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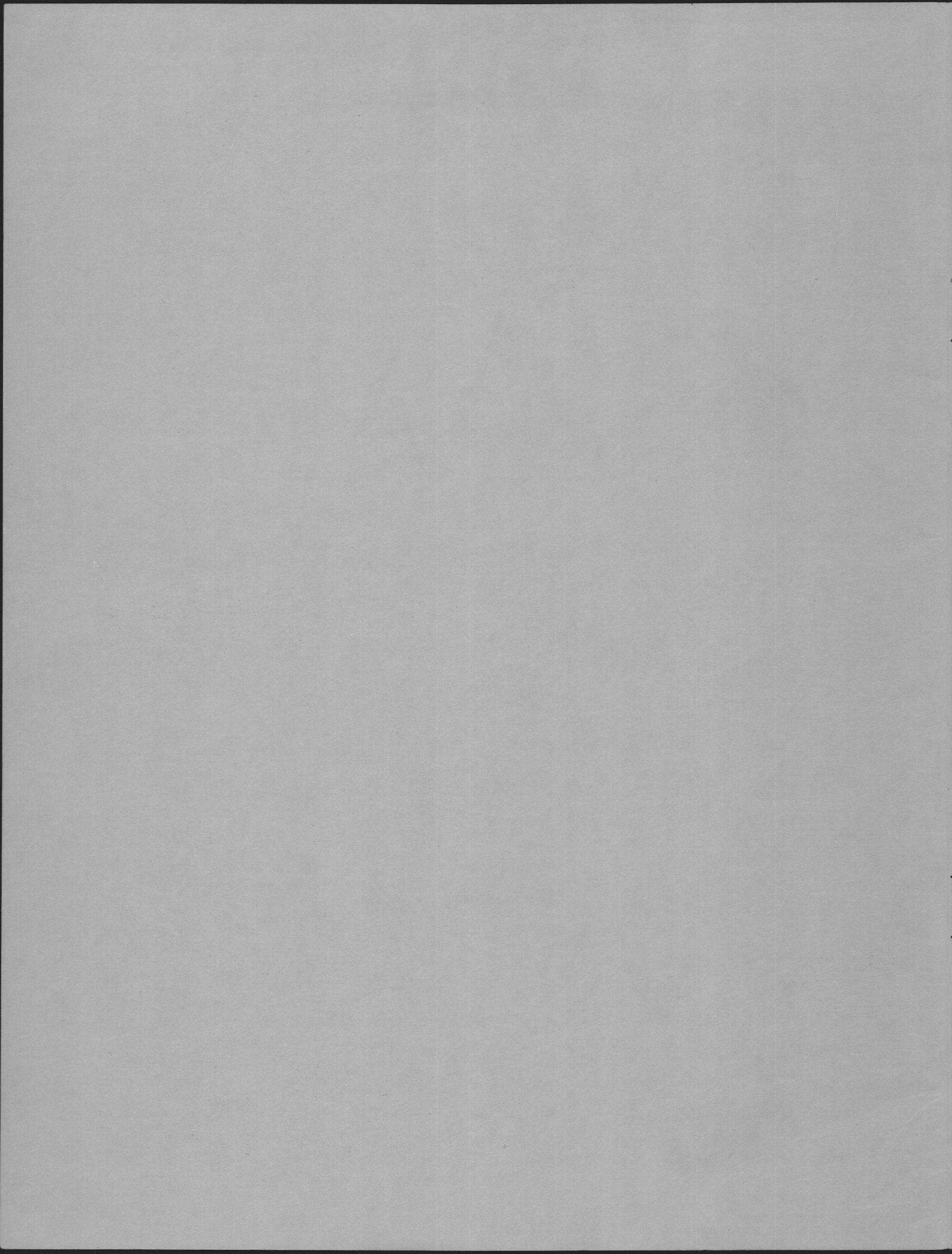
**Pacific Southwest
Forest and Range
Experiment Station**

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**AN HISTORICAL SKETCH of
RECREATION RESEARCH
in the USDA FOREST SERVICE**

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INTRODUCTION

Formal research in forest recreation began in the USDA Forest Service about three decades ago. Some of its history has been published but much remains buried in files, manuscripts, and memories. Unfortunately, much of this early historical material has been lost or destroyed. This historical sketch attempts to chronicle and preserve what remains of that history.

This history focuses only on those programs which emphasize recreation. However, the substantial contribution of wildlife, water, and timber management programs is recognized.

The initial concerns of the Forest Service were trees, range animals, wildlife, and fire. Forest recreation centered largely on backpacking, camping, fishing, and hunting. In fact, early in the century, the Forest Service began leasing summer home sites to provide a different, more comfortable type of experience. Very little was required of the forest officer to keep forest users satisfied.

But times changed. And so did the numbers and attitudes of users. Diversity of interests broadened, challenging recreation managers to deal with often incompatible interests. The increasing number of recreationists from urban areas required special facilities which approximated the amenities of home. Also, the lack of knowledge of the out-of-doors by neophyte enthusiasts required additional precautions to protect the recreationists as well as forest resources. The recreation manager had to abandon old practices and become a more sophisticated planner:

You could not let them make fires now, at random. Many would be careless, and the fires would spread, destroying timber, destroying cover, incinerating perhaps ten or a dozen of the carefree forest visitors themselves. Fireplaces, camp or picnic tables, pure piped water, and sanitary toilet facilities had now to be provided; yet things had to be kept natural or as natural as possible, lest the visiting throng destroy the very beauty and simplicity and quietude toward which, with a deep and restless yearning, they swarmed (Lord, 1940).

Forest recreation was impinging on other traditional forest land uses. It was becoming more diverse, thereby requiring increased management as well as physical facilities.

Recreation started as the stepchild of other forest disciplines. But tolerance gradually shifted to concern as forest use increased and vegetation in selected areas began to show signs of deterioration. The post-World War II era brought rapid change. The appeal of forest recreation broadened in response to greater mobility (trailers, campers, motor homes) and innovations in camping and backpacking equipment. Obsolescence and vandalism also increased.

Recreation research was slow starting. Fortunately, the Forest Service had a strong supporter of the program. In the 1940's, Dr. V.L. Harper, Director of the Northeast Forest Experiment Station, advocated a recreation research program. However, he "could not arouse the interest of anyone--industrialists, conservation organizations, watershed councils, or others--to publicly support this kind of research. They saw forest recreation as a land use and land management problem with policy and legislative overtones but couldn't see an important role for research per se. Only the wildlife or sportsmen's associations were interested, and they confined their support entirely to wildlife and fisheries aspects of recreation."

Another advocate of recreation research was Samuel T. Dana, Dean Emeritus, School of Natural Resources, the University of Michigan. Through his effective appeal to the Forestry Research Advisory Committee, Dana was able in 1954 to persuade the prestigious committee to recommend a research program which addressed issues related to forest recreation.

Such is the formal beginning of the Forest Service's recreation research program. However, it is important to acknowledge the less formal antecedents which preceded by several decades.

PIONEERS IN RECREATION RESEARCH

In 1929, Dr. E.P. Meinecke, USDA Bureau of Plant Industry pathologist, was requested by California Deputy State Forester, W.B. Rider, to investigate the effects of excessive tourist travel on plant life. The chief concern was the welfare of old redwoods. Meinecke (1929) made several studies of the effects of soil compaction on the roots of redwoods and other vegetation, concluding that:

In every case, precisely the same findings confirmed what can be established as a rule, namely that continued and concentrated traffic compacts the soil to the marked and serious detriment of the roots and that the effect on the soil is a lasting one, so that quick recovery of the roots is not to be expected.

Meinecke recommended the formulation of a park management policy that would regulate use to within the physical capability of the vegetation.

