

A recent paper in the Proceedings of the National Academy of Sciences suggested that Americans' participation in nature-based outdoor recreation had declined since the 1980s and early 1990s and implied that funding and support for natural resource conservation could suffer. Other data suggest that interest is increasing. The author provides a historical context for the issue and suggests how knowing more about these trends might inform public policy.

THE LATEST ON TRENDS IN

NATURE-BASED OUTDOOR RECREATION

Considerable interest in better understanding current trends in nature-based outdoor recreation followed publication of Richard Louv's book, *Last Child in the Woods*, and a recent paper by Oliver R.W. Pergams and Patricia A. Zaradic titled "Evidence for a Fundamental and Pervasive Shift away from

Nature-Based Recreation."¹ This latter paper attributed a decline in Americans' interest in nature-based recreation to the popularity of electronic entertainment. Is it really the case that nature-based recreation is declining in the United States? A recent national report, *Outdoor Recreation for 21st Century America*, indicated that Americans' participation in nature-based recreation activities had been rising up to the early part of this decade.² But is it still increasing?

Some of the speculation that nature-based outdoor recreation is declining is based on the well-documented growth of popularity of computers, home theaters, video games, and other electronic equipment by both adults and youth. These tools and entertainments compete for people's time and attention. Louv speculated that children are becoming less connected with nature. Others have written that recent changes in lifestyles have caused a significant shift away from nature-based recreation in the United States and abroad.³ Because such conclusions could have important consequences—reducing federal, state, and other funding for natural resource conservation and for recreation management—a closer look at this speculation about declining interest

in nature and recreating in the outdoors is warranted.

This paper gives an overview of outdoor recreation trends in the United States generally, and then looks at nature-based recreation specifically. Nature-based recreation is defined as outdoor activities in natural settings or otherwise involving in some direct way elements of nature—terrain, plants, wildlife, water bodies. Historical perspective is offered to help set the stage for looking at today's nature-based recreation. From this overview, insights for forest, other natural resource, and public land programs and policies are offered.

THE RISE OF OUTDOOR RECREATION

Following the Great Depression and World War II, outdoor recreation emerged as a major component of many Americans' lifestyles. In 1960, the U.S. population reached about 131 million and was growing steadily. Along with increasing affluence, this population growth boosted demand for outdoor recreation. Family vacations and summer trips quickly became a significant part of the typical American's calendar. Recognizing and respond-

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FOREST HISTORY SOCIETY PHOTO COLLECTION, FHS 974

All the nature-based recreation activities popular in the 1960s, such as hiking, camping, and picnicking, are still popular with the American public. These and many other activities may occur on either public or private lands, as in the case of this family gathered at a picnic site in Weyerhaeuser Timber Company's Bald Hill Lake Park on the Vail Tree Farm in Washington.

ing to this growing demand, the federal government initiated a study of the supply-and-demand situation for outdoor recreation in the 1950s and early 1960s. This study was conducted by the Outdoor Recreation Resources Review Commission (ORRRC), which reported its findings to the president and the Congress in 1962. That report set off a cascade of legislation, funding initiatives, and policy changes at both federal and state levels.⁴ Congress passed a series of acts creating resources such as the National Wilderness Preservation System, the National Wild and Scenic Rivers System, the National Trails System, a system of National Recreation Areas, and the Land and Water Conservation Fund.

As reported by ORRRC, the most popular summertime outdoor recreation activities in 1960 were, in order, driving for pleasure, swimming, walking, playing outdoor games or sports, sightseeing, picnicking, fishing, bicycling, attending outdoor sports events, boating, nature walks, and hunting. Also popular were camping, horseback riding, water skiing, hiking, and attending concerts or other outdoor events. Though the technology of outdoor equipment and clothing has evolved dramatically over the years since then, all of the activities popular then are still popular with the American public. As we shall see, however, outdoor technology is not all that has changed since 1960.

