RENEWABLE RESOURCES RECREATION IN THE UNITED STATES: SUPPLY, DEMAND, AND CRITICAL POLICY ISSUES

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ERRATA

ERRORS

Page ii, paragraph 6, sentence 2 should read, "About 1.56 billion acres in the U.S. are classed as forest and range lands."

Page 13, paragraph 4, sentence 1 should read, "About 1.56 billion acres in the U.S. are classed as forest and range lands."

Page 46, paragraph 2, line 9 should read, "from $0.11 to $0.27 over this period."

Page 82, column 2, paragraph 1, sentence 1, should read, "Over two-thirds of the recreational use of National Forests in 1981--about 165 million visitor-days--was in wilderness, primitive, semi-primitive, and other undeveloped backcountry areas."

OMISSIONS

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Tables

Table 1: NOTE: North Region contains the states of CT, DE, IA, IL, IN, MA, MD, ME, MI, MN, MO, NH, NJ, NY, OH, PA, RI, VT, WI, and WV; South Region contains the states of AL, AR, FL, GA, KY, LA, MS, NC, OK, SC, TN, TX, VA, and Puerto Rico; Rocky Mountain and Great Plains Region contains the states of AZ, CO, ID, KS, MT, NB, ND, NM, NV, SD, UT, and WY; Pacific Coast Region contains the states of AK, CA, HI, OR, and WA.

Table 3: SOURCE: USDA Forest Service, ROS Users Guide (Washington D.C.; Government Printing Office, no date), pp. 7-8.

Figure Sources and Footnotes

Figure 1: Carlton S. Van Doren and Louis Hodges, America's Park and Recreation Heritage — a Chronology. (Washington D.C.; Government Printing Office, 1975).

Figure 2: Executive Office of the President, Office of Management and Budget, The Budget of the United States Government: Fiscal Year(s) 1960, 1965, 1970, 1972, 1974, 1976, 1978, 1980, 1981, and 1982. (Washington D.C.; Government Printing Office), and Bureau of Economic Statistics, Inc., Handbook of Basic Economic Statistics, Vol. 36, No. 1 (Washington D.C.; Economic Statistics Bureau of Washington, 1982). pp. 99-101.

NOTE: These figures are based on Federal government estimates of outlays projected in each budget for the specific year cited. Actual outlays differ from the estimated amounts.

[a]Real dollars are current dollar appropriations deflated to base year 1967 using the Consumer Price Index.

Figure 3: USDA Forest Service, An Assessment of the Forest and Range Land Situation in the United States, (Washington D.C.; Government Printing Office, 1980), pp. 34-35.

Figure 4: Margaret Peterson, Trends in Recreational Use of National Forest Wilderness, Res. Note INT-319 (Missoula: USDA Forest Service, 1981), p. 8.

Figure 5: Carlton S. Van Doren, Dept. Recreation and Parks, Texas A&M University, Statistics on Outdoor Recreation, 1982. (Unpublished compilation).

[a]Estimated for 1979-1982.

Figure 6: Charles R. Goeldner and Stacy Standler, Proceedings of the 1980 National Outdoor Recreation Trends Symposium, vol. 1: Skiing Trends (Broomall: Northeast Forest Experiment Station, 1980), p. 114.

Figure 7: USDA Forest Service, An Assessment of the Forest and Range Land Situation in the United States, (Washington D.C.; Government Printing Office, 1980), p. 32.

NOTE: "other" includes cropland, improved pasture, industrial and urban land, and all other lands except forest and range land.

Figures 8-9: USDI Fish and Wildlife Service: Initial Findings Report on the 1980 National Survey of Fishing, Hunting, and Wildlife Associated Recreation, March 28, 1982. (unpub.).

Figure 10: Bicycle Manufacturers Association of America, Inc., Some Facts About Today's American Bicycle Market (Washington D.C.; Bicycle Manufacturers Association of America, Inc., 1982), 2p.

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FOREWORD

At this time, the American people are preoccupied with strategies for economic recovery. Widespread budget cutbacks are dramatically affecting many public programs including outdoor recreation supply, management, planning, and research. Dollars for site development, management and acquisition probably will never return to the real-dollar levels of the 1960's and early 1970's. Administrators of outdoor recreation management and research programs, therefore, are challenged to meet growing needs with greatly reduced resources.

Outdoor recreation permeates every segment of our society, and it is a vital part of the lifestyle of most Americans. Over three-fourths of the U.S. people regularly participate in some form of outdoor recreation, and they spend about $250 billion per year in its pursuit. Forest and range lands and their associated waters are the focus of much of this participation.

In December of 1980, the American Forestry Association and other resource organizations sponsored the National Conference on Renewable Natural Resources. The conference assembled more than 200 national leaders and experts in renewable natural resources to examine fundamental goals for management of these resources. The conference was cosponsored by two dozen national organizations concerned with trends in the management and use of this Nation's renewable natural resources.

Background papers were commissioned from recognized national experts in the seven resource areas of soil, water, fish and wildlife, energy, timber, range, and recreation. Experts were asked to summarize the present condition, future trends, and emerging policies and programs for their respective areas. This monograph is the background paper for the Recreation Working Group of that National Conference. It has been updated to reflect the demand and supply situation in mid 1982 for renewable resources outdoor recreation in the United States. The conclusions of the Recreation Working Group at the National Conference, which are cited in the Introduction, recognize the growing importance of outdoor recreation in our society and suggest key policy direction for Government involvement.[1]

Subsequent to the National Conference, the principal author was designated the National Resource Specialist for the 1984 and 1989 Resources Planning Act (RPA) Assessments of Outdoor Recreation and Wilderness in the United States. Through publication of this monograph the American Forestry Association seeks to provide a benchmark description of the outdoor recreation and wilderness situation in the United States for use in the Resources Planning Act (RPA) process of the Forest Service and in teaching, research, policy and program analysis.

REXFORD A. RESLER
Executive Vice President
The American Forestry Association

[1] Key to the Future: Renewable Natural Resources. Report on the 1980 National Conference on Renewable Natural Resources, 56 p., American Forestry Association, 1319 18th St., NW, Wash. DC 20036.

Renewable Resources Recreation in the United States: Supply, Demand, and Critical Policy Issues

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EXECUTIVE SUMMARY

Analysis of supply and use of renewable recreation resources in the United States is needed to project likely trends. Social and economic factors are particularly important. The analysis presented here identifies likely trends as well as critical policy issues which must be addressed.

Outdoor recreation has become a fundamental expression of our national character. It is done because it is enjoyable, but outdoor recreation also generates major personal, social, and economic benefits. Government expenditures to provide outdoor recreation exceed $5 billion per year, and the American public spends almost $250 billion consuming it. At least three-fourths of all Americans participate in some form of outdoor activity.

Traditionally federal and state governments have provided leadership in supplying recreation opportunities, principally by providing facilities, access, and information concerning outdoor opportunities. Government agencies have heavily subsidized use of public recreation areas by providing access free or at token rates. Shortness of funds are forcing fee policies to be reexamined. User fees large enough to cover operating costs and greater dependence on market forces and private enterprise are being viewed as viable means to meet recreation demands where and when they arise--all at less public cost.

Increasingly, the role of government in outdoor recreation is being viewed as emphasizing primitive and semiprimitive opportunities with reduced regulation, services, and development. Such a trend has been underway for the last few years in response to federal and state financial deficits.

Government's role in outdoor recreation will continue to adjust to political, economic and social changes, and the private sector will react to government and market signals. Ultimately, a new balance between government and the private sector will emerge. It is not yet clear what that balance will be, but federal, state and local governments will continue to have essential responsibilities for outdoor recreation planning, coordination and information. Legislation, administrative actions, and a rich cultural tradition mandate a vital role for government in outdoor recreation and especially for provision of recreation use on public lands. Only the manner for providing recreation opportunities on public lands is likely to change. Public recreation management will continue to be needed, but the importance of private land, water and facilities will increase.

THE SUPPLY SITUATION

Renewable resources provide a wide spectrum of outdoor recreation opportunities on forest, range land and specially designated areas such as National Parks and National Wilderness Areas. About 1.56 billion acres in the U.S. are classed as forest, range, and associated water. About 47.5 percent of this acreage is privately owned. Particularly in the South and East, private land is often strategically located with respect to large population centers.

In July 1981, the National Wilderness Preservation System (NWPS) had grown to nearly 80 million acres, but only modest additions are likely in the future. Enhancement of wilderness values will increasingly depend on better management of already designated areas. The issues of proximity to populations and recreational access to wilderness will continue to be key issues for debate over future additions.

In 1977, there were 281,000 miles of designated trails in the U.S., including 7000 miles in the National Trails System. Additions to the National Trails System since 1968 include three National Scenic Trails, five National Historic Trails, and 247 National Recreation Trails. In addition to trails, forest roads provide important access to backcountry areas for primitive and semiprimitive recreation. Where roads are not available, cross country

travel becomes the primary mode of access. In 1977, roughly one-fourth of the U.S. population used some form of motorized, off-road recreational vehicles to gain access to back-country areas.

Recreation facilities in natural settings include campgrounds, visitor information centers, second homes, resorts, and other highly modified settings. Although many federal, state, and local government agencies are beginning to reduce management of these developed areas, their numbers are large, and they continue to represent an important form of recreation for many. The private sector has not yet picked up the slack left by reduced government supply.

Water continues to be a focal point of outdoor recreation activity. There are approximately 107 million acres of water surface area in the U.S., including nearly 2 million rivers and streams. Pollution of both inland and coastal waters has been significantly reduced over the past few years, particularly near urban areas. But it is estimated that nearly 10,000 lakes are still in need of major pollution reduction and water quality restoration.

Snow and ice provide opportunities for a variety of recreational pursuits. Virtually all forest and range land in the Northern States is usable for winter recreational activities. During the late 1970's ski development, which had been very rapid, began leveling off.

Privately owned land and water resources should become more important sources of recreation opportunities, especially near population concentrations. Each year, however, almost 1½ million acres of private forest and range lands are lost to urban and other uses, and landowners are moving toward increased closure of this land to the public.

THE DEMAND SITUATION

Demand for virtually all outdoor recreation activities is projected to increase, but demand information is generally weak, making accurate projection highly uncertain. Recreation participation surveys often yield quite different estimates of future outdoor recreation participation.

In 1980, approximately 100 million people aged 16 years and older participated in a total of almost 7 billion days of wildlife-related recreation. Most of this participation was nonconsumptive and near home. Federal lands received 544 million visitor-days of recreational activity in 1981 (only 21.8 percent of this visitation occurred in fee management areas). From 1979 through 1981, levels of participation in most outdoor recreation activities either remained stable or increased. Winter sports, particularly downhill skiing, declined nearly one-third because of poor snowfall in some Western States.

Between 1965 and 1981, spending on leisure pursuits increased by 47% (adjusted for inflation). In 1981, leisure spending was at $244 billion. Americans spent $1 out of every $8 for leisure pursuits.

Predictions to the year 2030 imply that capacities will have to be greatly expanded if we are to support the expected increases in snow and ice and water activities. Even larger increases in numbers of sites and facilities will be needed to accommodate expected demands for land-based activities.

PREDICTIONS

We have projected market responses to demand and supply trends in the United States for 1982 to 2000. These predictions are reported for several major categories of activity. The predictions are based on an analysis of the likely influences of 20 social and economic factors expected to significantly affect future demand and supply of outdoor recreation.

Primitive--(Essentially unmodified natural environment of fairly large size, low user interaction, managed to be perceptibly free from human restrictions and controls). The National Wilderness Preservation System (NWPS) will grow slowly to about 100 million acres as the current allocation process is completed. A moderate decrease in public and a major decrease in private sector non-wilderness primitive areas will result from economic pressures. A moderate increase in demand for wilderness opportunity, at a rate slightly greater than population growth, but less than the rate of the 70's, is predicted between now and 2000.

Semiprimitive--(Predominately natural or natural-appearing environment of moderate to large size, often evidence of other users, managed for minimum on-site controls. A moderate decrease in public and a major decrease in private sector semiprimitive, non-motorized areas will result from economic pressures. Demand is expected to increase moderately.

Roaded natural and rural--(Predominantly natural-appearing or rural environments with moderate evidences of human disturbance, low to moderate interactions with other users, resource modification and utilization practices are evident). Public areas (campgrounds, picnic areas, and swimming beaches) are expected to decrease moderately in relation to population growth. Reduced competition from government-developed sites and increased fees at public sites will stimulate private development of campgrounds and other facilities. Demand is predicted to grow faster than growth rate of population.

Rural--(Substantially modified natural environment, evidence of human activity readily apparent, interactions between users moderate to high, facilities often provided for special activities). Predictions are the same as for roaded natural. With slightly decreased supply in the face of growing demand, some severe imbalances may result.

Urban--(Substantially urbanized environment, resource modification to enhance specific activities, evidence of humans is predominant, large numbers of users present, with mass transit often available). Intensively developed public sites will face serious funding problems. To a lesser extent, private areas, such as theme parks, resorts, ski areas, will face the same funding pressures. There will be a moderate increase in demand for these services approaching the population growth rate.

CONCLUSIONS:

Recreation demand is going to increase and, if recent history is any indication, demands may be greater than we predicted and in directions we have not yet imagined. The uncertainty of even the best predictions and the increasing scarcity of public funds suggest a need for private responses to demand and supply imbalances. Government planning will continue to be needed, but we must also develop a system that is more responsive to short-term change. We need a recreation delivery system that will respond to unanticipated fluctuations, as well as to long-term trends.

General recommendations include:

- a more responsive delivery system,
- acknowledgement of the importance of outdoor recreation in American Life,
- a major research effort to better predict future recreation demands,
- decentralized recreation delivery systems,
- fiscal solvency and equitablity, and
- expanded coordination, cooperation, and partnership between the public and private sectors.

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Outdoor recreation has become a fundamental expression of our national character. Over three-fourths of the U.S. population regularly participates in some form of outdoor recreation, spending about $250 billion annually in its pursuit. Participation is predicted to increase during the next 50 years. The future role of government is being viewed as emphasizing primitive and semi-primitive opportunities, with the private sector expanding its influence as a provider of services and developed sites. (U.S. Forest Service photo.)

INTRODUCTION

PURPOSE

In this paper historical and current supply and use of renewable recreation resources in the United States are examined to predict future trends. Social and economic factors related to supply and use are considered, and critical policy issues are discussed.[1] The future and the problems, options, and opportunities for shaping that future are our primary concerns. The last section of this paper identifies some topics for action.

From November 30 to December 4, 1980, the National Conference on Renewable Natural Resources was convened by the American Forestry Association and 23 other conservation organizations to address the future of six renewable resource areas, one of which was outdoor recreation. An earlier draft of this report provided background for the Recreation Working Group of that conference. Following is a summary of the

[1]The authors gratefully acknowledge J. Herbert Stevens, Jr., of the Department of Forestry at Clemson University, for assistance in compiling, summarizing, and interpreting data from a wide variety of sources; to Dr. N.E.H. Hull, of the University of Georgia, for developing and summarizing social-economic trend data; and to D. Kirkpatrick for compiling, summarizing, and editing data. The authors wish to thank the following persons for their review comments on various drafts. Dr. Fred Kaiser, USDA Forest Service; Dr. Gordon Howard, Clemson University; Dr. Paul Saunders, Washington State University; Dr. George Siehl, Congressional Research Service; Dr. Merle Van Horne, National Park Service; Dr. Roger Clark, USDA Forest Service, and Dr. Rabel Burdge, University of Illinois, and Lawrence A. Hartmann, USDA Forest Service.