Between 1932-1937, Meinecke wrote three articles which focused on camp planning and campground policy, serving to direct recreation managers in the early expansion of recreation facilities. Those articles are:

Camp Planning and Camp Reconstruction
A Campground Policy
Recreation Planning: A Discussion.

In 1939, Clarence L. Forsling and Robert Marshall, Washington Office, urged Reid Bailey, Director, Intermountain Forest and Range Experiment Station, to prepare a progress report on recreation research. The task fell to Lincoln Ellison, head of range research:

If a thorough knowledge of problems is necessary in any line of endeavor, it is especially necessary here because research is still an unexplored field, and because at least some of the problems are changing rather than fixed...It is essential to visualize forest recreation as a whole. A problem survey should be of sufficient scope to relate it to other means of recreation and to other forest uses and values. After all, the basic question is this: What is the proper place of forest recreation in modern life? (Ellison, 1940)

Ellison recommended research in campground deterioration, roadside vegetation ecology, and recreation economics. Ellison followed up with another article two years later: Trends of Forest Recreation in the United States. Unfortunately, the climate of response was not favorable and such recommendations were not acted upon for nearly a decade.

In a collection of essays by 30 foresters, the need for research was recapitulated:

Research must be pushed; research ranging over the fields of economics, sociology, psychology, aesthetics, botany, ecology, pathology, and forestry; research to the end that the people may use the forests for recreation permanently without hurting the forests and, ultimately, ourselves. (Lord, 1940)

Recognized here is the complexity of the problems confronting the researcher and the need for establishing a research program.

In 1954, Assistant Chief V.L. Harper, supported by the recommendations of the Research Advisory Committee, started to lay groundwork for a research program. Harper called upon Samuel Dana, Dean Emeritus of the School of Natural Resources, University of Michigan, to prepare a problem analysis, which provided an excellent overview of problems in forest recreation, and which was quoted often during the development of the research program (Dana, 1957).

In 1955, Harper set aside \$10,000--part of a Congressional increase in forest and range management research--to fund Dana's report. For several years the program was financed by such budget adjustments, which of course postponed the selling of a new program to Congress. It was not until 1960

that recreation research became a standard line item in the Federal budget. The timing was good: the Outdoor Recreation Resources Review Commission, created in 1958, made Congress and the public aware of the importance of outdoor recreation. The Forest Service research program additionally benefitted from strong advocates in both the Senate and House of Representatives. Also, public interest in the environment and wilderness system laws--particularly in the mid and late 1960's--bolstered support for recreation research.

PROGRAM DEVELOPMENT

V.L. Harper initially assigned the Division of Forest Economics Research to establish a recreation research program. The task was later reassigned to the Division of Range Management Research, under the direction of Kenneth W. Parker. Frank M. Craighead, Jr., well-known wildlife biologist, was contracted to co-design the research program but was later reassigned. In July 1959, Harry W. Camp was appointed as the first head of recreation research. He had been a staff assistant to Edward C. Crafts, Program Planning and Legislation, and had 26 years in research and administration in the field.

Although physical and environmental issues figured prominently at the program's inception, it was felt that the social aspects of recreation were extremely important and should receive major attention as early as feasible. Obstacles included lack of trained scientists, overcoming the reticence of recreationists when questioned by researchers, and lack of support by some field administrators.

However frustrating, the early stages of program development were interesting. Many National Forest field headquarters were visited and their staffs were interviewed regarding recreation problems. Not uncommonly, interviewers were confronted by reticence or defensiveness. Such reactions were discouraging but not entirely unexpected; for too long, field personnel were alone in dealing with the myriad recreationists and inadequate facilities to accommodate them. Also, field managers then had little or no recreation management training. Initially, forest administrators resented researchers crossing into their area of expertise. Fortunately, such obstacles were short-lived.

Edward P. Cliff, Assistant Chief responsible for National Forest Administration, set the direction for recreation research: In a speech at the annual meeting of the Federation of Western Outdoor Clubs at Merriweather, Oregon on August 31, 1958, he said...

Our most pressing need at present is for more information on how to properly manage, maintain, and improve areas subject to heavy mass recreation use. Basic to this broad problem are such surveys and studies as inventory of present and potential facilities on all forest lands; study of the kind of recreational facilities people desire and are necessary associated facilities; carrying capacity and possible rotation and deferral of use of camp and picnic sites; how to prevent or alleviate deterioration of vegetation and soils; how to revegetate and restore recreation sites and protect them from attacks of insects, disease, and fire; and how best to coordinate recreation with other land use.

The majority of studies which would ensue focused on physical and biological concerns rather than social problems.

Initiating a forest recreation research program presented real challenges. Establishing its credibility as a field of research was the first priority, with emphasis on recreation resources. From the inception of this program, the sociological and psychological aspects of recreation ranked importantly. Dr. George E. Jemison, Assistant and later Deputy Chief--Research, was strongly committed to people-oriented research. Jemison was critical of the progress in recreation research:

One subject on which I disagreed with Harper from the beginning, although I understood his position--and perhaps he was more astute than I--was that I felt we ought to get into people-oriented research studies in recreation resource management rather than research only into physical resources.

Sociological studies were eventually considered, but not until forest recreation research was better established and more adequately financed.

Forest recreation research was planned on a regional problem basis in order to better capitalize on financial and manpower resources. It was found that a major problem could be identified with each Experiment Station region.

RESEARCH (1958-1962)

The recreation research program began modestly in 1958. The need for the program was evident, but its implementation was slow. The first task was to define research goals and to promote the program among both public and private entities.

The Forest Service program was the first organized effort dedicated solely to outdoor recreation issues. Working in a new program, the first researchers were not inhibited or burdened with pre-existing methodology. However, a limited budget and the inexperience of the researchers largely shaped the initial direction of the program. Problems were broadly defined, and it was difficult to assign priorities.

Washington, D.C.

In 1957, Dr. Frank C. Craighead transferred from the Division of Range Management and Wildlife Habitat Research to the Division of Recreation and Lands. Because of his background as a wildlife biologist, Craighead provided valuable skills in evaluating wilderness, hunting and fishing areas, and in conducting the National Forest Recreation Resource Survey. Harry W. Camp transferred from Program Planning and Legislation, under Assistant Chief Edward C. Crafts, to outline research projects and initiate programs in the field. In late 1961, Keith A. Argow joined the program as a student assistant.

Northeast Experiment Station

In August 1959, the first Forest Recreation Research Center with forest recreation research as a major theme was established in Warren, Pennsylvania. Hubert D. Burke was center leader and J. Alan Wagar was recreation researcher. Elwood L. Shafer, also a recreation researcher, was located at Kingston, Pennsylvania. Two studies were implemented: a review of nine recreation areas developed 20 or more years earlier and the planning techniques and facilities which contributed to the success or failure of those areas, and an assessment of soil compaction in heavily used recreation areas.

Shafer interviewed recreationists to determine their preferences for recreation facilities available in four state parks in northeastern Pennsylvania. The interviews were designed to measure the demand for such facilities as beaches, picnic areas, fireplaces, sanitation facilities, and campsites.

The Center worked in conjunction with the Allegheny National Forest to develop the Biddle Demonstration Forest to illustrate state-of-the-art forest land management methodologies, recreation research techniques, and optimization of multiple use facilities.

Pacific Southwest Experiment Station

In 1960, a second program was implemented in Berkeley, California, under John R. McGuire, head of Forest Economics (later Chief of the Forest Service). Researchers were Ernest M. Gould, Jr., Richard L. Bury, Arthur W. Magill, and Leslie F. Marcus. Eamor C. Nord, ecologist at the Riverside Laboratory, was assigned to the project on a part-time basis.