Twenty years after the ORRRC report was published, the 1982–83 National Recreation Survey was conducted, as recom-

mended by ORRRC. The survey found that the most popular activities at that time were, in order, swimming, walking, visiting zoos and parks, picnicking, driving for pleasure, sightseeing, attending outdoor sports events, fishing, and bicycling. The other activities enjoyed by Americans then were similar to those twenty years earlier. By the early 1980s, America's population had grown by 100 million, to about 231 million.

By 2000, the population had risen to around 284 million and was increasing at the rate of about 3 million per year. Viewing and photographing birds had become the fastest-growing activity in the country. As reported in *Outdoor Recreation for 21st Century America*, watching, photographing, and identifying wild birds had attracted more than 50 million new participants in less than twenty years.⁵ Closely following the growth rate for birding were day hiking and backpacking, growing 193 and 182 percent, respectively, in less than twenty years. Snowmobiling increased 125 percent. Next fastest, increasing 50 to 100 percent since 1982, were attending outdoor concerts, plays, and other events; walking for pleasure; camping in developed sites; canoeing or kayaking; downhill skiing; and swimming in natural waters (i.e., streams, lakes, and oceans). Increasing 25 to 50 percent were ice skating, visiting nature centers and museums, picnicking, horseback riding, sightseeing, and driving for pleasure.

Because, in general, men participated in many of those



Backpacking and camping gear in use in the 1960s was quite different than the lightweight, wind- and water-proof equipment of today. The recreation equipment being used by “Red” Chaplin of the North American Family Campers Association was typical of equipment in the 1960s and 1970s.

activities at higher rates than women, they tended to have a heavy influence on overall activity trends. Through the 1990s and into this decade, however, women’s participation in outdoor activities began to increase faster than in previous decades. In particular, more women engaged in horseback riding, pool swimming, fishing, and sailing. At this same time, participation in several activities by older Americans was moving up strongly as well.

In 2000, the most popular activities were walking for pleasure, outdoor family gatherings, and visiting a beach—the same activities that were at the top of the National Recreation Survey in 1994–95, when an update of the 1982–83 survey was done. When that update was conducted, the national survey was renamed the National Survey on Recreation and the Environment (NSRE). The most noticeable change by 2000 was growth in the proportion of the total population that participated in outdoor activities. In 1994–95, for example, 67 percent of the population participated in walking; by 2000, that rate had climbed to 83 percent, making it by far the most popular outdoor activity in America. The percentage of individuals who visited nature centers, nature museums, and similar nature study sites had risen substantially as well. Also noticeable was a continuing shift in the mix of activities people were turning to for outdoor experiences.

We see clear differences between what one would have witnessed at a typical outdoor area in the 1950s, 1960s, and 1970s and what one sees today, in the numbers of participants, types of clothing, and sophistication of equipment. In all likelihood, the changing composition of our population will stimulate further change. As well, one has to wonder how events like the terrorist attacks of September 11, 2001, have impacted outdoor recreation, particularly nature-based activities. Just after the attacks, respondents in an NSRE survey said they might modestly decrease their activities, but when asked about numbers of trips planned in the coming twelve months, people said they were planning about the same number of trips for recreation activities.

THE NSRE

The data for this article were obtained from the National Survey on Recreation and the Environment, a federal survey of Americans’ outdoor recreation activities.⁶ The NSRE is conducted by the Forest Service research group in Athens, Georgia, with two partners, the University of Georgia and the University of Tennessee. The Athens research group has been collecting data and producing reports about the recreation activities, environ-

mental attitudes, and natural resource values of Americans since the 1980s. The core of the survey covers outdoor activity participation and personal demographics. NSRE is a random-digit-dialed household telephone survey of a cross section of noninstitutionalized U.S. residents 16 years of age or older.