Working Group position statements and recommendations that were included in the final Conference Report (American Forestry Association, 1981).[2]

> Recreation is essential to our health and enjoyment. It is also a major contributor to our economy, generating some $200 billion of economic activity annually. Although everyone supports the need for outdoor recreation opportunities, there is conflict among various recreation interest groups as to: what forms of recreation should be permitted and where; who should pay and for what; what role the private sector should play in providing recreation opportunities, and at what price; and what should be the role of government at federal, state, and local levels.
>
> The crux of this issue seems to be that demand for all outdoor recreation forms is expanding more rapidly than supply. One of the major suppliers of recreation opportunities, the federal government, is finding it more and more difficult to finance either the operation and maintenance of existing recreational facilities or the construction of new, high-cost facilities.
>
> A critical review is urgently needed of recreation supply and demand, of future needs, and of how such needs may be met by both the private and public sectors of society.
>
> Recommendation No. 31
>
> The Administration and Congress should mandate and participate in a national assessment of outdoor recreation supply and demand to evaluate recreation trends and set priorities and direction for the future. The structure of the body and the mission might be patterned after the Outdoor Recreation Resource Review Commission of the 1960's.
>
> Recommendation No. 32
>
> Since publicly owned lands support a high proportion of recreation use, the planning, development, and management of those lands should receive continued public financial support; however, recreation users should assume a greater share of program costs.
>
> Recommendation No. 33
>
> To accommodate the growing demand for recreation opportunities, incentives must be developed to encourage the private sector, including private landowners, to offer recreation opportunities. Those incentives should include equitable pricing between the public and private sector, reasonable limitation on landowner liability, and tax incentives to promote the development of high-quality recreation facilities and services.

DATA AND ANALYSIS

This analysis is based primarily on existing documents and data. Primary sources include the 1965 Outdoor Recreation Participation Survey and the Recreation Imperative: A Draft of the Nationwide Outdoor Recreation Plan (U.S. Congress 1974), the 1977 Third Nationwide Outdoor Recreation Plan (U.S. Department of Interior 1979), the Outdoor Recreation and Wilderness chapter of the 1979 RPA Assessment (Forest Service, U.S. Department of Agriculture 1980), the RCA Assessment (Soil Conservation Service, U.S. Department of Agriculture 1980A), and an unpublished compilation of outdoor recreation statistics by Dr. Carlton Van Doren, Texas A&M University. We adapted and supplemented these data with additional

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[2]The final statement of the Recreation Working Group was developed under the leadership of chairman, Mr. William Shands, The Conservation Foundation, 1717 Massachusetts Avenue N.W., Washington, D.C. 20036. Members of the Working Group included William E. Shands (Chairman), Conservation Foundation; John C. Hendee, H. Ken Cordell, and Roy Feuchter, U.S. Forest Service; Derrick A. Crandall and William T. Jobe, Jr., International Snowmobile Industry Association; Keith A. Argow, Trout Unlimited; Herbert Brantley, Clemson University; James R. Craine, Federal Timber Purchasers Association; Gordon Gullion, University of Minnesota; Robert Maynard, Keystone Corp.; Tim Monroe, Bureau of Land Management; Joseph T. Prendergast, American Ski Federation; Kevin Kearney, American Motorcyclist Association; George Siehl, Congressional Research Service; Nancy Tessaro, Corps of Engineers; John Tkach, Heritage Conservation and Recreation Service; and Louis Twardzik, Michigan State University.

calculations and displays and have presented our own analysis of social and economic influences on future renewable resources recreation supply and demand.

IMPORTANCE OF OUTDOOR RECREATION

The outdoor recreation delivery system in the United States has evolved over the past 80 years to include four major activities:

1. **Preserving natural, scenic, and historic resources.**
2. **Providing information, interpretation, and safety for visitors.**
3. **Providing public access to land and water.**
4. **Developing sites and facilities for recreation activities.**

Recreation expenditures in 1981 totaled about $250 billion, including $1.9 billion by the Federal Government (for management and the Land and Water Conservation Fund), **$3.5 billion by state and local agencies, and an estimated $244 billion by individuals** (about $77 billion more than is spent on national defense).

Outdoor recreation is a major expression of our national character. An estimated three-fourths of all Americans over 11 years old regularly participate in some form of renewable resources recreation (U.S. Department of Interior 1979). Passive activities such as picnicking and sightseeing attract the greatest number of participants. The ranking of participation in various activities has not changed in recent years, but the number of participants has grown (U.S. Department of Interior 1979). **The most participated in recreation activities are swimming** (105.4 million participants), **bicycling** (69.8 million), **camping** (60.3 million), **and fishing** (59.3 million) (U.S. News and World Report 8/10/81:63).

We define renewable resource recreation as the leisure time use of natural and cultural resources on forests, and rangelands, and other open and green spaces. Our country has a long tradition of such use dating back to picnics on town commons, hunting and fishing for sport as well as subsistence, and individual exploration of wild areas. These traditions reflect enduring patterns of leisure use for outdoor activities.

As the affluence of individuals grew, most citizens found it increasingly easy to meet basic survival needs. Better education and incomes meant a higher standard of living that was accompanied by a rapid growth of participation in outdoor recreation activities. However, the growth trends in real income that marked the period 1950-1970 have not persisted and the standard of living for most Americans has not improved appreciably in the last 10 years.

It is difficult to predict whether the stagnation of standard of living will continue, or what its impact on recreation demands will be. Some experts predict that people will engage in leisure activities closer to home, such as short day trips or activities that use local resources such as schools and urban parks. Some predict longer stays at fewer sites and car pool vacations (U.S. News & World Report, 1981: 8/10/81:61). Costs are certainly a factor. We must examine potential travel price changes and predict their likely impacts. The travel price index produced by the U.S. Travel Data Center indicates that travel costs increased 130 percent between 1972 and 1980 (Goeldner and Dicke 1981), while the consumer price index rose only 97 percent. Outdoor recreation is so deeply ingrained in our society's lifestyle, however, that **increasing constraints on participation are likely to change the activities and settings for outdoor recreation rather than overall participation.**

BENEFITS FROM OUTDOOR RECREATION

Recreation is important because of the personal, societal and economic benefits it generates (Kelly 1981):

Personal benefits of recreation are those directly experienced by individuals. These include many satisfactions that lead to an overall sense of enjoyment (Hendee and Bryan 1978). For example, various recreation activities and experiences provide participants with satisfactions such as excitement, relaxation, companionship, environmental appreciation, learning, or testing one's competence. Additional long-term benefits may be derived from these

Outdoor recreation provides many satisfactions such as companionship, nature appreciation, physical exercise, solitude, and relaxation. These satisfactions may lead to other benefits such as increased self esteem, improved family and social bonds, physical and mental health, and increased productivity. (U.S. Forest Service photo.)

recreation experiences and satisfactions such as self-enhancement through improved mental health, development of self-reliance and competence, establishment of relationships of trust and communication, "renewal" of both mind and body, and others.

Societal benefits are those that accrue to larger social groups. These include such things as strengthened family and friendship bonds, increased economic productivity, improved health, improvement and development of community cohesiveness. These benefits in part result from the personal benefits described above. For example, recreation participation can result in happier, more productive people whose renewed dispositions affect society at some level of social organization such as through their jobs, family, friends or community organizations.

Economic benefits include both direct and indirect outcomes of recreation, such as increased employment and income. Effects on communities near recreation sites are most obvious, but benefits occur throughout the national economy.

Direct economic benefits include income to recreation entrepreneurs in the form of business revenues and returns to public agencies in the form of user-generated revenues. Direct benefits also include jobs created directly in the private or public sector for recreation-related sales, management, and services.

Indirect benefits include the additional income and employment from the economic activity of public and private recreation enterprises. That is, the materials, supplies, and services they pro-

cure create secondary income and employment effects among their suppliers. Indirect economic benefits also include increased tax revenues to local governments, increased business, and growth in property values attributable to recreation.

Good estimates of most direct and indirect economic benefits do not exist. Nevertheless, there are some sources of data that shed light on the magnitude of these benefits.

In 1975, for example, **state park systems generated a total of over $115 million of revenues** from operations including facility fees (65 percent), concessions on park lands (9 percent), entrance and parking fees (18 percent), and other sources (8 percent) (Van Doren 1982). **In 1981, the total state park revenues were $197.1 million. In 1975, a total of $20.5 million in fee revenues was collected by federal agencies from users of designated fee areas** (USDI 1981). **In 1981, the federal fee revenue total was $32.2 million.** Additional revenues to public agencies were received through sales of state fishing and hunting licenses. **In 1975, license sales generated over $2.1 billion in state revenues** (Bevers 1979), and in 1980, the total was over $4.2 billion. In Colorado alone, total tax revenues from tourists and recreation-related activity was $49.2 million in 1975 and included sales taxes, license sales, and income taxes from recreation businesses. **These examples of taxes, fees, and license sales show that recreation has major importance in financing government operations.** Uncounted in these totals are the billions of dollars gained through fuel and travel taxes for domestic and foreign visitor tourism in the United States.

Recreation-related expenditures in the private sector are even more significant. Expenditures for recreation in 1975 were $66.5 billion; in 1980, they were in excess of $110 billion. Total leisure-related expenditures in 1981 were $248 billion (including recreation and sales of books, TVs, video games, entertainment, and other leisure equipment and services.) These revenues have enormous effects throughout our economy and have resulted in greater income and employment. They are particularly significant in some areas where industry is sparse but recreational opportunities are great because of the substantial forest and range land base.

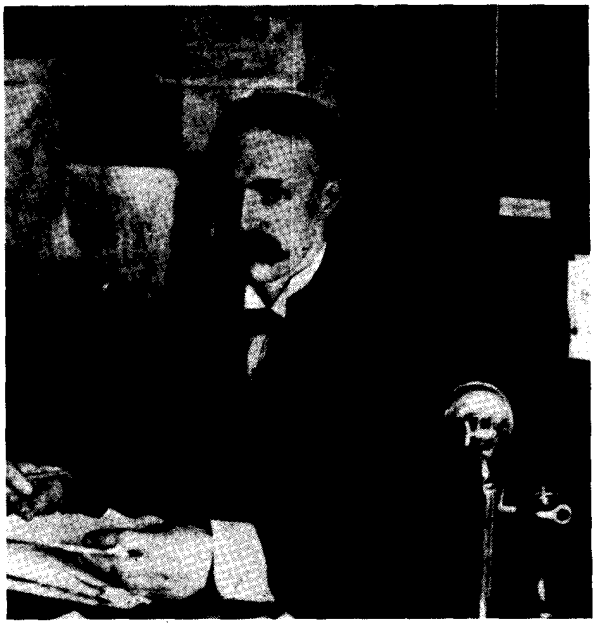
THE RECREATION LEGACY IN THE UNITED STATES AND CURRENT PROBLEMS

ADMINISTRATIVE AND LEGISLATIVE HISTORY

For many years, the United States Government has subsidized outdoor recreation by providing essentially free use of public lands. Thus, the current shift toward increased fees to cover costs and the use of market forces to direct allocations is remarkable. Reductions in federal support for recreation planning, acquisition, and management offer unprecedented challenges (and we hope opportunities) for people involved in these activities.

For nearly 100 years, legislation and major administrative actions have shaped federal outdoor recreation policy. A **comprehension of this history helps to understand the current situation.**

A chronology of pertinent legislation from 1860 through 1975 appears in Figure 1 (Van Doren and Hodges 1975). Some of the more noteworthy of these actions over the



Gifford Pinchot, first Chief of the U.S. Forest Service, near the end of his tenure in office.

past century are described in the text below to illustrate how we responded to growing outdoor recreation participation. Many of these legislative actions were a part of or paralleled major environmental movements.

In 1850, the average work week was approximately 70 hours, but by 1900 it had dropped to 60 hours and productivity had more than doubled. During this era, Yosemite Valley was ceded to the State of California (1864) "for public use, resort, and recreation"; Yellowstone National Park was established (1872) as a "pleasuring ground"; and the Organic Forestry Act of 1897 provided for the administration of the "forest reserves". Central Park was established in New York City in 1853, and the Adirondack Forest Reserve Park was authorized in 1885. Between 1900 and 1910, Theodore Roosevelt placed 148 million acres of public land under federal supervision; the Reclamation Act was passed in 1902; the first National Wildlife Refuge (Pelican Island) was established in 1903; and the Preservation of American Antiquities Act was passed in 1906. The TVA and Civilian Conservation Corps (CCC) were established in 1933. In 1934, the Taylor Grazing Act provided for regulation of the formerly open public domain, established grazing districts, and halted unrestricted homesteading. The Soil Conservation Service was established in 1935. The Duck Stamp Act passed in 1934 and the Historic Sites Act in 1935. In 1935, the Pittman-Robertson Act was enacted to tax guns and ammunition for state wildlife projects. Money was allocated to purchase 11 million acres of eastern forest lands under the Weeks Act in 1937, and in 1939, the Fish and Wildlife Service was established.