The first study attempted to define a recreation unit of use and how best to record and evaluate use. The Sierra National Forest was selected as a model for this study. A second study focused on the impacts of

use in order to determine the carrying capacity of a recreation resource. Researchers began by investigating the ecology of campgrounds.

At the same time, Region 5 requested research assistance in formulating management plans for the High Sierra Wilderness and in completing the National Forest Recreation Survey. The goal was to define optimum patterns of use without disturbing wilderness characteristics.

Lake States Experiment Station

James T. Morgan, Chief of Forest Economics, headed the recreation research program. Robert C. Lucas, demographer, was probably the first nonforester in recreation research. He started recreation studies in the Boundary Waters Canoe Area on July 1, 1960. David A. King joined the staff in 1961 and conducted research on the Huron-Manistee National Forest in Michigan.

Research formally began at this Station in 1960. But as early as 1958, the Lake States Station cooperated with the Rural Sociology Department, University of Minnesota, to determine patterns of recreation use and to define those conditions which provide optimum recreational benefits in rural areas. Interviews of 300 canoeists on Superior National Forest waterways were analyzed and published by the Minnesota Experiment Station.

Southwest Experiment Station

Research began at this Station in 1961 under H. Glenn Meginnis, Chief of Range and Watershed Management Research. Thomas A. Ripley headed a cooperative study with the Virginia Wildlife Research Unit to determine the impact and trends of hunting in relation to game population dynamics and area treatments on a newly created forest-wildlife management area.

Pacific Northwest Experiment Station

In 1961, recreation research began at this Station under David F. Costello, Chief of Range, Wildlife, and Recreation Management Research. Wiley D. Wenger, Jr., researched patterns of wilderness use and types of users.

Other Stations

In 1962, research programs extended to the Central States, Intermountain, and Rocky Mountain Experiment Stations. Edward A. Johnson, Chief of Watershed, Range, Recreation, and Wildlife Habitat Research, supervised the program at the Central States Station. Dwight R. McCurdy studied the role of private woodlands in outdoor recreation, attitudes of owners, and methods of motivating owners to fully utilize these resources.

The Intermountain Station entered a cooperative study with Utah State University at Logan to assess forest recreation issues within the scope of multiple use. Roscoe B. Herrington made the studies under the direction of S. Blair Hutchison, Chief of Economics Research. S. Ross Tocher was the cooperator from the university.

L. Dudley Love began the program at Rocky Mountain Station. The region focused on the integration of recreation with other forest uses, particularly water and timber.

Cooperative Units

One of the initial problems of forest recreation research was the lack of suitably trained scientists. However, Forest Service projections of the need for specialists in forest recreation provided sufficient motivation to universities and colleges to augment their training efforts. To this end, Forest Recreation Research and Training Units were established. Between 1962-1966, the Forest Service appointed employees to cooperative units at five schools of forestry:

Syracuse University	Elwood L. Shafer
Michigan State University	Hugh A. Davis
Utah State University	J. Alan Wagar
North Carolina State University	Stephen J. Maddock
Washington State University	J. Alan Wagar

These units were designed to strengthen curricula and stimulate interest in forest recreation, conduct recreation research, and advise forest recreation graduate students.

In 1971, T.F. McClintock, Director of Forest Environmental Research, summarized the success of the cooperative units in a memorandum to R. Keith Arnold, Deputy Chief--Research:

- " The several units have been fairly successful. They played a key role in the training of at least 50 professionals now employed in forest and park administration. They produced four scientists now employed in forest recreation research. And they were instrumental in the publication of approximately 20 forest recreation pamphlets and articles.
- " Today the demand supply picture has been reversed. At least 50 universities have now instituted curricula in parks and recreation and/or forest recreation and have attracted several hundred students. "

The supply of trained professionals for management considerably exceeds the demand, and there are far more applicants for research positions than there are positions for them. In short, the need which prompted the establishment of these units no longer exists.

Insofar as the five cooperative units are concerned, there has been both drift and attrition. The Syracuse unit now consists of three scientists and its mission has been redefined in terms of an in-house forest recreation research program, with the cooperative aspects still receiving some attention. [N.B.: This project eventually grew to six fulltime scientists and attracted 25 graduate students during the height of its activities.] The Ann Arbor unit has been unstaffed for several years and is now being closed out, although here again the St. Paul unit will strengthen its cooperative ties with several universities, and plans are being drawn up to activate a new unit as soon as funding is available. At the Intermountain Station, Director Pechanec and this office are in complete agreement that the two one-man units at Ogden and Logan (the latter a cooperative unit) should be consolidated at Logan. The new research unit will continue to work cooperatively with the university but its main goal will be research. The unit at Seattle, currently the most productive of the four cooperative projects, is already devoting most of its energy to a VIS area--that of communicating with recreation visitors--although in close cooperation with the university...In view of the foregoing, we suggest that there is no further need to formally identify cooperative work in forest recreation research as a special activity (McClintock, 1971)

It seems obvious that the Cooperative units accomplished their objectives well, and that it was now time to channel research efforts in other directions.

By the close of FY 1962, 25 significant studies were underway. Excluding program administrators, 15 fulltime scientists plus an undetermined number of summer field assistants were working on forest recreation issues. Programs were principally organized on a regional basis, each region addressing a central research theme. But studies were really divided into four broad areas: forest recreation use, forest recreation resource, forest recreation facilities, and forest recreation economics.

In 1956, the budget was a mere \$10,000, and that was adjusted from existing research budgets. In 1961, forest recreation budget became a line item and was increased to \$162,000. In 1962, this amount was raised to \$317,000 (Appendix L).

RESEARCH (1963-1983)

V.L. Harper, Frank Craighead, and Harry Camp figured importantly in founding recreation research in the Forest Service. But generous credit must be given to Walter S. Hopkins, who succeeded Camp in 1962. During his decade as head, the program became more clearly defined, gained in popularity and scientific significance among other government agencies, and took on international significance. Hopkins' dedication to excellence left his successors--Duane Lloyd, Elwood Shafer, and George Moeller--with a solid foundation to continue the program. Under Hopkins, recreation research now operated under the same guidelines which governed other research programs. Also, there was a strong cooperativeness between recreation researchers and managers in identifying issues and maximizing research resources. Due to the dedication of the scientists recruited into the program, research was timely and useful.

In June 1982, Robert C. Lucas, Intermountain Forest and Range Experiment Station, and Roger N. Clark, Pacific Northwest Forest and Range Experiment Station, produced an unpublished report which assessed the research program (Lucas and Clark, 1982).

The overall mission of Forest Service recreation research is to seek solutions to important outdoor recreation policy and management problems through rigorous scientific research. The outdoor recreation research is practical, problem-oriented, and largely applied research. By conducting research focused on specific problems, the overall research program can build a body of knowledge to advance the management of recreation resources, in order to provide increased benefits to the American people.

Research is concerned with areas where recreation is a primary output as well as areas where recreation is one of multiple outputs. This includes developing essential theories and concepts, analyzing causes and effects, providing reliable data, producing improved management guidelines, and transferring technology to managers. The clientele for the products of this research include land managers in public agencies at all levels of government and in the private sector. Universities also use results of this research.

One measure of success in recreation research is the degree to which program concepts, theories, and research techniques have been incorporated into management practices. The tools developed over the last two decades allow today's recreation researchers to address complex challenges and issues. Some highlights of results of the recreation research program are:

- Development and application of double sampling methodologies for accurately measuring recreation use. These are in use today by many agencies.
- Development of methods and concepts for measuring and monitoring campground impacts, which led to improved methods for their control.
- Development of basic concepts and frameworks that have been incorporated into resource management programs at many governmental levels. Examples include recreational carrying capacity studies (focused on both biological and social indicators), and the Recreation Opportunity Spectrum, which is becoming a key organizing framework for outdoor recreation management in the United States and other countries.
- Development of the incentive system for litter control which helps recreation managers effectively limit this form of depreciative behavior in various types of recreation setting at low costs.
- Development of an extensive data base related to recreation opportunities and use, visitor preferences, recreation impacts, and recreation benefits. For example, river floaters' activities,

attitudes, and characteristics have been studied on over 60 rivers from Florida to Alaska to provide data critically needed for management decision making by Forest Service, Bureau of Land Management, National Park Service, Tennessee Valley Authority, and state and local river managers.