The most recent rounds of NSRE surveying were conducted between the summer of 2005 and spring of 2008 as part of a long-term data collection effort that began in the fall of 1999. The survey is statistically related to all previous National Recreation Surveys so that tracking of trends is possible. The current NSRE covers a much longer list of outdoor recreation activities than did ORRRC's first survey in 1960. Across all survey versions since 1999, more than 100,000 respondents were asked, "During the past 12 months, did you go [hiking, etc.] outdoors?" If the answer was yes, respondents were then asked, "On how many different days did you go [hiking, etc.] in the last 12 months?" Any amount of time spent on an activity on a given day, whether less than an hour or for several hours, was counted, whether that activity was the primary reason for recreating outdoors or not. The total number of people responding "yes" to any of the activities listed and the total days on which they participated, summed across activities and across all who participated, are the two primary statistics reported in this paper. The total days of participation across activities is a consistent index over time indicating the overall number of times people engage in outdoor activities.

Respondents were asked about more than eighty outdoor

activities at varying times during the surveying to permit profiling the full scope of recreation activities. About twenty of these activities are competitive sports or fitness activities which are not addressed in this paper. The focus instead is on the other sixty outdoor activities, especially the fifty we define as nature-based. All data used in this report were weighted so that the demographic profiles of survey respondents matched those of the U.S. population over 16 years old at the time of surveying.

NATURE-BASED RECREATION TRENDS SINCE 2000

Our overall picture of nature-based outdoor recreation includes number of people, number of days, and trends in participation. The time periods of primary interest are from 1999–2001 and 2005–2008—seven years across which we look for change in outdoor activities in general and change in nature-based activities especially. For the sake of simplification, each period will be referred to by a midpoint year, 2000 and 2007.

General trends in outdoor recreation. Between 2000 and 2007, the total number of people who participated in one or more outdoor activities grew by 4.4 percent, from an estimated 208 million to 217 million (see Figure 1). At the same time, the number of days of participation summed across all participants and activities increased from 67 billion to 84 billion, approximately 25 percent. The number of days of participation in walking for pleasure outdoors grew almost 14 percent, attending family gatherings



COURTESY OF CONNIE HEAD

Over the past twenty years, nature-based outdoor recreation has become less dominated by men as women began to participate more in outdoor activities. A group of women canoe-camping—here, in the Okefenokee National Wildlife Refuge Wilderness in 2004—would have been an unusual sight in the 1960s.

outdoors grew almost 14 percent, visiting beaches grew more than 16 percent, and visiting farms and other agricultural settings grew by more than 100 percent. As will be discussed below, certain nature-based activities grew considerably as well.

For some of the sixty activities, on the other hand, days of participation (summed across all participants in each activity) decreased—examples include picnicking, driving for pleasure, visiting historic sites, and day hiking. Interestingly, for a few of these activities the number of people participating actually increased, while the opposite was observed for other activities. That is, we saw decreases in per capita days of participation for some activities, but increases in per capita days of participation for others. Over all sixty activities, per capita days of participation increased by almost 16 percent between 2000 and 2007. This is an important finding, especially in light of the study by Pergams and Zaradic.

General trends in nature-based outdoor recreation. Within the list of sixty outdoor recreational activities are fifty nature-based activities associated with wildlife and birds, streams and lakes, snow and ice areas, hunting and fishing sites, different types of water bodies, trails, rugged terrain and caves, and other natural settings and resources on public or private forest, range, or other land and water. Some of these nature-based pursuits can be done near home (such as wildlife watching or swimming); others are enjoyed in more remote wildland areas (such as backpacking or mountain climbing). Here, too, between 2000 and 2007 we see discernible growth in the total number of participants and growth in the summed number of days they participated. Figure 2 summarizes these trends across the fifty nature-based activities. The total number of people who participated in these activities grew by 3.1 percent, from an estimated 197 million to 203 million. At the same time, the number of days of participation summed across all participants and activities grew about 32 percent, from an estimated 41 billion to nearly 55 billion. Over all fifty nature-based activities, per capita days of participation increased by more than 22 percent.

A few of the nature-based activities, such as mountain biking, coldwater fishing, whitewater rafting, and downhill skiing, experienced decreases in both the number of people who participated and total days of participation. Primitive camping (not in developed campgrounds), backpacking, and mountain climbing showed decreases in the number of people who participated, but increases in the number of days of participation. Visiting pre-historic sites, saltwater fishing, and snorkeling showed decreases in total days of participation, but increases in participants.