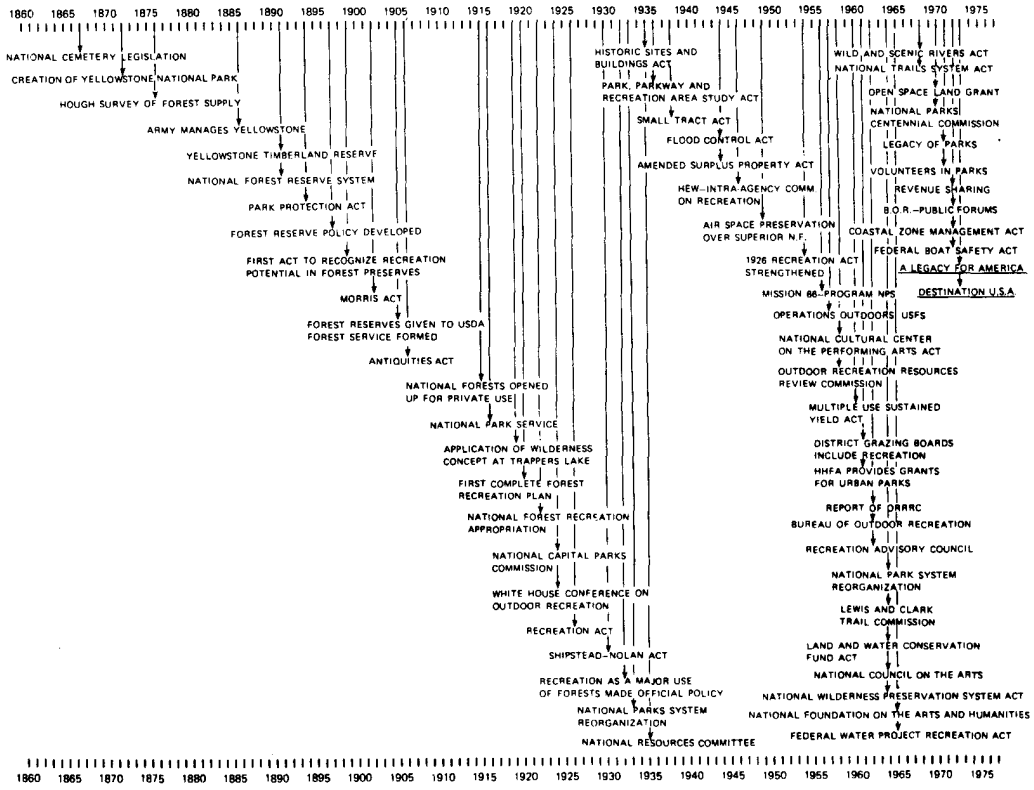


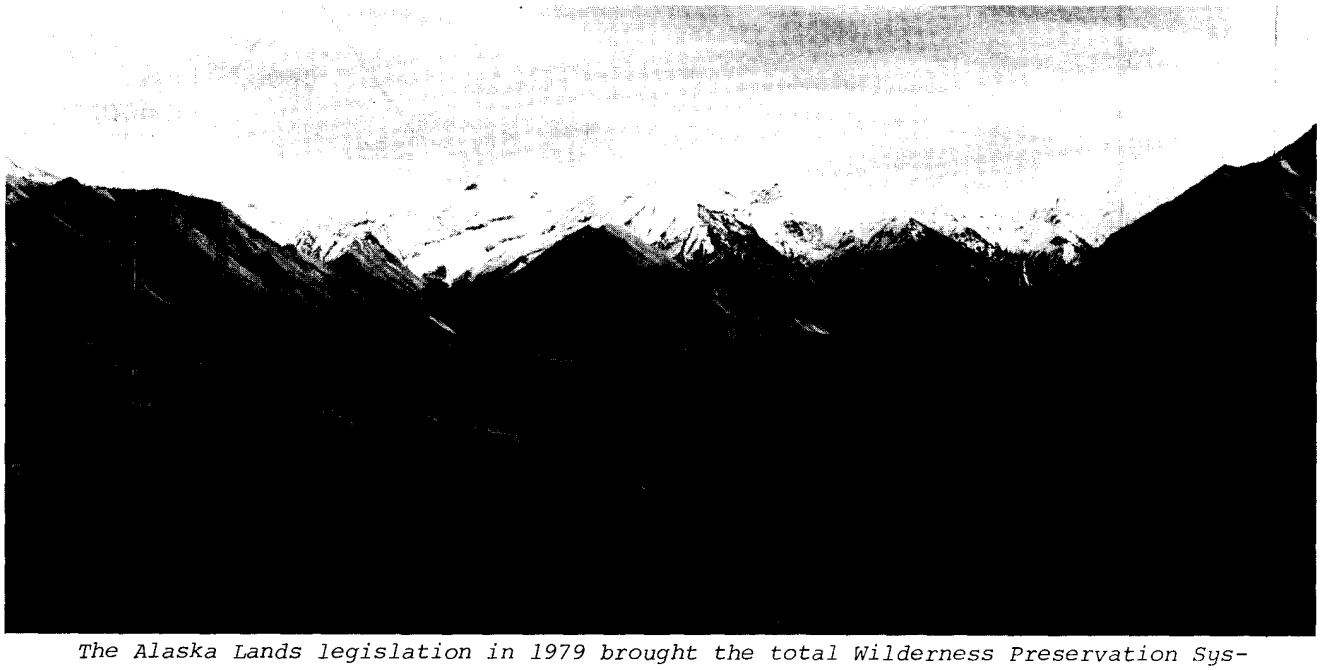
Figure 1 - Chronicle of federal recreation and parks legislation in the United States, 1860-1975.

Unparalleled prosperity after World War II fueled rapidly rising demands for outdoor recreation. The National Park Service launched "Mission 66" to improve park facilities, many of which were constructed by the CCC projects in the 1930's and were beginning to deteriorate. At the same time, the Forest Service carried out "Operation Outdoors" to do essentially the same thing on National Forests.

Multiple use (including recreation) became official policy for the Forest Service and Bureau of Land Management in their multiple use acts of 1960 and 1964, respectively. The Multiple-Use Sustained-Yield Act of 1960 established the policy that the National Forest System lands would be managed to achieve multiple use of their natural resorces and sustained yields of forest products. Subsequently, the Forest and Rangeland Renewable Resources Planning Act of 1974 (RPA), as amended by the National Forest Management Act of 1976 (NFMA), the Federal Land Policy and Management Act of 1976 (FLPMA)--the BLM Organic Act, and the Public Rangelands Improvement Act of 1978, re-emphasized multiple use both for the Forest Service and for the Bureau of Land Management. **These statutes decreed that management of federal forests and rangelands would be based on detailed inventories of resources, on careful planning, and on public participation to achieve a balance among competing uses.**

In hand with Mission 66 and Operation Outdoors, the Outdoor Recreation Resources Review Commission (ORRRC) was formed in 1958 to study the planning, use, and coordination of public recreation needs and resources. As a result of ORRRC, the Bureau of Outdoor Recreation (BOR) was established in the Department of the Interior to coordinate various federal programs and to assist other levels of government in meeting demands for outdoor recreation. In 1964, Congress passed the Land and Water Conservation Fund Act to be administered by the BOR for funding recreation planning, land acquisition, and development. In this same year, the National Wilderness Preservation Act was passed. In 1968, the National Wild and Scenic River Act designated 8 rivers and identified 27 others for study. In addition, the 1968 National Trails System Act established the Scenic, Historic, and Recreation Trails System.

In 1975, the so-called "Eastern Wilderness Act" expanded wilderness eligibility to include many more areas in the East. In 1978, the Heritage Conservation and Recreation Service (HCRS) was established by consolidating the previous BOR functions with the heritage preservation functions of the National Park Service. (HCRS was abolished early in 1981 and its functions and most of its personnel were transferred back to the National Park Service).



The Alaska Lands legislation in 1979 brought the total Wilderness Preservation System acreage to more than 56 million acres in Alaska, and nearly 80 million acres nationwide.

The Clean Water Act of 1977 required consideration of recreation benefits in all wastewater treatment projects and water quality management plans. In 1978, the National Parks and Recreation Act was passed to mandate study of unutilized, underutilized, and excess federal real property for possible wilderness, wildlife conservation, and recreation and park uses. In 1978, the Forest Service embarked on its second Roadless Area Review and Evaluation, called RARE II, to identify land to be recommended to Congress for Wilderness classification, further planning, or non-wilderness use. RARE II helped focus attention on the need to complete allocations to the National Wilderness Preservation System and end the uncertainty that was restricting other uses. At the same time, BLM was inventorying public domain lands; it has identified 11 million acres of wilderness study areas. Far more significant than RARE II or the BLM's roadless area review in its effect on Wilderness acreage was the Alaska Lands legislation in 1979. This legislation brought the total Wilderness acreage in Alaska to more than 56 million acres and the total in the NWPS to nearly 80 million acres.

THE CURRENT CHANGE IN DIRECTION

Legislation and administration actions through 1975 increased federal support for recreational and aesthetic values of natural resources. In the late 1970's, economic conditions and an increasingly conservative mood led to leveling off and some declines in proposals and appropriations for recreation management and environmental protection. For example, **real dollar appropriations for federal recreation management grew from about $85 million in 1960 to $718 million in 1978, but fell to only $374 million in 1982 (Figure 2).**

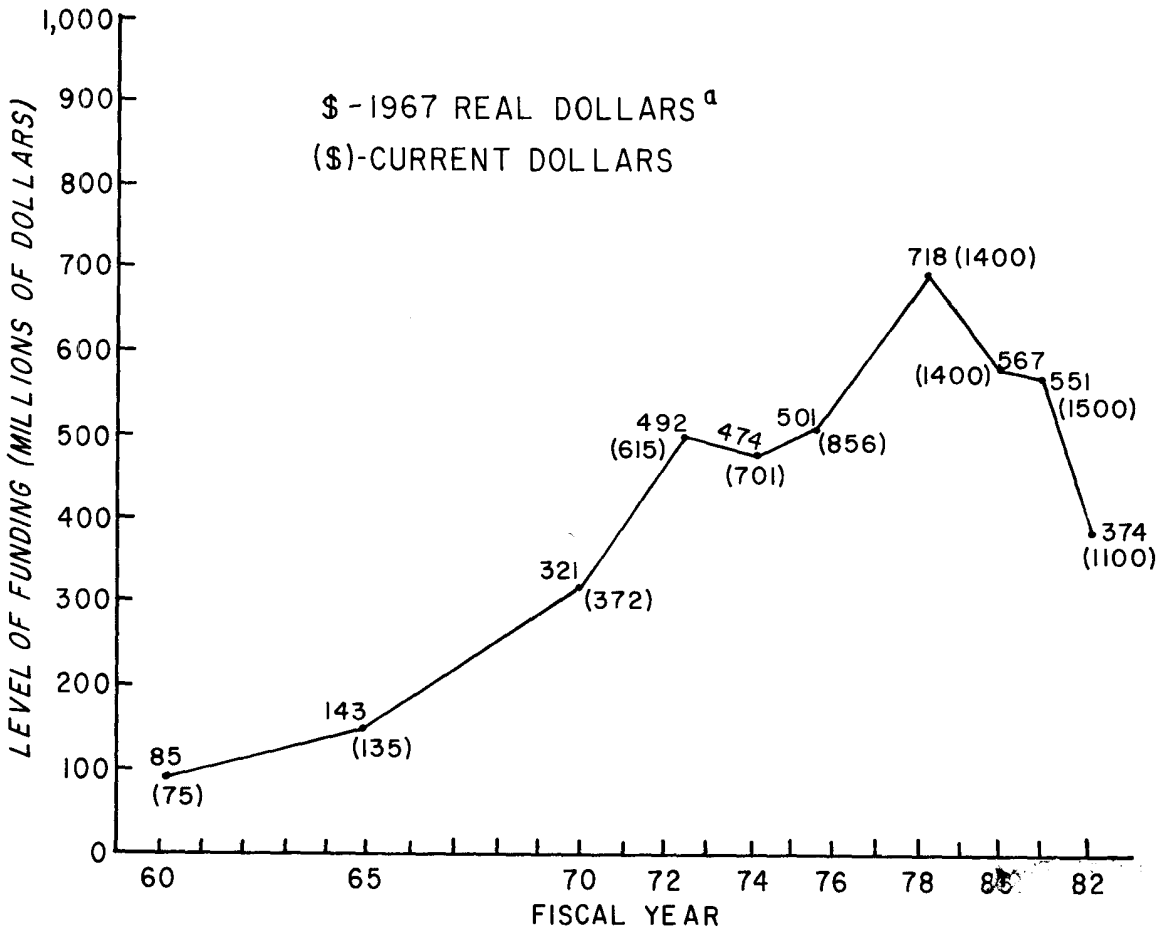


Figure 2 - Estimated federal outlays for recreation resources planning, acquisition and management in 1967 real dollars, 1960-1982 (selected years).

Declining recreation budgets have forced several agencies to reduce maintenance, development, and supervision of many recreation sites. Some agencies are looking to volunteers to assist with operations and maintenance. (U.S. Forest Service photo.)

Smaller recreation development and management budgets have forced several agencies to reduce maintenance, development, and supervision of many developed recreation sites. Some sites have been closed due to a lack of operating funds. To help offset closures and restricted service, some agenices are looking for volunteers to supervise, collect fees, and provide information. Local governments and private enterprise are also being encouraged to manage recreation sites. **Unprecedented withdrawal of federal support is causing higher fees on more areas and dependence on market and entrepreneurial forces to lower costs and increase recreation supply.**

The move to involve the private sector and market forces in recreation management has been rapid and dramatic. For example, the Tennessee Valley Authority (TVA) has opened several recreation sites for public use under cooperative maintenance arrangements with local agencies. They also have entered concession arrangements with private firms to operate some TVA facilities in exchange for the concessionaire keeping all fee-derived revenues.

In response to shrinking budgets, the TVA has also abolished its community recreation planning assistance program and is no longer inventorying recreation use and facilities. Likewise, the Forest Service, Corps of Engineers, and National Park Service have expanded use of fees, level of fees, and concessionaire arrangements for operating facilities.

Proposed legislation before the Congress would liberalize authorizations for charging fees for recreation on federal land. This proposed legislation seeks to broaden the range of recreation facilities and areas on which fees can be charged. A desired outcome is to help cover rising recreation operation and maintenance costs in the face of decreased management appropriations.

Other cutbacks in federal support for renewable resource recreation may be more difficult to absorb. For example, the nationwide planning and matching grants programs within the National Park Service have been reduced and may be discontinued under Administration-proposed budget reduc-

tions for fiscal year 1983. Major programs that would be most directly affected by the Administration's proposed budget include river and trail studies, recreation land acquisition, the Urban Park and Recovery Program, nationwide planning, and technical services.

Studies of rivers and trails for possible inclusion in the National Wild and Scenic Rivers System and National Trails System would be reduced to those authorized by their respective legislation, P.L. 90-542 and P.L. 90-543. In addition, study of the potential adverse effects of federal actions on study rivers, evaluation of new trail corridors, cooperative trail development, and evaluation of abandoned rights-of-way for trail development would be eliminated.

Land acquisition through the Land and Water Conservation fund (L&WCF) would be eliminated and a much reduced L&WCF would be targeted toward restoration and improvement of National Parks. Since the major use of acquisition and development funds in the past has been for state and local matching grants, a double-edged reduction would result. Likewise, revolving fund acquisitions by private organizations such as the Nature Conservancy, which depend on Federal purchase of their acquisitions with L&WCF dollars, will be affected. Financial assistance for improvement of urban park and recreation opportunities through the Urban Park and Recreation Recovery Program would also be eliminated as would technical services to state and local governments through workshops, demonstration projects, and publications.

Nationwide planning, including the Nationwide Outdoor Recreation Plan, would be reduced to an updating function with planning limited to specific issues and Congressionally mandated studies and plans. As a result, legislatively mandated planning for renewable resources, including the Assessments under the Resources Planning Act (RPA) by the Forest Service and the Resources Conservation Act (RCA) by the Soil Conservation Service, will likely become the more widely used national planning reference documents.