- Discovery that most loss of vegetation at campsites occurs with low use, and that sites vary widely in vulnerability to such damage. This has shifted management emphasis from limiting use to relocating campsites.
- Prediction of use of potential ski areas to guide development decisions in California.
- Discovery that wilderness visitors prize solitude at campsites more than while hiking suggests management priorities.
- Development of recreational area hazard tree rating systems.
- Development of a wilderness travel simulation model that has enabled managers of heavily used areas to develop rationing systems that reduce use as little as possible to meet solitude objectives.
- Testing of visitor information efforts as a tool for redistributing recreational use of wilderness has produced guidelines for effective use of information.
- Development of visitor attitude and use pattern information that has justified party size limits in many wildernesses.
- Measurement of scenic beauty as related to timber harvesting and slash disposal that has helped to identify cost-effective timber management practices that improve the land's appearance.
- Development of a campground quality report card system, now used by many private campground operations to monitor their services.
- Segmentation of the camp market into potentially active, active, and inactive submarkets. In 1973, there were 6 million potential camper households, 14 million active households, and 14 million inactive households, about half temporarily inactive and half permanently inactive. The camping industry uses these data to plan expansion and advertising.
- Improved methods for estimating dollar value of outdoor recreation participation.
- Development of the Code-A-Site key sort system for managing information about dispersed campsites, used by a number of agencies.
- Preparation of a simulation model for campsite use in the Boundary Waters Canoe Area Wilderness that is used to set entry point quotas as high as possible without exceeding capacity.
- Testing of trail register designs, which led to the system now used by the National Forests.
- Development of the basis for the visual resource management system used by the National Forests and the Bureau of Land Management, including computer-based perspective drawings of alternatives to timber cutting.

IMPACT OF RECREATION RESEARCH

The recreation research program, the only one of its kind in the United States, has had far-reaching influence, particularly in resource management:

- Fundamental theories and concepts have developed to replace much of the outdated information that prevailed.
- Recreation researchers in the Forest Service are an important link between university and resource management agencies.
- Forest Service recreation research plays a key role in coordinating research involving academic, agency, and private sponsors, as well as in-house studies. This coordination promotes cooperation and avoids duplicate effort.
- Recreation research coordinates the efforts of physical, biological, and social sciences. Such coordination has led to the effective solution of complex problems. Examples of this team approach are the system developed to measure wilderness quality of roadless areas in RARE II and the analysis of public involvement resulting from RARE I and RARE II.

Resource management has benefitted greatly from a staff of professional social scientists. These research scientists have made substantial contributions in public involvement, social impact assessment, technology transfer methods, and resource evaluation techniques. Technology transfer has been highly successful. Managers have cooperated closely in identifying research problems and in designing and implementing studies. Today, a growing cadre of resource management professionals and research scientists have at their access a broad range of sophisticated tools.

Each year, recreation researchers play an integral role at workshops and symposia sponsored by the Forest Service and other agencies. Forest Service recreation researchers have sponsored or participated in symposia which focus on recreation trends, recreation impacts, simulation techniques, and fee structuring for public lands. Forest Service scientists frequently teach at universities or are invited to lecture. Two Forest Service publications are frequently used texts in these classes: Wilderness Management and Symposium Proceedings of the 1977 River Conference. Also, many Forest Service scientists serve on editorial boards of professional journals.

Past clients of the recreation research program include:

- Government agencies at federal, state, and local levels
- Private resource management organizations
- Recreational service suppliers
- Academic institutions
- Private citizens and special-interest groups

Several public agencies have supported Forest Service efforts rather than institute their own programs. Several Department of Interior agencies, particularly the Bureau of Land Management and the National Park Service, have contributed substantially to Forest Service studies, including river use assessment, cost-benefit analyses, and public demand.

Internationally, the Forest Service recreation program is held in high esteem. This program was introduced to the international research community in the early 1960's by V.L. Harper, Vice President, International Union of Forestry Research Organizations (IUFRO). Through the collaborative efforts of George M. Jemison, a section dedicated to recreation and wildlife issues was established in 1967. Since then, American researchers have been invited to foreign research facilities, have participated in international workshops and symposia, and have taken foreign sabbaticals. Examples of international cooperation follow:

- Two recreation scientists were invited by Australian authorities to present a series of workshops on the Recreation Opportunity Spectrum concept.

- A Forest Service recreation researcher chaired the IUFRO section that focuses on recreation and landscape research.
- Forest Service recreation researchers planned and led the IUFRO study tour of the United States.
- A Forest Service recreation scientist has been invited to be a partner in research studies in The Netherlands and Denmark.
- A Norwegian and a Danish social psychologist visited a Forest Service research unit to study environmental perception research methods.
- Several Australian scientists have studied with research units, some for as long as a year.
- An Israeli economist worked with a recreation scientist to develop a simulation model of recreation travel.
- Canadian scientists and recreation managers have had extensive contacts with recreation research units.
- Recreation researchers have organized study tours for foreign counterparts from Chile, Spain, and Australia.

The demand for outdoor recreation continues to increase at a rapid pace. Major changes are taking place in the kinds of outdoor activities in which people participate. The effects of these increases on forest recreation facilities and basic resources needs to be carefully monitored. The current research program is very small relative to the breadth and complexity of the issues, and must be stepped up to keep pace with the changing times. Outdoor Recreation for America 1983 published by Resources for the Future concludes that---outdoor recreation is linked, in ways that have not been adequately researched, to such factors as job satisfaction and productivity, and family, and social cohesion. Urban recreation also requires further attention. The link between outdoor recreation, environmental quality, and resource management also should be considered.

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**APPENDIX A: RECREATION RESEARCH PERSONNEL,
WASHINGTON OFFICE, TO THE PRESENT**

Division	Personnel	Date
Division of Range and Wildlife Habitat Research	Kenneth W. Parker, Director	1958-1962
Recreation Research	Frank C. Craighead, Head Harry W. Camp, Head Kenneth A. Argow, Scientist	1958 1959-1962 1961-1963
Division of Watershed Management and Recreation Research	Herbert C. Storey, Director	1962-1964
Recreation Research	Walter S. Hopkins, Head George V. Douglas, Scientist	1962-1964
Division of Watershed, Recreation, and Range Research	Herbert C. Storey, Director	1964-1968
Recreation Research	Walter S. Hopkins, Head	
Division of Forest Environment	Herbert C. Storey, Director Thomas J. McClintock, Director Junior B. Hilmon, Director Robert Z. Callaham, Director Robert E. Dils, Director Charles M. Loveless, Director Ronald D. Lindmark, Director	1968-1970 1970-1972 1972-1974 1974-1977 1977-1979 1979-1981 1981-1987
Forest Recreation and Related Human Environment Research	Walter S. Hopkins, Head A. Laverne Thornton, Scientist R. Duane Lloyd, Head A. Laverne Thornton, Scientist Elwood L. Shafer, Head	1968-1971 1971-1975 1975-1976
Forest Recreation and Related Amenities Research	Elwood L. Shafer, Head George H. Moeller, Head	1976-1979 1979-1987