For a sizable number of nature-based activities, however, both the number of people participating and the summed days of participation increased. Prominent among these growth activities were viewing and photographing natural scenery, flowers, trees, wildlife, birds, and fish. This category of activities has contributed more than any other category to growth in nature-based recreation. Also growing in both number of participants and total days of participation were visiting nature centers, sightseeing, visiting beaches, visiting wilderness, developed camping, boating, driving off-road motor vehicles, big-game hunting, kayaking, and snowboarding.

Fastest-growing nature-based activities. Overall, Americans' participation in nature-based outdoor recreation is on the rise, driven by several kinds of activities. Table 1 reports total partic-

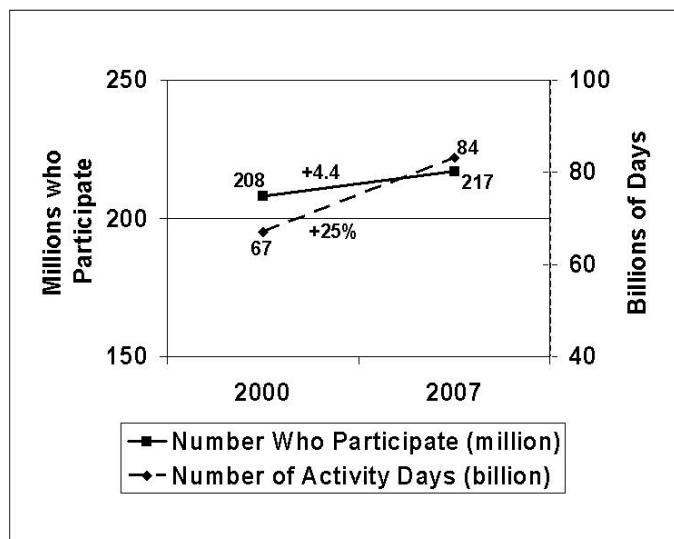


Figure 1. Growth in number of people and number of participation days in sixty outdoor recreation activities in the United States, 2000–2007.

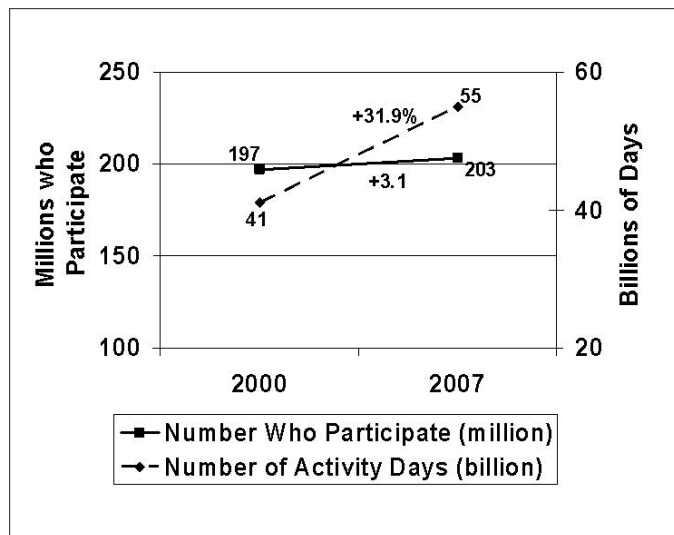


Figure 2. Growth in number of people and number of participation days in fifty nature-based outdoor recreation activities in the United States, 2000–2007.

ipants and total days of participation in 2007 and rate of increase in both these measures between 2000 and 2007. The focus is on the seventeen fastest-growing activities—that is, those with days of participation growing by more than 10 percent.

