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RECREATION

TODAY AND TOMORROW IN
THE MISSOURI RIVER BASIN





UNITED STATES DEPARTMENT OF THE INTERIOR

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NATIONAL PARK SERVICE

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RECREATION

Today and Tomorrow



A Survey of the Recreation Resources
of the Missouri River Basin

DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE *in cooperation with*

Missouri Basin Inter-Agency Committee



Space and facilities for family recreation. Scene at Crowder State Park, Mo.



Foreword

A GENERATION AGO, it would have been difficult to foresee today's complex pattern of living and the important role of outdoor recreation. The social strains caused by urban living, more confining occupations, and increased leisure time reflect the need for conserving natural and cultural recreation resources and for providing additional outdoor recreation outlets.

Like other sections of the country, the Missouri River Basin has experienced an increased use of existing resources and also has felt an added impact from reservoir impoundments developed as part of the Missouri River Project which began in 1944. As recreation planning for the new reservoirs progressed, the need for a basinwide study of recreation resources as background for the specific studies became evident.

The National Park Service, in cooperation with the Missouri Basin Inter-Agency Committee, undertook a program of appraising the resources of the Basin, determining what is required to meet the needs and suggesting an approach. This report, a study of the recreation resources of the Missouri River Basin, is a result of that undertaking.

The first objective of the report is that it may serve as a guide to interested Federal, State, and local agencies in their program to locate, acquire, and preserve areas to meet the needs of their residents. The second objective is to generate public interest in supporting a sound program of conservation and wise use of our natural, cultural, and man-made recreation areas to provide for tomorrow as well as today. It is my hope that, in the years to come, a look back will reveal that the objectives of this study have been largely fulfilled.

Conrad L. Wirth

DIRECTOR, NATIONAL PARK SERVICE



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Introduction


The Missouri River Basin is rich in recreation resources, with unique natural features, significant sites of historic and archeologic interest, and many new reservoir areas. This report is an appraisal of the present situation in the field of nonurban park and recreation areas and suggests a comprehensive plan for the development of a balanced basinwide system. The planning base is 25 years, ending in 1980.

The Park, Parkway, and Recreational Area Study Act of June 1936 (49 Stat. 1894) authorized the National Park Service to prepare a study which could serve as a basis for coordinating and correlating recreation land planning among Federal, State, and local agencies having responsibility for park and recreation developments. By 1941, individual recreation reports were prepared by 37 States, in cooperation with the Service, and they were summarized in the report *A Study of the Park and Recreation Problem of the United States*. To a considerable extent, the States have followed the basic recommendations of the report in carrying out expansions of their park systems. However, because of changing populations and patterns of living many of the original suggestions are now obsolete.

In the Missouri River Basin, increasing public demands on existing park and recreation areas, combined with added pressures resulting from water-control projects constructed under the Missouri River

Project (Pick-Sloan Plan), made the need for an overall recreation study urgent. Since passage of the Flood Control Act of 1944, the National Park Service has made recreation studies on many of the water-control projects. The need for a comprehensive survey against which to relate these studies, combined with accelerated use trends, resulted in the Service undertaking such a program, first on a limited scale and then as a basinwide study. It was carried out in cooperation with the States and the Federal agencies concerned. Coordination was effected through the Interior Missouri Basin Field Committee and the Missouri Basin Inter-Agency Committee. A special recreation subcommittee of the latter parent committee was formed to this end.

The intent of the study is to identify significant recreation resources in the basin, analyze the distribution and interests of the using public and the particular situation in each of the basin States, outline areas of need, and identify general areas and in some cases specific areas for addition to public park systems. These areas purposely are not pinpointed in most cases in order to allow for flexibility in final selection of specific sites by the individual States. The report has been kept general in nature because studies now being undertaken by Federal and State agencies will develop, in greater detail, solutions toward achieving a balanced basinwide system of areas.



Summary

THE BASIN

The Missouri River Basin covers 586,000 square miles and includes all or parts of 10 States: Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, Kansas, Montana, Wyoming, and Colorado. It represents one-fifth of the continental United States.

Generally, the basin is divided into three areas: On the east, with more plentiful rainfall, lies part of the Corn Belt, plus a part of the Minnesota lake country and the Ozarks in Missouri; in the middle lie the Great Plains; and on the west, the Rocky Mountains.

It is an area of extremes—physiographically, scenically, and climatically. Historically, in terms of settlement and development, it is relatively young.

Resident populations are sparse and unevenly distributed. In 1950 the basin contained 7,699,000 people, 5 percent of the Nation on 20 percent of the land area. Over half live in the relatively industrialized southeast corner, while one-fifth live in three major urban centers—Denver, Kansas City, Kans.—Kansas City, Mo., and Omaha-Council Bluffs. Elsewhere, and particularly throughout the plains and mountains, populations are sparse.

The more important *findings* and *conclusions and recommendations* are summarized below:

1. Physiographically and scenically the basin is highly variable. Major natural attractions include the Rockies, the lake region, and the Ozarks, plus scattered variations such as the Black Hills, the Badlands of North and South Dakota, and the pine-ridge country of Nebraska. These contrast sharply with the vast plains and prairie regions. They contain many outstanding features which attract millions of visitors from all over the Nation.

To a large degree these areas and this distribution has determined, and probably will continue to determine, the backbone

of the various park systems in the basin so far as natural areas are concerned.

2. The climate, though healthful and predominantly sunny, is one of extremes and is subject to frequent variation throughout the area.

Vacation attraction is focused on the mountains and lake country. Conversely, the need for park and recreation areas throughout the hotter and more humid sections is accentuated. Winter sports except for ice fishing, are not attractively feasible over most of the basin.

3. The basin population is sparse. Though outmigration of a decade or two ago has been more than offset in recent years, population growth with few exceptions is below the national average. Distribution of population is uneven and does not match that of natural recreation resources.

There is a considerable unmet need for public park and recreation areas within day, weekend, and vacation reach of the larger population centers.

4. While the southeast corner of the basin is relatively industrialized, the basic economy is agriculture—diversified farming in the east and where irrigation has been developed, grazing and dryland wheat farming throughout most of the central or plains section. Vacation and tourist business is of major economic significance in all 10 States and ranks second in some.

The economic aspect of tourism has had its effect on parks and recreation areas. Currently the States are giving it increased attention, which should be coordinated with sound planning for a balanced park system.

5. Transportation patterns are of particular interest in the basin. Generally, they reflect the east-west pattern of exploration and settlement and of the present tourist flow.

Highways have special significance. Not only do they channel tourists to objectives within the area, they also represent arteries of through-tourist travel, east coast to west and vice versa. The proposed interstate highway system should be recognized in current and long-range planning.

RECREATION RESOURCES

Basic ingredients for parks and recreation areas are the natural and cultural recreation resources—scenic, scientific, and historical. In these the basin is

richly endowed. They represent the magnets which draw vacationists to the basin, a sample of the American scene which should be preserved for future generations.

1. This region is renowned for the infinite variety of its scenic, geologic, and paleontologic features. Many outstanding or unique areas or features are already set aside and preserved for the public. Many others are still unprotected and are being lost to the inroads of civilization.

Each geographical section of the basin, in fact each State, contains many such areas which should be considered in developing or rounding out balanced park systems.

2. The fauna and flora of the basin covers a wide range, from the alpine and subalpine plant and animal associations in the mountains, down through the short-grass and true prairie to the oak-forest association along the lower Missouri. In addition to their academic and general public interest, they provide some of the Nation's finest hunting and fishing—outstanding trout and lake fishing, and upland game and big-game hunting which draws sportsmen from all over the Nation. Of particular significance, the basin includes the Nation's "duck factory" in the pothole sections of the Dakotas.

Long-range planning for park systems provides an opportunity and responsibility at each level of government to give balanced consideration to the preservation of these resources.

3. Cultural recreation resources are both historic and prehistoric. Major themes in the basin's history are the early exploration and fur trade, the Indian wars, westward expansion and settlement, and more recent statehood eras. They have a western flavor and a particular appeal to tourists and vacationers.

The basin's prehistory is still far from clear, but a considerable program of archeological survey and salvage is filling in the chapters.

National recognition has been given to a number of areas as parks, monuments, or historic sites. Each State, in varying degree, has set aside other areas.

These resources are an important part of our national and State heritage. They are increasingly being lost or damaged. Significant areas or sites not yet protected should be acquired soon and, where appropriate, incorporated as a desirable part of park systems.

4. Water is of paramount importance in this basin, much of which receives less than 20 inches of precipitation annually, for domestic and industrial supply, for agriculture, and for recreation.

Many reservoirs have been and are being constructed for power, irrigation, and flood control. As an extra dividend they provide valuable recreation opportunities. Properly developed and managed and with adequate public lands, they can make a major contribution to meet growing demands, particularly in the more arid sections.

In some cases water-control projects, existing or proposed, modify or destroy recreation resources of great value.

When new parks or recreation areas may involve resources valuable for other purposes—whether water, mineral, or vegetable—

or, conversely, where such other use may involve significant recreation values, the overall public interest should be recognized in weighing alternate use before those resources are dedicated to a particular use.

So far as authority allows, full consideration should be given to recreation in planning and managing water-control projects. Early and complete cooperation between Federal, State, and local agencies should be the rule to solve the special problems of access, land acquisition, development, and management.

Reservoir recreation areas often create pressure on State agencies for public use. So far as reasonable they should take their place in the orderly development of balanced park systems.

RECREATION-USE TRENDS

1. The Missouri River Basin is experiencing the same cross section of trends in park use as the country at large but in some respects accentuated. Attendance has been increasing more rapidly than for the balance of the Nation—for State Parks at nearly twice that rate, in National Parks somewhat higher. National Forest and Wildlife Refuges have experienced comparable trends.

Attendance at the many new reservoirs has been startling, and boating activity has been without precedent because much of the basin was without usable bodies of water before.

This general trend reflects several factors—improved economy, more leisure time in present-day farming, the fact that the basin is both a focal point and a thoroughway for the now more mobile tourists, and a general catching-up process. It can be expected to continue but necessarily at a reduced rate.

2. Traditional outdoor recreation pursuits continue to be the most popular activities, but with regional variety.

Fishing- and hunting-license sales are well above national averages per capita. Pleasure driving, picnicking, and sight-seeing rank near the top. Camping in various forms is doubling in some States in each of several successive years. Hiking, riding, and particularly dude ranching which is indigenous to the basin, add western flavor. Water sports, particularly boating are increasingly popular.

In some of the States the accent has been on providing fishing and hunting opportunities. In most States, park systems are not as yet well rounded.

Trends in public interest accent the need to work toward balanced systems and more diversified areas and facilities.

TOURISM, THE ECONOMY, AND PARKS

Tourist and vacation business is of major significance to the basin. Estimates indicate that out-of-state visitors spend more than a billion dollars a year in the 10 basin States. In each it is important; in some it ranks second only to agriculture.

The Missouri River Basin contains special attractions which are primary vacation objectives: National Parks and Monuments; generally attractive regions, such as the Rockies, Black Hills, Ozarks, and the Minnesota lake country; fine hunting and fishing; plus the less definable, though real, spell of "wide open spaces."

In addition the basin occupies a strategic mid-continent position. Its major highways bring many visitors through to targets beyond.

The States currently are giving active attention to maintaining or increasing the value of this industry.

Basically it is a matter of time spent—whether the tourist hurries through or lingers to enjoy what each State or region has to offer.

In addition to services, facilities, and resorts provided by private enterprise, public areas and developments for the convenience, comfort, and enjoyment of the visitor can play an important part. Well-distributed and diversified State park systems, supplemented by wayside areas and markers and parkways and tourways, might prove the answer.

STATE PARK ADMINISTRATION

On the average, the 10 basin States are young in the State park field. Whereas some have long and well-established park systems, others as yet have none. Similarly, many variations in policies and organizations have been and are being employed. They reflect a diversity of background and evolution.

1. Analysis of the organization pattern in the States shows that 2 are administered by Conservation Commissions; 4, by State Park Board, Commission, or Authority; 2, by Game, Fish, and Parks Commissions; 1, by a Highway Commission; and 1, by a State Historical Society.

While no one form is best, from a hypothetical standpoint, management of all natural resources by a department of natural resources is highly satisfactory. Under this plan, park activities are administered at a level coordinate with fish, game, forests, and other resources.

2. In matters of functions, authorities, and staffing, too, there is much variation among the basin's park agencies.

While the picture is too complex to summarize briefly, analysis and desirable guides discussed in the chapter on "State Park Administration and Financing" point to areas where the several States may wish to strengthen their position.

3. The work of the State park agency can be supplemented by local and regional recreation and planning departments. In fact, if park and recreation needs are to be properly met at each level of government, such local and regional organizations are necessary.

Although a number of basin States permit the functioning of county recreation boards or commissions, the necessity for regional and county planning commissions is not generally realized. Legislation enabling the formulation of such planning offices is highly recommended.

STATE PARK FINANCING

Adequate financing is fundamental to the sound development and management of State parks. The increasing need for, and use of, parks has stimulated governmental units to explore various financing methods.

1. Regular tax revenues remain the most important source of funds for the operation, maintenance, and development of parks and park systems. The seeming shortage of such revenues stems primarily from two conditions—a lack of enlightened public support, and limitations in State and local tax structures.

A planned and active public-relations program, plus development of sound long-range plans, could solve the former; an evaluation and realignment of tax structures might reveal effective ways to resolve the latter.

2. Operating revenue is frequently supplemented by entrance fees, parking fees, activity fees, rentals and leases, and the sale of natural resources. Across the country these sources had increased to represent 41 percent of park operating and maintenance costs by 1955.

While these sources are of real help, it is not reasonable to expect that park systems will be wholly self-supporting. The acquisition of areas and capital improvements will in any event have to be financed from other sources.

Use of State institutional labor and facilities also can in some cases be helpful.

3. Within recent years interest has been growing in the use of revenue bonds. Several States have authorized their use. There are both advantages and disadvantages.

Before a park agency undertakes financing through revenue bonds, the following factors should be present: A system of parks used by many visitors; parks already well developed, with needed public facilities except lodge, cabins, or perhaps swimming pool; an informed legislature that understands that appropriated funds will be required if the public is to be adequately served and well-balanced parks are to be maintained.

4. Funds, land, and even labor often are donated for park purposes. Such gifts may be substantial.

Care and diplomacy must be exercised to insure that lands or earmarked funds are consistent with park policies.

BASIC PLANNING CONSIDERATIONS

1. Post-World War II trends in the park and recreation field, though anticipated, have gone far beyond earlier estimates. A direct expression is the pressure which parks are now receiving. Others also are obvious, such as interest in a wider range of activities, and larger and more nearly year-round vacation and park use.

These are surface expressions of trends affecting the economic and social pattern of the Nation—a sharp rise in birth-rate, a continuing shift from rural to urban population, increased leisure, higher incomes, and greater mobility.

At the same time, natural recreation resources are being continually lost to the inroads of civilization.

In the Missouri River Basin each of these trends pertains, though with regional variation. Populations are increasing at a slower rate than for the Nation; resident and tourist park use is rising more sharply. Collectively, they accent the urgency for acquiring and preserving still-unspoiled natural and cultural resources and for providing more park opportunities conveniently accessible to public needs.

2. As park philosophy has developed, certain basic concepts have been recognized and generally accepted. Fundamental is the dual objective of (1) preserving significant recreation resources and (2) providing accessible park and recreation opportunity to meet needs. Analysis of the basin confirms this as basic to meeting the present situation.

Well-distributed and balanced systems of parks and recreation areas provided appropriately by each level of government should be the goal.

Development of long-range master plans for each system—Federal, State, and local—is essential.

Coordination and cooperation are necessary if these systems are to properly supplement and complement each other.

Federal responsibilities will be concerned primarily with preservation of outstanding areas or features; providing recreation opportunities on public lands when compatible with primary purposes; and providing assistance to State and local governments in the park and recreation field.

The burden will remain largely on State and local agencies in providing recreation opportunities for resident populations, for the convenience and enjoyment of tourists, and for preserving natural or cultural resources of State significance.

Constructive guides for the composition of State park systems and desirable criteria were prepared and are available through the National Conference on State Parks.

STATE ANALYSES

At the end of this report, analyses by States identify existing parks and recreation areas and point out inadequacies and areas of unmet need. Special planning considerations and objectives are discussed and a plan is suggested to meet the situation. Included are general, and in some cases detailed, recommendations for areas and programs which should be considered.

1. Existing Federal, State, and local parks and recreation areas are shown on plate 9 and summarized in detail in each State analysis. While too numerous and varied as to type, size, and administration to tabulate in summary, they include National Parks and Monuments; Wilderness, Wild, and Recreation Areas in the National Forests; recreation areas in some of the Federal Wildlife Refuges; many State Parks recreation areas and monuments; and a number of county and municipal non-urban parks.

While numerically these areas are impressive in total, this is in some respects misleading. In matters of distribution in relation to population; acreage, quantity, and diversity of facilities and

programs management; and imbalance between preservation and providing recreation opportunities, there are many inadequacies to meet the present and foreseeable public need.

2. At the Federal level, much still remains to be done to fill voids, expand areas or facilities to meet increasing use, and bring existing facilities up to present-day requirements.

This study did not attempt detailed recommendations in this regard, recognizing that programs of the several agencies were underway or are being formulated to develop long-range solutions—MISSION 66 of the National Park Service, Operation Outdoors of the U.S. Forest Service, and a comparable program of the Fish and Wildlife Service, etc.

Much of the load has been, and increasingly can be, met at the State level. Whereas some have well-established park systems, others, as yet, have none. On the average they are young in the State park field because the region itself is young, because populations are small in terms of the vast area, and, in part, because large Federal holdings in some of the western States have until recently appeared to provide adequately for public needs.

3. State park systems in the basin vary in the extreme, both in terms of the number of areas and the type. Some have accented preservation of historical and archeological sites; some, natural areas; some, the development of recreation opportunities; and some, just recently being formed, are so far largely comprised of reservoir recreation areas.

In each State one or more general areas of unmet need were determined to exist. (See plate 9.)

In each State, in varying degree, there is a shortage of areas, acreage, facilities, and interpretive programs.

A balanced system of areas preserved for their natural or cultural significance, supplemented by opportunities developed to provide conveniently accessible areas for day, weekend, and vacation use, remains the basic objective. Solutions should accent the selection and acquisition of significant areas not yet in public ownership, the enlargement of existing areas when desirable and the provision of additional and more diversified facilities, and the development of new areas selected specifically to fill voids and provide recreation opportunities when needed. Reservoirs in many cases will be desirable additions. (For details, see the maps for each State in the final chapter.)

Basic State park systems should be supplemented by roadside parks, tourways or parkways, and historical signs and markers to further provide for the convenience and enjoyment of the traveling public.

The use of zoning and of county or regional planning boards will prove useful in some situations.

In meeting the park and recreation needs of the basin and in particular in preserving important recreation resources, the next decade may prove crucial.

The Basin

about half of Kansas and Missouri; and smaller parts of Colorado, Iowa, and Minnesota.

WHAT IT LOOKS LIKE

To a traveler, east- or west-bound, the basin unfolds in three distinct north-south zones or belts, each distinguished by widely different characteristics.