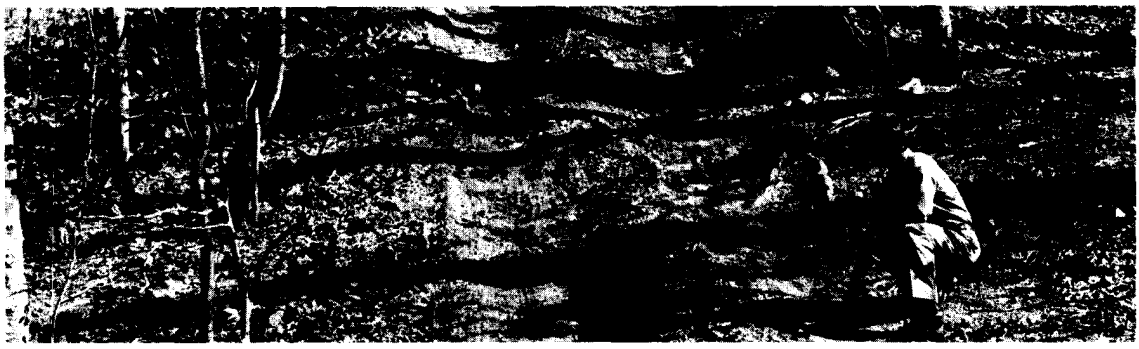
Among the small gains in federal involvement is passage of the 1981 National Tourism Policy Act for promoting foreign tourism in the United States. Because of the importance of tourism and recreation to the economy, this Act established the Travel and Tourism Administration to develop and implement foreign tourism marketing plans and to administer a financial assistance program for regions with low or declining foreign tourism trade.

Increasingly, the courts have become arbitrators of conflicts between users of public lands. Recent rulings on special use permits have favored phasing out recreation residence permits on public lands in favor of agency proposals to use those lands for public purposes. An example is a case concerning the phase out of special use permits for summer homes on the Coronado National Forest in Arizona. Where such permits are not being phased out, dramatic increases in fees based on property valuations have resulted in increased revenues, but often unhappy tenants.

While the proposed reductions in federal support for outdoor recreation are a shock to many administrators, they also represent challenge. Is there sufficient demand for outdoor recreation to stimulate market pressures and thus a response by the private sector? Can private entrepreneurs provide recreation services on public lands at desired quality levels? Will increased dependence on market forces to direct allocations among recreation programs compensate for reduced planning and study? Will market-allocated recreation resources provide equitable distribution of opportunities? The answers to these questions are yet unknown, but the shift toward deregulation of renewable resource recreation could lead to greater innovation and efficiency in our nation's recreation delivery system. We hope for a strong effort by the recreation management institutions whose actions will help dictate the degree of success.

MANAGEMENT PROBLEMS

Serious problems have evolved in the U.S. recreation supply system. These problems also implicate some of the above questions. **Crowding and traffic congestion are serious in some areas, including many National Parks.** For example, the National Park Service proposed a management plan for California's Yosemite National Park in 1980 that called for the relocation of administrative and housing facilities for some 1,900 concession and Park employees. The



Heavy use of recreational lands has disturbed many sites. Other serious management problems include crowding, traffic congestion, visitor conflicts, and obtaining accurate use estimates in order to predict future demands. (U.S. Forest Service photo.)

plan is aimed toward reducing overnight lodging units and eventually eliminating automobile traffic in Yosemite Valley.

The Grand Canyon National Park also has had a large increase in number of visitors. Between 1967 and 1972, the number of persons floating the Colorado River soared from 2,099 to 16,432 and posed a serious threat to Canyon wildlife and vegetation. After several studies, the Park Service proposed a management plan that established use levels, redistributed launching times for trips, and established regulations to minimize impacts on soil, vegetation, and wildlife. The plan originally called for phasing out motorized river craft by 1985, so that all trips would be oar powered, and only 70 percent commercial. However, controversy surrounding these cutbacks now threaten their attainment.

Crowding and conflicts on streams, in Wilderness, and other sensitive areas are a concern of all land management agencies. In April of 1981, a national conference was held to discuss recreation use allocation. Sponsored by the Forest Service, Bureau of Land Management, and the National Park Service, the conference addressed the need for use limits, rationales for allocating use between commercial and private users, and the equity of various management and allocation strategies. Managers and users generally agreed that allocation policies and practices are needed in many areas. They also agreed that tools such as pricing will become increasingly acceptable to allocate use among competing groups (Cordell 1981).

Collection, management, and proper use of data and information are persistent problems in managing public lands for recreation. Legislative mandates (e.g., NFMA and FLPMA) require that resource allocation be based on analysis of relevant benefit/cost comparisons. Such an analysis depends on good estimates of the unit value of recreation outputs consumed by the public. Such unit values are yet to be developed for regionwide and nationwide planning. Reliable and affordable methods for estimating the amount of participation in visits, visitor-days, or other units are also lacking. Unit values and accurate use estimates are equally important in cost/benefit analyses that are comparable to those for competing resource values such as timber and minerals, for which better data **are available. Research is needed to improve recreation use estimation procedures.**

Other major problems for resource managers include: wilderness allocation controversies; maintaining the visual quality of forest and rangelands managed for timber, water and mineral development; resolving conflicts between different recreation visitors such as motorized versus non-motorized users; projecting future demands; and maintaining and restoring heavily used sites. On a broader scale, we need to know more about the satisfactions and benefits resulting from recreation experiences so recreation environments and use can be managed to optimize benefits.

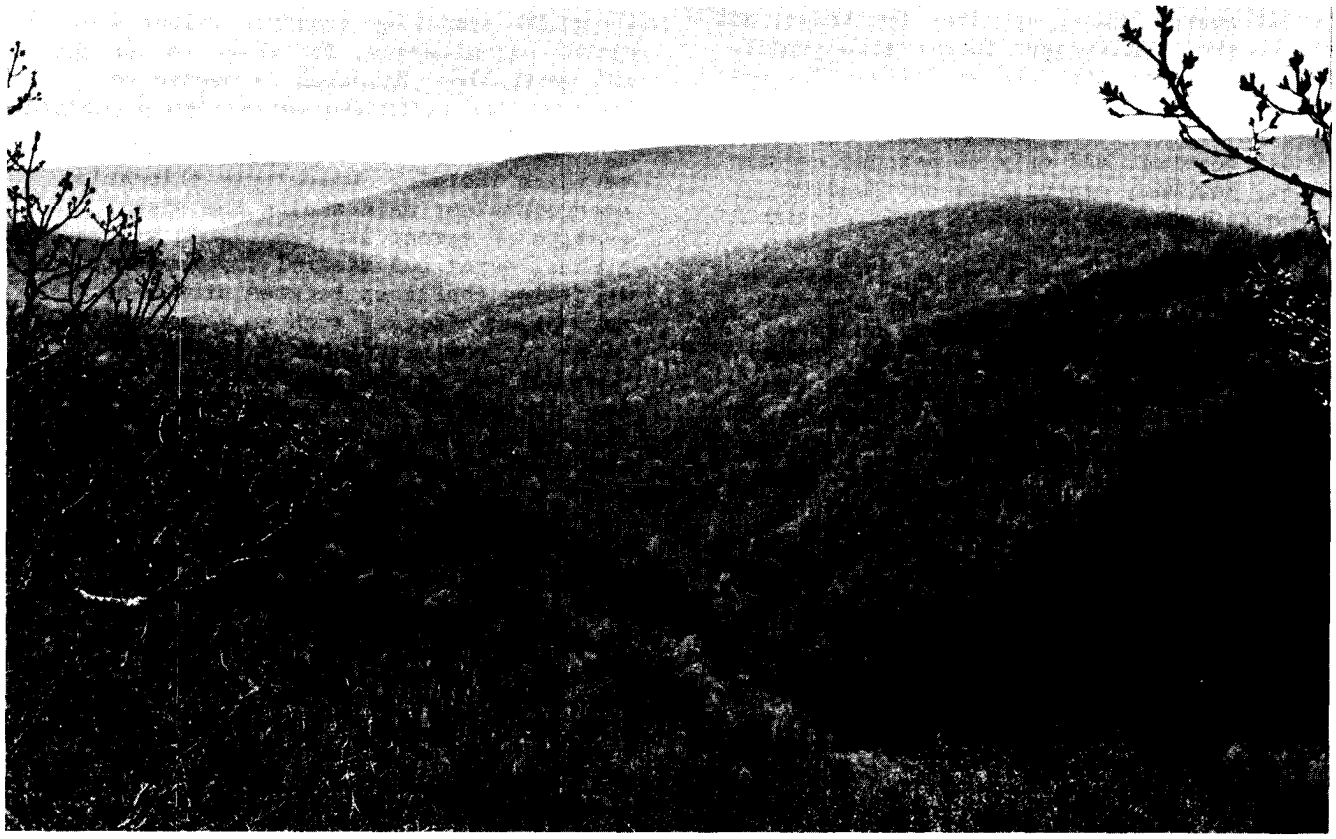
Efforts to address these problems and needs are being reduced as philosophies about government's role in outdoor **recreation are changing. Current philosophies lean toward government providing primitive and semiprimitive opportunities, with reduced regulation, services, and development. The private sector is viewed as the source for capital investments and intensive site development and services.** In spite of these emerging philosophies, the previous approach by government clearly had enduring effects. Providing recreation opportunities is still a mandated government

responsibility. Authority, facilities, coordination, and administrative mechanisms for providing outdoor recreation are in place. Legislation to clean up air and water is causing a return of fishing and swimming to formerly polluted waters. A vast National Wilderness Preservation System has been created; National Parks, Forests, and Recreation Areas, and Wild, Scenic, and Recreation Rivers have been established and support impressive levels of use.

Previous government direction has been to expand public supplies in response to rising participation rates. Recreation demand can no longer be met so readily because resources for expanding public recreation supplies are more limited. Earlier gains from better coordination and expanded authority probably cannot be duplicated. Meeting future recreation needs will require more than linear extensions of historical policies and approaches. Projections indicate increased demand for outdoor recreation in the face of greater uncertainty about that future, an already saturated supply, increasing development and opportunity costs, continued inflation, and more intense competition for public expenditures. All these factors suggest a need for new and more comprehensive policy directions and creative solutions that are compatible with current conditions and philosophies.

RENEWABLE RESOURCES RECREATION SUPPLY SITUATION IN THE UNITED STATES

Forests and ragelands provide a wide spectrum of outdoor recreation opportunities. The kinds of opportunities provided are largely determined by the distribution of land and water areas among various categories of public and private ownership and the geographic distribution of land and water relative to that of the population. **We summarize acreages of land and water, per capita regional distributions, ownership and management responsibilities, and other relevant characteristics of these resources.**



The 755.4 million acres of federally owned land in the United States include about 33 percent of the land base. Another 6 percent (about 173.6 million acres) is owned by state and local governments, and 2 percent is owned by native Americans. (U.S. Forest Service photo.)

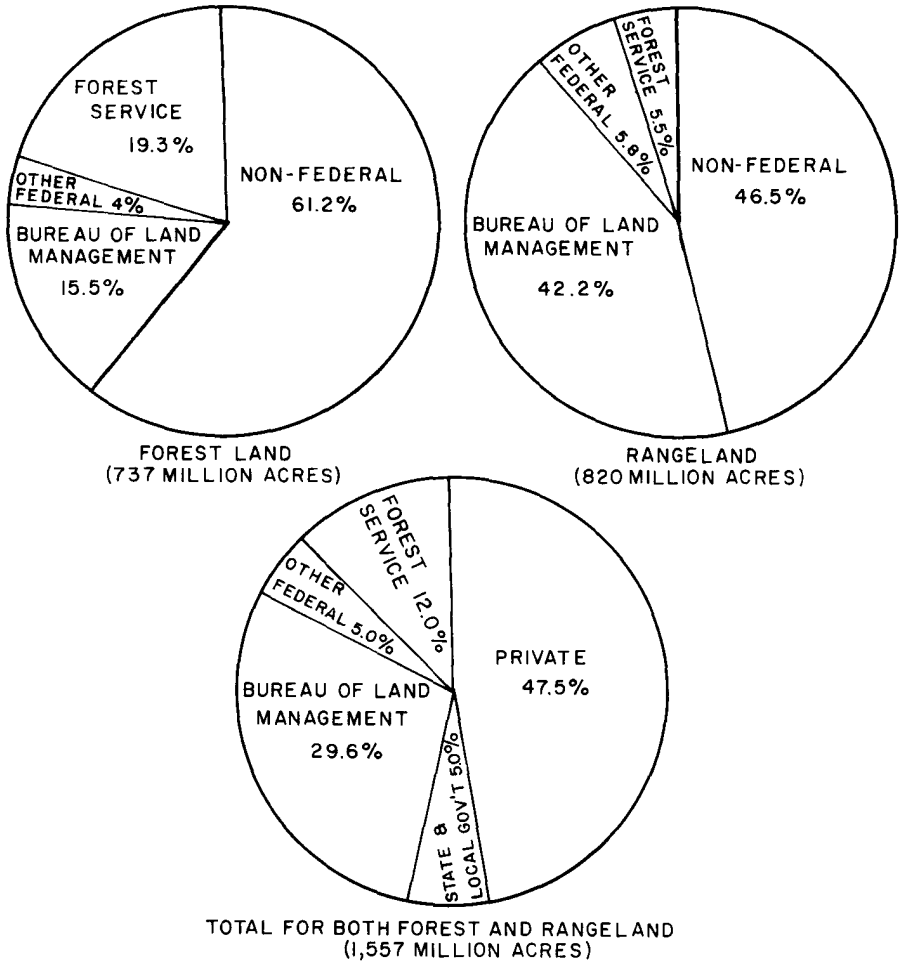


Figure 3 - Percentage of forest and range land area by ownership in the United States, 1977.

OWNERSHIP AND AMOUNT

The land base of the United States includes about 2.265 billion acres surrounded by 84,200 miles of coastal shoreline. Approximately 2 million rivers and streams have a total length of 3.2 million miles. Nearly 30,000 miles of streams have been inundated to create the 49,000 large reservoirs and 2 million small reservoirs so important as recreation settings.

There are about 755.4 million acres of Federally-owned land in the United States. These lands are managed primarily by four agencies: USDA Forest Service (25 percent), USDI National Park Service (3 percent), Bureau of Land Management (62 percent), and Fish and Wildlife Service (4 percent). Federal lands represent 33 percent of the U.S. land base. Another 6 percent (about 173.6 million acres) is owned by state and local governments, and 2 percent is owned by native Americans.

Fifty-nine percent of the land base in the U.S. is privately held (about 1.336 billion acres) by an estimated 34 million different corporate and noncorporate owners (Lewis 1980). Almost 90 percent of these private owners are individuals or married couples, the majority of whom (57 percent) are 55 and over.

About 1.56 billion acres in the U.S. are classified as forest and range lands and associated waters. Approximately 47.5 percent of this area is privately owned. Management responsibility for the 46.6 percent in federal holdings is divided among the Bureau of Land Management, which administers the most (29.6 percent), the U.S. Forest Service (12.0 percent), and other agencies, including the National Park Service (5.0 percent). State and local governments own about 5.9 percent of the forest and range acreage. As Figure 3 shows, private owners control a higher proportion of the forest (61.2 percent) than

the rangeland acreage (46.5 percent). There are also regional differences with more range in the West and more forest in the South and East.