Of these top seventeen activities, six involve viewing, photographing, identifying, visiting, or otherwise observing elements of nature—flowers, trees, natural scenery, birds, other wildlife, nature exhibits, and wilderness (wildlands generally). The growth in viewing and photographing plants and natural scenery has been most rapid, at about 78 and 60 percent, respectively. A motorized activity, driving motor vehicles off-road, occupies the number three slot; it grew by 56 percent between 2000 and 2007. Next are viewing, photographing, and identifying wildlife and birds. Thus, four of the top five activities are viewing, photographing, and otherwise observing nature.

Three water-oriented activities made the top seventeen: kayaking, visiting water areas or shores other than ocean beaches, and



COURTESY OF JAMES G. LEWIS

Viewing, photographing, or otherwise observing nature has been the fastest-growing type of nature-based recreation activities for Americans. New technologies like digital cameras and cell phones with cameras may be fueling these increases. Here, amateur photographers line up at Yosemite National Park's Tunnel View in August 2005 to take pictures of Yosemite Valley.

visiting ocean beaches. Four physically challenging activities are on the list: rock climbing, backpacking, snowboarding, and mountain climbing. Big-game hunting is also included, even though other data sources have reported that this activity is declining. (NSRE measures participation in an activity whether or not it is the only or primary motivation for an outdoor recreation occasion. Thus any participation at any level in big-game hunting is included.) Sightseeing and primitive camping round out the list.

Activities increasing at less than 10 percent in total participation days include gathering natural products (e.g., berries), motorboating, developed camping, anadromous (migratory) fishing, warm-water fishing, swimming in natural waters, and visiting natural caves.

Water skiing, surfing, visiting prehistoric sites, small-game hunting, riding personal watercraft, rafting, rowing, cross-country skiing, and coldwater fishing have declined very modestly. Activities declining at somewhat greater rates, by 10 to 20 percent in total number of activity participation days, include snorkeling, saltwater fishing, migratory bird hunting, canoeing, sailing, and downhill skiing. Declining by 20 to 40 percent are day hiking, horseback riding on trails, snowmobiling, scuba diving, mountain biking, snowshoeing, and windsurfing.

Visiting public sites for nature-based recreation. A recent examination of visitation to public lands found leveling for some, but moderate growth for other public lands.⁷ For state parks, the number of visits per annum decreased modestly between 2000

and 2006. But that decrease began to turn around, and reported visitation in 2007 rose above the figure reported in 2001 (a 0.7% increase). Similarly, although there were minor decreases in visits to national parks during the 2000s, for the most part visitation to national parks had been stable since 2001. For national wildlife refuges, visitation grew from about 33 million in 1998 to more than 40 million in 2007, nearly a 21 percent increase. Also, the U.S. Fish and Wildlife Service reported substantial increases in numbers of visitors watching wildlife in public parks and areas near their homes.⁸ This survey, in fact, reported a 21 percent increase. According to NSRE data, growth in days visiting wilderness and other wildland areas increased more than 12 percent between 2000 and 2007.

IMPLICATIONS AND OBSERVATIONS

The implications of these findings regarding outdoor recreation in contemporary America are many. First, things have changed since the 1950s and 1960s, when the federal government first began tracking recreation trends. The most popular activities then are not necessarily the most popular now. Snow skiing, day hiking, snowmobiling, horseback riding on trails, and some forms of fishing, for example, have begun to decline in popularity. On the other hand, viewing, photographing, and studying nature have shown rather spectacular growth. Some motorized recreation, especially off-road driving, has also been growing, as have