The easternmost belt is the fertile, highly productive "breadbasket" section of the basin, known as a combination of the prairie and deciduous forest ecologic communities. To the north, it includes the famed Red River Valley of western Minnesota and eastern North Dakota, occupying the level bed of prehistoric Lake Agassiz. This is the principal spring-wheat area of the United States. Just to the east, and also partly within the basin, is the equally famous Minnesota lakes region. Southward lies the rich, rolling corn belt section of western Iowa and eastern Nebraska. It terminates with the green hills and

WHERE IT IS

The Missouri River drains a funnel-shaped basin containing nearly one-fifth of the land area of the United States. As defined for purposes of this report, the basin includes all the Missouri's drainage in the United States, plus that of the Red River of the North lying below the Canadian border. Thus defined, it contains 586,000 square miles.

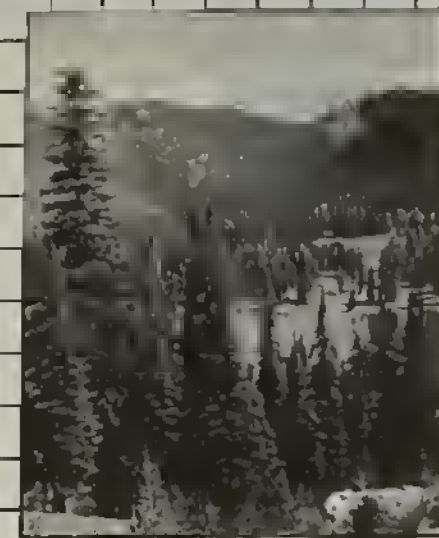
Bounded on the west by the Continental Divide, the Missouri River watershed extends southeast, across the Great Plains, where the river joins the Mississippi a few miles north of St. Louis, Mo. Included in the basin are the States of Nebraska and North Dakota; most of Montana, South Dakota, and Wyoming;



Dwarfed against the endless plains and the openness of the prairie sky, man is awed by the "bigness" of nature. Photograph taken near Ft. Morgan, Colo.



THE BASIN



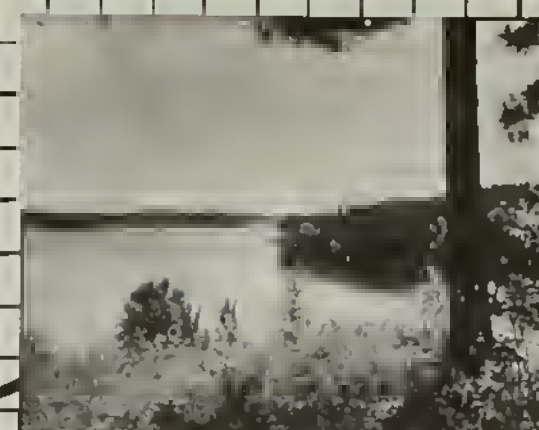
MONTANA



NORTH DAKOTA



SOUTH DAKOTA



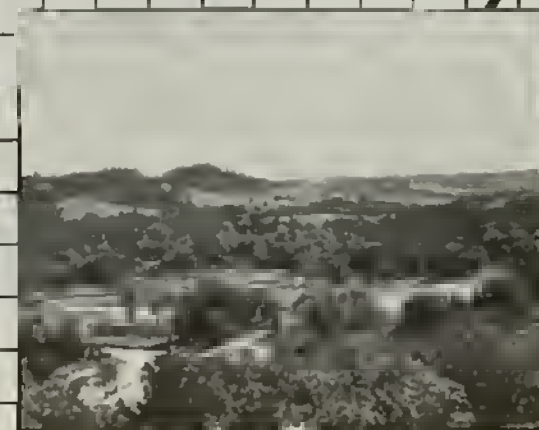
MINNESOTA



WYOMING



COLORADO



NEBRASKA



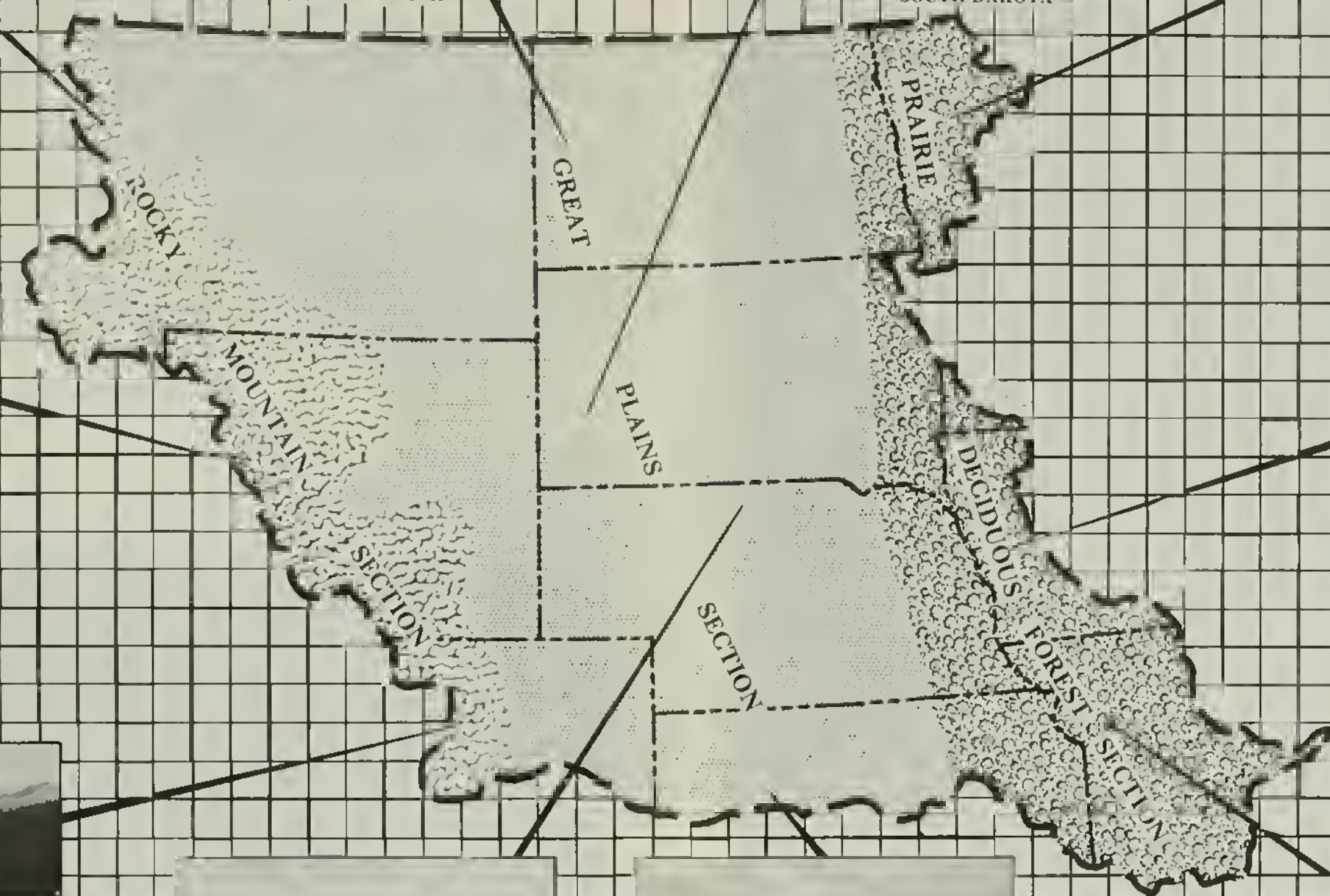
KANSAS



IOWA



MISSOURI



THE BASIN



Old Faithful.

valleys of northern and eastern Missouri and the region of hardwood forests, caverns, and spring-fed streams in the northern Ozarks.

To the west, stretch the Great Plains, or second belt, which make up most of the basin area. Here, the impression is one of a boundless expanse of brilliant, blue sky coupled with the seemingly endless panorama of the plains—a land of grass and immense tracts of wheat. The openness of the plains is broken here and there by narrow valleys with their fringes of cottonwoods and willows bordering the streams and, in the larger valleys, green irrigated fields.

Scattered over the plains are distinct variations, such as deeply eroded and colorful badlands with their delicate sculpturing, and the mountainous uplift of the Black Hills, an island of green forests and clear streams set in the midst of the rolling grasslands.

The grasslands themselves have an unforgettable quality. In few other settings can man better comprehend the "bigness" of nature than when dwarfed against the endless plains and the openness of the prairie sky. One of the most exciting views, which one can obtain while crossing the higher western plains from the east, is the slow materialization of the jagged, snow-covered mountain peaks of the Rockies on the distant horizon.



Once a part of a great prehistoric mountain system, the Ozarks are now low, rounded hills. Gasconade River from Kisinger Point, Mo.

The eastern slope of the Rockies forms the third belt in the basin. Here is a world-famed vacation land of rugged peaks, alpine forests, glaciers, lakes, waterfalls, volcanic features including the world's greatest geyser area, and one of the world's greatest natural wildlife and fishing regions.

In summary, the basin contains a wide variety of areas and features well known for their scenic qualities. Many of these scenic attractions are of such a high order that they have been established as National Parks, National Monuments, and Wilderness Areas to be preserved for the enjoyment of both this and future generations.

HOW IT WAS FORMED

Many forces have combined to form the basin as it exists today. To the west, mighty upheavals arched the sedimentary deposits of long-vanished seas into high uplands. Through succeeding epochs of geologic time, the forces of nature have faulted, uplifted, and eroded the area again and again, producing some of America's most rugged mountain ranges.

Descending eastward from the ancient highlands, many prehistoric rivers carried away great quantities of weathered debris in the form of silt. As the rivers decreased in gradient and rate of flow, they deposited their burden in great alluvial fans or flood plains. From the ancient uplifted and eroded mountains are derived the present Rocky Mountains, and from the old river sediments the Great Plains.

During much of this same period, volcanism played its fiery role in the formation of the western highlands. Great lava flows issued from deep cracks in the earth, and volcanic cones spewed ash and lava over wide areas.

To the east, in what is now central Missouri and adjacent States, the Ozark Plateau was formed. Once a part of a great prehistoric mountain system, the peaks have been weathered and eroded into low, rounded hills.

Within recent geologic time, the northern portion of the basin was covered and altered by the continental ice sheets, which displaced huge quantities of original soil and rock and, in retreating, left heaps of debris. The present course of the Missouri and its



Mountain glaciers have played a major role in carving the Rocky Mountains into a spectacular series of peaks. Gannett Peak, Wind River Range, Wyo.

tributaries was largely determined by the extent to which later stages of the continental glaciers penetrated southward.

At the same time, in the Rockies to the west, smaller local glaciers slowly bulldozed their way toward the lowlands, gouging deeper the valley floors and, bit by bit, masses of rock from the adjoining walls. The profound changes these glaciers brought about were an important factor in producing the U-shaped valleys and spectacular peaks that today characterize the Rocky Mountains.

From the front of the continental ice sheet flowed many streams, carrying large quantities of glacial debris. This material was deposited as a gently sloping outwash plain, which now makes up much of the tall-grass prairie region.

CLIMATE

Nature has favored the basin with an exceptionally healthful, invigorating climate. The most distinctive attribute, perhaps, is the predominance of sunshine, both in summer and winter. The average number of sunny days in the northern part of the basin, for example, is higher than in many parts of the "Sunny South."

As is typical of inland regions, the climate of the basin is mainly a continental one of temperature extremes and great irregularity. Cold, dry air masses from the Arctic impart to it a rigorous winter climate. On the other hand, air currents from the Gulf of Mexico—robbed of much of their moisture en route—transmit their heat to the basin in summer. The meeting and interplay of these opposing air masses produce the frequent high winds and turbulent storms so characteristic of the Great Plains.

The region is consistently not only the coldest—temperatures as low as -70 have been recorded—but also one of the hottest of any in the United States. Its pattern of precipitation, too, has varied greatly, producing the drought and dust storms of the early 1930's and the lush years of the 1940's and early 1950's.

The eastern and western boundaries receive considerable added moisture, sufficient in the southeastern corner of the basin to support eastern-type forests.

These climatic conditions directly influence the pattern and type of recreation in the basin. For example, they are not generally conducive to winter sports except along the northeastern and western fringes.

The summer climate over most of the basin, with its low rainfall, high temperatures, and hot, dry



Surface water is a recreation resource of increasing importance. View of Missouri River from Nebraska shore.

winds, makes outdoor recreation activities related to water or a cool mountain retreat especially inviting and popular.

WATER

Water is one of the basin's most vital resources. Underground supplies are the more important economically, and the chief source for varied public, farm, and industrial uses.

It is the type and amount of available surface water, however, that determines, in much of the basin, the degree to which a given area may be suited to diversified recreation use.

In the Missouri Ozarks, abundant surface water is an important resource. Natural streams and many crystal-clear springs are noted for their recreation and inspirational value. The placid beauty of the north-eastern section of the basin, part of the Minnesota lakes region, is almost entirely due to its surface water resources. High mountain lakes and cascading mountain streams, fed by nearby ice and snow fields, play an important part in the scenic and recreation values along the western boundary. The wide expanse of grassland lying between the mountains and the water-blessed areas to the east, however, has but few attractive natural water areas.

Although the combined watershed of the western, mountain-fed streams is but a small fraction of the basin's total area, it contributes nearly one-third of the water that the Missouri empties each year into the Mississippi. Such rivers as the Osage and Gasconade, streams largely supplied by the Ozark springs, account for an additional one-sixth of the Missouri's annual flow.

As they cross the plains, the rivers and streams become muddy and brown. After the June rise, when water from melting snow in the mountains has subsided, most rivers of the plains become nearly dry.

GRASSLANDS AND FORESTS

In a broad swath, from southern Texas through North Dakota and on into Canada, stretches the grassland area of North America, the world's second largest plains region. Nearly half of this great area is drained by the Missouri River.

To the east, in the region of relatively abundant rainfall, grew the tall grasses of the true prairie. In early times, these grasses reached stirrup height. Westward, the vegetation gradually changed and the

short-grass plains emerged. Much of the original grassland has been plowed or grazed, and the few original grassland areas which now remain are highly significant remnants of this great ecologic type.

Though proportionally small in area, the basin's forested lands now provide many recreation opportunities and hold a still greater recreation potential. The oak-hickory forests of the Ozarks add particularly to that region's attractiveness.

The Black Hills of South Dakota, the relatively dry ridges of northwestern Nebraska, the Colorado Front Range, and the Big Horn Mountains of north-central Wyoming are conducive to the growth of parklike forests of ponderosa pine. This type of forest is easily adapted to recreation use.

The Rocky Mountains harbor two principal forest types. The drier zones are the habitat of widely distributed forests of lodgepole pine. These are replaced at the higher elevations by the dense, green, spruce-fir stands characteristic of the Boreal zone. These forest types, when associated with the lush mountain meadows, are among nature's true gems.

Farther up the mountainsides, trees give way to grass and other herbaceous plants. This Arctic-Alpine vegetation, or tundra, in turn succumbs to the barren coldness of rock-bound alpine summits.

WILDLIFE

At the time of early exploration, the basin was the home of countless numbers of wild animals. Although it is likely that the wildlife resources were never so great as portrayed by some writers, all authorities agree that the American bison, commonly but erroneously called buffalo, inhabited the entire basin and numbered in the millions. Fleet pronghorn were occupants of the broad grasslands, while the river valleys provided habitat for innumerable woodland species. In the moist and swampy forests of the northeastern section of the basin and in the uplands to the west, moose were relatively abundant.

Bighorn, now restricted to the more remote regions, formerly were seen throughout the rugged sections of the basin. Herds of American elk roamed the northern plains and the high plains and foothills of the Rockies in the western section of the territory, where mule deer were, and still are, numerous.

Prairie dog towns of great size were found by many early travelers. Some of the remaining colonies in the basin are now protected sites. Occasional observations by early travelers of such animals as the



Mule deer are common residents of the western basin.

wolverine and the fisher, now listed among our rarest mammals, suggest that they were once widely distributed throughout the extent of the basin. Beaver probably occupied most of the streams where food was available, and in the mountain regions in the west they served as a goal for the expeditions of 19th-century trapping parties. The wolf, grizzly bear, and cougar were common in many sections, while the coyote, as today, was ever present.

Impact of the Indians upon the wildlife of the basin, although quite significant at times in specific areas, was not sufficient to cause notable changes in animal population or in their general habitat and range. Twentieth-century occupation and development of the basin has modified this wild picture greatly, either by hunting or destruction of habitat. Many creatures, such as the bighorn, buffalo, and mountain goat, were nearly exterminated, but all species have been saved through careful conservation practices. The more adaptable of the region's wildlife species have adjusted their ways to survive under present conditions. White-tailed deer, for example, are still



Beaver are historically associated with the basin.

sufficiently abundant along stream courses throughout most of the basin to permit regular hunting seasons. This is also true with reference to American elk and mule deer in the west. The pronghorn, also endangered as a species some 70 years ago, has made remarkable recovery in parts of the basin. The coyote has successfully maintained itself despite man's developments, and is a familiar sight in many parts of the territory; but the wolf is extremely rare.

Some species of birds have been extirpated; others have been greatly reduced in number; but most species of the region's birds were generally little affected by man's activities. Many types undoubtedly found improved habitats through establishment of farmsteads with their related tree and shrub cover.

Various species of exotic fish have been introduced into the basin's streams and have brought some changes to the native aquatic community. Adverse effect upon the waters of the basin and fishing potential by industrial waste disposal and other types of stream pollution is a problem which, in many instances, is reaching a critical stage.

The modern traveler crossing the Missouri River Basin may expect to see samples of the region's former wildlife population in various preserves and refuges. Outside of these areas, the observant tourist may catch sight of deer, coyote, and other native creatures. He will also find the population of smaller birds to be almost as rich and varied as it probably was a century ago. Certainly the wildlife resources of the basin are important recreation assets.

HISTORY AND DEVELOPMENT

Stone Age Man

According to present knowledge, man first took up residence in or near the basin at about the time the last major continental glaciers began their retreat from the northern plains, some 10,000 years ago.

The lot of these early residents was one of continuous struggle for existence. In the cold and wet of the glacial era, these primitive, spear-throwing people contended with such potent adversaries as the mammoth and long-horned bison for much of their sustenance.

As the glaciers retreated, there resulted environmental changes wherein modern forms of game replaced some that are known only from fossil remains. As time passed, the climate became progressively warmer and drier to reach a peak of aridity some 3,500 to 4,000 years ago. There is little evidence of any human occupation during this period of desert-like conditions. As the climatic cycle gradually returned to the relative humidity of the present era, migrating Indians again found their way into the basin. Along the fertile river valleys about 2,000 years ago, man began to plant fields, establish permanent homes and villages, and develop tools and pottery. These we find today in our archeological excavations.

The coming of the horse to the plains in the early 1700's greatly affected the Indian's way of life. He not only acquired larger tepees and more equipment, but his increased mobility and "horsepower" enabled him to follow and hunt the migrating buffalo more successfully. Displaced groups from the east, under pressure from the white man, made their way into the plains to add more chapters to tribal histories. Beginning in the early 19th century, successive waves of fur traders, soldiers, miners, and settlers invaded the Indian's old haunts in the northern plains. The metal tools and firearms acquired from these newcomers by midcentury marked the passing of the Indian's Stone Age culture.