**APPENDIX B: RECREATION RESEARCH PERSONNEL,
FIELD OFFICES, TO THE PRESENT**

Personnel	Location	Date
Central States Forest Experiment Station		
Dwight R. McCurdy	Columbus, OH	1963-1965
North Central Forest Experiment Station		
Robert C. Lucas	St. Paul, MN	1960-1967
David A. King	St. Paul, MN	1961-1965
Hugh C. Davis	Ann Arbor, MI	1962-1967
George Orning	St. Paul, MN	1965-1967
Larry W. Tombaugh	Ann Arbor, MI	1966-1969
Miron L. Heinselman	St. Paul, MN	1966-1974
Lewis F. Ohmann	St. Paul, MN	1966-1979
Robert R. Ream	St. Paul, MN	1966-1970
Charles J. Cushwa	St. Paul, MN	1969-1970
David W. Lime	St. Paul, MN	1967
Robert B. Brander	St. Paul, MN	1972-1975
Richard R. Breech	St. Paul, MN	1975-1979
Margaret P. Martin	St. Paul, MN	1975-1976
John Copp	St. Paul, MN	1976
Lynn Rogers	St. Paul, MN	1976-1979
John Prabst	St. Paul, MN	1977-1979
Richard C. Knopf	St. Paul, MN	1979-
John H. Schomaker	St. Paul, MN	1979-
Earl C. Leatherberry	St. Paul, MN	1979-
Dorothy H. Anderson	St. Paul, MN	1981-
John F. Dwyer, Jr.	Chicago, IL	1978-
Robert C. Wendling	Chicago, IL	1979-1980
Herbert W. Schroeder	Chicago, IL	1980-
Pacific Southwest Forest and Range Experiment Station ¹		
Arthur W. Magill	Berkeley, CA	1960-
Ernest M. Gould, Jr.	Berkeley, CA	1960-1962
Richard L. Bury	Berkeley, CA	1960-1964
Leslie F. Marcus	Berkeley, CA	1960-1961
Eamor C. Nord	Riverside, CA	1960-1964
Robert H. Twiss	Berkeley, CA	1962-1969
	U.C. Berkeley (joint appt.)	1969-1973
William S. Folkman	Berkeley, CA	1962-1963
Gary Elsner	Berkeley, CA	1966-1976
Floyd L. Newby	Berkeley, CA	1969-1971
R. Burton Litton	Berkeley, CA	1969-1976
	U.C. Berkeley (joint appt.)	1969-1976
Ronald A. Oliveira	Berkeley, CA	1972-1974
Larry Streeby		
Stanley Naparst		
Charles F. Schwarz	Berkeley, CA	
Philip A. Barker	Berkeley, CA	1977-

APPENDIX B: (CONTINUED)

Personnel	Location	Date
Northeast Forest Experiment Station		
Hubert D. Burke	Warren, PA	1959-1964
J. Alan Wagar	Warren, PA	1959-1962
	Syracuse, NY	1975-1977
Elwood L. Shafer	Warren, PA	1961-1963
	Syracuse, NY	1963-1971
	Pinchot Institute	1971-1974
Roger R. Rich	Warren, PA	1962-1965
Wilbur F. LaPage	Warren, PA	1962-1966
	Syracuse, NY	1966-1968
	Durham, NH	1968-1982
James C. Whittaker	Syracuse, NY	1967-1969
George H. Moeller	Warren, PA	1965-1966
	Syracuse, NY	1969-1975
	Pinchot Institute	1975-1977
	Washington, D.C.	1979-
Herbert E. Echelberger	Syracuse, NY	1966-1977
	Durham, NH	1977-1982
	Burlington, VT	1982
Jack W. Thomas	Amherst, MA	1971-1975
Brian R. Payne	Amherst, MA	1971-1978
Joseph C. Mawson	Amherst, MA	1971-1972
Robert O. Brush	Amherst, MA	1971-1980
	Syracuse, NY	1980-1983
Raymond E. Leonard	Durham, NH	1976-1984
A. LaVerne Dickerson	Amherst, MA	1975-1979
Paula A. Cormier	Durham, NH	1976-1982
Richard M. Degraff	Amherst, MA	1975-1982
Thomas A. More	Amherst, MA	1975-1980
	Syracuse, NY	1980-1982
	Burlington, VT	1982-
Robert D. Williamson	Amherst, MA	1975-1980
Harriet V. Plumley	Durham, NH	1979-1982
Rowan Rowntree	Syracuse, NY	1979-
Nancy G. Tighmann	Amherst, MA	1980-1982
	Warren, PA	1982-
Southeast Forest Experiment Station ²		
Thomas H. Ripley	Asheville, NC	1960-1965
William H. Moore	Asheville, NC	1961-1963
Seth E. Gordon, Jr.	Asheville, NC	1961-1962
George A. James	Asheville, NC	1962-1975
Stephen J. Maddock	Raleigh, NC	1964-1969
Gene R. Welch	Athens, GA	1967-1973
Gary L. Tyre	Athens, GA	1969-1973
Gary L. Tyre	Clemson, SC	1977-1978
Larry W. Tombaugh	Raleigh, NC	1969-1971
Harold K. Cordell	Athens, GA	1971-1973
	Clemson, SC	1976-1982
Michael A. Lenartz	Clemson, SC	1975-1976
Richard F. Harlow	Clemson, SC	1975-1976
Robert G. Hooper III	Clemson, SC	1975-1976

APPENDIX B: (CONTINUED)

Personnel	Location	Date
Pacific Northwest Forest and Range Experiment Station		
Wiley D. Wenger, Jr.	Portland, OR	1960-1965
Hans M. Gregersen	Portland, OR	1962-1963
William R. Burch	Portland, OR	1963-1964
Hubert D. Burke	Wenatchee, WA	1966-1969
John C. Hendee	Seattle, WA	1966-1976
J. Alan Wagar	Seattle, WA	1969-1975
Dale R. Porter	Seattle, WA	1970-1976
Roger N. Clark	Seattle, WA	1975-
Mack L. Hogans	Seattle, WA	1977-1979
Harriet H. Christiansen	Seattle, WA	1979-
Intermountain Forest and Range Experiment Station		
Roscoe B. Herrington	Ogden, UT	1961-1971
J. Alan Wagar	Logan, UT	1962-1969
Wendell G. Beardsley	Logan, UT	1966-1970
Robert C. Lucas	Missoula, MT	1967-
George H. Stankey	Missoula, MT	1969-
Philip A. Barker	Logan, UT	1970-1972
Robert P. Rinehart	Missoula, MT	1974-1978
Randel F. Washburne	Missoula, MT	1978-1982
David N. Cole	Missoula, MT	1978-1982
Margarete Petersen	Missoula, MT	1980-1984
Rocky Mountain Forest and Range Experiment Station ³		
L. Dudley Love	Ft. Collins, CO	1961-1964
Hubert D. Burke	Ft. Collins, CO	1964-1966
Wendell G. Beardsley	Ft. Collins, CO	1964-1966
Beverly L. Driver	Ft. Collins, CO	1975-1982
Donald H. Rosenthal	Ft. Collins, CO	1978-1980
Southern Forest Experiment Station		
Irene J. Nelson	Tuskegee Institute, AL	1970-1975

¹ In 1976, the PSW project was titled Land Use and Landscape Planning Methodology Research. In 1977, Urban Forest Research was added, under the direction of J. Alan Wagar. In 1981, these two projects were combined into Landscape Management and Urban Forestry Research, again under the direction of Wagar.

² In 1976, the project was retitled Urban Forestry Research Project.

³ In 1982, the project was retitled Valuation of Wildland Resource Benefits, with less emphasis on recreation.