Table 1. Fastest-growing U.S. nature-based outdoor activities, 2000–2007

Activity	Total participants (millions), 2007	Percentage change in participants, 2000–2007	Total days of participation (billions), 2007	Percentage change in total days, 2000–2007
Viewing or photographing flowers and trees	118.4	25.8	10.2	77.8
Viewing or photographing natural scenery	145.5	14.1	11.5	60.5
Driving off-road	44.2	18.6	1.3	56.1
Viewing or photographing other wildlife	114.8	21.3	5.3	46.9
Viewing or photographing birds	81.1	19.3	8.0	37.6
Kayaking	12.5	63.1	0.1	29.4
Visiting water (other than ocean beach)	55.5	1.6	1.1	28.1
Backpacking	22.1	–0.6	0.3	24.0
Snowboarding	11.3	7.3	0.1	23.9
Rock climbing	8.7	–5.5	0.1	23.8
Visiting nature centers, etc.	127.4	5.0	1.0	23.2
Big-game hunting	20.2	12.8	0.3	21.2
Mountain climbing	11.8	–12.5	0.1	20.5
Visiting ocean beach	96.0	10.5	1.4	16.3
Sightseeing	113.2	4.1	2.3	14.0
Visiting wilderness	70.6	3.0	1.1	12.8

some physically challenging activities. Generally, however, the greatest growth in participation is for activities that are physically not very challenging.

Our research suggests that Americans' interest in nature and nature-based recreation, though changing, is not declining; rather, it is strong and growing. The increase in the observation and study of nature is, in my view, a very healthy trend that apparently reflects rising and widespread interest in the future of natural resources, conservation, and public lands. Perhaps the interest in nature we see in our data represents more of an opportunity than we have realized. Two public policy implications come quickly to mind.

The first implication is that professional communities should seek to convert public interest in nature into active support of and engagement in conservation of forests, grasslands, and wetlands. A good example is the support for sustainable management of this nation's forests. No doubt today's youth live a very different lifestyle than did previous generations, but adults interested in nature can pass along and stimulate that interest in their children.

The second implication is that because outdoor activities can contribute to better physical conditioning, as well as better emotional health, perhaps there is an opportunity to use interest in nature as a means of stimulating greater physical activity. While still accommodating participants with disabilities, trails, overlooks, and wildlife observation sites could be designed to require some physical effort.

The recent spike in gasoline prices will very likely cause further change in the mix of outdoor activities that people choose, and perhaps reduce trips to more distant destinations. This may mean greater—not less—visitation to local parks, state parks, and federal lands near urban areas. In whatever ways the future unfolds, however, it is my opinion that this country's population in general will not lose interest in the forests, wildlife, and other natural resources of this country. □

Ken Cordell is a project leader and pioneering scientist in the U.S. Forest Service's Research and Development Branch. His offices are located at the University of Georgia in Athens. Appreciation is extended to research colleague Carter Betz for running the data for this paper.

NOTES

1. Richard Louv, *Last Child in the Woods: Saving Our Children from Nature-Deficit Disorder* (Chapel Hill, NC: Algonquin Books, 2005); and O.R.W. Pergams and P.A. Zaradic, "Evidence for a Fundamental and Pervasive Shift away from Nature-Based Recreation," *Proceedings of the National Academy of Sciences* 105(7) (February 19, 2008): 2295–2300, <http://www.pnas.org/cgi/reprint/0709893105v1> (accessed May 30, 2008).
2. H.K. Cordell, C.J. Betz, G.T. Green, S. Mou, V.R. Leeworthy, P.C. Wiley, J.J. Barry, and D. Hellerstein, *Outdoor Recreation for 21st Century America* (State College, PA: Venture Publishing, Inc., 2004).
3. Pergams and Zaradic, "Evidence for a Fundamental and Pervasive Shift away from Nature-Based Recreation," 2295–2300.
4. Citizens' Committee for the Outdoor Recreation Resources Review Commission, *Action for Outdoor Recreation in America: A Digest of Commission Findings and Recommendations* (Library of Congress No. 63-22303) (Washington, D.C., 1962).
5. Cordell et al., *Outdoor Recreation for 21st Century America*.
6. U.S. Forest Service, *National Survey on Recreation and the Environment* (Athens, GA: Southern Research Station, 2008). <http://www.srs.fs.fed.us/trends>.
7. H.K. Cordell, "Nature-Based Outdoor Recreation Trends and Wilderness," *International Journal of Wilderness* August 2008 (forthcoming).
8. U.S. Department of Interior Fish and Wildlife Service, *National Survey of Fishing, Hunting and Wildlife-Associated Recreation* (Washington, D.C., 2006).