Exploration and Settlement

During the 17th and 18th centuries, both France and Spain claimed the Louisiana Territory, which included all the Missouri River Basin. Before the purchase of this land in 1803 by the United States, European explorers penetrated the fringes of the basin.

It remained for the noted Lewis and Clark Expedition, sent out by President Thomas Jefferson, to make the first crossing of the continent, via the Missouri and Columbia Rivers.

During the first three quarters of the 19th century, a number of other explorers and observers traveled over portions of the basin and reported on its various aspects. Among the more prominent of these were John Bradbury, Henry M. Brackenridge, George Catlin, Prince Maximilian, Francis Parkman, Stephen Long, Capt. John C. Fremont, John J. Audubon, Father Pierre Jean De Smet, Lt. G. K. Warren, Capt. William F. Reynolds, and Dr. Ferdinand V. Hayden.

Fur traders, operating out of St. Louis, played an important role as the advance guard of settlement. In 1807 John Colter, believed to be the first white man to enter the area, discovered the thermal wonders of present Yellowstone National Park. In 1813, Robert Stuart of the Astor's Pacific Fur Company discovered the overland route which became the Oregon Trail. After the War of 1812, fur traders extended their operations on the Upper Missouri. Beginning in 1823, when travel on the river was blocked by Arikara Indians, they shifted their activities to the Rocky Mountain region. The beaver trade, which flourished until 1840, was dominated by the American Fur Company.

Meanwhile, settlers and gold seekers advanced westward. The Santa Fe Trail, which began at Old Franklin, Mo., was opened in the 1820's. Capt. B. L. E. Bonneville took the first wagons across the Continental Divide in 1832. The first great migration to Oregon country occurred in 1843. In 1847, Brigham Young led the Mormons to the Great Salt Lake of Utah. And in 1849 the historic California gold rush began. These mass migrations were stimulated by the opening of vast new territories resulting from our war with Mexico and the settlement of the Oregon dispute with Great Britain.

During the 1850's settlers began to occupy what is now eastern Kansas and Nebraska, thus leading to the eventual confinement of the Plains Indians. Settlers and immigrants as well as professional hunters and sportsmen took a heavy toll of buffalo and other wildlife on which the nomadic tribes depended for food. The Indians offered increasing resistance as the vital supply of game declined. To guard the Missouri River and the overland trails, the Government built many forts which achieved frontier fame. Conspicuous among these were Forts Rice, Atkinson,



Certain stretches of the Old Smoky Hill Trail, like this section in central Colorado, are still visible.

Leavenworth, Kearney, Laramie, Riley, Larned, Randall, Sully, and Stevenson.

The destruction of the buffalo and the relentless campaigns of the Army in the 1870's and 1880's finally forced the Indians onto reservations. Today, some 60,000 Indians inhabit 20 reservations. These reservations occupy 23,435 square miles, or 4 percent of the entire basin area that was once the Indian's undisputed domain.

Other factors which accelerated the settlement of the basin were the discovery of gold in Colorado (1859), Montana (1864), and the Black Hills (1874); the enactment of the Homestead Act (1862); and the completion of the first transcontinental railroad (1869).

Development

Whether a particular homestead proved successful may have depended upon the adventurous nature of the settler. The more Western-minded pioneer, pushing into the short-grass plains regions, was disappointed more often than not; for, unknown to him, rainfall over these level grasslands was undependable. The less venturesome frontiersman, settling on the tall grass of the eastern prairie, found for himself a land of milk and honey; the dark-brown prairie

earths, blessed with adequate precipitation, produced bountifully.

Although the plains region proved unsuited to general farming, the settlers found the same grasses that had supported the vast herds of buffalo for centuries to be fully as nutritious for livestock, and the region developed into one of the principal beef-cattle and wool-producing areas of the United States.

Since the basin was first opened to settlement, it has developed rapidly. Almost within a single lifetime it has advanced from land inhabited by mainly nomadic Indians to a state of settlement, economy, and society comparable with the rest of the Nation.

The basin's hurried development, however, has given rise to more acute problems than would have arisen had it grown in a more leisurely manner. Various departments and levels of government, for example, have not been geared to the fast-moving economic pace. This fact is apparent in the park and recreation field. Also, the economic condition of the basin still reflects the disparity in available moisture between the prairie and the plains. Specialized agriculture (grains and livestock) still constitutes the backbone of its economy, and is the paramount source of wealth.

Irrigation, spearheaded by State and private development, has contributed to the economic growth and

agricultural stability of various areas in the basin. Especially noteworthy examples are the Wheatland-Scottsbluff area of eastern Wyoming and western Nebraska; the North Platte-Kearney-Grand Island section of southwestern and central Nebraska; and the Fort Collins-Loveland-Greeley area of northern Colorado.

The Missouri River Project, undertaken in 1945, is having further influence on the lives and welfare of basin residents. Although the major objectives of the program are pointed toward irrigation, flood control, navigation, and power, the reservoirs will in many cases open up important new recreation outlets and provide additional fish and wildlife habitat. Completion of some other reservoirs in this project, however, would result in losses to recreation resources.

The basin's industries, being primarily dependent on agriculture, have been unable to provide a cushion against the vagaries of weather and price disturbances. This has, in many cases, added to the severity of depressions brought about by such disturbances.

The basin's forests have furnished vital necessities to its residents ever since the first settlement. Despite some commercial production, however, the demand for lumber and wood products within the basin itself has always exceeded the output of its forests. These forest areas probably perform their highest function in protecting precious watersheds, and in serving as

much needed inspirational and recreation areas for the Nation's millions.

The discovery and development of new mineral resources and improved methods of processing undoubtedly will further strengthen the basin's economy. Any concentrated, large-scale influx of industry, however, seems remote at the present time.

Income from tourist travel has become increasingly important to the basin's economy since World War II. Today, the new wealth brought into the basin from that source alone totals well over 1 billion dollars each year.

TRANSPORTATION

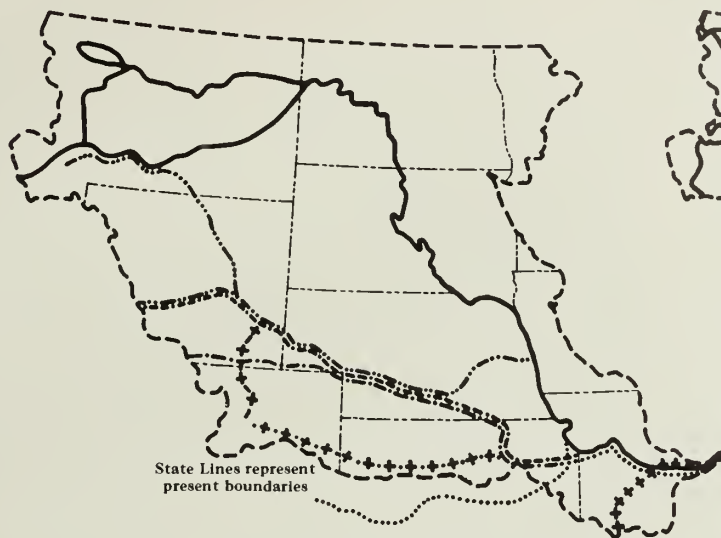
An integrated system of transcontinental highways, railroads, and coast-to-coast airlines spans the basin. These forms of transportation, however, have one feature in common that distinguishes them from the systems of the eastern or western United States—nearly all major travel is via east-west routes. This characteristic, apparent on plate 2, is largely the outgrowth of two important factors: First, the basin's Federal highways of today follow, to a large degree, the old overland trails and the early railroads which were destined for the Pacific; and second, the flow of raw materials and manufactured goods—beginning with the opening of the territory—between the basin and its eastern and western neighbors.

MAJOR TRAVEL ROUTES

YESTERDAY

TODAY

TOMORROW



HISTORIC TRAILS

TODAY'S HIGHWAYS

- | | |
|-------------------------|------------------------|
| — Lewis and Clark Trail | — Major Highways |
| -+--+ Trail (unnamed) | ++++ Ozark Trail |
| — Bozeman Trail | ·+·+· Smoky Hill Trail |
| ····· Santa Fe Trail | — Overland Trail |
| — Mormon Trail | ·-·-· Oregon Trail |



PROPOSED SYSTEM OF INTERSTATE HIGHWAYS

○ State Capitals in Missouri River Basin

The People

HOW MANY PEOPLE

All park and recreation planning has one ultimate goal, the use of recreation resources for the social and economic benefit of people now and in the future. The consideration of people, then, is basic to any successful plan. It concerns such factors as how many people there are and how many there will be in the foreseeable future; where they live now, and where they are likely to be living in the years to come; and what they do and would like to do for recreation.

With about 20 percent of the total United States land area, the Missouri River Basin in 1950 supported only some 5 percent of the total population—7,699,000 people. From Bureau of the Census forecasts based largely on past trends, together with the consideration of various foreseeable factors that may influence future growth, it appears that this number will increase some 22 percent, by 1980, to nearly 9½ million people.

Plate 3 shows the expected rates of population growth for the basin and for the United States as a whole. The total United States population is expected to increase at a much more rapid rate than that within the basin. Therefore, an ever-increasing num-



Relaxation.

ber of visitors can logically be expected to vacation within the basin, or to pass through it. This transient population will want to use the basin's recreation resources.

WHERE THEY LIVE

Basinwide Distribution

Resident population is distributed quite unevenly in the basin. Except for the Denver metropolitan area and a few counties along or near the eastern boundary, it is mainly concentrated in the more industrial southeastern corner. Further, nearly one-fifth of the basin's population resides in its three major urban centers—Denver, the Kansas Citys, and Omaha-Council Bluffs. Elsewhere, the Great Plains and the mountain regions remain relatively thinly populated. Population distribution and the general pattern of density for the basin are graphically illustrated in plate 4.

The future population distribution probably will be much the same in 1980 as it is today, but with the probability of more rapid growth, proportionately, in and near the metropolitan areas, particularly the Denver area. Essentially, today's most heavily populated sections of the basin will still support much of the resident population.

Urban-Rural Population

A definite shift to urban living is taking place in the basin, as in the rest of the Nation. In 1940, only 38 percent of the basin's population lived in cities or urban communities of 2,500 or over; but by 1950, this percentage had increased to 45. Over 40 percent of the urban segment is concentrated in the three metropolitan areas.

While the present urban trend undoubtedly will continue, a number of variable and indeterminate factors make difficult any accurate long-range predictions. It appears reasonable to assume, however, that over 60 percent of the basin population will be classified as urban by 1980.

Recent studies by the Bureau of the Census indicate that virtually all of the civilian population increase in the United States between 1950 and 1955 occurred in the places that were classified in 1950 as standard metropolitan areas. This trend may well continue. Consequently, it is expected that the smaller towns will continue to grow at a much slower

rate than will the metropolitan areas during the next 25 years.

The known and projected urban-rural compositions are shown, on a percentage basis, in plate 3. Two major factors, however, may even further increase the urban segment. They are: (1) Industrial expansion combined with the present trend toward its decentralization; and (2) the new definition for urban areas as adopted by the Bureau of the Census in 1950, which includes all incorporated or unincorporated places of 2,500 or more persons and the densely settled urban fringe around cities of 50,000 or more. Under the previous definition, upon which plate 3 is based, only incorporated places of 2,500 or more, plus certain special cases, were included in the urban count.

WHAT THEY DO AND WOULD LIKE TO DO

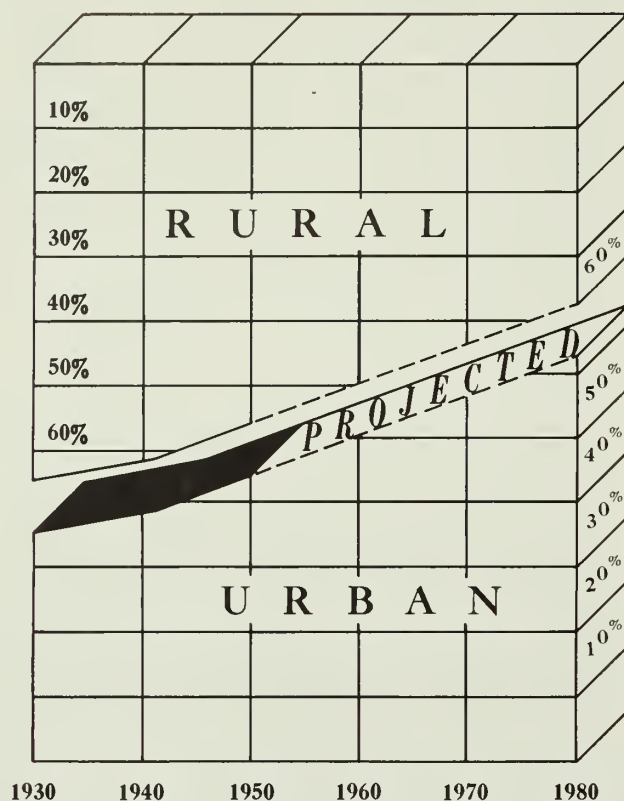
It is a well-known fact that such recreation pursuits as picnicking, fishing, and swimming have long been popular. This has become particularly evident in the last decade when, prompted by such factors as increased leisure and prosperity, the demand has caused general overcrowding and overuse in established parks and recreation areas.

Little actual research, however, has been done in the way of collecting and assembling background data of this nature, and there are, as yet, no consistent sources of information that can be used as a firm basis for recreation planning.

As an exploratory step, and with this basinwide study in mind, the National Park Service in 1952 contracted with Iowa State College to conduct a survey of outdoor, nonurban recreation habits, desires, and needs of the 98,000 residents in the Niobrara River Basin of northern Nebraska. The Niobrara, part of the Missouri watershed, was selected as typical in many ways of the plains portion of the Missouri Basin and also because extensive water-development studies, involving a series of reservoirs, were under way at the time by Federal agencies.

In addition to obtaining information on the recreation characteristics of the residents as a whole, the study was pointed specifically toward a comparison of the habits, desires, and needs of the urban and rural population groups. Accordingly, the study area limits were expanded slightly to include the towns of Alliance, Chadron, and O'Neill, Nebr., plus Yankton, S. Dak. All are under 8,000 population.

POPULATION TRENDS IN THE BASIN



RURAL AND URBAN SEGMENTS

ACTUAL AND PROJECTED

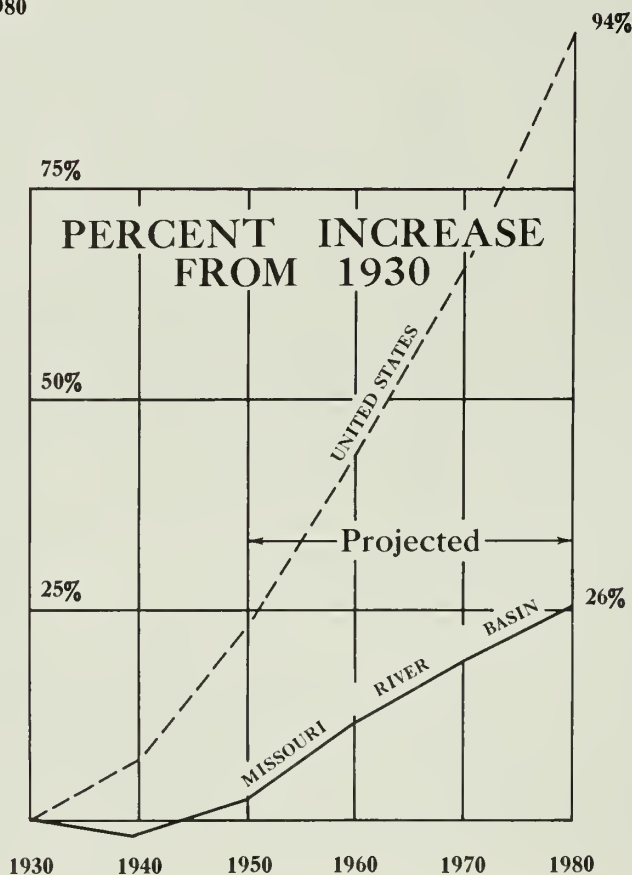
1930 - 1980

GROWTH RATE ACTUAL AND PROJECTED

1930 - 1980

| YEAR | UNITED STATES | MISSOURI RIVER BASIN |
|------|---------------|----------------------|
| 1930 | 122,775,000 | 7,500,000 |
| 1940 | 131,669,000 | 7,430,000 |
| 1950 | 150,697,000 | 7,699,000 |
| 1960 | 177,800,000 | 8,410,000 |
| 1970 | 204,600,000 | 8,906,000 |
| 1980 | 238,400,000 | 9,424,000 |

Bureau of the Census data

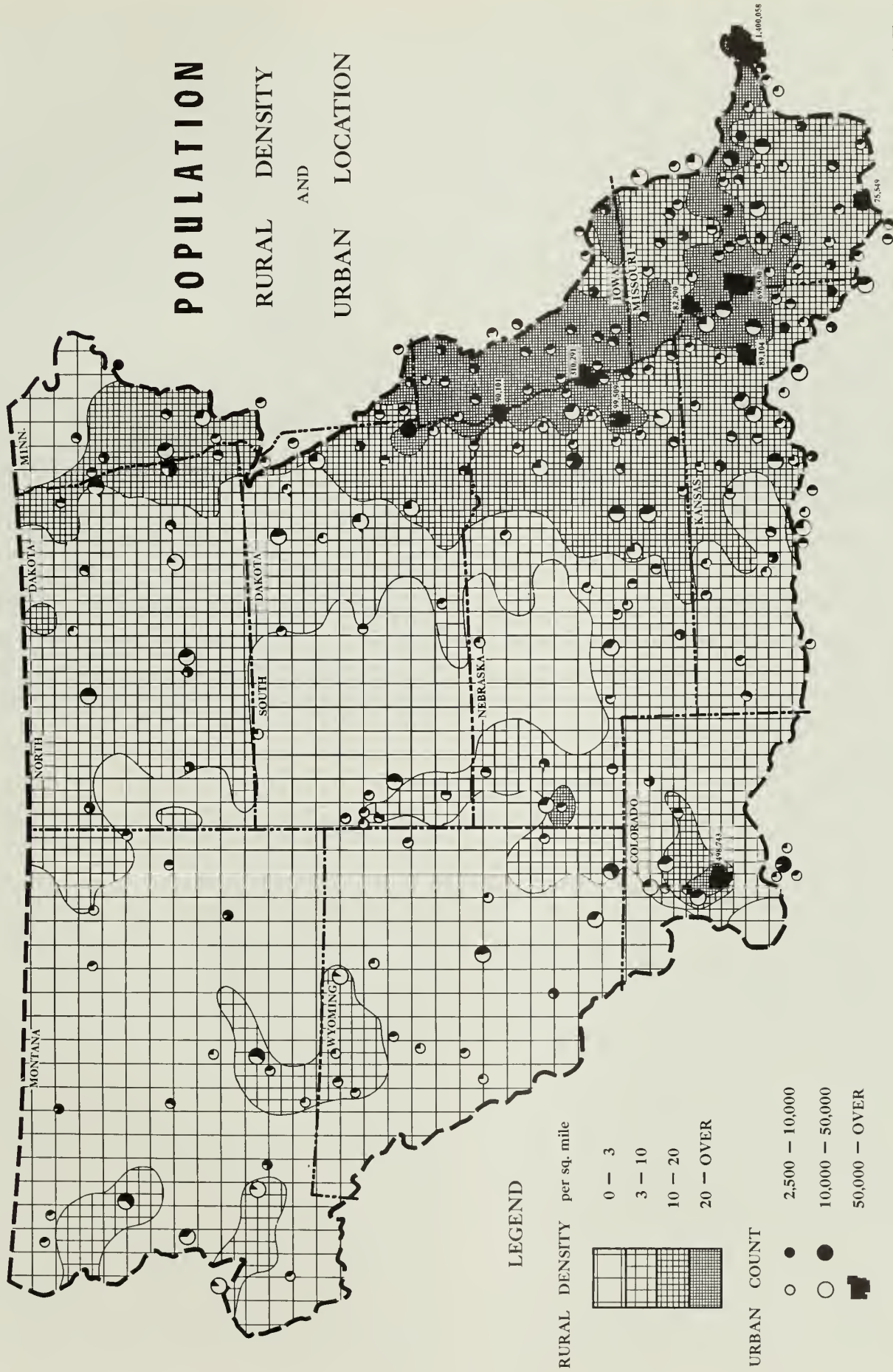


POPULATION

RURAL DENSITY

AND

URBAN LOCATION

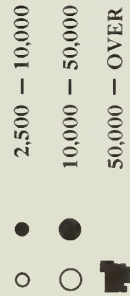


LEGEND

RURAL DENSITY per sq. mile



URBAN COUNT



Bureau of the Census, 1950 Census



Reliving the experience of the Lewis and Clark Expedition at the Missouri River headwaters.

