* Chicago, IL: National Marine Manufac-

turers Association.

Office of Policy Development and Research. (1994, September). *Urban policy brief* (1). Washington, DC: U.S. Department of Housing and Urban Development.

Orams, M. B. (1995). Towards a more desirable form of ecotourism. *Tourism Management, 16*(1), 3-8.

Outdoor Recreation Resources Review Commission (ORRRC). (1962). *National recreation survey.* ORRRC Study Report 19. Washington, DC: U.S. Government Printing Office.

Parker, J., & Winter, P. L. (1996). *Angeles National Forest wilderness visitors' characteristics and values.* Unpublished draft manuscript supplied by the authors.

Payne, R. H. (1991). Potential economic and political impacts of ecotourism: A research note. *Texas Journal of Political Studies, 13*, 65-77.

Propst, D. B., Gavrilis, D. G., Cordell, H. K., & Hansen, W. J. (1985). Assessing the secondary economic impacts of recreation and tourism: Work team recommendations. In D. B. Propst (Comp.), *Assessing the economic impacts of recreation and tourism.* Asheville, NC: U.S. Department of Agriculture, Forest Service, Southeastern Research Station.

Proshansky, H. M., Fabian, A. K., & Kaminoff, R. (1983). Place identity: Physical world socialization of the self. *Journal of Environmental Psychology, 3*, 57-83.

Rogers, E. M., Burdge, R. J., Korshing, P. F., & Donnermeyer, J. (1988). *Social change in rural societies: An introduction to rural sociology.* Englewood Cliffs, New Jersey: Prentice Hall.

Romero, A., & Stangel, P. (1997). *1997 directory of birding festivals.* Washington, D.C.: National Fish & Wildlife Foundation.

Scott, D., Stewart, W., & Cole, J. (1997). *An examination of activity preferences & orientations among serious birders.* College Station, TX: Texas A&M University, Department of Recreation, Park & Tourism Sciences, Texas Agricultural Extension Service.

Scott, D., Thigpen, J., Kim, S. S., & Kim, C. (1996). *The 1995 Rockport Hummerbird celebration: A survey of visitors including information about the Great Texas Coastal Birding Trail.* College Station, TX: Texas A&M University, Department of Recreation, Park & Tourism Sciences, Texas Agricultural Extension Service.

Shafer, E. L., Carline, R., Guldin, R. W., & Cordell, H. K. (1993). Economic amenity values of wildlife: Six case studies in Pennsylvania. *Environmental Management, 17*(5), 669-682.

Simcox, D. E. (1993). Cultural foundations for leisure preference, behavior, and environmental orientation. In A. W. Ewert, D. J. Chavez, A. W. Magill (Eds.), *Culture, Conflict and Communication in the Wildland-Urban Interface.* Westview Press.

Simcox, D. E., & Pfister, R. E. (1990). *Hispanic values and behaviors related to outdoor recreation and the forest environment.* Unpublished cooperative agreement report supplied by the authors.

Spiegler, M. (1996, December). Pop vulture: Gen X—not. *American Demographics.*

Sporting Goods Manufacturing Association. (1991). *Mountain biking—on the way up.* North Palm Beach, FL: Sporting Goods Manufacturing Association.

Strauss, W., & Howe, N. (1991). *Generations: The history of America's future, 1584-2069.* New York: William Morrow and Company.

Taylor, D. E., & Winter, P. L. (1994). *Factors influencing perceptions, expectations, and responses to depreciative behaviors in three national forests of the Pacific Southwest.* Unpublished draft manuscript supplied by the authors.

Tilmant, J. T. (1991). *Mountain bike use within national parks: A report on a 1990 survey.* Unpublished draft supplied by author.

Trembley, K. R., Jr., & Dunlap, R. E. (1978). Rural-urban residence and concern with environmental quality: A replication and extension. *Rural Sociology, 43*(3), 474-491.

U.S. Bureau of the Census. (1994). *Current Population Reports, P25-1095 and P25-1104.* Washington, D.C.: Author.

U.S. Department of Agriculture, Forest Service. (1994). *RPA assessment of the forest and rangeland situation in the United States—1993 update.* Report No. 27 . Washington, D.C.: Government Printing Office.

U.S. Department of Agriculture, Forest Service. (1995). *The forest service program for forest and rangeland resources: A long-term strategic plan.* Draft 1995 RPA Program. Washington, DC: Author.

U.S. Department of Agriculture, Forest Service. (1996). *Common social unit data base.* Golden, CO: Rocky Mountain Regional Office.

U.S. Department of the Interior. (1974-1992). *Federal recreation fee report.* Washington, DC: Author, National Park Service.

U.S. Department of the Interior. (1993). *The 1991 national survey of fishing, hunting, & wildlife-associated recreation*. Washington, DC: U.S. Fish & Wildlife Service.

Uysal, M., Oh, H. C., & O'Leary, J. T. (1995). Seasonal variation in propensity to travel in the U.S. *Journal of Tourism Systems and Quality Management*, 1(1), 1-13.

Van Horne, M. J., Szwak, L. B., & Randall, S. A. (1986). *1982-1983 nationwide recreation survey*. Washington, DC: U.S. Government Printing Office.

Viehman, J. (1990, August). Let's build trails, not walls. *Backpacker*, p. 3.

Walsh, R. G., Jon, K. H., McKean, J. R. & Hof, J. (1992). Effect of price on forecasts of participation in fish and wildlife recreation: An aggregate demand model. *Journal of Leisure Research, 21*, 140-156.

Washburne, R. F. (1978). Black underparticipation in wildland recreation: Alternative explanations. *Leisure Sciences, 1*(2), 175-189.

Watson, A. E., Williams, D. R., & Daigle, J. J. (1991). Sources of conflict between hikers and mountain bike riders in the Rattlesnake NRA. *Journal of Park and Recreation Administration, 9*(3), 59-71.

Wenger, K. F. (1997). What is ecosystem management? *Journal of Forestry, 95*(4), p. 44.

Western, D. (1993). Defining ecotourism. In K. Lindberg & D. Hawkins (Eds.), *Ecotourism: A guide for planners and managers* (pp. 7-11)., North Bennington, VT: The Ecotourism Society.

Wiedner, D., & Kerlinger, P. (1990). Economics of birdwatching: A national survey of active birders. *American Birds*, 44, 209-213.

Wilson, W. J. (1980). *The declining significance of race*. Chicago and London: The University of Chicago Press.

Wilson, W. J. (1987). *The truly disadvantaged*. Chicago: The University of Chicago Press.

Winter, P. L. (1995). *Visitor research case study: The Redding Resource Area final report*. Unpublished report supplied by the author.

Winter, P. L. (1996). *Environmental concern and environmental action: How do recreationists fare?* The Sixth International Symposium on Society and Resource Management: Social Behavior, Natural Resources, and the Environment, Pennsylvania State University, University Park Pennsylvania.

Winter, P. L. (1996). *San Gorgonio Wilderness visitor survey, summer and fall, 1994*. Unpublished report supplied by the author.

Woo, C. J. 1996. Asian immigrants: Attitude and behavior toward natural resources. In *The Sixth International Symposium on Society and Resource Management: Social Behavior, Natural Resources, and the Environment* (May 18-23, 1996). University Park: The Pennsylvania State University.

Woods & Poole Economics, Inc. (1997). 1997 Complete Economic and Demographic Data Source (CEDDS) on CD-Rom Technical Documentation. Washington, DC: Woods & Poole Economics, Inc.