Private land is likely to be an increasingly important source of recreation opportunities because it is more strategically located near major population cities in the South and East. Table 1 shows the disproportionate distribution of forest and range lands relative to population in the four regions of the United States. Almost 50 percent of the U.S. population, for example, lives in the Northern Region which contains only 10.5 percent of the forest and range land acreage. This region has 1,476 such acres per 1000 population compared to 6,774 acres per 1000 population nationally. Of the 164 million acres of forest and range in the North, 78 percent is privately owned. In contrast, the Pacific Coast Region, with only 14.4 percent of the population, has 33.4 percent of the forest and range land; and only 12 percent of these 520 million acres are privately owned. Because opportunities for recreational use of private lands are generally more limited than opportunities on public lands, there appears to be a severe imbalance in available recreation opportunities.

The greatest amount of per capita forest and range land in almost all ownership categories is in the Rocky Mountain-Great Plains Region with almost 32,000 acres per 1000 population. Acreages per capita are lowest in the Northern region (1,476 per 1000) and next lowest in the Southern Region (4,732 per 1000). Even though the population is shifting from the North to the West and South, significant changes in the distribution of acres per 1000 population probably will not occur between now and the year 2000.

State lands are likely to be more important in the future because, among other reasons, they are regionally well distributed relative to population, even though there is somewhat more acreage per state in the West. There is a need, however, to examine the policies governing these lands relative to their recreation opportunity potential. As of 1977, 53 percent of state lands had no use designation and thus are not managed for recreation (table 2).

RECREATION RESOURCES CLASSIFICATION

For comprehensive land resource planning, systems have been developed for classifying, inventorying, and mapping recreation resources. **One of the most widely-accepted current systems is the Recreation Opportunity Spectrum (ROS) which is based on possible mixes of activities, settings, and probable experience opportunities** (Buist and Hoots 1982). ROS has six classes ranging from primitive areas to very intensively developed urban areas. Probable experience in each of these settings are shown in Table 3.

The Forest Service and the Bureau of Land Management have formally adopted the ROS System. Since these two agencies manage the majority of public forest and range land, descriptions in this paper of the recreation resource situation in the United States are keyed to the six ROS classes.

PRIMITIVE AND SEMIPRIMITIVE OPPORTUNITIES

Particular emphasis is placed on wilderness in this section because of the importance of pending wilderness allocation decisions. **Rarely in our history has a single natural resource issue so clearly defined the interests of competing resource user groups as has the wilderness issue.** The remaining discussion of primitive and semiprimitive opportunities focuses on trail and road access to backcountry areas.

The National Wilderness Preservation System

The Wilderness Act of 1964 established the National Wilderness Preservation System (NWPS) with an initial allocation of 9.1 million acres. Over the past 18 years the NWPS has grown to nearly 80 million acres, but only modest additions are likely in the future.

The debates over wilderness allocations have clearly been among the most spirited experienced for any resource policy issue. Some claim that debate has in increased sensitivity to intangible values and environmental analysis by resource managers, greatly improved public involvement, and increased membership and tactical sophistication by environmentalists. While wilderness allocation debates on individual areas will surely continue, other wilderness

Table 1.--Forest and range land acreage and acreage per 1000 population by region and ownership, 1980

Region	Population in 1981	Acreage of Forest and Range Land									
		Regional Total		Forest Service		Other Fed.		State and Local		Private	
	(millions)	Acres (000)	Acres per 1000 pop.	Acres (000)	Acres per 1000 pop.	Acres (000)	Acres per 1000 pop.	Acres (000)	Acres per 1000 pop.	Acres (000)	Acres per 1000 pop.
North	111.2 (48.4)[a]	164,171.0 (10.5)[a] (100)[b]	1,476.4	11,513.7 (6.2) (7.0)	103.5	2,437.0 (0.4) (1.5)	21.7	22,556.5 (24.4) (13.7)	202.8	127,663.8 (17.3) (77.8)	1,148.1
South	68.3 (29.7)	323,163.2 (20.8) (100)	4,731.5	12,481.3 (6.7) (3.9)	182.7	6,667.0 (1.2) (2.1)	97.6	19,756.6 (21.4) (6.1)	289.3	284,258.3 (38.4) (88.0)	4,161.9
Rocky Mtn. and Great Plains	17.3 (7.5)	549,255.6 (35.3) (100)	31,748.9	97,947.3 (52.4) (17.8)	5,661.7	168,409.3 (31.3) (30.7)	9,734.6	18,462.5 (20.0) (3.4)	1,067.2	264,436.5 (35.7) (48.1)	15,285.3
Pacific Coast	33.0 (14.4)	519,970.9 (33.4) (100)	15,756.7	64,919.6 (34.7) (12.5)	1,967.3	359,967.0 (67.0) (69.2)	15,756.7	31,785.2 (34.4) (6.1)	963.2	63,299.1 (8.6) (12.2)	1,918.2
U.S. Total	229.8 (100)	1,556,560.7 (100) (100)	6,773.5	186,861.9 (100) (12.0)	813.2	537,480.3 (100) (34.5)	2,338.9	92,465.3 (100) (6.0)	402.4	739,753.2 (100) (47.5)	3,219.1

SOURCES: U.S. Department of Commerce, Bureau of the Census, Current Population Reports: Population Estimates, Ser. P-25, No. 909, Estimates of the Population of the United States to January 1, 1982 (Washington, D.C.: Government Printing Office, 1982) and U.S. Department of Agriculture, Forest Service, An Assessment of the Forest and Range Land Situation in the United States, (Washington, D.C.: Government Printing Office, 1980), pp. 34-35, Table 2.3.

NOTE: Estimates based on 0.3 percent annual growth in North, 1.2 percent in South, 1.7 percent in Rocky Mountain and Great Plains, and 1.7 in the Pacific Coast.

[a]Percent of U.S. (column) total.

[b]Percent of regional (row) total.

Table 2.--Use and acreage of state lands, 1977

Use		Acres (thousands)	Percent of total
Forests		26,503	34.0
Fish and/or wildlife mgt.		9,006	11.6
Parks		5,528	7.1
	Subtotal	41,037	52.7
Schools		431	0.6
Unclassified		36,400	46.7
	Subtotal	36,831	47.3
	TOTAL	77,868	100.0

SOURCE: U.S. Department of Interior, Bureau of Land Management, Public Land Statistics: 1977, (Washington, D.C.: Government Printing Office, 1978).

issues will increasingly command attention. The most heated debates now center on: (1) how and whether to release, for nonwilderness development and use, lands already under consideration but not yet selected for NWPS designation; and (2) to what degree existing NWPS units should be opened to oil, gas, and mineral exploration and development.

Future preservation and enhancement of wilderness values will increasingly depend on better management of already designated areas. Major policy issues include the need to establish carrying capacities, to disperse visitors to combat overuse in spots, to increase emphasis on light-handed management using minimum regulation and force to meet management objectives, and to increase use of volunteers to accomplish wilderness management.

Recent history—The most heated wilderness controversies have centered on National Forest land where alternative uses compete for proposed wilderness areas. About 110 million of the 188 million acres of National Forest lands are roaded and the rest are undeveloped. In 1977, 15.6 million of these acres were included in the NWPS. In 1977, the Forest Service initiated its second Roadless Area Review and Evaluation (RARE II) to determine which of the remaining 62 million acres should be included in the NWPS, set aside for further planning, or released to nonwilderness uses. The RARE II goal was to resolve the controversy over as many of the contested areas as possible so management programs could proceed.

As a result of RARE II, the Administration recommended an additional 15.4 million acres of National Forest System lands (8 percent of the National Forest System) for NWPS classification by Congress. It recommended further study for another 10.8 million acres.

RARE II greatly heightened the controversy over releasing lands not selected for wilderness to other, nonwilderness uses. The first post-RARE II wilderness bills to pass the Congress designated as wilderness a 2.2 million-acre section of the Salmon River area in central Idaho called the River of No Return Wilderness. This bill also added 105,600 acres to the existing Selway-

Table 3.--ROS Users Guide

ROS					
Primitive	Semi-Primitive Non-Motorized	Semi-Primitive Motorized	Roaded Natural	Rural	Urban
Setting Characterization*					
Area is characterized by essentially unmodified natural environment of fairly large size. Interaction between users is very low and evidence of other users is minimal. The area is managed to be essentially free from evidence of human-induced restrictions and controls. Motorized use within the area is not permitted.	Area is characterized by a predominantly natural or natural-appearing environment of moderate-to-large size. Interaction between users is low, but there is often evidence of other users. The area is managed in such a way that minimum on-site controls and restrictions may be present, but are subtle. Motorized use is not permitted.	Area is characterized by a predominantly natural or natural-appearing environment of moderate-to-large size. Concentration of users is low, but there is often evidence of other users. The area is managed in such a way that minimum on-site controls and restrictions may be present, but are subtle. Motorized use is permitted.	Area is characterized by predominantly natural-appearing environments with moderate evidences of the sights and sounds of man. Such evidences usually harmonize with the natural environment. Interaction between users may be low to moderate, but with evidence of other users prevalent. Resource modification and utilization practices are evident, but harmonize with the natural environment. Conventional motorized use is provided for in construction standards and design of facilities.	Area is characterized by substantially modified natural environment. Resource modification and utilization practices are to enhance specific recreation activities and to maintain vegetative cover and soil. Sights and sounds of humans are readily evident, and the interaction between users is often moderate to high. A considerable number of facilities are designed for use by a large number of people. Facilities are often provided for special activities. Moderate densities are provided far away from developed sites. Facilities for intensified motorized use and parking are available.	Area is characterized by a substantially urbanized environment, although the background may have natural-appearing elements. Renewable resource modification and utilization practices are to enhance specific recreation activities. Vegetative cover is often exotic and manicured. Sights and sounds of humans, on-site, are predominant. Large numbers of users can be expected, both on-site and in nearby areas. Facilities for highly intensified motor use and parking are available with forms of mass transit often available to carry people throughout the site.
Experience Characterization*					
Extremely high probability of experiencing isolation from the sights and sounds of humans, independence, closeness to nature, tranquility, and self-reliance through the application of woodsman and outdoor skills in an environment that offers a high degree of challenge and risk.	High, but not extremely high, probability of experiencing isolation from the sights and sounds of humans, independence, closeness to nature, tranquility, and self-reliance through the application of woodsman and outdoor skills in an environment that offers challenge and risk.	Moderate probability of experiencing isolation from the sights and sounds of humans, independence, closeness to nature, tranquillity, and self-reliance through the application of woodsman and outdoor skills in an environment that offers challenge and risk. Opportunity to have a high degree of interaction with the natural environment. Opportunity to use motorized equipment while in the area.	About equal probability to experience affiliation with other user groups and for isolation from sights and sound of humans. Opportunity to have a high degree of interaction with the natural environment. Challenge and risk opportunities associated with more primitive type of recreation are not very important. Practice and testing of outdoor skills might be important. Opportunities for both motorized and non-motorized forms of recreation are possible.	Probability for experiencing affiliation with individuals and groups is prevalent, as is the convenience of sites and opportunities. These factors are generally more important than the setting of the physical environment. Opportunities for wildland challenges, risk-taking, and testing of outdoor skills are generally unimportant except for specific activities like downhill skiing, for which challenge and risk-taking are important elements.	Probability for experiencing affiliation with individuals and groups is prevalent, as is the convenience of sites and opportunities. Experiencing natural environments, having challenges and risks afforded by the natural environment, and the use of outdoor skills are relatively unimportant. Opportunities for competitive and spectator sports and for passive uses of highly human-influenced parks and open spaces are common.

Bitterroot Wilderness. A proposed amendment to the River of No Return bill (the McClure Amendment) called for release of an adjacent 987,000-acre area set aside by the Forest Service for additional study. The "release amendment" was aimed at preventing future consideration for wilderness of the areas not included in these bills. Although the amendment was rejected, similar provisions have been inserted in other bills. **Legislative release of roadless lands for nonwilderness development and use has become one of the most controversial wilderness issues of the 1980's.**

RARE II resolved much of the wilderness issue in many states but was clouded by a Federal District Court decision in January 1980 (California v. Bergland). California, the only state that wanted more of its land designated as wilderness than the President recommended, challenged the adequacy of the RARE II environmental impact statement for California roadless areas that were not recommended for wilderness or further study. The court decided that the EIS was inadequate and enjoined further development of the affected areas until requirements of the National Environmental Protection Act were **adequately met. Thus, RARE II, like previous efforts, resolved only part of the wilderness allocation question on National Forest lands, but it facilitated resolution for many specific areas and focused atten-**

The National Wilderness Preservation System includes nearly 80 million acres and may be about 80 percent complete. Increased demand for wilderness use will intensify pressures for more and better wilderness management. (National Park Service photo.)

tion on whether unselected lands should be released for other uses.

In a process similar to RARE II, the U.S. Department of the Interior is conducting its own wilderness suitability reviews of roadless areas managed by the National Park Service, the Fish and Wildlife Service, and the Bureau of Land Management (BLM). Under authority of the Federal Land Policy and Management Act of 1976 (FLPMA), the President directed the Secretary of the Interior to establish a review system. For the BLM, the FLPMA's Section 603 directed that public lands managed by the agency be inventoried for wilderness values. **By May 30, 1980, inventory of the 174 million acres of BLM managed land in the contiguous states had eliminated 124 million acres which were found to have too few wilderness characteristics.** Approximately 11 million acres were identified as wilderness study areas, and these are being examined to determine suitability for wilderness designation. Under the Act, BLM must make its wilderness recommendations to the President by 1991, and by 1993 the President must make recommendations to Congress. The BLM review has also highlighted related issues such as interim management policies for candidate areas and the ultimate wilderness management policies for areas that will eventually be classified.

Amount and location of wilderness--The Wilderness Act of 1964 (P.L. 88-577) established the NWPS and made 54 National Forest units (9.1 million acres) the nucleus of the system. Subsequent legislation added 104 Wilderness Areas and enlarged 20 existing Wilderness Areas, to add approximately 16.2 million more acres of National Forest System land to the NWPS. During 1980 alone, 48 areas totaling approximately 9.82 million acres of National Forest System lands were added to the NWPS. There are now 158 wilderness areas within National Forests totaling approximately 25.2 million acres. These wilderness acres include Alaska and represent about 13.4 percent of all lands administered by the Forest Service (Table 4).

The National Park Service, Fish and Wildlife Service, and Bureau of Land Mangement, all in the Department of Interior, had no wilderness acreage designated under the Wilderness Act of 1964. By early 1981, the National Park System contained 3.0 million acres of Wilderness in the contiguous U.S. and 35.4 million acres in Alaska. The Fish and Wildlife Refuge System now has only .6 million acres of

Table 4.--Area of the National Wilderness Preservation System by location, managing agency, and year

Managing Agency	Contiguous states and Hawaii (1964)	(1979)	(1981)	Alaska (1981)	United States (1981)
	(millions of acres)				
Forest Service, USDA	9.1	15.3	19.7	5.4	25.1
National Park Service, USDI	0.0	2.8	3.0	32.4	35.4
Fish & Wildlife Service, USDI	0.0	0.7	0.6	18.7	19.3
B. of Land Management, USDI	0.0	0.0	0.01	0.0	0.0
TOTAL	9.1	18.8	23.31	56.5	79.8

SOURCE: U.S. Department of Agriculture, Forest Service, Wilderness Fact Sheet (unpublished), February 1982. 1 p.