The study produced significant and more than usually reliable information, since it was conducted by trained interviewers on a scientifically prepared sample basis. The field work was carried out mainly during the summer of 1953, and the results were assembled in 1954.

The broad findings of the Niobrara study, as they relate to present recreation habits, are summarized as follows:

1. Seventy-six percent of the people interviewed took part in at least one recreation activity.
2. Fishing, picnicking, pleasure driving, hunting, swimming, hiking, riding, and photography were the eight most popular activities, in that order. Moreover, they accounted for some 90 percent of all recreation activity.
3. Perhaps partly because of the lack of facilities, only 14 percent of the total recreation activity took place in established public parks or recreation areas.
4. Urban people made use of the established areas about three times as often as did the rural groups, and they spent more money on recreation pursuits, not including vacations.
5. Basically, the study showed that the urban and rural residents seemed to have about the same tastes as to recreation activities, but that the urban residents

participated nearly twice as often as did their rural neighbors.

6. Twenty-five percent of the urban residents were non-participants, as compared with only 18 percent of the rural residents. Thirty percent of the people living in incorporated areas under 2,500 population, a segment of the rural group, did not participate. This latter variation from pattern was attributed to the relatively large number of elderly and retired people in these small communities.

7. The presence or absence of youth in the household appeared to be a primary, if not the deciding, factor in the variety of activities in which the adults engaged. The adults in families with youth—members under 18—took part in about one and one-half times as many kinds of activities as did those in families without youth.

8. Recreation activity decreased sharply with age. Ninety-four percent of the people from 18 to 30 took part in one or more activities; 75 percent of those from 50 to 60; and only 42 percent of people 70 and over.

9. Eighty-five percent of the adults in the \$5,000 and over income bracket engaged in an average of two activities. The average dropped steadily to less than one activity for adults with less than \$600 income. Only a little more than one-fourth of this group took part in activities.



Hunting.

The survey further disclosed the following desires on the part of the Niobrara residents for other recreational activities:

1. Activities for which more opportunities were desired were—in order of preference—fishing, picnicking, hunting, swimming, and pleasure driving.

2. Nearly half the people interviewed expressed a desire for opportunities for activities in which they did not engage, in the following order: Boating, fishing, swimming, picnicking, hunting, horseback riding, skating, and camping.

3. More than three-fourths of the people interviewed desired the type of recreation opportunities afforded by lakes and reservoirs. Here, again, a significant difference was disclosed in urban and rural habits: 42 percent of the urban residents anticipated frequent weekend use, while only 22.5 percent of the rural group anticipated such use. Most anticipated use at reservoirs was from within a radius of 50 miles, dropping off quite sharply up to 80 miles, beyond



Skiing, such as at the Ski Bowl, Bridger Mountain State Park, Mont., is a popular sport in the mountains.

which the expected use was minor. About one-third of the people interviewed expected to take an annual vacation at established reservoir areas.

The specific findings of the Niobrara study apply statistically only to that basin. However, the findings, in general, could serve as planning guides in nearly any section of the basin.

Activities found to be popular in the Niobrara are enjoyed by people whether they live in the Ozarks, the lake region, the plains, or the mountains.

Regionally, special activities may be popular, such as snow sports in the mountains, boating on reservoirs and in the Minnesota lakes region, float fishing in the southeastern part of the basin, and ice fishing on reservoirs and natural bodies of water. Dude ranching incorporates many of the popular activities, including camping, as the Western way of enjoying the out-of-doors.

Recreation habits in connection with larger urban populations were explored in Amarillo and Texarkana, Tex., and in Tulsa, Okla., through an informal, voluntary-reply type of survey conducted by the National Recreation Association in 1952. The most popular activities of these groups were found to be picnicking, sightseeing, swimming, fishing, and visiting historic sites and museums, in that order. Boating and camping in various forms also were listed in the top-ranking group of activities. The importance of water areas developed for recreation use was indicated repeatedly in the survey returns. This survey, as did the Niobrara study, disclosed that youth in the household is a determining factor in the variety of activities in which the adult members of the family engage.



The Recreation Resources

Recreation resources might be called the "raw materials" of outdoor recreation. They are those natural and cultural features which appeal to the human senses and improve the physical and spiritual well-being of the individual.

At first thought, the term "recreation resource" brings to mind opportunities for activities such as picnicking, boating, fishing, hunting, and camping. In the more fundamental sense, however, the non-urban recreation resources with which we are dealing are much more than suitable settings for physical activity; they appeal to all or any number of our senses. In the long run their value to an individual and their significance to a nation lie in those qualities which provide mental stimulation, inspiration, satisfaction, and appreciation of events that have gone before. The mountain meadow, for example, is more than a setting for physical activity; its chief recreation value is derived from an array of wildflowers, the sound of a nearby stream as it leaps and splashes its way to the valley below, the sight of a doe and her fawn as they quietly traverse the upper end of the meadow; the clean fragrance of encircling stands of spruce and fir; the coolness and crispness of the oncoming night; and the special indefinable qualities of a wild setting.

So, too, a quiet stroll over the grounds of yesterday's frontier outpost or a tour through an antique grist mill enables one to reconstruct and, in some degree, relive the adventures and varied experiences of our early settlers. Telling the story of our cultural heritage through such means develops in Americans of all ages an understanding of our country's background and history and brings to life a sense of national pride.

Outstanding archeologic sites tell something of early man's struggle on this continent and his various cultures. Paleontologic sites depict prehistoric forms of plant and animal life. The many differing land forms in the basin stand as mute but vivid evidence of the geologic events which are, in large part, responsible for the present scenic and biologic values.

All of these are significant resources—the basic ingredients of parks and recreation areas. Not always, however, are they adaptable for recreation use. In addition to their inherent value, they must have sufficient appeal to arouse general public interest. In many instances, perhaps because of their limited or specialized nature, the features may be of purely academic interest and hence unsuited to general public use and enjoyment. However, if they are located in attractive natural surroundings, such historic, archeologic, or scientific resources might well be incorporated into a larger park or recreation area. Some, on the other hand, may be of sufficient public interest to merit preservation and interpretation regardless of their setting.

The Missouri River Basin has many natural and cultural areas or manmade features which are, or can become, units of a balanced basinwide and nationwide park and recreation system.

NATURAL RECREATION RESOURCES

The most fundamental recreation resources are those supplied by nature in climate, geologic character, and plant and animal life, all of which provide vital interest and scenic quality.

The basin's natural recreation resources are of four major geographic types: The mountains, including the Rockies along the western border and the Black Hills of South Dakota; the western portion of the Minnesota lakes region; the plains and prairies; and the northern part of the Missouri Ozarks. Plate 5 shows



The western basin is a region of scenic superlatives, and attracts vacationers from all over the world. Pictured is Beartooth Lake in northwestern Wyoming.

the location and general distribution of these four types.

The Mountains

The Rocky Mountains section of the basin, extending from central Colorado through Wyoming and Montana to the Canadian border, contains some of the Nation's and the world's choicest scenery and most inspiring natural wonders. It is a region of scenic superlatives, where the magnitude and majesty of the snowcapped Rockies, with their glaciers, alpine meadows, geysers, clear rushing streams, and back-country lakes, set off by green forests of pine, fir, spruce, and occasional birch and aspen, provide a tourist and vacation magnet almost without peer. Perhaps no other region of comparable size offers more in the way of sheer topographic grandeur and varied opportunities for outdoor recreation.

The Black Hills, all the more imposing because of their central location in the plains, also possess unique recreation resources. These forested granite moun-

tains contain Harney Peak, the highest point east of the main Rocky Mountain Range. Yet they are easily accessible to the average vacationer and perhaps more easily ascended by the novice mountain climber than would be expected in mountains of such height. Here, there is ample opportunity to study varied and spectacular rock formations, a variety of interesting minerals, and a wealth of native plant and animal life.

The dynamic, continuing story of the earth's geologic processes is everywhere vividly illustrated in the mountains and represents a major facet of their appeal. Within the basin portion of the Rockies, glacial erosion has produced some of America's most dramatic mountain scenery. Outstanding examples are preserved in Glacier and Rocky Mountain National Parks. Other prime examples are seen along the Front Range, and also in the major outposts of the Rockies—the Snowy Range, Absaroka, and Big Horn Mountains.

Magnificent examples of dome mountains, caused by the forcing of molten rock into sedimentary layers

MAJOR TYPES OF NATURAL RECREATION RESOURCES



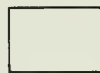
L E G E N D



Minnesota Lakes



Mountains



Plains and Prairies



Ozarks

and by other forms of volcanic intrusion, are seen in the Judith and Crazy Mountains of central Montana and in the Black Hills. The world-famed Devils Tower, a National Monument in northeastern Wyoming, is a unique product of such volcanic forces.

While surface and near-surface volcanic features are rare in the mountain region, many of those which do exist are outstanding. The geysers and other thermal features of Yellowstone, for example, are known the world over. Giant hot springs, such as those at Thermopolis, Wyo., are due to past volcanic action. The lava beds of the Yellowstone Plateau and the Absaroka Range are very thick, providing clear evidence of the ages of time through which active volcanoes existed in the region that is now Montana, Wyoming, and Colorado.

Most of the rocks that are exposed in the mountains within the basin are of sedimentary origin and represent many geologic periods. Notable are the ancient Precambrian series exposed in Glacier National Park, while innumerable exposures of later sedimentary rocks occur elsewhere in the mountain region.

Examples of folding and faulting of rock strata are also abundantly distributed. The Lewis Overthrust—evidences of which are best seen in Glacier National Park and the Bob Marshall Wilderness area in Montana—is a famous phenomenon, treated in nearly all geology textbooks. Intricate folds of sedimentary rocks are exposed in the Flatirons of Colorado's Front Range, the Wind River Canyon of central Wyoming, and the hogbacks that encircle the Black Hills.

In the higher mountains are almost numberless rock-bound lakes, the result of alpine glaciation. Notable examples occur in Glacier and Rocky Mountain National Parks, and in Wyoming's Medicine Bow, Wind River, and Big Horn Mountains. Yellowstone Lake, due in part to such glacial processes, is one of the great scenic features of Yellowstone National Park.

Erosion by running water has contributed numerous scenic wonders to the mountain region. Uncounted mountain streams add their beauty of sight and sound as they continue cutting their channels deeper, searching out and joining others to form tributaries of the Missouri. Canyon erosion, as a geologic process, has many outstanding examples, such as the Canyon and Falls of the Yellowstone River in Yellowstone National Park and the picturesque narrows of the Big Thompson River in Colorado. Classic ex-

amples of stream piracy, wherein one stream captures the headwaters of another, exist in the Belle Fourche River north of the Black Hills, and the Wind River-Big Horn River system in Wyoming. Remarkable cases of superposed drainage, where a stream maintains its course across an adverse structure, may be seen in the canyon of the Big Horn River south of Hardin, Mont., or along the course of the North Platte in Wyoming. Here and there throughout the basin, and notably in the Black Hills, are numerous caverns and caves, the result of geologic erosion by underground solution.

Of no less vital importance in the total recreation picture of the Rocky Mountains section of the basin are the biologic resources. Especially notable are the interesting forms of wildlife. Natural ranges have been reduced by advancing civilization, and



Lewis and Clark Caverns in Montana are the result of erosion by underground solution.

some animal species which formerly had a wider distribution are now found only in the highlands. Such a species is the rare grizzly bear, which has retreated to the most wild and remote mountain sections. The grizzly population in the basin is almost entirely confined to Montana's Bob Marshall Wilderness Area and the limits of Yellowstone and Glacier National Parks. Similar is the fate of the almost vanished wolverine, which finds the rugged back country of Glacier National Park a favored wilderness retreat. Almost the entire breeding grounds of the beautiful, rare, and graceful trumpeter swan in the United States are in the Red Rocks Migratory Waterfowl Refuge in southern Montana and in nearby Yellowstone National Park.

Some of the largest herds of big-game animals are found along the eastern slope of the Continental Divide in Montana and Wyoming. The high-noted bugling of the American elk, or wapiti, on an autumn evening is an exciting and unforgettable experience.

Moose, too, are common to the mountains of Wyoming and Montana, although in much fewer numbers than the elk. The alert traveler, however, has a good chance of seeing this animal feeding along marshy streams and swampy lake shores.

The mountains harbor abundant Western mule deer, and lesser populations of the smaller white-tailed deer and antelope. Together with the elk,

these species provide the bulk of big-game hunting in the region. Equally important, when seen in their natural setting they highlight many a vacation.

Black bears, also typical forest dwellers, are much more common to the region than the grizzly. Those of the National Parks are widely known and, unfortunately, not so widely respected as potentially dangerous. They do provide great recreation value for park visitors.

Limited numbers of buffalo, historically plains inhabitants, and at one time threatened with extinction, also exist in the mountains. Within the basin portion of the Rockies, they are largely confined to only a few areas such as Yellowstone National Park and the Big Horn Mountains in the Crow Indian Reservation. Herds of buffalo, as well as elk, pronghorn, and deer, are part of the scene in Custer State Park and Wind Cave National Park in the Black Hills.

Among the rarer large animals of the mountains are the bighorn, or Rocky Mountain sheep, and the mountain goat. They inhabit the craggy country along the Continental Divide. A few, successfully introduced, are also found in the Black Hills. Although they can often be seen from a distance, the usual rugged habitat of these animals makes them almost unapproachable. It is indeed a fortunate "shutterbug" who finds one within camera range.



A few mountain goats are present in the Black Hills.



Blue columbine.

Numerous forms of smaller animals also populate the mountain region and add much wildlife interest. Most of them can be readily observed, with patience and a little knowledge of their habits. Among the more common are the coyote, badger, muskrat, porcupine, marmot, snowshoe hare, cottontail, and pika or rock rabbit. Squirrels and chipmunks add charm to nearly every established park or campsite, while the more secretive beaver and his dam-building activities hold particular fascination for forest visitors. The mournful howl of the coyote still preserves the tradition of the Old West for the visitor.

Less common, and more elusive, are the lynx, bobcat, and pine marten. Rare, indeed, is the sight of a cougar or timber wolf.

The birdlife of the mountain region is yet another facet of its natural recreation resources. The abundance and rich variety of the birds are well indicated by the fact that over 250 kinds have been observed in Rocky Mountain National Park alone.

Many of the more common mountain species include the Canada jay, Clark's nutcracker, gray-crowned rosy finch, white-tailed ptarmigan, raven, mountain chickadee, and various ducks, hawks, grouse, owls, and woodpeckers. The sight of a pair of golden eagles never ceases to thrill, and even the oft-berated magpie is an attractive and appreciated part of the western atmosphere for nearly every tourist.

Evergreens dominate the forest scene and are a major attraction in themselves. Timberline, characterized by stunted and disfigured trees, is a biologic phenomenon which has universal appeal to the general public; newcomers to the mountains exclaim at finding themselves in a spot too rigorous for forest growth. The region offers many such spots that are available even to the motorist.

A vast array of flowering plants is found in the differing environments of the forests and alpine meadows of the mountain region. Masses of flowers, running the gamut of reds, blues, and yellows, provide a sight long to be remembered by the visitor in early and middle summer.

These attractions are representative of the natural resources which, with the cool summer climate, provide opportunities for much enjoyment and many varieties of outdoor activities in the mountain region. The region is ideal not only for saddle and pack trips, hiking with back-packs, and hunting, but also for such family-type pursuits as camping, picnicking, boating, hiking, sightseeing, and nature study. The clear, unspoiled mountain streams afford some of the world's finest trout fishing. The region's winter climate and abundant snowfall afford opportunity for active winter sports and bring a new beauty to the landscape. Sightseeing is an increasingly popular winter activity.

The general Rocky Mountain region lends itself to the establishment of large parks and recreation areas of different and complementary types, ranging from those set aside primarily to preserve outstanding natural areas to those planned primarily to provide active recreation opportunities.

The Plains and Prairies

Throughout the Great Plains, the dominant natural recreation resources are the Missouri, its tributaries, and the few natural, usable bodies of water that exist within that part of the basin. The Missouri itself



Bottomland cottonwoods.

is scenic as it crosses the plains of Montana, the broad grasslands of the Dakotas, and continues on past the wooded bluffs of Nebraska, Iowa, and Kansas. Panoramic views of the sinuous watercourse, with its sandbars, eddies, and its fringes of bottomland cottonwoods, willows, and other growth, are available at almost any point except through the Dakotas where four large impoundments are replacing several hundred miles of river valley with manmade lakes. Its scenic qualities are given added emphasis by its marked contrast with the surrounding open plains. Essentially the same picture is repeated, on a smaller scale, along the tributary streams.

The prairies and plains, far from being the unrelieved expanse of flatness they are commonly considered, often are of a rolling and even rough character. Here and there are steep bluffs and stark buttes, so much the more scenic for their relative isolation. Many localized areas exist in each State which are of very definite recreation value and interest. Usually such areas are associated with water or with scenic or topographic variations.

There is much also of geologic interest. Former channels of the Missouri and its tributaries that were abandoned as a result of the Ice Age continental glaciers are to be seen, as, for example, Shankin Gap in Montana.



The prairies and plains often are of a rolling or rough character. Photograph taken in Ellsworth County, Kans.



Buffalo, once dominant plains inhabitants, are now confined to protected areas.

The rivers, in many places, have exposed the bedrock of the plains region. Niobrara River limestones in the vicinity of Valentine, Nebr., offer fine examples of such stream action. Some tributaries of the major streams have cut rapidly into the soft, layered Tertiary clays, producing colorful and picturesque badlands and tables.

Along the lower Missouri there are occasional oxbow lakes, caused when a bend in the river is cut off by its own erosional force and isolated by silting of the channel ends.