APPENDIX C: POPULATION OF STATES WITH NATIONAL FORESTS OR LAND USE PROJECTS

Region	Year				
	1957	1958	1966	1972	2000
	(Thousand)				
Northeast (New York)	30,798 (15,888)	31,300 (16,200)	35,400 (18,900)	40,800 (21,900)	58,000 (32,800)
South	43,592	44,5000	49,377	57,100	78,800
North Central (Iowa)	49,094 (2,799)	49,900 (2,800)	56,200 (3,000)	65,000 (3,300)	91,800 (4,100)
Pacific Coast (California)	18,413 (13,922)	18,900 (14,300)	23,200 (17,700)	28,500 (21,800)	49,100 (38,100)
Western States	10,669	10,920	12,100	14,200	20,600
Alaska	(No estimate)				
Total	152,566	155,520	176,277	205,600	298,300
w/o Iowa Total w/o NY	133,897	136,520	154,377	180,400	261,400
Total Cont. U.S.	170,333	173,600	196,500	229,400	332,100

**APPENDIX D: ACREAGE OF NATIONAL FORESTS
AND LAND USE PROJECTS**

Region	Year			
	1957	1958	1959	1966—2000
	(Thousand Acres)			
Northeast (New York)	2,342 (14)	2,345 (14)	2,345 (14)	2,345 (14)
South	11,580	11,590	11,455	11,455
North Central	10,202	10,252	10,228	10,228
Pacific Coast (California)	44,615 (19,985)	44,609 (19,985)	44,639 (19,986)	44,639 (19,986)
Western States	98,370	98,341	96,235	96,235
Alaska	20,741	20,742	20,742	20,742
Total	187,850	187,879	185,644	185,644
Total w/o Alaska	167,109	167,137	164,902	164,902

**APPENDIX E: ANNUAL RECREATION VISITS TO NATIONAL FORESTS
AND LAND USE PROJECTS**

Region	Year				
	1957	1958	1966	1976	2000
	(Thousand)				
Northeast (New York)	3,050 (4)	3,277 (4)	5,410 (7)	13,802 (10)	30,296 (32)
South	11,150	12,006	24,887	50,745	122,477
North Central ¹	5,158	5,697	11,229	23,534	53,607
Pacific Coast (California)	18,019 (11,265)	20,537 (12,475)	33,454 (19,967)	61,330 (36,004)	165,237 (95,007)
Western States	24,002	27,022	48,872	94,097	250,362
Alaska	368	572	950	1,720	5,000
Total	61,747	69,111	124,802	245,228	626,979
Total w/o New York	61,743	69,107	124,795	245,218	626,947
Total w/o Alaska	61,379	68,539	123,852	243,508	621,979
Total w/o NY & AK	61,375	68,535	123,845	243,498	621,947

¹ No reported visits to Iowa.

APPENDIX F: ANNUAL RECREATION VISITS PER ACRE OF NATIONAL FOREST OR LAND USE PROJECT

Region	Year				
	1957	1958	1966	1976	2000
Northeast	1.30	1.40	2.31	5.89	12.92
South	0.96	1.04	2.17	4.43	10.69
North Central	0.51	0.56	1.10	2.30	5.24
Pacific Coast (California)	0.40 (0.56)	0.46 (0.62)	0.75 (1.00)	1.37 (1.80)	3.70 (4.75)
Western States	0.24	0.27	0.51	0.98	2.60
Alaska	0.02	0.03	0.05	0.08	0.24
All Regions	0.33	0.37	0.67	1.32	3.38
All except Alaska	0.37	0.41	0.75	1.48	3.77

APPENDIX G: ANNUAL RECREATION VISITS PER CAPITA TO NATIONAL FORESTS AND LAND USE PROJECTS

Region	Year				
	1957	1958	1966	1976	2000
Northeast ¹	0.20	0.22	0.33	0.73	1.20
South	0.26	0.27	0.50	0.89	1.55
North Central ²	0.11	0.12	0.21	0.38	0.61
Pacific Coast	0.98	1.09	1.44	2.15	3.37
Western States ³	2.81	3.08	4.99	8.11	14.56
Alaska	—	—	—	—	—
All Regions ⁴	0.47	0.51	0.82	1.37	2.41
United States ⁵	0.36	0.39	0.63	1.06	1.87

¹ Excludes New York because of small number of visits and very large population.

² Excludes Iowa.

³ Excludes Kansas.

⁴ Excludes New York, Alaska, Kansas, and Iowa.

⁵ Excludes Alaska and Hawaii.

APPENDIX H: SUMMARY OF THE FIRST REGIONAL ANALYSIS

Relying heavily on Dana's work plus input from Administrative Field personnel the first regional analysis was made by Harry Camp in 1960 and is summarized here.

NORTHEAST

This heavily populated region has a limited area of national forests. Recreational use of these areas will therefore become increasingly intense. At present, the most intensive forest recreational use is in the Northeast. Of necessity, then, development and management of recreation areas must incorporate the best know-how available to get the best kinds of recreation use without destroying the resource. Research in recreation area development and management is particularly appropriate.

Selected studies include:

- Case histories of nine highly developed forest recreation areas and some of their recurring problems
- Soil compaction on recreation areas
- Current administration practices of camp and picnic areas, including space assignment, reservations, cleanup and policing, signs, and duration of visits
- Manipulation of use and vegetation to maintain or improve the recreational resource, including location, layout, design, and equipment for various kinds of recreational areas
- Effectiveness of fertilizers
- Establishment of sod under tree cover
- Effects of recreation on other forest uses, and reciprocal effects of other forest uses on recreation
- Interpretive services
- Public motivation and attitudes towards forest recreation

CALIFORNIA

Studies in the Pacific Southwest are greatly affected by two factors: explosive population growth and competition for public lands. The highest priority is assessing recreational use in the National Forests and determining its place in the multiple-use picture. A sampling system and evaluation methodology are required that will reliably estimate types of use. Such a system could have application to forest lands nationwide.

Other priorities include:

- Developing methods to rehabilitate and revegetate overused recreation areas
- Learning to estimate carrying capacities as an aid in planning recreation areas
- Developing criteria for assessing future recreation use, including user expectations, distances willingly traveled to a recreation source, and crowding tolerance
- Establishing interpretive services

PACIFIC NORTHWEST

The intensity of recreation use in the Pacific Northwest is not as great as in other regions. The Pacific Northwest is in fact characterized by wide expanses of wilderness valued for its scenic beauty. The conflict in this region focuses on the distribution of use between recreation, timber, and other interests on the National Forests. Research is urgently needed in assessing wilderness management, including hunting and fishing. Wilderness studies are required in the following areas:

- Carrying capacities of wilderness areas including individual needs for space, use dispersal, and factors controlling capacity
- Improvements required to properly manage an area including access and trail and transportation systems
- Assessment of wilderness use including the need for interpretive services and types of users
- Assessment of user impact on ecology
- Criteria for estimating wilderness values and use

NORTH CENTRAL

The North Central region is the most populous. Yet the intensity of recreational use (visits per acre) ranks lower than the Northeast and the South and projected visits per capita are much lower than for other regions. Only a slight change in the outdoor habits of residents in this area could create difference in intensity of use. Research is needed into attitudes toward forest recreation. Such concerns are currently being addressed in cooperative studies by rural sociologists at the University of Minnesota and the Quetico-Superior Research Center, a privately endowed institution. The University of Wisconsin and Michigan State University have cooperative studies in outdoor recreation. Though limited in scope, these programs could realistically be expanded to include concerns of the forest recreation administrator.