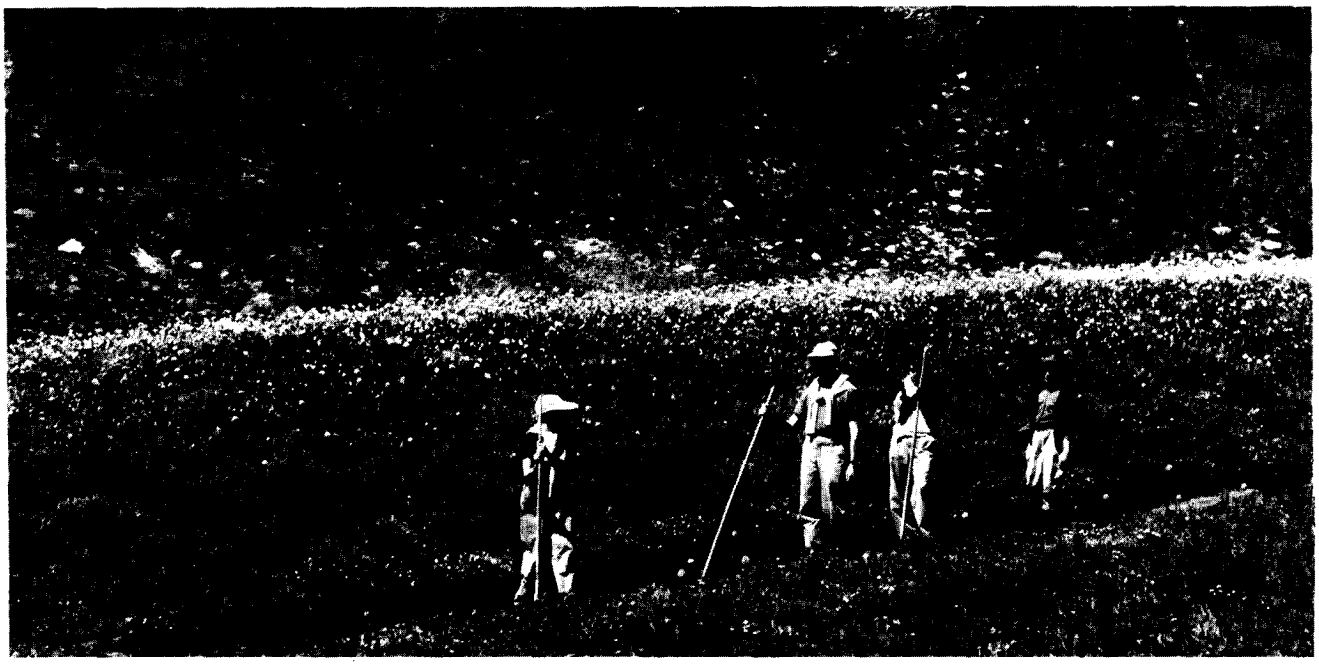
wilderness in the lower 49 states (including numerous islands and some other sensitive habitat), but has 18.7 million acres of wilderness in Alaska. The Bureau of Land Management has only about 10,000 acres of designated wilderness but, as indicated above, 11 million acres of BLM lands have been designated for wilderness study.

On January 1, 1981, the NWPS totaled 79.8 million acres. These areas included 56.5 million acres designated in Alaska.

Table 4 and this discussion indicate the phenomenal growth in the NWPS since 1964. What these figures do not reveal is the limited access and proximity to population of the majority of this acreage. Recreational access to wilderness in Alaska is extremely limited and these areas are distant from significant populations. Furthermore, most of the NWPS acreage in the contiguous states is in the West and is not readily accessible to the more heavily populated East. In the East, there are approximately 2.6 million acres of wilderness, most of which is in the North Cental region and Florida. Almost 1.1 million acres of the wilderness in the East are in the National Forest System and 1.5 million acres are in the National Park System. **A little over 3 percent of the NWPS is in the East where over three-fourths of the U.S. population resides.** These two issues--proximity to population and recreational access--will continue to be key issues for debate over future additions to the NWPS.

Wilderness use--During fiscal year 1980 (October 1, 1979 September 30, 1980), the number of visitor-days use (9,267,800) in Wildernesses and Primitive areas decreased about 4 percent compared to fiscal year 1979. This decrease does not necessarily reflect a decline in the popularity of wilderness, but more likely reflects improvements in visitor use estimation procedures, as well as restrictions on use in certain areas. More important is the fact that **wilderness visitor use more than doubled from 1965 to 1980.**

Only a small part of the increase in wilderness use resulted from additions to the NWPS. Use of the 14.6 million acres in 88 Wilderness and Primitive areas that existed in 1965 still accounted for 88 percent of the total visitor-days of use in 1980 (Peterson 1981). The average annual rate of growth in use from 1965 to 1980 was 4.3 percent (solid curve, Figure 4). Use of all the NWPS areas on National Forests is



Visits to the nearly 80 million acre National Wilderness Preservation System more than doubled between 1965 and 1980. Most visits (88 percent in 1980) occur on the 14.6 million acres included in the original NWPS created in 1964. (National Park Service photo.)

plotted as a broken line and indicates that use of areas added since 1965 is a relatively small proportion (12 percent in 1980) of the total system use.

The distribution of use is uneven, both among and within Wilderness Areas. Visitor-days per acre on individual areas range from a low of .01 to a high of 7.95. Within most Wilderness Areas, the different entry points, travel routes, and campsites vary greatly in use.

On most Wilderness Areas, use is heaviest in summer and peaks on weekends and holidays. It is too unevenly distributed for best utilization of the resource (Hendee et al. 1978). In fact, overuse in spots is a major problem in some areas.

Wilderness management—In simplest terms, wilderness management calls for doing only what is necessary to meet objectives established with the help of public involvement and outlined in individual management plans. Use of tools, force, or regulation should be the minimum needed to meet these objectives and prevent loss of the area's wilderness qualities (Hendee et al. 1978; Hendee 1981). The intensive use of a relatively small portion of the NWPS and its resulting impacts are a source of management concern. There is interest among managers in establishing carrying capacities to limit wilderness use where necessary to avoid resource damage from overuse. Monitoring techniques are needed to identify where unacceptable change is occurring from overuse and to reveal management's success in reducing such impacts.

Already a considerable wilderness management capability has evolved from field experience, research-based knowledge, and application of available technology. Recent studies reveal the spotty presence of a growing list of wilderness management techniques and substantial management interest (Cole and Washburne 1981; Roggenbuck and Watson 1982). The immediate challenge is to strengthen management but with reduced budgets. Emphasis on light-handed management is growing and a need for public involvement in area-based management plans and proposals has been recognized.

Requests for activities related to mineral exploration, leasing, and mining in Wilderness Areas are increasing. These activities are a topic for proposed legislation and regulation, all spurred by the December 31, 1983, mineral entry and leasing deadline. Difficult decisions need to be made on suitable lease locations and necessary restriction on development, production, and use of support facilities.

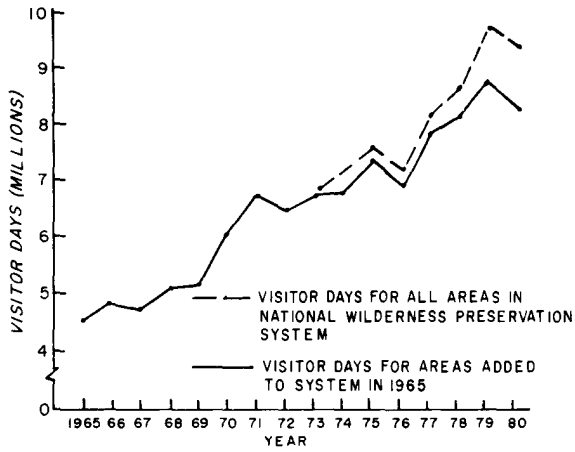


Figure 4 - Trends in recreational use for wilderness and primitive areas from 1965-1980.

Increasing volunteers are accomplishing such wilderness tasks as sign and trail maintenance, campsite rehabilitation, debris removal, and visitor contacts for interpretive and educational services. In one wilderness in Oregon, for example, 21 volunteers did the equivalent of $73,000 worth of work. These volunteers included concerned individuals and members of local and national organizations such as the Sierra Club, Student Conservation Association, and Boy Scouts of America. The YCC and YACC programs have also contributed significantly, but these programs are being eliminated. Clearly **volunteers can be an important source of help to wilderness managers with increasingly stringent budgets.**

Characteristics of wilderness users--All age groups are represented among wilderness users; but they tend to be younger than the general population. Approximately three-fourths of all visitors to most wilderness areas are male (Hendee et al. 1978). They tend to have more than average education, and large percentages are students or are employed in professional and technical occupations. Skilled laborers are the next most common occupational category, and housewives are well represented among women. Income levels are much higher than the national average. Wilderness users reflect higher educational and income attributes even more strongly than do other outdoor recreationists.

Use of wilderness areas is mainly by people from within the surrounding region (Hendee et al. 1978; Lucas 1980), and the majority of wilderness users are urban residents (Hendee et al. 1968; Murray 1974; Roggenbuck 1979; Lucas 1980).

The majority of wilderness visitors come in small family or friendship groups (Table 5). Less than 10 percent of use in most areas is by organization-sponsored groups (Lucas 1980). One-half to three-fourths of the groups in most areas include two to four individuals and lone individuals are uncommon. Most visits are short, lasting an average of only 2 days (Table 5). For many small- and medium-sized areas, day-users may be most common (Hendee et al. 1978).

Hiking is the primary method of travel, although in certain areas horseback riding is dominant. Fishing, photography, nature study, swimming, and hunting are activities often engaged in by visitors during wilderness trips.

Wilderness users in the East and West tend to seek the same experiences: enjoyment of scenery and nature; escape from noise, crowds, and mental stress; and development of physical fitness (Haas 1977; Roggenbuck 1980). Similar environmental features such as water, wildlife, and views are valued by users of all areas.

Wilderness users' preferences and perceptions--Studies over the past 15 years have revealed much about what users seek and find in the Wilderness System. **There is widespread similarity of user preferences and perceptions even among Wilderness Areas which differ greatly in geographic location, use intensity, types of use, and physical characteristics** (Echelberger and Moeller 1977; Stankey 1973; Lucas 1980; Roggenbuck 1980). Users tend to report high overall satisfaction with their wilderness visits (Lucas 1980; Roggenbuck 1980). The most common reason cited is a favorable reaction to the natural environment. Although total satisfaction tends to decline as crowding increases, the association of total satisfaction with total number of encounters is not particularly strong. Rather, it appears that the kinds and locations of encounters may be more critical than numbers alone. Wilderness visitors tend to be more sensitive to contacts with other users at campsites than on trails, and they strongly prefer to camp out of sight and sound of other groups (Stankey 1978, 1980; Lucas 1980; Roggenbuck 1982). Study of three Wilderness Areas in the Southeast revealed

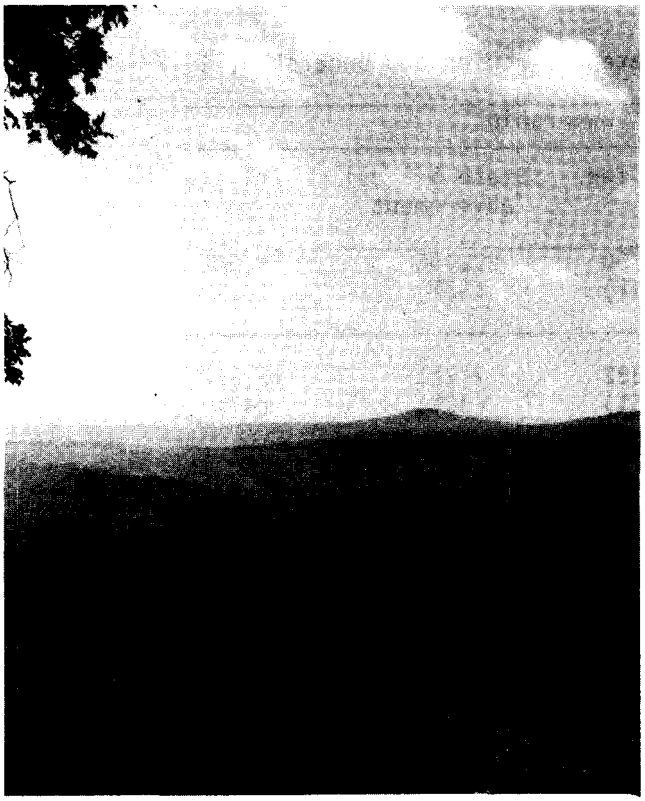
Table 5.-- Characteristics of user groups of National Park backcountry and National Forest Wilderness and Primitive areas

Area(State)	Year	Length of stay[a]	Percent day use	Party size: 1	2-4	3-10	10+	Major Activity: Hike	Horse-back	Hike with stock	Other	Fish	Hunt	Photog-raphy	Swim	Nature Study	Mtn. Climbing	Party Composition: Family	Family with Friends	Friends	Group Organi-zation	Alone
Boundary Waters Canoe Area (Minn.)	1974	4.2	41	3	70	27	0	3	NA	NA	97	-	-	-	-	-	-	---61---		27	11	1
Bob Marshal W. (Mont.)	1970	5.9	14	6	51	27	7	31	59	6	4	61	34	58	22	28	0	43	15	30	2	8
Scapegoat W. (Mont.)	1970	2.9	41	6	61	20	14	69	18	12	1	62	11	53	20	27	2	36	21	29	8	7
Cabinet Mtns. W. (Mont.)	1970	1.6	67	5	72	18	4	90	7	2	1	61	6	45	15	25	2	40	15	33	5	5
Spanish Peaks P.A. (Mont.)	1970	1.8	63	8	57	27	6	72	20	7	1	41	16	53	9	29	4	38	13	35	4	10
Mission Mtns. P.A. (Mont.)	1970	1.7	62	5	57	32	5	97	2	1	0	74	2	56	18	31	2	46	17	29	2	5
Selway-Bitter-root W. (Idaho-Mont.)	1971	3.0	48	5	66	22	6	70	20	6	4	42	16	58	17	35	2	40	14	37	3	6
Desolation W. (Calif.)	1974	3.2	40	9	69	18	5	99	1	0	0	48	1	54	46	52	4	33	16	34	7	10
John Muir W. (Calif.)	1972	-	-	9	72	12	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
San Gorgonio W. (Calif.)	1972	-	-	7	53	15	25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Yosemite N.P. (Calif.)	1972	-	-	14	71	12	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sequoia-Kings Canyon N.P. (Calif.)	1972	-	-	13	75	7	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Grand Teton N.P. (Wyo.)	1974	-	62	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
North Cascades N.P. (Wash.)	1974	3.5[b]	-	13	63	18	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Olympic N.P. (Wash.)	1974	2.8[b]	-	14	72	9	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mount Rainier N.P. (Wash.)	1974	1.9[b]	-	13	71	14	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Glacier Peak W. (Wash.)	1965	-	-	-	-	-	-	82	18	0	0	-	-	-	-	-	-	-	-	-	-	-
Three Sisters W. (Oreg.)	1965	-	-	-	-	-	-	85	15	0	0	-	-	-	-	-	-	-	-	-	-	-
S. Appalachian Trail (Va., Tenn., N.C. Ga.)	1970-1971	2.5	53	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

SOURCE: John C. Hendee, George Stankey, and Robert C. Lucas, 1978 Wilderness Management (Washington, D.C.: USDA Forest Service, 1978): 296, table 13-3.