The ancient deltas and beaches associated with prehistoric Lakes Agassiz and Souris provide interesting features in those regions and are sufficiently notable to be treated in most geology textbooks.

An outstanding example of windblown deposits in the central basin is the Sandhills region of north-central Nebraska, one of the world's largest underground water reservoirs. Extensive loess deposits in Nebraska, Iowa, and the Dakotas produce steep-walled slopes whenever they are exposed by erosion or man's excavations. These deposits remind us of the centuries when this was arid desert country.

Many minor "natural curiosities" within the plains—balanced rocks, hoodoo formations, rock arches, and hogback ridges—are due to erosion and the weathering of rocks of differing altitudes, hardness, or other characteristics.



The pronghorn is an interesting and beautiful creature.



The flickertail.

Characteristics of Great Plains wildlife distinguish it, as a group, from the forest wildlife. Exceptionally keen eyesight, for example, is common to nearly all grassland dwellers, and ability to make observation from vantage points serves the same protective function as does secretive retreat for forest species.

Communal or gregarious characteristics, too, seem more common among the animals of the plains and prairies, as seen in the prairie dog towns and in the former large herds of buffalo and pronghorn. In the plains region, the once dominant buffalo is now confined to refuges. Pronghorn populations, however, have again increased to the point where they now occupy important segments of their former range. These interesting and beautiful creatures are at their best on the western plains that are their natural home, and numbers of them often can be seen from trains and transcontinental highways.

Although their range is not restricted to the plains, various other forms of wildlife are more or less common to this region and, like the pronghorn and prairie dog, are historically associated with it. The most representative among this group is the coyote, closely followed in popular fancy by the jackrabbit. The badger and gopher, too, are widely distributed, while the beaver and muskrat inhabit many of the shallow ponds and smaller streams.

White-tailed deer are common in the bottom-land brush and timber, but they often extend their range for some distance onto the surrounding bluffs and plains. The mule deer, in the western Great Plains, are abundant, too.

Overhead, spring and autumn, waterfowl wing



In early spring the pasqueflower tinges the northern prairie with lavender.

their way in orderly groups toward unseen goals. The Missouri Basin lies entirely across the central flyway and overlaps into the western part of the Mississippi flyway, two of the four main bird migration routes of North America; while North Dakota, in particular, is the major breeding grounds of waterfowl in the United States.

In addition to waterfowl, countless upland and water-loving birds summer in the grasslands region or use it during the spring and autumn migrations. Also, the prairie potholes and marshes in the northern plains are used by shore birds as breeding areas.

The ring-necked pheasant, an exotic introduced some years ago, has made itself at home over the entire plains and prairies. The enjoyment this bird provides to thousands of hunters each year is well known.

An amazing variety of both birds and flowers lends further biologic importance to the plains and prairies from the recreation standpoint. More than 300 varieties of game and song birds and well over 450 species of wildflowers are native to parts of the basin's plains and prairies.

The plains and the prairies have their own special charm and, while outdoor recreation is perhaps more limited in any localized area, in the aggregate they provide opportunities for almost all activities other than those specifically related to the mountains. Winter sports in the usual sense are not practical in this region because of extreme and highly variable weather conditions.



The lakes of the Minnesota region are a result of glacial action.

Minnesota Lakes Region

A broad belt of the Minnesota lakes region lies within the basin and fringe zone.

The northern half of this semicircular belt of lakes is within the original area of pine, spruce, and balsam fir forest that, until the era of lumbering and grazing, covered nearly the entire northern part of the State. The southern half skirts the edge of this once vast evergreen forest and overlaps hardwood forests of maple, beech, basswood, white and burr oak, ash, and butternut.

The thousands of lakes that dot the region are the result of several forms of glaciation. Some, for example, are due to morainal dams. Others fill depressions that were either scooped out by the ice or left by immense ice blocks, now melted, about which sediments were deposited. Each lake has a character all its own. Some have clearly defined shorelines, others a marshy gradual change from water to land; some have gently sloping sand beaches ideal for swimming, and still others meet land abruptly with deep reflecting shadows.

The hills, too, are largely of glacial origin, and are composed of debris dumped and distributed by continental ice sheets. Erosion by running water or the persistent action of the wind has carved others.

Buffalo and elk were generally common throughout Minnesota but quickly disappeared with the arrival of the settlers. The pronghorn and the grizzly, both

of which roamed the western part of the State, have met with a similar fate. The only large mammals now found in numbers in this part of the basin are white-tailed deer, black bear, and moose. Even deer, however, have been forced largely into the northern half of the State, while moose are restricted almost solely to the northern border.

At Upper Red Lake, just inside the basin, is a remnant herd of woodland caribou, or North American reindeer. This northern animal is now found nowhere else in the basin, nor perhaps in the United States.

The more familiar and easily observed of the smaller animals are squirrel, beaver, raccoon, badger, skunk, porcupine, red and gray fox, and the gopher, from which the State derives its well-known nickname. Rarer and more wary are Canada lynx, bobcat, timber wolf, and otter.

The region's woodlands and thousands of lakes, ponds, and marshes are ideally suited to a variety of birdlife, particularly water birds. Cultivation and land drainage have, unfortunately, greatly reduced the bird population in numbers, and some species are now quite rare or have been forced to seek other homes. While some birds, such as spruce grouse, Canada jay, and northern raven, inhabit only the coniferous forests, the general region also serves as a meeting ground for those of various climes. There are, for example, meadowlark, Brewer's blackbird, lark bunting, and burrowing owl, while eastern



The moccasin flower.

cardinal, mockingbird, Carolina wren, and Louisiana waterthrush may be found in the southern areas.

There is a wide range of flowering plants, with great variation in species from north to south. Spring flowers of the hardwood areas are particularly abundant and begin to bloom almost before the last snows have melted. They include such typical woodland flowers as hepatica, anemone, bellwort, Dutchman's-breeches, bloodroot, trillium, and wild geranium. In autumn, the open hillsides are covered with asters, goldenrod, and other plants.

The coniferous forest supports pink-flowered dwarf kalmia, white-flowered thimbleberry, and prostrate trailing arbutus and wintergreen.

The aquatic vegetation of lakes and swamps is also a distinctive recreation resource. The more shallow bodies of water are literally covered with yellow and white waterlilies, tamarack swamps harbor pitcher plant, twinflower, swamp azaleas, and the rare pink-and-white ladyslipper orchid.

These are the natural recreation resources which impart to the Minnesota lakes region its outstanding and distinctive attributes. Its cool summer climate is a welcome relief to vacation-seeking visitors who

come from all surrounding States and many more distant ones too. They come to enjoy a secluded campsite, resort facilities which range from deluxe accommodations to the very primitive, or to occupy summer cottages. Residents, too, take full advantage of Minnesota's varied recreation opportunities. Recreation, however, is by no means limited to the summer season; cold winters with deep snows are ideal for winter sports.

The Ozarks

The Missouri Ozarks bring to mind the peaceful beauty of deep valleys and wooded hills, resplendent with flowering dogwood and redbud; restful float fishing in some clear, springfed stream; or, perhaps most vividly of all, the easy pace of Ozark life. In contrast to urban tensions and confinement, such an atmosphere marks the Ozark country as one of the Nation's delightful and relaxing vacation regions.

The central and northern third of the Missouri Ozarks lie within the basin, while the heart of the region adjoins it on the south. Water is not only the major scenic and recreation resource of the area but is also associated closely with the history and traditions of the Ozark people.

The principal rivers in this section of the basin are the Osage, with its huge reservoir, Lake of the Ozarks; and the scenic Gasconade, one of the few natural, unspoiled streams remaining in the basin. The smaller streams also have quiet charm and much the same scenic character as does the Gasconade. The tops of the steep rock bluffs that border the Gasconade and Big Piney, a tributary, offer fine scenic views of the meandering valleys below.

Within the Ozarks of the basin, large natural springs flow into the rivers and give them their clear, blue-green color.

Waterpowered gristmills were built at nearly every spring, as well as on some of the smaller streams, during the early days of statehood. In addition to grinding cornmeal and flour, they served as meeting places for the exchange of news during a period in our history when "going to the mill" was a necessity and a social event. The historical associations of the few old mills that still remain further enhance the region's recreation value and appeal.

Through ages of time, water has honeycombed the soluble limestones and dolomites of the central Ozarks with caverns and caves. The slow but constant dripping of ground water from the cave ceilings

has built up intricate formations of stalactites, stalagmites, and similar deposits. Most of them are beautifully marbled cave onyx. Many caves show evidence of long occupation by early man.

In addition to white-tailed deer, the early settlers encountered other large forms of wildlife that were common to various areas throughout the basin—elk, black bear, cougar, and wolf. The buffalo, too, frequently extended its range into the lower prairie-type sections of the Ozark hills. Except for deer, which continue to thrive, these larger animals are now gone, but the hills are well populated with game such as the smaller red fox, raccoon, opossum, fox squirrel, and cottontail rabbit.

Wild turkey, quail, prairie chicken, passenger pigeon, and eastern ruffed grouse were once so numerous that they provided a staple food supply for Indians, explorers, and early residents. Today, only quail, or eastern bobwhite, exist in appreciable numbers. In the last few years, however, the wild turkey has been reintroduced, and under careful protection is rapidly increasing in some areas.

The Ozarks also benefit from the Mississippi waterfowl flyway. Canada geese and substantial numbers of ducks come into the region, to the satisfaction of sportsmen and wildlife enthusiasts.

Fishing, too, is a well-known and outstanding Ozark attraction. The clear streams of this region, with alternating pools and swift water, are noted for their largemouthed and smallmouthed black bass.

A variety of eastern songbirds, as well as several southern varieties, are found in the territory. There are also occasional snipe, loon, killdeer, and several varieties of hawks and owls. The majestic bald eagle is frequently seen.

The great abundance, rich variety, and beauty of Ozark wildflowers impress even the casual visitor, and the autumn color of hardwood forests is a special attraction.

The most popular nonurban recreation pursuits in the Missouri Ozarks are sightseeing, "just plain relaxing," visiting historic sites, fishing, swimming, and boating. The vacation season is longer in this southern part of the basin, spring and autumn being particularly pleasant. Various recreation activities are enjoyed throughout the year.

HISTORIC RESOURCES

The basin has a wealth of sites at which broad themes of regional and national history may be



The steep rock bluffs that border the Big Piney offer fine scenic views of the valley below.

interpreted. Some of these, such as pioneer architecture, military posts, and pioneer industries, may be best interpreted and most fully enjoyed at the actual sites. Other phases, including certain aspects of overland migration and pioneer life, may best be told through museums and interpretive devices. Many sites are located on or near major highways—progeny of the historic overland trails—and so lend themselves easily to public use. Others, like the Bannock Battlefield near Clarks Fork, Wyo., are too isolated to receive much public use. Certain themes, for example the period of Indian Wars, tend naturally to stimulate wide visitor interest, as at Custer Battlefield National Monument, Mont.

The historic themes discussed below follow the terminology developed by historians.

Exploration and Fur Trade

A number of landmarks of the Lewis and Clark Expedition have survived through the years. Sites of some of the more important fur trading posts, such as Forts Union and Clark in North Dakota and McKenzie in Montana, are relatively intact and might



The few old mills that remain in the Ozarks, such as Hulston Mill in Missouri, enhance the region's recreation value and appeal.

be points at which the story of the fur trade on the northern plains could be told.

Overland Migration

Highway construction and farming operations have destroyed most of the historical evidence along the old Oregon and Santa Fe Trails. However, many celebrated landmarks, for example Scotts Bluff and Chimney Rock in Nebraska, Independence Rock and Devils Gate in Wyoming, and Arrow Rock in Missouri, still survive.

The Civil War

Only a small segment of the basin, notably Missouri and eastern Kansas, was materially affected by the Civil War. There are, however, particularly in Missouri, a number of battlefields, among them Lexington and Westport, which are of regional and State significance.

Indian-Military Frontier

The basin is particularly rich in sites associated with the Plains Indians: Battlefields, military posts, Indian agencies, and missions. A few of these, including



This old log blockhouse is one of the original buildings of Fort Logan, Mont. It is believed to be the only one of its kind in the trans-Mississippi West.

Fort Laramie, Custer, and Big Hole Battlefield National Monuments, have been preserved by the Federal Government; others, like Shawnee Mission and Fort Abraham Lincoln, have been preserved by the States. However, many other sites have not yet been included in the programs of any public agency.

Early Settlement

Very few typical pioneer structures have survived in their original form. It is extremely difficult to find sod houses typical of the 1870's and 1880's, which were once so common on the Great Plains. However, some early log dwellings and other pioneer structures have survived.

Industrial Theme

Sites at which the basin's industrial history may be interpreted are relatively few. Practically all early industrial plants and many mines at which the story of early methods of processing and manufacturing might be told have passed from the scene. Exceptions include a few old gristmills and the Watkins' Woolen Mills, built in the 1860's, in Missouri.

Political Theme

Several of the States, notably Missouri, Kansas, South Dakota, and Montana, have territorial capitals identified with their history.

Presidents Harry S. Truman of Independence, Mo., and Dwight D. Eisenhower of Abilene, Kans., and Vice President Charles Curtis of Kansas lived for many years in the basin. Their homes are still standing. The site of Elkhorn Ranch, one of Theodore Roosevelt's Dakota ranches, is preserved by the National Park Service. Both of the Lincoln, Nebr., homes of William Jennings Bryan, three times Democratic candidate for President, have survived. The Harry S. Truman Birthplace Memorial Shrine, Lamar, Mo., has recently been set aside as part of the State Park System.

ARCHEOLOGICAL RESOURCES

The archeological resources of the basin are not fully known since only parts of this extensive area have been systematically investigated by professional archeologists. However, an extraordinarily diverse assortment of sites is on record. These include various types of the following classes: Open camps, villages, cave shelters, rock quarries from which the stone-age people obtained raw materials, burial mounds, cemeteries without surface identification, cliffs and other rock faces inscribed with picture writing, religious shrines or ceremonial places, buffalo "kills," and soil layers where implements shaped by



The basin is rich in archeologic resources. Scene at Oldham Site, Fort Randall Reservoir, S. Dak.

man are found closely associated with the bones of extinct animals. The period of time represented by these sites spans some 10,000 years.

For convenience in discussing the people of the basin's prehistory, descriptive names have been given to the characteristic inhabitants of four major time intervals of the past: The Big Game Hunters preceding 6000 B.C., the Foragers of 6000 B.C. to A.D. 500, the Woodland peoples of A.D. 500 to 1200, and the Western Farmers of A.D. 1200 to historic times.

To tell the story of these people adequately, most of the sites which they occupied would require considerable interpretive treatment. In their discovered state, most of these remains lack popular appeal and often occur in ordinary surroundings. Big Game Hunter sites, particularly, fall into this category.

Although most Forager sites lack general public appeal, a few, particularly the caves, contain a long record of the activities of these prehistoric peoples. Sometimes the evidence occurs beneath occupational

layers of later groups and with proper interpretation comprises a potential of great popular interest.

Because of the scarcity of remains, few of the Woodland sites are impressive, but some of the surviving groups of burial mounds are worthy of preservation and interpretation. One group of Woodland people, known as the Hopewell group, ranks among the outstanding artisans of the New World. They were skillful weavers and dyers, potters, stone flakers, metal workers, and sculptors in stone, bone, and shell. Extensive trade routes were in use during their times, more than 1,000 years ago. They used mica from the Appalachians, obsidian from the Rocky Mountains, sea shells from the Gulf of Mexico, and copper from Upper Michigan. Village sites with Hopewellian affinities have been found as far up the Missouri River as Council Bluffs, Iowa.

Overlapping the Woodland period to some extent came the period of Western Farmers. These people occupied permanent dwellings grouped in settlements, often protected by fortifications still discernible. These sites offer the greatest recreation potential among the archeologic resources of the basin. Individual lodge sites are commonly marked by depressions, and a great variety of ornaments, tools, and other artifacts may be recovered from nearby storage pits and refuse dumps. At many sites, it would be possible to create centers of great popular appeal by

exhibiting old house floors and by making restorations of dwellings, moats, palisades, and other structures.

PALEONTOLOGY

The study of fossils in the basin has been directed primarily toward the advancement of scientific knowledge. The wide variety and distribution of these remains, however, make them perhaps equally important as a recreation resource of general public interest.

Fossil-bearing sedimentary rocks are distributed throughout much of the basin. Those that were laid down in the bottom of long-vanished seas contain fossils of ancient forms of life. Scientific study of these abundant marine fossils, as well as their relationships to other fossils, has contributed greatly to the field of paleontology.

Other sedimentary rocks were originally laid down as sandbars and mud in ancient swamps, and along the flood plains of now extinct rivers. These strata contain the remains of land-living creatures. Some of them have yielded rich assortments of dinosaur remains, and others the remains of gigantic mammals. Sites such as Como Bluff in Wyoming, Agate Springs in Nebraska, and the Badlands of South Dakota are world famous for the fossils they have yielded. One very unusual lakebed deposit near Florissant, Colo.,





Reconstructed Mandan Indian earthlodges at Fort Abraham Lincoln State Park, N. Dak., are interpretive centers of popular appeal.








RESERVOIRS THE RIVER BASIN

LEGEND

-  Existing Reservoirs
-  Proposed Reservoirs (authorized)

EXISTING RESERVOIR RECREATION AREAS ADMINISTRATION

-  Federal
-  State
-  Local

BASIC DATA FROM CORPS OF ENGINEERS
AND BUREAU OF RECLAMATION, 1957.





Fossils of animals are frequently found in the South Dakota Badlands, as in other badlands areas.

at the headwaters of the South Platte, has yielded thousands of insect fossils. Petrified forests, coal deposits, and related fossil remains also represent resources of great value—either for economic exploitation or for recreation.

RESERVOIRS AS A RECREATION RESOURCE

The comprehensive Missouri River project, which had its inception in the Pick-Sloan Plan of 1944, is resulting in a major type of recreation resource that is new to much of the basin. Sizable manmade water areas that will provide important opportunities for a variety of water-related outdoor recreation are being constructed by the Corps of Engineers and the Bureau of Reclamation. The program, covering nearly every part of the basin, calls for completion of well over 100 artificial lakes, ranging in size from a relatively few acres to a length of more than 225 miles.

The largest reservoirs will be those on the Missouri itself. These will form a chain of inland water areas unique in the basin, both from the standpoint of size and location in a region that is generally devoid of any usable, natural bodies of water. Together with the reservoirs on the tributary streams, they will provide recreation opportunities such as fishing, boating, swimming, camping, and picnicking, for the use and enjoyment of the people in the Great Plains section of the basin.

In addition to the recreation usefulness of the

reservoirs, the dams, together with spillways, power-generating plants, and other engineering works are, in themselves, often of such magnitude as to attract many visitors.

In the basin, however, particularly in the case of States which are relative newcomers to the park and recreation field, emphasis may be so strong on immediate active recreation opportunities created by reservoirs that the orderly development of a balanced park system, containing areas preserved for their inherent natural or cultural values and those created primarily for active recreation, will be difficult to achieve.

Then, too, there are some cases where water-control projects result in losses to irreplaceable natural recreation resources, such as are found in the areas of the National Park System, the Wilderness Areas of the National Forests, and comparable resources, that more than offset artificial opportunities created.