Information needs include:

- Why users select the National Forests for recreation
- Who those users are (place of origin, income class, family size, etc.)
- What facilities are most acceptable or desirable
- What outdoor recreation is desired

SOUTH

The South (particularly the Southeast) is similar to the Northeast and North Central regions in terms of large population and a relatively small distribution of National Forests. Nationwide projections indicate that the level of recreation use for camping, picnicking, hunting, and fishing will be higher here than in other regions. Core issues focus on developing and managing recreational areas, especially those related to hunting and fishing. These recreational uses need to be assessed in terms of dispersal and amount. Measurement techniques need to be developed. And the roles of public and private agencies need to be assessed.

INTERMOUNTAIN AND ROCKY MOUNTAIN

The states within these regions contain the greatest National Forest acreage and the smallest populations. The major interest here is determining the place of recreation in the multiple-use picture:

- Kinds of development needed as inaccessible areas are opened and reservoirs are completed
- Recreation management in wilderness areas
- Guidelines for the protection and rehabilitation of recreations areas with low rainfall whose soils and vegetation are sensitive to use

NORTHERN (ALASKA)

Alaska has an enormous recreation resource with a variety of activities to offer. Although little has been done to develop this resource, statehood brought with it pressure to develop all resources within the state, including assessment of the following:

- Economic potential of recreation
- Types of recreation required
- Assimilation of recreation into the development of Alaska's other natural resources

NATIONAL

In addition to regional considerations, there are matters of national implication as well, including

- Projecting future recreation demand
- Improving techniques for making inventories of forest recreation resources
- Assessing values and returns on recreation
- Determining charges for recreation use

In a review of issues and problems relevant to recreation, it was determined that a shortage existed of scientists with technical training in outdoor recreation:

Short-term recreation research calls for 82 scientists, and there is little doubt that many more people with special training in several disciplines will be needed by the states, universities, and other federal agencies. We have estimated that, in addition to the research scientists, the Forest Service should have on its rolls within the next 10 years 850 professional employees in the administration of forest recreation. This number does include normal turnover of personnel. If turnover is as much as 5 percent per year, about 50 recruits would be needed each year to maintain adequate staffing. Such staffing would amount to about one professional for every 270,000 visits. By applying estimates of future outdoor visits...as many as 7250 people with technical training in outdoor recreation could be needed to handle the outdoor recreation business by 1980 (Camp, 1960a).

The review further recognized that the successful research program would incorporate a breadth of disciplines. It was estimated that by 1962 research would need 6 economists, 5 research foresters, 2 forest ecologists, 1 social scientist, and 2 wildlife biologists. This training and recruitment task spawned a recommendation that the Forest Service establish cooperative forest recreation research training units at universities and colleges. Each unit would address specific areas of concern with the goal of achieving the following objectives:

- Promote interest in forest recreation as a vocation
- Encourage graduate training in forest recreation research and management
- Conduct research relevant to forest recreation issues
- Provide technical assistance to state and local recreation agencies.

The Cooperative Wildlife Research Units sponsored by the Fish and Wildlife Service and the Forest Service's Cooperative Watershed Unit at Colorado State University served as models.

**APPENDIX I: TOTAL SCIENTISTS, BY DISCIPLINE AND STATION,
NEEDED BY 1972**

Discipline	Station											Total
	N	PNW	PSW	INT	FM	LS	CS	NE	S	SE	WO	
Economist	1	2	3	3	2	3	2	3	2	2	2	25
Forester	1	2	1	1	2	1	1	1	1	2	-	13
Forest Ecologist	-	1	3	2	3	1	-	2	1	2	-	15
Social Scientist	-	2	3	2	2	2	2	2	1	2	1	19
Landscape Engineer	-	1	1	1	-	-	-	1	-	-	-	4
Wildlife Biologist	-	-	-	1	1	-	-	1	-	2	-	5
Mechanical Engineer	-	-	-	-	-	-	-	1	-	-	-	1
Total	2	8	11	10	10	7	5	11	5	10	3	82

**APPENDIX J: PROJECT LEADERS, RECREATION
RESEARCH WORK UNITS, 1983**

<u>Project No.</u>	<u>Location</u>	<u>Program Emphasis</u>	<u>Project Leader</u>	<u>Business Address</u>
PNW-1901	Seattle WA	Forest Road Use, Vandalism and Wildlife Values	Roger N. Clark	USDA Forest Service 4507 Univ. Way, NW Seattle, WA 98105 8-339-7817
#RM-4252	Ft. Collins CO	Valuating Non- commodity Forest Products	George Peterson	USDA Forest Service 240 West Prospect Ft. Collins, CO 80521 8-323-1299
INT-1903	Missoula, MT	Wilderness Management	Robert C. Lucas	USDA Forest Service Forestry Sci. Lab Univ. of Montana Campus, Drawer G Missoula, MT 59801 8-585-3533
%NC-1901	St. Paul, MN	Backcountry River Recreation	David W. Lime	USDA Forest Service 1992 Folwell Ave. Univ. of Minnesota St. Paul Campus St. Paul, MN 55101 8-784-0234
*NC-1951	Chicago, IL	Urban Forest Recreation	John Dwyer	USDA Forest Service 5601 N. Pulaski Rd. Chicago, IL 60646 8-588-7650
@NE-1951	Durham, NH	Indicators of Outdoor Recreation Trends	Hebert E Echelberger	USDA Forest Service Concord & Mast Rd P.O. Box 640 Durham, NH 03824 8-834-0797
@NE-1903	Durham, NH	Backcountry Recreation in the East	Raymond E. Leonard	USDA Forest Service Concord & Mast Rd. P.O. Box 640 Durham, NH 03824 8-834-0797

Partly funded by Forest Recreation Research

% No longer has Backcountry in its Problem statement

* Has been merged into NC 1952

@ These are closed and replaced by NE 1951--Burlington, VT
Efficiency in Recreation Management- H.E. Echelberger
705 Spear St.
Box 968
Burlington, VT 05402
8-832-6771

**APPENDIX K: PROJECT LEADERS, URBAN FORESTRY WORK UNITS,
1978**

<u>Project No.</u>	<u>Location</u>	<u>Program Emphasis</u>	<u>Project Leader</u>	<u>Business Address</u>
NE-1651	University Park, PA	Amenities and Municipal Water- shed Management	Howard G. Halverson	USDA Forest Service Penn. State Univ. Armsby Bldg. Rm 309 University Park, PA 16802 8-723-1935
NE-1751	Amherst, MA	Urban Wildlife Management	Richard DeGraaf	USDA Forest Service University of Mass. Hilton House Amherst, MA 01002 8-413-549-0520
NE-1952	Syracuse, NY	Urban Forest Resource Manage- ment	Rowan Rowntree	USDA Forest Service State Univ. of NY Environment Science and Forestry Syracuse, NY 13210 8-315-473-8673
NC-1952	Chicago, IL	Recreation Use of Urban Forests Along the Lower Great Lakes	John Dwyer	USDA Forest Service 5601 N. Pulaski Rd. Chicago, IL 60646 8-388-7650
# SE-1905	Athens, GA	Urban Forestry in the South	Harold K. Cordell	USDA Forest Service Forestry Sci. Lab Carlton St. Rm 22 Athens, GA 30602 8-250-2451
# PSW-1903	Berkeley, CA	Landscape Manage- ment and Urban Forestry	J. Alan Wagar	USDA Forest Service 1960 Addison St. P.O. Box 245 Berkeley, CA 94701 8-449-3567

66% of Unit is Recreation

* 50% of Unit is Recreation

**APPENDIX L: FOREST SERVICE RECREATION BUDGET HISTORY
1961-1981**

Fiscal Year	\$M(515) Research	1972* Dollars	Fiscal Year	\$M(515) Research	1972 Dollars
1961	162	229	1972	1,059	1,059
1962	317	438	1973	1,095	1,036
1963	399	544	1974	1,326	1,154
1964	413	555	1975	1,251	996
1965	432	581	1976	1,464	1,108
1966	516	667	1977	1,580	1,130
1967	479	606	1978**	1,991	1,327
1968	828	1,004	1979	1,917	1,178
1969	855	985	1980	1,521	858
1970	904	989	1981	1,499	773
1971	1,038	1,081			

* Based on GNP Implicit Price Deflator with 1972 base, Deflator for comparable calendar year used for each fiscal year. In 1978, the dollar figure does not include urban forestry.