[a]Length of stay is expressed in ordinary calendar days.

[b]Based only on overnight campers; no day-use included.



Even though wilderness opportunities are limited in the East, research indicates that visitors there seek the same kinds of experiences as visitors to wilderness in the West--enjoyment of scenery and nature, solitude-escape from noise and crowds, and traditional outdoor activity in a primitive setting. (U.S. Forest Service photo.)

that "observing other people in the area" and "knowing others are nearby" were the major detracting factors of a wilderness experience (Roggenbuck and Dawson 1979). This study also showed that wilderness users in the East and West have similar concerns and management preferences. Many visitors also feel that meeting several small groups is more acceptable than seeing one large group (Lucas 1980; Roggenbuck 1982). There is some evidence to suggest that visitors to heavily used areas tend to be more tolerant of contact with other groups (Stankey 1980; Vaske, et al. 1982).

A survey of the general public (Opinion Research Corp. 1977) found that only 7 percent of the respondents thought there was "too much" wilderness, while 32 percent said there was "too little", and 44 percent said the current amount was about right. Though this survey and another poll of the Illinois public (Young and Crandall 1979) found that knowledge of wilderness is still relatively low, they concluded that the public continues to support the NWPS.

Some control of use is fairly well accepted by wilderness users (Stankey 1978, 1980; Lucas 1980; Roggenbuck 1980). Party size restrictions are generally endorsed. Users also favor improved information about conditions. They are neutral to slightly in favor of restricting use through permits. If permits are used, an advance reservation system is the most favored allocation strategy (Stankey 1978; Roggenbuck et al. 1982). Users generally reject distributing permits by lottery and charging user fees. Rigid preplanned itineraries and campsite assignment are strongly rejected. Users generally prefer indirect over direct management controls and tend to support what they perceive as the minimum control necessary to maintain wilderness values. However, several studies have found a greater acceptance of direct regulation in areas which receive heavy use (Stankey 1980; Roggenbuck 1980).

A recent study indicated that about half of the visitors who had made previous trips to the same Wilderness Areas in the West felt conditions in these areas are stable (Lucas 1980). Among the other half, more thought conditions were much worse than thought they had improved. While perceptions of specific problems vary from area to area, the most common ones are a feeling of declining quality, more crowding, and more worn and littered areas. Litter, destruction of vegetation, fire rings, not enough wildlife, too many people in certain places, and not enough information on use are generally perceived as problems in areas in the East. The actual situation may be somewhat worse since visitors who perceive deteriorating conditions may have stopped using these areas.

There is general support among users for only minimum facilities in Wilderness. Low standard trails, bridges over large streams, fire rings, and fish stocking are considered appropriate for wilderness by most visitors (Lucas 1980). Responses are mixed on the desirability of pit toilets, pole horse corrals, and bridges over small streams. Picnic table and cemented rock and metal grill fireplaces are not favored by most. Rustic shelters are generally considered inappropriate.

Table 6.--Trail mileage in the United States by region and ownership, 1977

Region	Total	Ownership			
		USFS	Other fed.	State & local government	Private
North	97,295 (35%)	4,405 (5%)[a]	708 (1%)	32,496 (33%)	59,686 (61%)
South	26,064 (9%)	4,649 (18%)	1,382 (5%)	7,711 (30%)	12,322 (47%)
RM&GP	94,923 (34%)	55,041 (58%)	5,078 (5%)	6,867 (7%)	27,937 (29%)
Pacific Coast	62,776 (22%)	29,538 (47%)	9,168 (15%)	7,931 (13%)	16,139 (26%)
Total U.S.	281,058 (100%)	93,633 (33%)	16,336 (6%)	55,005 (20%)	116,084 (41%)

SOURCES: U.S. Department of Agriculture, Forest Service, An Assessment of the Forest and Range Land Situation in the United States (Washington, D.C.: Government Printing Office, 1980), pp. 116-117 and National Association of Conservation Districts, Survey of Private Recreation Enterprises, (unpublished computer data file).

OTHER PRIMITIVE AND SEMIPRIMITIVE OPPORTUNITIES

Trail mileage is a primary indicator of the availability of lands for recreation in undeveloped settings. Of the more than 281,000 miles of officially designated trails nationally in 1977, 94,000 (33 percent) were on National Forest land, an additional 16,000 (6 percent) were on other federal land, 55,000 (20 percent) were on state-owned land, and 116,000 miles (41 percent) were on private land (Table 6). Motorized use is not permitted on most of these trails.

Some of the trails described above are included within the National Trails System. **Since establishment of the National Trails System in 1968, three National Scenic Trails, five National Historic Trails, and 257 National Recreation Trails (about 2,590 miles) have been designated.** The U.S. Forest Service has established and registered 145 of these National Recreation Trails, meeting a target of 2 per National Forest, and others will be added by other agencies in the near future at the direction of the President. **In total, the National Recreation Trails System encompasses 681 trails with a total of over 7,000 miles (Table 7).**

There are major differences between regions in total trail mileage (Table 6), the most striking being the low mileage in the South (26,064; 9 percent) relative to the other three regions. Most of the mileage in the South is nonfederal land, and much is privately owned. Private trails are also quite prevalent in the North (59,686 miles; 51 percent) and in the Rocky

Mountains and Great Plains Regions (27,937 miles; 24 percent). National Forests provide the most trail mileage in the Pacific Coast (29,538 miles; 47 percent) and Rocky Mountain and Great Plains (55,041; 58 percent) Regions.

In addition to trails, forest roads ranging widely in quality provide access to backcountry forest and range areas for primitive and semi-primitive recreation. Roads are the base from which many recreational activities occur, such as cross-country skiing, trail hiking, camping, fishing, and hunting. Clearings, stream crossings, and small openings along forest roads often are used for a variety of recreational activities, including camping at small sites established by users. **The National Forests alone have nearly 247,000 miles of forest roads; 40 percent are in unimproved condition, 33 percent are maintained dirt, 22 percent gravel, and 4 percent paved (Hogans** 1979).

Off-road vehicular use of forest and range lands has increased steadily in the last 15 years, both as an activity and as a means of gaining access to backcountry areas. Policies allowing such use are usually liberal. **In 1977, about 43.6 million people engaged in some form of motorized, off-road recreational activity (Siehl 1979). Because it can damage resources, however, motorized use of some public land is being restricted. Currently, nearly**

Table 7.--Number and mileage of National Recreation Trails in the United States by region, 1982

Region	Number of Trails[a]	Trail Mileage
North	144 (21)[b]	1276.6 (18)
South	160 (23)	2035.0 (29)
RM&GP	208 (31)	2087.2 (30)
Pacific Coast	169 (25)	1609.5 (23)
Total U.S.	681 (100)	7008.3 (100)

SOURCE: United States Department of Interior, National Park Service, unpublished annual report on National Trail System, 1982.

[a]Seven of the NRTs cross state lines (Ark./Okla., Ida./Mont., Calif./Ore., Conn./Mass., Wash./Ore., Tenn/Ga., and Wisc./Mich. They are listed in each state involved, but counted only once in the number and mileage grand totals. Two NRTs in Puerto Rico are not counted in the above totals. District of Columbia figures are included in the North Region.

[b]Percentage of column total.

The Appalachian Trail is part of the 2,590 mile National Trails System. (National Park Service photo.)

41 million acres of federal land have restrictions on season of use and on type of vehicle permitted. Off-road vehicular use in the East is primarily on private land. Where private land is open for general recreation, it also is usually available for off-road vehicular use. Currently, about 230 million acres of private forest and range land are considered open to recreation nationwide.

The severity of the problem caused by off-road vehicles is demonstrated in the California desert. **Each year, BLM processes more than 100 permits for motorcycle races, some of which are annual events with as many as 3,000 competitors.** There are intense conflicts between the users of motorized vehicles and conservationists over off road vehicle use. BLM is attempting to reduce the impact on natural and cultural resources of the desert, thus reducing user conflicts.

In the San Joaquin Basin in the southern half of the great Central Valley of California, one of the major forces of desertification is reported to be damage from off-road vehicles. **A USGS study in the San Joaquin Basin indicates that intensive off-road vehicular use has reduced productivity of some 521,000 acres of the Basin's rangeland (CEQ 1980).**

NON-PRIMITIVE OPPORTUNITIES

Nonprimitive opportunities (roaded natural, rural and urban) often center on developed sites including campgrounds, visitor information centers, second home developments, resorts, and other highly modified settings. On National Forests, for example, developed sites account for about one-third of total visitor days of recreation use. In addition, the Bureau of Land Management, Tennessee Valley Authority, Corps of Engineers, National Park Service, state agencies, and private landowners provided numerous and varied developed facilities and sites.

In recent years, many government agencies have begun to redefine their roles in providing recreation opportunities. **Many federal, state, and local government agencies which have invested heavily in developed sites are beginning to reduce their numbers and management. General strategies**

The National Forests have nearly 247,000 miles of forest roads. Road and trail mileage is an important indicator of access to forest and range lands for outdoor recreation. (U.S. Forest Service photo.)

Table 8.--Number and acres of selected National Forest System non-primitive areas and facilities in the United States, 1960-1980

Area or facility	Year 1960		1970		1980	
	(No.)	(Acres)	(No.)	(Acres)	(No.)	(Acres)
Camp and picnic areas	5,067	29,470	6,855	164,844	6,328	49,244
Swimming areas	188	374	311	716	313	1,187
Organization camps	563	7,733	564	6,829	518	6,365
Winter sports areas	184	27,576	204	23,137	234	29,546

SOURCE: Carlton S. Van Doren, Dept. Recreation and Parks, Texas A&M University, unpublished compilation of statistics on outdoor recreation, 1982.

include closure of little-used facilities, consolidation of small units into larger ones for easier management, and transfer of operating responsibility to private individuals or local governments. These strate- are becoming visible in agency statistics. For example, in the National Forest System (Table 8), the number of camp and picnic areas increased from 5,067 in 1960 to 6,855 in 1970, but fell to 6,328 in 1980. Between 1970 and 1980 the number of National Forest organization camps decreased by 6.8 percent. In contrast, the number of winter sports areas, which are operated by private concessionaire, increased over the past 20 years, going from 184 areas in 1960 to 234 in 1980.

Other agencies also accelerated development from the late 1950s through the 1960s and 1970s. The Tennessee Valley Authority (TVA) had 76,812 land-based facilities (campgrounds, rental units, private seasonal residences, etc.) in 1960, 217,966 in 1970, and 455,936 in 1978. The explicit current policy of the TVA, however, is to close, consolidate and relinquish management of some of the areas currently under agency jurisdiction.

Recreation and development associated with Corps of Engineers projects has followed a pattern similar to the TVA. Figure 5 shows, for example, a peak annual development of 1454 new recreation areas in the period 1963-66, falling to a low of 34 in 1979-82. The Corps plans reductions in involvement throughout the 1980s. To meet a 20 percent targeted reduction in both manpower and budgets in fiscal years 1982 and 1983, the Corp plans to close more than 400 recreation areas. The strategy at some other Corps areas includes reduced length of operating seasons, temporary closures during periods of low use, reduced interpretive services, use of volunteers for management and fee collection, and other retreat measures including contracting maintenance, increasing user fees, and encouraging concessionaire operation of some sites.

Campgrounds--Among nonprimitive sites, campgrounds seem to exemplify the emerging developed recreation supply situation. **The number of campground facilities nationwide has decreased by 10 percent since 1973, and most of this decrease is in the private sector.** The number of private campgrounds

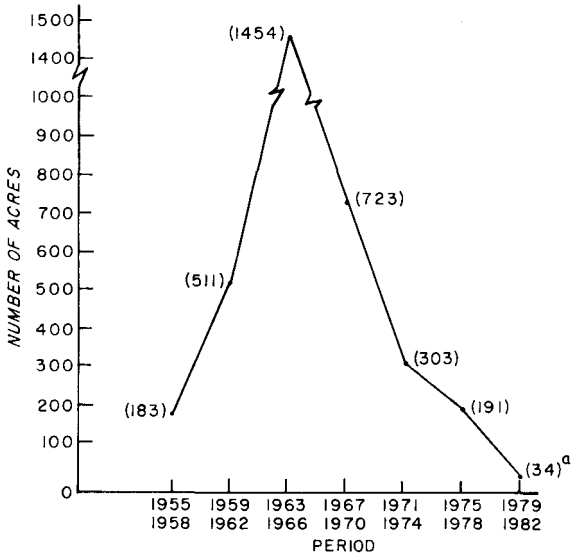


Figure 5 - Number of acres in new recreation areas established and developed at Corps of Engineers projects during 4-year periods, 1955-1981.

remained fairly stable between 1973 and 1977, but decreased by 23 percent between 1978 and 1981.

Changes in numbers of campgrounds have varied among regions. Between 1973 and 1977 in the North and South, there were modest increases (+7 and +1 percent, respectively). Since then, these regions have encountered sharp decreases (-16 and -26 percent). The Rocky Mountains and Great Plains and the Pacific Coast Regions, each of which had a 10 percent decline in private campgrounds between 1973 and 1977, have since had even greater decreases (-30 and -33 percent, respectively). **These decreases in number of private campgrounds have occurred despite reported increases in the number of camping participants.**

The number of public campgrounds in the North and South also declined between 1977 and 1982 (-1 and -.7 percent, respectively). In the Rocky Mountain and Great Plains and Pacific Coast Regions there were modern increases (+7 and +4 percent, respectively).

In summary, the supply of developed campgrounds has declined nationwide, and surprisingly, the reduction has been greatest in the private sector. Whether reduced numbers of federal campgrounds and the stimulus of increased fees will trigger more activity in the private sector is a major issue in the immediate future.

Vacation Homes--Vacation homes provide another important form of developed site recreation; most are on private land. In 1970 (latest data, Ragatz 1978), there were 2.1 million vacation homes representing 3.1 percent of the total number of housing units in the United States. Highest numbers of vacation homes in 1970 were in Michigan (188,864), Minnesota (83,855), New York (181,138), Pennsylvania (92,813), Texas (130,580), and Wisconsin (100,336). Although they do not represent large numbers relative to the national total, the New England States of Maine (18.5 percent), New Hampshire (15.6 percent), and Vermont (16.5 percent) have very high percentages of their total statewide housing units classed as vacation homes. Of the total number of vacation homes in 1970, 56.6 percent were in the Northern Region, 23.6 percent were in the South, and 11.8 and 8.0 percent were in the Rocky Mountain and Great Plains and the Pacific Coast Regions, respectively (Cordell et al. 1980).

Recent rises in mortgage interest rates and limited availability of mortgage funds have depressed sales of single-family vacation homes. A trend which may dominate the middle-income family vacation-home investments in the coming years is condominium time-sharing. For a substantially lower price than that of owning a traditional vacation home, a family can jointly own a condominium and have access to it for a few weeks each year. An added advantage to this arrangement is that time sharing units can be traded, so that the family is not geographically moored.