The small watershed program of the Soil Conservation Service, U.S. Department of Agriculture, also may provide new local recreation opportunities through small but usable reservoirs close to population centers. Such possibilities will depend to a large degree on whether recreation values are considered in their planning.



A picnic by the lake was not possible for many plainsmen before the advent of Great Plains reservoirs. Swanson Lake, Nebr.

WHAT IS HAPPENING TO THE RESOURCES

Examples of each of the resources that have been mentioned are now preserved. At the national level are the areas of the National Park System—15 in the basin—that are of unique scenic, scientific, historic, or archeologic interest. Many areas with natural values of very high quality have been administratively designated as Wilderness Areas in the National Forests, mostly in the Rocky Mountain section. There are also perhaps equally unique resources, though on a more limited scale, in certain of the Indian reservations. Fish and Wildlife Refuges in many cases contain developed recreation areas which are receiving increasingly heavy use.

At the State level, the historic sites have been most widely recognized and, to varying degrees, have been preserved in all the basin States. A few States have also done outstanding work in preserving archeologic sites. Some of the older States in the park and recreation field, Minnesota and Missouri for example, have built their park systems largely around areas that are preserved primarily for their natural values and scenic beauty. Others, until recently, have centered their developments around fish and wildlife. Still others have started new systems with the accent on reservoir recreation areas.

In addition to wilderness areas, in which development and use are limited to those consistent with wilderness values, there are many developed camp grounds and picnic areas, resorts, and summer home groups throughout the National Forests in the basin. These represent an important part of the basin's recreation opportunities.

Thirty reservoirs, including the main stem impoundments—totaling over a million acres of usable water—have been completed under the Missouri River project in 7 of the 10 basin States. Recreation development

has been carried out at 19 of them, limited for the most part largely to minimum basic facilities for access, public health and safety, and the protection of the reservoir areas, plus certain concession-type developments. Nevertheless, many of the completed reservoirs already are providing new recreation outlets of importance and are creating considerable interest in more diversified use. Arrangements have been made, or are being completed, for appropriate Federal, State, county, or municipal agencies to administer the recreation resources.

On the negative side, many unprotected and undeveloped recreation resources in the basin are being lost. Industrial and other development, acquisition and posting of lands by private interests, and expansion of suburban developments contribute to this trend. Water and other resource development programs, and land drainage, also take their toll of natural recreation resources.

Losses in historic and archeologic sites have been heavy. Because of man's tendency to use rivers as avenues of travel, floods and channel meanderings have swept away many cultural remains. Construction of dams, particularly along the main stem of the Missouri, and roads have caused many important sites to be obliterated. Tornadoes, windstorms, and lightning, as well as deterioration from extreme heat and moisture, have contributed to the loss of cultural resources. In addition, many remnants of historic or scientific value have been destroyed by farming operations.

The ever-increasing popularity of the basin's recreation resources has resulted in increasing wear and tear on existing facilities. Present use has exceeded the capacities of the areas and facilities, producing serious and widespread deterioration through overuse and, at times, incompatible use.

AREAS SET ASIDE TO PRESERVE NATURAL AND CULTURAL HERITAGE RESOURCES

LEGEND

FEDERAL

NATIONAL PARK SERVICE



Parks and Monuments

UNITED STATES FOREST SERVICE



Wilderness & Wild Areas
(Administratively Designated)

BUREAU of INDIAN AFFAIRS



Roadless Area

STATE



Parks and Reserves



Historic Sites



Archeologic Sites

LOCAL



Parks



Mountain Park Systems



Historic Sites



Archeologic Sites



The Recreation Pattern

RECREATION TRADITION IN THE BASIN

The Missouri River Basin largely coincides with "the last frontier" of the American West. Citizens of the basin today are just one or two generations removed from pioneers who struggled to wrest a living from the vast land. We are frequently reminded of the heroic attributes of these frontiersmen—their self-reliance, their fortitude, and their industry. Less frequently do we appreciate the fact that, despite their toils and dangers, they often were playful, fun-loving, and given to varied forms of entertainment. The word "recreation" may not have been in their vocabulary, and surely no one had to set up a formal "recreation program," but perhaps our pioneer ancestors had a better approach to living than we do today.

Despite their strenuous lives, often involving extreme hardships and dangers, the frontiersmen—fur traders, emigrants, cowboys, homesteaders—knew how to play, to balance their lives with vigorous activities that were integrally related to their everyday outdoor occupations. The cowboy's rodeo, for instance, was simply an extension of his daily activities, with the difference that his skills were diverted for the purpose of play instead of work. Despite the drabness and narrowness of their lives (to hear novelists tell about it), the small-town villagers of yesteryear depended upon their own humble resources and managed to have a whale of a good time.

For active sport, the earliest white inhabitants of the mountains and plains—the fur trappers and traders—held annual rendezvous, where they not only traded traps and beaver hides, but also held roisterous carnivals featuring rough sports and contests of strength and skill. The covered-wagon emigrants

who followed the Platte River westward to Oregon, Utah, and California were seldom so exhausted at the end of a grueling day's trek that they weren't ready for a campfire rally, singing folk songs and dancing.

Life at outlying Army posts along the Platte and Missouri River waterways placed a premium on native ingenuity. Athletic contests, feats of horsemanship, dancing, angling, buffalo hunting, picnicking, berry picking, and even water-color painting and photography, are recorded in surviving journals.

The homesteaders brought to the trans-Mississippi West a culture which found fresh expression as it adapted to prairie life. These first permanent plains settlers relieved their toilsome lot by participating in a rich variety of "sociables"—barn raisings, spelling bees, husking bees, quilting bees, hog-calling contests, turkey shoots, Sunday afternoon lemonade fests, and barbecues.

The villagers of mid-Western America, at the turn of the century, were most ingenious in devising ways of entertaining themselves. Fishing, picnicking, cross-country hiking, and communing with nature that was everywhere close at hand—these were in-



Early pioneers camping at Chimney Rock, now a National Historic Site in Nebraska.

dulged in zestfully by young and old, and recreation was of primary importance. Horseshoe pitching was popular in this age, and baseball became a widespread sport. This was also the golden age of the circus and the chautauqua.

These active pursuits provided relief from everyday chores and added spice to life. But of even greater influence on our predecessors was their nearness to nature. The pioneers depended almost entirely on the out-of-doors for their existence. In large part, it was the promise of new wealth from a virgin land which encouraged the emigrants' bold adventure. The green grass, the blue sky, the windswept hilltop, the creatures of the wild—all were a part of the lives of these settlers. The quiet spot, where one could retreat for solitude and contemplation, was always near at hand. The thrill of discovery, of finding out what lies beyond, the satisfaction of living with nature, of enjoying its fruits, was the essence of frontier life. If one were to analyze the historical recreation habits of Western America, he probably would find that this closeness to nature played a dominant role in keeping alive the spirit of the

pioneer, the homesteader, the cowboy, and the trapper.

THE PARK AND RECREATION AREA MOVEMENT IN THE BASIN

Realization of the vital importance of irreplaceable scenic, recreation, and inspirational resources in the western basin as a great national heritage came about almost before settlement had been completed. It was, in fact, in the basin that four memorable "firsts" came into being: Yellowstone National Park was set aside in 1872, Shoshone National Forest in 1891, Devils Tower National Monument in 1906, and the Bob Marshall Wilderness Area in 1940.

It was during this era, too, that the State park movement began to manifest itself in one of the basin States, Minnesota. In 1889, Camp Release Wayside, a site with historical associations, became its first State Park. The first tract acquired in the basin proper for park purposes was in North Dakota in 1908. In that year, the Federal Government transferred to the State the lands comprising Fort Abraham Lincoln and Fort McKeen, situated on the west bank of the Missouri.

RECREATION IN MODERN SOCIETY

The earlier tranquil scene began to change when the machine age arrived to systemize and regiment our lives. The industrial centers attracted large numbers of persons, many of them were formerly farmers and other rural inhabitants. They came from a world of vastness and openness to a world of mass production, closeness, and accelerated living.

For some, disillusionment prompted return to the country. But most people found city life profitable, so that today in the United States, nearly twice as many live in urban areas as in rural. The proportion is about evenly divided in the basin States.

Swept along by a fast-moving economy, many people now are engaged in a demanding and stress-provoking way of life. A set of ills associated with this manner of living is afflicting increasing numbers of individuals. For relief, man requires more than merely increased leisure time, rather, the knowledge of how to use and enjoy it.

We are painfully conscious today of a need for outdoor recreation in our individual lives, not only to fill in the hours left over after the 40-hour week but also to make biological and spiritual amends for



A region of magnificent mountain scenery, The Bob Marshall Wilderness Area, was set aside by the U.S. Forest Service in 1940 as the first such area.

the damage done to our bodies and our souls by the job straitjacket, the assembly line, or the desk-sitting routine. We feel a deep need for that same quiet spot, that same hilltop, or that same cool wooded glen, so much a part of the lives of our settlers, where we, too, can retreat for contemplation and spiritual refreshment. The fascination of discovery, of finding out what lies beyond, still lights in man the flame of curiosity and adventure.


One need only consult figures regarding travel to National and State Parks, or view the unprecedented boom in the sporting goods, outdoor living, and do-it-yourself industries to verify the already existing desire for recreation. With millions of people now searching for daily, weekend, or annual vacation opportunities, the demand for parks, shorelines, and outdoor facilities of every kind has grown out of all proportion to their supply. The mounting recreation needs and desires are being felt even in the car manufacturing industry; models can be purchased that are

almost completely equipped for extended vacation trips.

The swelling interest in recreation will continue to grow in response to present-day physical and psychological needs of the average American citizen. The revival of wholesale and wholesome recreation, however, will succeed only to the degree that we take our cue from the past. This means a return to the outdoors, a return to honest community-participating enterprise in meeting everyday needs, rather than the occasional mass-seating spectacular event which merely widens our "sitting capacity."

In short, the problem is to integrate the individual in a relaxed and healthful way with his outdoor environment, to restore the old Westerner's sense of "doing what comes naturally." Is this not the trend which is becoming more and more prevalent?

It is this philosophy which underlies and justifies immediate attention to the basin's and the country's recreation needs.



State Park Administration and Financing

Many variations in State park policies and organizations have been, and are now being, employed in the basin. These variations reflect a great diversity in thinking among individual legislatures as to the best means of providing and administering park and recreation services. They represent, too, phases in the evolution of State park systems—a process that must take place if the systems are to grow and fulfill their proper function in the lives of the people of the State.

The policies and principles that are briefly explained here have, in general, proved sound in long-range practice. While, in most cases, they will apply only partially to any one State, it is hoped that they will prove of real value as general guides to those persons responsible for State park administration.

THE PARK AGENCY'S PLACE IN STATE GOVERNMENT

A popular organizational pattern for State park agencies allows for a strong, specially financed authority, divorced from other resource management activities. This type of organization is generally very successful in accomplishing immediate objectives. However, in the long run the very independence which gives the agency its strength may also prove its weakness when it must compete with other resource management agencies for land and water uses.

At the other end of the scale, planning and operation of State parks have also been made subactivities of the Fish and Game Commission, or some other agency whose efforts are directed toward a related though different major program.

From a hypothetical standpoint, a highly satisfactory type of government organization provides for

management of all natural resources by a department of natural resources, or similar agency. Under this plan, as may be seen in plate 8, park activities are administered on a level coordinate with fish, game, forestry, and other resource-management functions. As in the case of an independent office, exclusive attention is devoted to park interests, yet the office's activities are coordinated with those of other resource management agencies. A number of outstanding State park systems are administered by agencies organized in this way.

Presently, among the 10 basin States, only 2 State park systems, those of Iowa and Minnesota, are administered by departments of natural resources. State park boards or commissions handle park matters in 4 additional States, and agencies of other types handle State parks in the other 4 States. A tabulation of this information is presented below.

| <i>Conservation Commission</i> | <i>State Park Board, Com- mission, or Authority</i> | <i>Game, Fish, and Parks Commission</i> | <i>State Highway Commission</i> | <i>State Historical Society</i> |
|------------------------------------|---|---|---|---|
| Iowa Minnesota | Colorado Wyoming Kansas Missouri | Nebraska South Dakota | Montana | North Dakota |

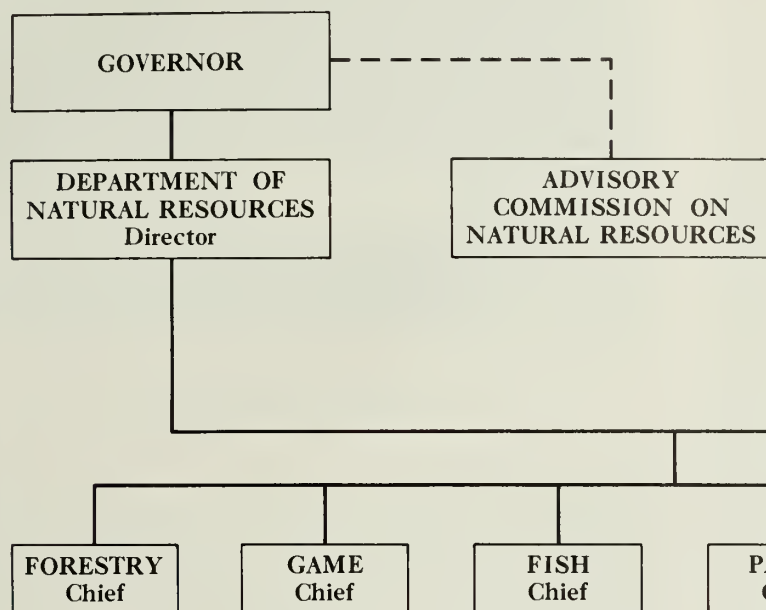
FUNCTIONS AND POWERS OF THE STATE PARK AGENCY

Ideally, the primary function of the State park agency is to plan, acquire, develop, and manage a State park system. Powers enabling development and operation of State parks are granted to all basin State park agencies. Development authority usually is granted by a general statement to that effect. Powers of operation include the authority to maintain facilities, lease facilities, grant concessions, make rules, and enforce regulations.

An important phase of park system planning and development involves acquisition of lands. The park agency should have power to acquire land by purchase,

RELATION OF PARKS TO OTHER RESOURCE-MANAGEMENT ACTIVITIES UNDER A DEPARTMENT OF NATURAL RESOURCES

PLAN A



PLAN B

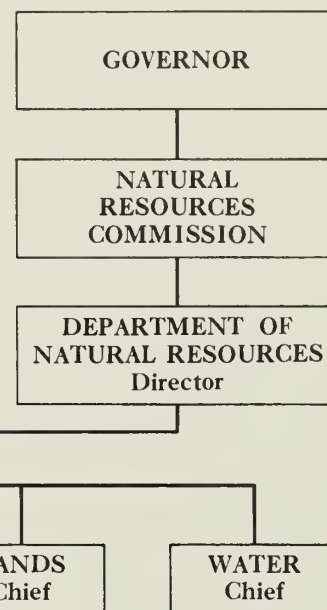


PLATE 8

gift, tax reversion, devise, eminent domain, lease, or exchange in accordance with a statewide plan. State park agencies within the Missouri Basin vary considerably with respect to their powers of land acquisition. This is evident in the following tabulation. Obviously, those State park agencies which are not granted the power of eminent domain may be severely handicapped in their efforts to form a planned State park system.

Land acquisition powers of State park agencies in the Missouri River Basin

| State | Purchase | Gift | Tax reversion | Devise | Eminent domain | Lease | Exchange of land |
|-------------------|----------|------|---------------|--------|----------------|-------|------------------|
| Colorado..... | X | X | | | | | |
| Iowa..... | X | X | | | X | X | X |
| Kansas..... | X | X | | X | X | X | |
| Minnesota..... | X | X | X | X | X | X | |
| Missouri..... | X | X | | | X | X | |
| Montana..... | X | X | | X | X | X | X |
| Nebraska..... | X | X | | X | | X | |
| North Dakota..... | X | X | | | X | X | X |
| South Dakota..... | X | X | | | X | X | |
| Wyoming..... | X | X | | X | | X | |

It is through cooperative means that the agency undertakes its secondary function, that of assisting the local governments to plan their own park systems. In the broad sense, it is through cooperative endeavor that integration of local, State, and Federal park and recreation programs is realized. The exchange of plans and ideas among those agencies, in advance of irreversible action, is essential to the formulation of any statewide or nationwide recreation plan.

Existing cooperative powers granted State park agencies are summarized in the following tabulation. In many cases, the general powers granted imply that the agency may conduct whatever cooperative activities, including cooperative powers of land acquisition, area maintenance, and land exchange, are necessary for the achievement of its program.

Cooperative powers of primary State park agencies in the Missouri River Basin

States are designated by the following numbers:

| | | | |
|----------------|---|-------------------|---|
| Colorado..... | 1 | Montana..... | 6 |
| Iowa..... | 2 | Nebraska..... | 7 |
| Kansas..... | 3 | North Dakota..... | 8 |
| Minnesota..... | 4 | South Dakota..... | 9 |
| Missouri..... | 5 | Wyoming..... | 0 |

| Organizations or individuals with whom cooperative relations are maintained | States whose primary park agencies have cooperative powers of— | | | | |
|---|--|-----------------------------|-----------------------|-------------------|-------------------|
| | General cooperation | Land acquisition | Maintenance | Exchange of lands | Transfer of funds |
| Other States..... | 3, 6, 7..... | 3, 6, 7..... | 3, 6, 7..... | | |
| Local agencies..... | 1, 3, 6, 7, 9..... | 1, 2, 3, 5, 6, 7, 8, 9..... | 1, 2, 3, 6, 7, 9..... | 1, 8..... | |
| Federal agencies..... | 1, 3, 6, 7, 8, 9, 0..... | 1, 3, 5, 6, 7, 8..... | 1, 3, 6, 7..... | 1, 8..... | |
| Other departments.. | 1, 2, 3, 5, 6, 7, 9..... | 1, 2, 3, 5, 6, 7, 8..... | 1, 2, 3, 5, 6, 7..... | 1, 8..... | 1..... |
| Private individuals.. | 7..... | 3, 5, 7..... | 2, 3, 4, 7, 0..... | | |

The work of the State park agency can be supplemented by the activities of local and regional recreation and planning departments. Existing legislative authorizations for these types of activities are listed in the following tabulation. Although a number of basin States permit the functioning of county recreation boards or commissions, the necessity for regional and county planning commissions is not generally realized. Legislation enabling the formulation of such planning offices is highly recommended.

Legislation enabling the formulation of local planning and recreation boards or commissions

| State | County Recreation Board or Commission Enabling Act | County Planning Board Enabling Act | Regional Planning Board Enabling Act |
|-------------------|--|------------------------------------|--------------------------------------|
| Colorado..... | Yes..... | Yes..... | Yes..... |
| Iowa..... | Yes..... | No..... | No..... |
| Kansas..... | Yes..... | No..... | No..... |
| Minnesota..... | No..... | No..... | No..... |
| Missouri..... | Yes..... | Yes..... | No..... |
| Montana..... | Yes..... | No..... | No..... |
| Nebraska..... | No..... | No..... | No..... |
| North Dakota..... | Yes..... | Yes..... | No..... |
| South Dakota..... | Yes..... | No..... | No..... |
| Wyoming..... | Yes..... | Yes..... | No..... |

PERSONNEL

Staffing

One of the more pressing problems facing public administrators today is the development of a competent and permanent staff. Urgently needed are persons, both technical and nontechnical, who have the ability to see ahead and plan for the future as well as for the present. Among the 10 basin States, even those that administer rather extensive park systems, the park agency staffs are significantly undermanned. Many do not have professional planners, landscape architects, or engineers. The pressures of a growing population, increased recreation demands, accelerated



An adequate and competent staff plays an important role in any planning program.

resource development programs, and the objectives of long-range planning itself, place special emphasis on the immediate need for expanded and balanced planning staffs. Qualified consultants may be used for designing development plans.