** Urban forestry research program began.

APPENDIX M: ANECDOTES

An annoying hurdle in the development of the program dealing with people was the requirement pertaining to approval questionnaires. By law the Bureau of the Budget reviewed and approved or disapproved every questionnaire that asked the same question of 10 or more people. At the start of the program this requirement was watched over in the B.O.B. by Ole Neegard. He took this study very seriously, and many hours were spent explaining the need for the questionnaires, justifying each question, and detailing the process for analysis of the replies. It took an inordinate amount of time to get a simple questionnaire approved, and it surely slowed the advancement of our studies having social aspects. An isolated case caused some delay in proceeding with social studies. One young researcher was unaware that approval was required and started without approval. Almost his first interview resulted in disaster when the interviewee asked for the B.O.B. approval number. Dr. Harper received several calls from Congressmen and the appropriations committee because of protests from recreationists about the personal nature of some of the questions, particularly those on religion. The B.O.B. also protested about the number and content of proposals. Severe restrictions were placed on the use of questionnaires, and almost immediately we began getting complaints from environmental organizations that the Forest Service was quashing wilderness research by rejecting proposed studies in the social aspects of recreation problems. The additional requirement of getting Department of Agriculture approval on publications involving social sciences became another hurdle in research involving people.

Lest readers overreact to problems caused by this isolated case, it must be added that dozens of other surveys caused no adverse reaction at all. Most researchers have found that recreationists welcomed the chance to express ideas about things important to them. Ending an interview usually was more difficult than initiating it. Bob Lucas, who has been involved in many visitor surveys over 25 years, can recall only one flat refusal, and that was from a man who appeared to be conducting an unlicensed, illegal outfitting business. Mail questionnaires routinely achieve 80 percent rates of return, sometimes even reaching the 90 percent range.

Les Harper recalls an incident with Ole Neegard at the time of the Outdoor Recreation Research Conference in Ann Arbor, Michigan. Les's acquaintance with Ole went back to the days of the War Production Board in the early 1940's. Ole was as tough then, as later, on approving questionnaire surveys. At the close of the Ann Arbor Conference, as Les and Ole were starting home, Ole grasped Les's arm in the manner of an old friend and proceeded to seek support for this conviction that questionnaires were not needed in recreation research. Les disagreed and told why they were needed in certain aspects of the research. As usual, Ole argued his point of view in earnest and at length. Hoping to further their (dubious) friendship for future benefit of the research program, and noticing that it was beginning to rain, Les suggested to Ole that he share Les's umbrella, especially since Ole had no raincoat. Mention of the raincoat caused Ole to turn pale. He stopped and then bolted back toward the conference site. He had forgotten his raincoat. (Proves that Ole was human about some things.)

Dr. Keith Arnold and Harry Camp had an appointment to discuss wilderness research with Dr. Wayburn, then President of the Sierra Club. The discussion revolved around the overuse of some California wilderness areas, and the need for research to determine kinds of management practices to apply in these areas. They were politely but firmly told that all that was needed was to set aside more wilderness area and that the need for management measures would disappear. End of conference. Wilderness research is now an important segment of the research program.

In a discussion with Earl E. Bachman (Chief, Branch of Recreation Administration, Region 5, U.S. Forest Service) about recreation research needed in California, the researchers were told that no research was needed that dealt with facilities and materials. He maintained that nearly everything physical had been tried. The discussion resulted in a report prepared by Bachman and published by the Pacific Southwest Forest and Range Experiment Station. This publication is a real contribution by administrative personnel and describes in writing and pictures Earl's long experience in the trial and development of forest recreation facilities. Recreation facilities....a personal history of their development in the National Forests

of California, by Earl E. Bachman. Pacific Southwest Forest and Range Experiment Station and California Region, 1967.

In my (Camp) talks with researchers around the country about a history of recreation research, I sensed that in the evolution of the forest recreation research program, recreation was being evolved nearly out of the picture. Urban forestry, landscape management, and other environmental questions were detracting heavily from research programs on so-called recreation problems.

Bob Lucas met with a District Ranger in Minnesota about 1961 whose District was a prime recreation area. He was told by the Ranger that if he could get a locked gate installed on the main access road (the Gunflint Trail), he could solve all his recreation problems without any research. (Ed. this was not entirely a non-typical remark, but hopefully it was said in jest.)

People come into the Forest Service recreation research program in a variety of ways. Bob Lucas, then a graduate student at the University of Minnesota, met Jim Morgan, Branch Chief for Economics research at the Lake States Station, at a noon "brown bag" meeting at which a number of University professors and graduate students discussed research plans involving the Boundary Waters Canoe Area. You might say a baloney sandwich led to a career.

In 1962, Dave King and Bob Lucas had two forestry students employed as field interviewers in Central Michigan. One was a free spirit a little ahead of time. First, Dave and Bob had to deal with complaints from local Forest Service folks about his attire--Bermuda shorts! (Seems pretty innocuous now.) But, the next complaint was a little more difficult. It came from the Sheriff. It seems the employee had met a young lady counselor from a youth camp. He thought he had a date, but there was a breakdown in communications, and he was apprehended trying to crawl in a window at the camp. He went on to become a successful recreation planner. (Go ahead and guess.)

George Jemison recalls this example of difficulty in recruiting people for the recreation research program. When Hopkins was heading up the program, we were under heavy pressure from the Department to employ minority people, and like everyone, we had a quota. Walt tried hard to find a black and finally located a black female who had a Masters Degree in sociology. We sent her out to Seattle (from DC where she lived) for a one-week look at our program there. The project folks in Seattle treated her well. At the end of the week, which she enjoyed at our expense, I personally took her to the airport and had a nice visit. She was pleased to accept the GS-9 job for which she was qualified. I immediately called Walt, who got all the papers through Personnel promptly. Monday morning when we contacted her, we found she had already been employed by another Federal agency a week before we sent her to Seattle.

Al Wagar has this to tell about this early piece of research that occasioned considerable comment. During a meeting Forest Service recreation researchers in Berkeley about 1962, Hugh Davis complained that my publishing on development of the convection-stack toilet was going to give our research a bad image. Les Harper stood up to defend the study, saying that the problem came up in almost every discussion of research need, that we didn't want it to be our first effort, but that sooner or later we needed to address it. After this a couple of those present suggested calling the convection stack "Harper's afterburner." They didn't do so to his face, however. Hubert Burke mentioned later that they had one very thin file of requests for all other research and one very thick file of requests for the convection stack note. Walt Hopkins mentioned that, in seeking support, he assiduously avoided mentioning such earthy research to some congressmen but found it a fine example for others.

The program was often subject to misunderstanding and hard to defend to people who had little patience for research, or no background, or who wouldn't try to understand. About 1972, the Secretary of Agriculture received an irate letter from a farmer in North Dakota protesting USDA's not giving more financial aid to farmers while paying for studies of use of urban cemeteries (Boston) for outdoor recreation. It was easy for fragments of our work, out of context, to draw attention and brickbats.

In remembering the early efforts in developing a research program, Harry Camp recalls that when he expressed disappointment over the responses of his field contacts, Dr. Harper gave him this advice. "Harry, what did you expect? You don't ask the Chef what is wrong with the meals he prepares. Sometimes you must find out by yourself. It could be you are asking the wrong people." Not bad advice in many circumstances.