Other Nonprimitive Facilities--In 1975, United States totals for other selected private nonprimitive facilities were 234,202 family picnic units, 832,546 acres of land in developed resorts, and 660,899 acres in vacation farms and ranches. Regions differ in per capita supply of these facilities. In general, the North has a much lower per capita supply of developed sites and facilities than the other regions. There are 129 shooting preserves and 137 picnic units per million population in the North as compared to the South which has 995 shooting preserves and 834 picnic units per million population. Concentration of developed vacation farms and ranches is greatest in the Rocky Mountain and Great Plains Regions with 34,257 acres per million population.

From 1978 to 1981 there was a 23 percent decrease in private campgrounds, despite reported increases in the number of camping participants. Surprisingly, the reduction has been greatest in the private sector. Whether reduced federal participation in providing campgrounds and the stimulus of increased fees will trigger more activity in the private sector is a major issue in the immediate future. (U.S. Forest Service photo.)

WATER RESOURCE OPPORTUNITIES

The Outdoor Recreation Resources Review Commission reported in 1962 that water is usually a focal point of outdoor recreation. This desire for water to camp beside, boat on, or swim in has not changed. Rivers, streams, reservoirs, and natural lakes are often the primary attractions.

In total, there are approximately 107 million acres of water surface area in the United States. This includes 59 million inland water acres and 48 million coastal water acres, excluding the coastal waters of Alaska and Hawaii. Just over 23 million acres of water are in the South, and 56 million acres are in the North. Approximately 9 million acres are in the Rocky Mountain and Great Plains Region, and over 18 million acres are in the Pacific Coast Region.

Pollution of both inland and coastal waters has been significantly reduced over the past few years, particularly in waters near urban areas. This pollution reduction is likely to become even more important as travel becomes more expensive and the lakes and streams near population centers become more of a focus for outdoor recreation. **However, it is estimated that 10,000 of the 37,000 lakes in the United States are still in need of major pollution reduction and water quality restoration** (CEQ 1980). Under the EPA CLean Lakes Program, diagnoses of some polluted lakes is underway. **Most of these are in urban parks.**

An important component of the water resource situation in the United States is ownership and use of shoreline. Along the coast of the contiguous 48 states there are almost 37,000 miles of shoreline; along the Alaskan coast there are 47,300 miles (Table 10). **Most (over 70 percent) of the coastal shoreline in the lower 48 states is privately owned and only 28 percent (8,500 miles) is owned by either federal, state, or local government.** In the lower 48 states, only 9

Table 9.--Number and percentage of campgrounds in the United States by region, ownership, and year, 1973, 1977, and 1981

Region	TOTAL						PUBLIC						PRIVATE					
	Number			Percent Change			Number			Percent Change			Number			Percent Change		
	1973	1977	1981	73-77	77-81	73-81	1973	1977	1981	73-77	77-81	73-81	1973	1977	1981	73-77	77-81	73-81
North	5,301 (34)[a]	5,579 (35)	4,969 (36)	+5	-11	-6	1,809 (24)	1,827 (24)	1,801 (23)	+1	-1	0	3,492 (42)	3,752 (45)	3,168 (50)	+7	-16	-9
South	3,475 (22)	3,589 (23)	3,019 (21)	+3	-16	-13	1,355 (18)	1,447 (19)	1,437 (18)	+7	-1	+6	2,120 (26)	2,142 (26)	1,582 (25)	+1	-26	-25
RM & GP	3,673 (23)	3,526 (22)	3,293 (23)	-4	-7	-10	2,228 (30)	2,230 (30)	2,388 (31)	0	+7	+7	1,445 (17)	1,296 (16)	905 (14)	-10	-30	-37
Pacific Coast	3,313 (21)	3,158 (20)	2,873 (20)	-5	-9	-13	2,103 (28)	2,065 (27)	2,143 (28)	-2	+4	+2	1,210 (15)	1,093 (13)	730 (11)	-10	-33	-40
TOTAL U.S.	15,762 (100)	15,852 (100)	14,154 (100)	+1	-11	-10	7,495 (100)	7,569 (100)	7,769 (100)	+1	+3	+4	8,267 (100)	8,283 (100)	6,385 (100)	0	-23	-23

SOURCES: U.S. Department of Agriculture, Forest Service, An Assessment of the Forest and Range Land Situation in the United States (Washington, D.C.: Government Printing Office, 1980), p. 126, Table 3.8 (for 1973 and 1977 data) and Rand McNally and Company, Campground and Trailer Park Guide, (Skokie: Rand McNally and Company, 1982) (for 1981 data).

[a]Numbers in parentheses represent percentage of column totals.

Table 10.--Ownership and use of United States coastal shoreline, 1971

Ownership and use	U.S. (excluding Alaska)		Alaska	
	Miles	Percent	Miles	Percent
Ownership				
Federal	3,900	11	41,300	87
State and local	4,600	12	5,500	12
Private	25,800	70	500	1
Uncertain	2,600	7	0	0
	36,900	100	47,300	100
Use				
Recreation				
Public	3,400	9	0	0
Private	5,800	16	0	0
Nonrecreational	27,700	75	47,300	100
	36,900	100	47,300	100

SOURCE: U.S. Department of the Interior, Heritage, Conservation and Recreation Service, The Third Nationwide Outdoor Recreation Plan: The Assessment (Washington, D.C.: Government Printing Office, 1980), pp. 98-99, Tables IV-2 and IV-3.

percent of the total shoreline is developed or has purposely been made accessible by government for public recreation. Only 16 percent of the private shoreline has been made accessible for recreation. **In total, only 25 percent of the U.S. coastal shoreline has been developed or otherwise designated as accessible for public recreation.**

Rivers and Streams

There are nearly 2 million rivers and streams in the United States. These rivers and streams total 3.2 million linear miles including almost 30,000 miles which have been inundated by reservoirs.

A crucial segment of the recreational stream resource includes rivers in the National Wild and Scenic Rivers System established by Congress in 1968. In 1969, there were only 789 miles of rivers in this System; by 1978 the total had grown to 2,318 miles. These rivers are protected because of their high scenic, wild, or recreational values. In the President's 1978 Environmental Message, agencies were directed to accelerate review of potential rivers and to submit an Eastern Inventory by 1979 and a Western Inventory by 1981.

Flat Water Resources

The rapid increase in the flat water resources (lakes, ponds, reservoirs) in the 1940s, 1950s, and 1960s slowed as the Corp of Engineers, Bureau of Reclamation, TVA, and private power companies inundated the most desirable, and least costly, reservoir sites. As a result of this development, over 99 percent of the United States population lives within 50 miles of a publicly owned fresh water lake, and about 33 percent live within 5 miles of a lake. Unlike coastal shoreline, most of the lake and reservoir shoreline is publicly owned, making most of the almost 12 million acres of reservoirs accessible.

The United States has over 84,000 miles of shoreline. Of the over 36,900 miles in the lower 48 states, however, only 9 percent has been made accessible by government for recreational use. Only 16 percent of the private coastal shoreline has been made accessible for recreation. (National Park Service photo.)

The U.S. Army Corps of Engineers is one of the primary suppliers of reservoir recreation opportunities. In 1981, the Corps managed 442 lakes and reservoirs with a combined shoreline in excess of 53,000 miles. On these reservoirs, they provided approximately 3,400 recreation areas. There were 11.1 million acres of land and water encompassed by these Corp projects, of which 5.3 million acres were water surface. About 80 percent of the Corps projects are within 50 miles of urban areas with populations of more than 50,000 people.

The USDI Bureau of Reclamation (BUREC) (previously Water and Power Resources Service) is also a major provider of flat water recreation opportunity in Western States. BUREC projects provide about 4.3 million acres of land and 1.6 million acres of water surface for recreation. Combined, these projects encompass 12,573 miles of shoreline. Although ash fallout from Mt. St. Helens has severely affected water quality of some BUREC projects, most are still heavily used. Facilities around BUREC reservoirs are mostly provided by state governments and other federal agencies.

Construction of private farm ponds continues to increase in the United States, and such ponds occupy 2.6 million acres nationwide--11.6 acres per 100,000 population in 1981 (Table 11). Based on a 1978 survey by the Soil Conservation Service, 1.7 million (66 percent) of the farm ponds are used for recreational fishing or other activities. An additional 773,000 ponds covering 825,000 surface acres are not currently used for recreation.

Most farm ponds used for recreation are in the North (31 percent) and South (62 percent). They are quite small (0.95 acres average size) and thus have limited recreation potential. Ponds in the West are somewhat larger (1.4 acres average size) and thus may offer greater recreational potential.

Water is a major focal point for outdoor recreation. There are nearly 2 million rivers and streams in the United States. These streams total 3.2 million linear miles, 2,318 of which are in the National Wild and Scenic Rivers System. (U.S. Forest Service photo.)

Private swimming ponds covered 182,368 acres nationwide in 1975. Two-thirds of these acres were in the Pacific Coast and Northern Regions. **To accommodate recreational boating, the private sector, including private power companies, provided more than 311,000 boat slips and 12,000 boat launching ramps in 1975. In addition, thousands of ramps are provided by public agencies** such as the TVA, Corps of Engineers, state fish and game agencies, and local government. Private operators also provide beach facilities and rent boats. In 1975, they provided almost 3 million linear feet of improved beach, and rented over 11,000 canoes and 35,000 motorboats.

SNOW AND ICE RECREATIONAL OPPORTUNITIES

Snow and ice provide opportunities for downhill and cross-country skiing, sledding, skating, snowmobiling, and other activities. In late fall, winter, and early spring, virtually all forest and range lands in Northern States are usable for winter activities, particularly snowmobiling and cross-country skiing. Some problems caused by

Table 11.--Number and acreage of farm ponds by region and recreational use status in the United States, 1978

Region	Used for recreation		Not used for recreation		Total	
	(Number)	(Acres)	(Number)	(Acres)	(Number)	(Acres)
North	533,811	454,657	70,170	55,958	603,981	510,615
South	1,055,090	1,127,772	415,347	434,981	1,470,437	1,562,753
RM & GP	132,427	234,640	260,895	272,070	393,322	506,710
Pacific	3,163	6,313	27,080	61,668	30,243	67,981
TOTAL	1,724,491	1,823,382	773,492	824,677	2,497,983	2,648,059

SOURCE: U.S. Department of Agriculture, Soil Conservation Service, 1980 Appraisal Part I Soil, Water and Related Resources in the United States: Status, Condition and Trends (Washington, D.C.: Government Printing Office, 1979), p. 280, Table 79.

Over 99 percent of the United States population lives within 50 miles of a publicly owned fresh water lake, and about 33 percent lives within 5 miles of a lake. Almost 12 million acres of reservoirs are accessible to the public. (U.S. Forest Service photo.)

snowmobiling are littering, property damage, wildlife disruption, and noise disturbances. There is a growing concern that these problems and conflicts with private landowners will cause acreage to be withdrawn from public access.

According to industry figures, annual snowmobile sales peaked at 332,000 at the beginning of the decade (1971-72). But since 1976, the figure has only once exceeded 150,000. Though lack of snow in the West is credited with depressing sales in the 1979-80 and 1980-81 seasons, the sharp decline in sales long before then suggests reduced attraction of new participants in this outdoor motorized activity (International Snowmobile Industry Association 1982.)

Particularly in the 1960s, the skiing industry's growth was very rapid. In the

Virtually all forest and range lands in the northern states are usable for winter activities, particularly snowmobiling and cross-country skiing. Snowmobile sales peaked in the early 1970's, but is still a popular wintertime sport. The rapid growth of ski areas in the 1960's was followed by a dramatic leveling off in the 1970's. (Michigan Travel Bureau photo.)

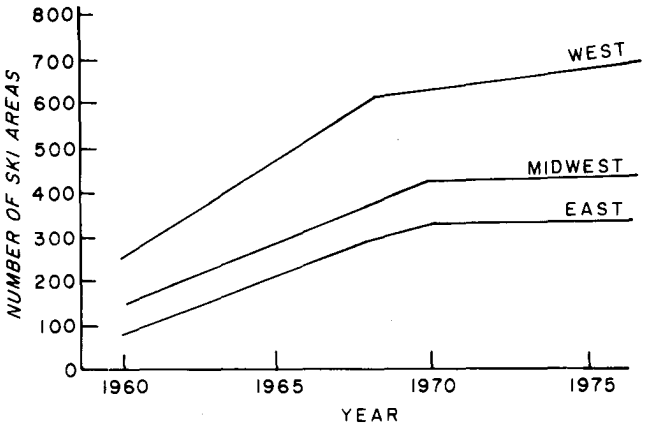


Figure 6 - Cumulative number of ski areas, 1960-1978.

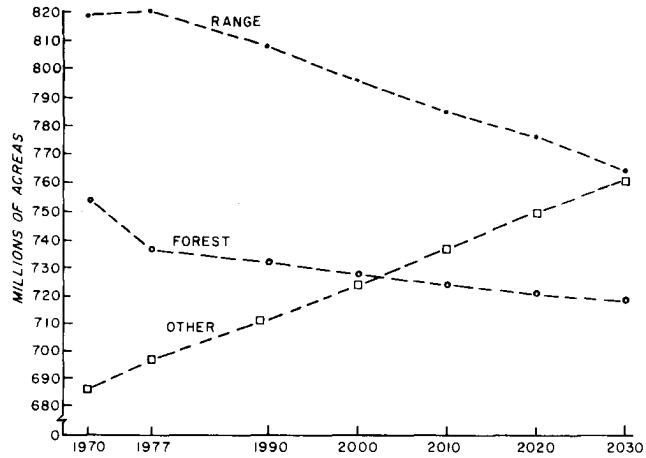


Figure 7 - Land area of the United States by classification 1970, 1977 and projections to 2030.

1970s it leveled off (Figure 6). Daily capacity is expected to increase by 30,000 skiers in the West through new area development and expansion of existing facilities (Goeldner and Standley 1980). Future development will be constrained, however, by environmental concerns regulated through the National Environmental Policy Act (NEPA) and by high initial development costs. **The number of ski lifts increased by more than 500 percent from a National total of 475 in 1960, to 2,246 in 1978** (Table 12). Thirty percent of all ski lifts are on National Forests; 60 percent are in the North.

Table 12.--Total number of ski lifts operating in the United States by land ownership and region, 1978

Region	Total		Forest Service Land		Other	
	(No.)	(Percent)	(No.)	(Percent)	(No.)	(Percent)
North	1,341	60	74	11	1,267	80
South	52	2	0	0	52	3
RM & GP	499	22	330	49	169	11
Pacific Coast	354	16	265	40	89	6
Total, U.S.	2,246	100	669	100	1,577	100

SOURCE: U.S. Department of Agriculture, Forest Service, An Assessment of the Forest and Range Land Situation in the United States (Washington, D.C.: Government Printing Office, 1980), pp. 135-136, Table 3.10.

NOTE: Ski lifts include aerial and surface lifts.