As important to park operations as the professional man is the laborer. Adequate maintenance crews are necessary to maintain an area at acceptable standards in the face of increasing use.

In order to obtain and hold an adequate staff, certain steps can be taken.

Pay

One of the biggest problems at all levels of government is that of salary and wage scales. Although starting salaries, in some cases, compare favorably with those offered by private industry, subsequent increases often do not keep pace with the increased responsibilities of higher positions. In other cases, the starting salary itself is insufficient to attract highly qualified personnel, particularly in the technical and professional groups.

Salary scales for professional and technical personnel must be raised to compete on the nationwide labor market. A shortage of qualified personnel has placed a premium on talent, and professional personnel are inclined to travel widely to gain experience and position. Staffing exclusively with "home-grown" talent is nearly impossible if the salary offered is low.

The current salary trend for professional conservation workers is shown by the findings of a recent study—the only one available. Throughout the country, in 1957, starting salaries for college-trained fishery workers averaged \$323 a month, and professional fishery workers having 5 years experience were receiving an average of \$400 per month. Another phase of the study, conducted among 200 major United States companies, indicated that college graduates, including those majoring in business and engineering, can expect a starting salary of \$400, if they enter business or industry. The average salary of men hired 5 years ago is \$575.

Although the first set of figures, above, applies exclusively to fishery workers, the same trend undoubtedly is true for other trained conservation personnel. The problem of attracting, training, and then retaining top personnel is largely one of economics.

Upward revision of wage scales also would help solve the problem of large turnover. State government positions too often serve merely as training billets for higher paying jobs in business, industry, or another government agency.

Competition for maintenance workers, although on more of a regional basis, still is keen and contains the element of competition between local industry and government.

Recruiting

In addition to low pay, some of the personnel shortage stems from a feeling on the part of prospective job applicants that, literally, public employees are "public servants." The traditional disadvantages of public service, though perhaps now greatly diminished, still cause many potential jobholders to disqualify the field of government as a career possibility.

A solution to this situation is education through active, aggressive, and sincere recruiting, not only by the central personnel agency but even more so by employees of the operating departments themselves. These are the real salesmen who can bring to prospective employees the true enthusiasm and satisfaction derived from work which the employees actually will do. Active field recruiting by representatives of the park agencies themselves can do much to alleviate their own personnel shortages.

Civil Service

The ability of a government to attract and retain highly qualified personnel depends upon the far-

sightedness and progressiveness of that government's personnel policies. Active support of a comprehensive and progressive civil service commission by both the legislative and executive branches is perhaps the first step in bringing about sound personnel administration.

The obvious advantages of a civil service system are to help recruit public employees on the basis of professional or working competence and to retain them in public service, productive and happy, as career employees. In addition, a progressive civil service system brings to government the services of professional personnel workers. Such matters as recruiting, examination, classification, pay, policy, training guidance, establishment of standardized procedures, conduct of personnel research, administering of a retirement system and fringe benefits, and aid in public relations should be handled or coordinated by the central personnel agency. Further, a civil service system provides machinery for orderly and unspectacular nonpartisan handling of grievances, disciplinary measures, and discharges.

Finally, a properly administered civil service agency, by its existence, contributes to a feeling of well-being and security on the part of public employees, resulting ultimately in improved public service.

To date, within the Missouri Basin, only the States of Colorado, Kansas, and Minnesota have statewide merit systems in operation. Minnesota is the only State in the basin having a well-established State park program and, at the same time, comprehensive civil service coverage.

PUBLIC RELATIONS

Success in all phases of park planning, development, and operation is dependent upon open avenues of communication between the park agency and the public. Therefore, a discussion of the more successful public relations policies and procedures seems in order. Although the thoughts here expressed are elementary and by no means completely cover this field, it is hoped that they may show, in a general way, what can be accomplished.

The Face-To-Face Contact

This is probably the most satisfying and fruitful of public relations activities. The park agency is particularly favored in this respect, in that contact with

the public is most often made in park areas which, because of their outstanding natural or cultural qualities, render the visitor receptive to an equally outstanding personal relationship with agency representatives. Superintendents and other field men, in addition to being competent managers and guides, are usually prominent members of the community and are in a position to explain official policies in rational and understandable language to those immediately affected by the policies.

At the same time, the park field man is in an excellent position to detect public sentiment. Part of his responsibility is to relay to the appropriate central office an interpretation of expressed public sentiment, along with suggested changes in policy and procedures which would seem desirable. This is one channel through which communications may be received from the public.

Hearings

This method of public contact, generally used when controversial issues are at stake, is, in some cases, a public relations tool which may be used to advantage. Such meetings help to assure citizens that their rights are being respected and, on the positive side, can help to swing neutral impassiveness to active support. Field hearings held in the local community are preferred to those held at the State Capitol.

Sample Surveys

Another method of gaging public opinion is by the use of scientifically conducted sample surveys. Considering the amount and accuracy of information divulged by these surveys, management might make greater use of them than heretofore, despite the seemingly high cost involved. The day may be very near, in fact, when the sample survey will become a basic step in the planning process.

Publicity

Publicity is one means of maintaining open communications to the public. Annual reports, periodicals, press releases, radio programs, movies, and other communication media serve as vehicles for publicity.

A planned publicity program, centered about a central theme, will be more effective than a program which involves little more than issuing the news of the hour.

Although increasing use of parks has stimulated governmental units to experiment with various financing methods, regular tax revenues remain the most important source of funds for the operation, maintenance, and development of parks and park systems. General tax revenues provide a dependable and flexible source of funds. This form of revenue can be adjusted more easily than others to increases in public needs and resultant increases in responsibilities of park agencies. The use of tax funds for a public park system is justified from two main standpoints:

1. Recreation is a basic need of the total population, which need cannot be met fully without governmental action.

2. Social conditions must be maintained that will produce the kind of citizen needed in a democracy. Recreation is a dynamic force in helping to maintain these healthy social conditions.

The seeming shortage of general tax revenues stems principally from two conditions. The most unfortunate of these is a lack of enlightened public support for park facilities. Without strong backing by a concerned public, legislatures will be reluctant to supply funds for an activity which many persons otherwise would represent as "frosting on the cake." A vitally interested and articulate body of citizens can do much to advance State park programs.

The second condition involves limitations in the tax structure of State and local governments. An evaluation and realignment of this structure would no doubt reveal effective ways to increase tax revenues available for park purposes.

Operating Income

Funds derived from entrance fees, parking fees, activity fees, rentals and leases, and surpluses from the operation of facilities constitute an increasingly important source of revenue. In 1950, these revenues amounted to 31 percent of State park operating and maintenance expenditures. By 1955, these revenues were equal to 41 percent of park operating and maintenance expenditures. The cost of land and of capital improvements will have to be met by some other source of revenue such as general appropriations.

Use of State institutional labor and facilities on various projects can bring about monetary savings and can speed program completion.

Revenue Bonds

Within recent years, several lodge and cabin developments have been financed within State parks by the issuance of revenue bonds. Interest in this type of financing appears to be growing. Executive Director Jack V. Boyd, of the Oklahoma Planning and Resources Board, has made the following valuable observations that are based on the State's several years of experience with this type of financing:

"There are several advantages to revenue bond financing: (1) such financing permits the construction of fine facilities well in advance of the time such construction could be accomplished if tax source were the only source; (2) the indebtedness is repaid from moneys collected from people using the facilities so built; (3) after the indebtedness has been repaid the moneys so expended for debt service are available for general park purposes.

"There are also disadvantages to such financing: (1) the interest rate is considerably greater than the cost of other municipal moneys . . . (2) there can be a tendency to subordinate all other park activities and purposes to that of making money; for instance, it is possible that functions or programs will be considered more on the basis of money making potential than on the basis of service.

"Before any park administering agency undertakes park financing through the issuance of revenue bonds,

the following factors should be present: (1) parks already well developed with all facilities except a lodge, cabins and perhaps a swimming pool; (2) a system of parks used by many visitors; (3) an informed legislature that understands more appropriated money will be necessary if the public is to be served adequately and well balanced parks maintained."

In using this method of financing, careful and conservative planning is probably the best policy. Even in times of rising business activity, it is difficult for motel and resort owners to gain exceptionally favorable credit terms. Bondholders require such stringent security provisions that orderly recreation development might be retarded for many years if the issuing agency were to default in payment.

Gifts and Donations

Funds, land, and even labor often are donated for park purposes. Such gifts may be substantial, and they are valuable from a public relations standpoint as well as for their more tangible uses. However, care and diplomacy must be exercised to insure that the lands and earmarked funds accepted are consistent with policies of park acquisition and development. Acceptance of small mediocre tracts on the provision that they should become parks, for instance, may only compound administrative problems.



Tourism, the Economy, and Parks

TOURISM AND THE ECONOMY

The States in the Missouri Basin occupy a strategic position from the standpoint of recreation travel by persons from outside the basin, whose visits constitute a major source of income to persons living in the States. A wide variety of tourist attractions within and on the border of the basin constitute tourist objectives while the major highways crossing the basin bring visitors with more distant travel objectives into the basin area.

The significance of its central geographic location in affecting tourist travel crossing the basin is apparent from studies that have been made of the origin of travel to the National Parks. For example, a study of motor vehicle entries to Grand Canyon National Park in 1954 shows that over 30 percent of the cars were from States east of the Missouri Basin where normal travel routes would indicate the likelihood of crossing the basin during the course of the vacation trip. A 1952 study of the tourist industry in Kansas showed that a large proportion of the out-of-State tourists were passing through Kansas merely because it happened to be on their way to some other destination. In response to a question on the reason for selection of route by out-of-State motorists, four-fifths of the tourists who were interviewed gave one of the following reasons: Direct and shortest route, best road available, recommended road, destination, avoidance of heavy traffic and detours, or familiarity with road.

The Kansas Industrial Development Commission found that tourist travel through the State provided great opportunities for economic activity but that relatively little had been done to take advantage of the economic potential of this travel. Less than 9 per-

cent of the travelers interviewed were able to name a specific tourist attraction they had seen in the State. Nevertheless, Kansas benefits substantially from tourist expenditures and ranks travel fourth in value in its economy, following agriculture, mining, and industrial development.

Tourist attractions within the basin range from the lakes of northern Minnesota to the geysers of Yellowstone and the varied terrain of the Rockies, the Black Hills, and the Ozarks. Fishing and hunting are major recreation objectives of visitors to the basin, as they are to residents. In studies of recreation habits and interests undertaken by the National Park Service and by private agencies, fishing and hunting rank among the most popular activities.

The Fish and Wildlife Service recently completed and published a report entitled National Survey of Fishing and Hunting. Some of the findings disclose that for 1955 nearly 3 billion dollars was spent on fishing and hunting, 2 billion on fishing, and 1 billion on hunting; and the typical hunter spent \$79.49 during the year; the typical fisherman, \$91.98.

In the fiscal year 1955, over 24 percent of all non-resident fishing licenses issued in the United States were issued by the 10 States wholly or partly in the basin, and these States also accounted for 26 percent of the total nonresident hunting licenses in the country. The growing importance of these activities in the basin is shown by an increase from 511,000 to 638,000, or 25 percent, in the number of nonresident fishing licenses issued by these 10 States between 1951 and 1955. Similarly, the number of nonresident hunting licenses increased from 43,000 to 89,000 in the same period.

Some idea of the importance of the scenic attractions and the central location of the basin, as an economic asset, can be obtained from tourist expenditures. It is estimated that more than a billion dollars a year is spent by out-of-State visitors to the 10 States

wholly or partly within the basin. According to estimates supplied primarily by agencies in the basin States, the tourist is becoming increasingly important to the basin area in an economic sense. with tourist expenditures rising from about 1 billion dollars in 1951 to over 1.3 billion dollars by 1955.

Several basin States have made studies of the economic aspects of tourist travel and of its importance to the various businesses that provide goods and services for visitors who are seeking recreation facilities, lodging, food, and automotive services. Minnesota considers the tourist industry of major importance in its economy, following industry, agriculture, and mining. Other States wholly or partly within the basin that consider travel of major importance are Colorado, Missouri, Montana, and Nebraska.

In addition to the industries that feel the direct effect of tourist expenditures, indirect effects of the tourist trade are found in related lines of business. Subsidiary industries experience fluctuations in line with changing tourist demand, since the activities of the industries that serve the tourist directly produce further economic consequences to other industries that do not actually have contact with the tourist. Hence, a rising demand in the tourist industry will have a magnified effect on the employment and income situation in the basin area.

Within recent years, tourism has assumed a dominant place in the country's and the basin's economy. The prosperous postwar years have seen a tremendous boom in the travel and outdoor-living market. Attendance at National and State Parks has skyrocketed. As a result, the tourist-serving businesses, hotel, motel, and resort owners, find themselves occupying a necessary and profitable niche in the economy. Clothiers, luggage manufacturers, sporting goods manufacturers, and other related occupational groups have all benefited. States and other governmental units have obtained additional revenue from the taxes and other fees collected from large numbers of visitors.

EFFECTS OF PARKS ON TOURISM

On the western boundaries of the basin are three National Parks: Yellowstone, Glacier, and Rocky Mountain. In 1956, visits to these 3 parks numbered 3,764,000, an increase of almost one-third over the



Rocky Mountain National Park is a major vacation goal for thousands of visitors annually

1950 visitation of 2,868,000. These parks, together with other areas in the basin administered by the National Park Service, accounted for 6.9 million visits in 1956, as compared with 4.4 million visits in 1950. There is every indication that these areas will continue to attract more and more visitors.

In 1954, visitors to Grand Canyon National Park spent over \$10,663,000 in and near the park, and over \$116,000,000 on the trips which included their visit to it. An earlier survey showed that in one year Yellowstone visitors spent over \$20,000,000 in and near the park. These expenditures constitute a significant contribution to the economy of the areas in which vacation travel takes place.

A few outstanding State parks also represent significant attractions in themselves. However, for the most part, State parks and related areas are features of secondary interest to out-of-State tourists, rather than major attractions.

While State parks generally, and such added facilities as roadside parks, overnight camping facilities, and similar developments, may influence tourist travel by holding tourists over slightly longer en route, they will be a major influence on travel trends only if they possess outstanding natural qualities and are properly developed and adequately maintained. An active State park program is one means which enables tourists to become intimately acquainted with, and to appreciate, outdoor America.



Policy and Planning Guides

One of the primary aims of policy is to define reasonable guides for determining and attaining objectives. In the park and recreation field, administrators and planners alike recognize the need for such guides and frequently wish for more concrete formulas to provide the answers—answers to the “what, where, and how” of meeting public demands and needs, while protecting long term public interests.

Because of the very nature of this field, however, planning will remain primarily an art rather than a science. Judgment, based on experience, an appraisal of pertinent trends, and an understanding of human requirements, will continue to be the basis for most planning activities.

FUNDAMENTAL OBJECTIVES

As park philosophy has developed, certain basic concepts have been recognized and generally accepted. Fundamental are the two objectives of publicly supported park systems: (1) Preserving for the enjoyment of future generations representative examples of our natural and cultural heritage; and (2) providing for the spiritual and physical well-being of our people through conveniently accessible outdoor park and recreation opportunities.

CURRENT TRENDS AFFECTING RECREATION

The soundness of this approach is supported by trends which have accelerated since World War II.

A direct expression of these trends is the pressure that parks are now receiving. Between 1946 and 1955 attendance at State parks and recreation areas in the basin States rose 195 percent, nearly twice the overall rate of the United States. During the same period,

attendance at National Parks in the basin rose 120 percent, also more than the national average. Total attendance in the basin in 1955 reached more than 14 million in the State areas and almost 6 million in the National Parks.

While attendance is skyrocketing, interest in a wider range of activities is also notable. Tent and trailer camping and organized camping have steadily gained in favor, in some States at a rate even faster than total park use. Within the basin, the large number of reservoirs, constructed under the Missouri River project, have dramatically increased interest in water-related activity. Hunting and fishing in the basin continue to be highly popular, with license sales per population significantly above the national average. Pleasure driving is currently perhaps the number-one activity, while interest in historic sites is growing throughout the country.

Around the turn of the century, an estimated 90 percent of all vacation trips were taken during June, July, and August. Those months now account for approximately 60 to 70 percent. Vacationing, travel, and recreation facilities are now in year-round demand.

Behind these surface expressions are a number of trends affecting the overall economy and social pattern of the Nation. They represent basic planning considerations for parks and recreation areas. The more significant of these include:

1. An unexpected and sharp rise in the birthrate, coupled with longer life expectancy, results in a rapidly increasing population. This increase is particularly noticeable in younger and older age groups.

2. The shift from rural to urban population is continuing. Surveys indicate that urban populations use developed park and recreation areas 2 to 3 times as frequently as rural populations.

3. Increasing leisure time results from shorter work weeks, longer paid vacations, and earlier retirements. Labor and industry are keyed to the forecast of a 35-

hour week by 1962 and a 30-hour week by 1975. Industry, also, has become much more interested in adequate recreation opportunities for their employees.

4. Higher incomes combined with an increasing number of automobiles and greatly improved highways, notably the proposed interstate highway system, will all further increase travel, vacations, and the more frequent day and weekend use of park and recreation areas.

In contrast to these changing patterns, significant scenic, scientific, and historic areas, as noted in the chapter on "Recreation Resources," are being lost to the increasing spread of civilization.

In the Missouri River Basin, each of these trends is apparent, though with certain regional variations. Population, for example, is increasing at a somewhat slower rate than for the Nation. On the other hand, resident and tourist use of public parks is rising more sharply. Collectively, the trends accent the urgency for acquiring and preserving still unspoiled, natural and cultural resources and for providing more outdoor recreation opportunities conveniently accessible to public needs.

THE PARK SYSTEM

To accomplish the two objectives of (1) preserving for the enjoyment of future generations representative examples of our natural and cultural heritage and (2) providing for the spiritual and physical well-being of our people through conveniently accessible outdoor park and recreation opportunities, a comprehensive, balanced system of parks and recreation areas will be required. They should be planned and developed cooperatively by all agencies concerned, whether local, State, or Federal. The composition of an overall plan should include areas of many types, recognizing existing areas, available resources, foreseeable needs, and the varying authorities and traditions of the agencies involved.

In order to properly analyze the needs and to suggest recommendations, planning procedures call for a study and evaluation of the existing park systems. Plate 9 presents an overall picture of existing park and recreation areas in the basin according to type, size, and location. A great variance exists throughout the basin States. While some States have accomplished much toward achieving a balanced park system, others are just beginning. As can readily be seen, certain types of areas are well represented while others are not. A balanced park system should be a composi-

tion of all types of areas, each a component part of the whole.

After a study and evaluation of existing areas, the next step would be a determination of the resources and the needs. Two types of needs should be considered in keeping with the objectives—preservation of natural and cultural areas, and providing for active recreation outlets. The need for preservation of natural and cultural areas is self explanatory, because these areas, if destroyed, can never be wholly replaced. The areas of need, delineated on plate 9, indicate those portions of the basin States where more day-use type of recreation facilities are required to adequately serve the people, now and in the foreseeable future. These areas were determined to a large extent by a study of pertinent trends (population growth, travel habits, economic factors, attendance figures) and an evaluation of existing areas.

From an analysis of the existing resources and a study of the needs, broad recommendations for preservation of suggested additional areas were made for inclusion in the respective State park systems. In addition, suggestions are included for the development of additional areas to fill otherwise unmet needs. The individual State analyses which follow explain in more detail the existing park systems, areas of need, available resources, and suggested additional areas for preservation.

In working, planning, and leading toward a comprehensive balanced park system, the healthy principle of assuming responsibility and meeting needs at the lowest feasible level of government should be recognized. At the Federal level, primary responsibilities are: (1) Preserving outstanding or unique recreation resources for public enjoyment; (2) providing recreation areas and opportunities on public lands where compatible with primary purposes for which they are administered; and (3) providing assistance to State and local governments in meeting public park and recreation needs of the Nation. A number of Federal agencies are involved.

The National Park Service is the only Federal agency primarily concerned with parks and recreation areas. It administers 16 areas in the basin—15 National Parks, Monuments, Memorials, and Historic Sites and 1 National Recreation Area.

The Forest Service administers several million acres of National Forest lands in the basin, including many developed recreation areas—campgrounds, winter-sports areas, resort areas, and summer homesites. In addition, it has administratively established 17



Interest in water-related activities is increasing among plains residents—a result of accessible reservoir water surface.

Wild or Wilderness Areas, in or adjoining the basin, which contain outstanding, unspoiled areas of very high quality.

The Bureau of Indian Affairs has given comparable status to a Roadless Area in the Wind River Mountains.

The Bureau of Sport Fisheries and Wildlife administers over a million and a half acres in National Wildlife Refuges in the basin. Many of these provide developed recreation areas, but all are managed on a multiple-use basis, where compatible with the primary purpose of the refuge.

The program of the Bureau of Land Management makes available to State and local agencies property to be used for park and recreation purposes. In addition, it administers all public-domain lands, many acres of which are used for recreation activities such as hunting and fishing.

Reservoir recreation areas, resulting from the many large Federal water-control projects being constructed, represent in many cases a valuable new type of area in the basin. On Corps of Engineer projects, these developments are in some cases provided and administered by the Corps and, in other cases, administered under agreement by appropriate State or local agencies. On projects of the Bureau of Reclamation, which has no authority to develop or administer recreation areas, such developments are managed by other appropriate agencies. To date in the basin, such administering agencies range from the National Park Service in one case, where recreation values were judged to be of national significance, to State, county,

or municipal park agencies. Where they lie within the exterior boundaries of National Forests, they are administered, under agreement, by the Forest Service.

At the State level, a balanced park system consists of a number of different kinds or types of areas. Chief among these are State parks and State recreation areas. In addition, State monuments, State parkways, State waysides, State beaches, and perhaps other variations should be considered where appropriate.

In the selection and use of these several categories, guides prepared cooperatively through the efforts of the National Conference on State Parks provide valuable and constructive policy guidelines. They are contained in the following documents issued by that organization, whose address is 901 Union Trust Building, Washington 5, D.C.:

1. *Suggested Criteria for Evaluating Areas Proposed for Inclusion in the State Park System*
2. *Criteria for Evaluating Historic Sites and Buildings*
3. *Suggested Wildlife Policy for State Parks*
4. *Suggested Policy on Vegetation Management*
5. *Suggested Park Management Standards and Practices, Historical and Archeological Areas*

County and municipal nonurban park systems might include areas similar to those of the State, though adapted to meet local requirements.

COOPERATION

Comprehensive, long-range planning clearly is required if park and recreation goals are to be attained. Just as clearly, coordinated plans are required if park systems developed at all levels of government are to complement each other in the best public interest. Cooperation therefore is basic.

Where the selection of new parks or recreation areas may involve resources valuable for other purposes—whether water, mineral, or vegetative—or, conversely, where such other use may involve significant recreation values, the overall public interest should be recognized in weighing alternate use possibilities before those resources are dedicated to a particular use.

Broad studies are being undertaken by several of the Federal bureaus, and the basin States plan to develop or bring up to date long-range State plans. In most cases, the addition of planning personnel to existing staffs will be required. Such action is strongly urged.



Large scenic parks are the backbone of a State park system. Pictured is the entrance to Chadron State Park, Nebr.

State Analyses

Using the basic principles and recommendations outlined heretofore, the remainder of this publication is devoted to a more detailed analysis of each State. A discussion of the recreation resources, planning considerations, and objectives and recommendations for each State is accompanied by maps and lists of existing and recommended areas. The States of the basin follow in alphabetical order.

COLORADO

Recreation Resources

Colorado's superlative mountain scenery, combined with a cool, invigorating summer climate, makes it one of the West's most popular vacation regions. It is one of the "public land" States—36 percent of the total area is under Federal ownership, of which about half is in National Forests. The northeast third of the State lies within the Missouri River Basin. Colorado's average altitude of 6,800 feet above sea level is the highest of any of the 48 States.

The part of the State within the basin consists of two distinct physiographic regions—the eastern slope of the Rocky Mountains along the western boundary of the basin, and the plains to the east. The two regions possess almost completely different types of plant and animal life, climate, and topography.

Most of the important natural recreation resources in the basin section are along the eastern slope of the mountains. This region's rugged and magnificent mountain scenery, the glaciers and glacial lakes, spectacular canyons, expansive forests, and varied wildlife offer a wealth of outstanding, as well as unique, recreation resources. More than 150 resorts and concessions in the National Forests serve the

tourist and the weekend recreationist. Many dude ranches offer visitors the opportunity to enjoy the atmosphere of the old West. Both resort and dude ranch operations are based on the recreation resources of the Arapaho, Pike, Roosevelt, and Routt National Forests. Some 2,200,000 acres of these forests are within the basin section.

In contrast to conditions in the mountains, significant recreation resources in the plains part to the east are limited to scattered, localized areas. While they do not compare with the outstanding resources in the mountains, they are of definite recreation interest and appeal to the residents.

Ecological associations, too, are tremendously varied in Colorado. In the basin section, they range from alpine types along the Continental Divide, down to



Colorado's superlative mountain scenery makes it one of the West's most popular vacation regions. Loch Vale in Rocky Mountain National Park.

PARK AND RECREATION AREAS

LEGEND

FEDERAL

- NATIONAL PARK SERVICE
- FOREST SERVICE
- Wild and Wilderness Areas
- Wildlife Preserve or Game Refuge
- Reservoir Recreation Areas
- Recreation Areas
- FISH & WILDLIFE SERVICE
- Wildlife Refuge with developed Recreation areas
- CORPS of ENGINEERS
- Reservoir Recreation Areas
- BUREAU of INDIAN AFFAIRS
- Roadless Area
- Historic Sites
- DEPARTMENT of the ARMY
- Historic Site

STATE

- Parks
- Parks
- Parks
- Recreation Areas
- Recreation Areas
- Recreation Areas
- Historic Sites
- Historic Sites
- Archeologic Sites
- Archeologic Sites
- Forests
- Game Management Unit or Public Hunting Grounds
- Wayside

LOCAL

- Recreation Areas
- Historic Sites
- Archeologic Sites
- Mountain Park System

*DENOTES A NUMBER OF DEVELOPED AREAS

ACRES

- 1000 or over
- 100 — 999
- 99 or less
- 1000 or over
- 100 — 999
- 99 or less
- 100 or over
- 99 or less
- 100 or over
- 99 or less



PARK AND RECREATION AREAS

LEGEND

FEDERAL

- NATIONAL PARK SERVICE
- FOREST SERVICE
- Wild and Wilderness Areas
- Wildlife Preserve or Game Refuge
- Reservoir Recreation Areas
- Recreation Areas
- FISH & WILDLIFE SERVICE
- Wildlife Refuge with developed Recreation areas
- CORPS of ENGINEERS
- Reservoir Recreation Areas
- BUREAU of INDIAN AFFAIRS
- Roadless Area
- Historic Sites
- DEPARTMENT of the ARMY
- Historic Site

STATE

- Parks
- Parks
- Parks
- Recreation Areas
- Recreation Areas
- Recreation Areas
- Historic Sites
- Historic Sites
- Archeologic Sites
- Archeologic Sites
- Forests
- Game Management Unit or Public Hunting Grounds
- Wayside

LOCAL

- Recreation Areas
- Historic Sites
- Archeologic Sites
- Mountain Park System

ACRES

- 1000 or over
- 100 — 999
- 99 or less
- 1000 or over
- 100 — 999
- 99 or less
- 100 or over
- 99 or less
- 100 or over
- 99 or less

SUGGESTED ADDITIONAL PARK AND RECREATION AREAS

STATE PARK SYSTEM

- Parks (Natural)
- Recreation Areas
- Historic Sites
- Archeologic Sites

LOCAL PARK SYSTEM

- Recreation Areas

AREAS OF RECREATION NEEDS

- SUGGESTED AREA SYMBOLS
- DENOTES GENERAL LOCATION ONLY

0 25 50 100 200

montane types, and to the grasslands types farther east. Each type has its own special recreation value and appeal.

Four major historical periods or themes are represented in the basin section of the State. They include exploration and fur trade; the Indian-military frontier; mining; and overland migration.

So far as is now known, the prehistoric peoples who inhabited this section of Colorado were mainly nomadic hunters. Their occupation dates from the period immediately before contact with Europeans back to at least 10,000 years ago. Two sites of the Big Game Hunting period are of outstanding scientific importance, but none with significant recreation potential are known to exist within the section.

Planning Considerations

PEOPLE. The basin section, with one-third of the State's area, has almost two-thirds of the State's population, nearly half of which is in the Denver metropolitan area. A second major population concentration is located along the eastern foothills, north of Denver, in the Boulder-Greeley-Fort Collins-Loveland area. The part of the basin section lying to the

east is sparsely settled; most of its population is concentrated in 2 or 3 local areas along U.S. 6. This locality lost population rather heavily in the last two decades. Statewide, however, there was a population gain of 18 percent from 1940 to 1950—the sharpest rise to take place in any of the 10 basin States. As a whole, the basin section of Colorado experienced an even greater increase, owing to the urban centers in the western part of the section. Future population growth undoubtedly will be in and near these urban centers. The booming Denver area, for example, is expected to exceed 1 million people by 1980.

Population trends since 1930 and as projected through 1980 are shown in the following tabulation:

| <i>Year</i> | <i>Population, total State</i> | <i>Population, basin part</i> | <i>Percent Urban, basin part</i> |
|-------------|------------------------------------|-----------------------------------|--------------------------------------|
| 1930 | 1,036,000 | 586,000 | 61 |
| 1940 | 1,123,000 | 641,000 | 64 |
| 1950 | 1,325,000 | 815,000 | 67 |
| 1960 | 1,670,000 | 1,085,000 | 70 |
| 1970 | 1,908,000 | 1,278,000 | 73 |
| 1980 | 2,147,000 | 1,503,000 | 76 |

RECREATION USE AND TRENDS. Although no specific studies have been made of recreation activities of Colorado residents, a 1953 Colorado tourist survey showed the most popular activity on the part of



The revival of Central City, a famous town of the mining era, has attracted large numbers of tourists.

vacationists to be sightseeing, followed by photography, general relaxation, visiting historic sites, picnicking, stream fishing, camping, and hiking. Boating, horseback riding, swimming, and lake fishing headed the list of activities in which tourists would have liked to participate, but could not.

The recreation habits of the residents are largely influenced by the type of resources and developments that are available in the mountains. Their recreation habits and desires, therefore, are undoubtedly similar to those of the average tourist, but with perhaps less emphasis on such aspects as sightseeing and relaxation and more on active forms of recreation such as hunting, fishing, camping, picnicking, and hiking. Recently completed or developed reservoirs, both in the foothills and in the plains, are influencing local trends in the direction of increased boating, lake fishing, picnicking, camping, and, to a less extent, swimming.

Overnight camping has steadily increased and, as an accommodation, is second only to motels. Winter-sports activities also are becoming more popular each season.

As in the rest of the Colorado Rockies, recreation use on the eastern slope is increasing rapidly. Each year brings new all-time highs in attendance records. In the past 15 years, for example, attendance has doubled at Rocky Mountain National Park. Recreation use in the National Forests that lie in the basin

section has more than tripled during the last 10 years. Estimates for Bonny Reservoir, in the eastern part of the basin section, place the 1956 attendance at 81,000. Attendance at Shadow Mountain National Recreation Area, which adjoins Rocky Mountain National Park on the south, reached a total of 1,308,177 persons during 1956.

Areas for which attendance records are available from 1946 through 1955 show the following trends:

| | 1946 | 1950 | 1955 | Increase, 1946 to 1955 (percent) |
|---|----------|-------------|-------------|--|
| National Forests | 768, 310 | 1, 113, 775 | 2, 434, 455 | 215 |
| Rocky Mountain National Park | 804, 588 | 1, 275, 160 | 1, 454, 019 | 80. 7 |

ECONOMIC IMPACT. The tourist industry ranks second only to agriculture in economic importance to the State. Coloradans themselves play a substantial part in the overall volume of tourist trade. Nearly all tourists travel through the eastern part of the basin section en route to or from their destination. Some 1¼ million tourists spent \$92 million in Colorado in 1946, compared with 3½ million who spent \$214 million in 1955.

ADEQUACY OF PUBLIC AREAS. Most of the publicly administered parks and recreation areas in Colorado have been established at either of two government levels—the Federal or the municipal.

A summary of the various types of existing areas or facilities offering public recreation opportunities



Skating in Denver mountain parks.

in the basin section and adjoining fringe area is presented below:

| Administration | Type of area | Number | Area (acres) |
|---|--|-----------------|---------------------|
| Federal: | | | |
| National Park Service | National park | 1 | 255,948 |
| | National recreation area | 1 | 15,540 |
| Forest Service | National forests | 4 | |
| | Camp and picnic grounds | 128 | 1,000 |
| | Back-area camps | 19 | 1 65 |
| | Resorts and concessions | 55 | 1 770 |
| | Winter-sports areas | 5 | 1 315 |
| | Organized camps | 3 | 1 20 |
| | Wild areas | 3 | 130,000 |
| State: | | | |
| Game and Fish Department | Game-management units | 2 | 13,080 |
| | Reservoir recreation areas | 3 | 5,254 |
| Colorado State University | State forest | 1 | |
| | Campgrounds | 4 | 70 |
| | Resorts and concessions | 2 | 20 |
| Highway Department | Historic site | 1 | |
| | Roadside parks | 50 | |
| Local: | | | |
| Larimer County | Reservation recreation areas | 3 | 6,320 |
| Municipal governments | Mountain parks, parkways, and waysides | ² 53 | ² 19,720 |
| Rocky Mountain Metropolitan Recreation District | Reservoir recreation area | 1 | 332 |

¹ In addition to the acres listed for developed recreation facilities, the Forest Service administers 2,900,000 acres of National Forest lands in the basin and adjacent parts of Colorado. These lands, though undeveloped, are used extensively for recreation pursuits, such as hunting, fishing, and sightseeing.

² Approximation.

Although a State Park Agency was formed in the late 1930's, it was active for only a short time. Under revised legislation, enacted in 1955, the agency was reconstituted as the State Park and Recreation Board. With the minimum staff and funds that have been available to the board, it has not been possible yet to formulate a program for a State Park System. Activities to date have been devoted to the development of roadside parks. In cooperation with Federal agencies, the Colorado Game and Fish Department administers and has developed day-use recreation facilities at three reservoirs that have been constructed by the Bureau of Reclamation.

The Department also administers two reservoir areas, as Game Management Units, and an administrative agreement is being negotiated for a third. In addition, the Colorado Game and Fish Department manages several small lakes and one State reservoir as Fish and Game Management Units. They are open to fishing and hunting, with camping permitted.

Of the 9 additional reservoirs completed by the Bureau in the Basin section or its fringe zone, 3 are administered by Larimer County, and 1 by the Rocky Mountain Metropolitan Recreation District. Although, for the most part, only basic facilities have

been provided at these various reservoirs, they are fast becoming important local recreation outlets.

At the Federal level, some of the most magnificent and scenically diversified sections of the Rockies, as well as samples of its flora and fauna and its geologic features, have been preserved—as exemplified by Rocky Mountain National Park. Also, three areas in the National Forests have been administratively established as Wild Areas in recognition of the national interest involved.

The many developed areas in the National Forests play an important part in serving recreation needs and in enhancing public enjoyment of the region's recreation resources.

At the other end of the scale, the municipal governments of Denver, Boulder, Loveland, and Fort Collins have developed excellent and widely known mountain park systems. All the municipal mountain parks are conveniently located with respect to the population centers concerned. Several of the more important parks in the Denver system, however, are as yet relatively undeveloped, and some of the more extensive and highly scenic tracts have inconvenient access because of surrounding private lands.

Historic resources of statewide interest have received considerable recognition. Areas and features that have been marked or preserved and interpreted to varying degrees at the State level include historic frontier towns, battlefield sites, and forts, representing mainly the exploration, fur trade, and mining themes. Frontier towns of special interest are the well-known old mining town of Central City, with its buildings preserved by Denver University, and Georgetown.

Steadily growing resident and tourist use has far outstripped recreation development. Reservoir recreation development has not appreciably alleviated overuse and overcrowding at earlier developments in natural areas.

Camping facilities in general are being used to the maximum capacity. In this connection, most reservoirs in the basin section can support more fishing than they now receive, and the possibility of increased fishing may offer opportunity for the development of additional camping as well as picnicking facilities. Increased fishing would, at the same time, result in improvement in reservoir fishing. Nearly all developed areas are being used to the saturation point, however, and the impact is bringing serious deterioration to inherent resources of national, as well as State, importance.

Other losses are being brought about by ribbon development along the highways, industrial expansion, and increasing private landholdings.

SPECIAL CONSIDERATIONS. Because of their particular significance in the overall recreation picture for the basin section, the following factors warrant special consideration by the various agencies concerned with long-range park and recreation planning:

1. The preservation, development, and use of the scenic and recreation resources of the general mountain region along the western edge of the basin in Colorado are of special importance not only to the State but also to the Nation. The significance of this factor will greatly increase during the next 25 years. Additional development and the expansion of present recreation facilities for day, weekend, and vacation use is a basic element in the consideration of this factor.

2. Existing and contemplated Federal water-control projects will be of special recreation importance to the basin section. With appropriate development, projects in the foothills of the mountains would be of basic importance in helping to relieve use pressures in other areas and in serving a portion of the recreation needs of the large population groups in the general area. Reservoirs in the plains section may provide the major means of serving local day-use needs in that section. On the other hand, the effect of reservoirs on the character and natural flow of streams, combined with the concentration of fishing pressure at or near the reservoirs, has greatly modified the recreation picture.

3. Public lands under the jurisdiction of the Bureau of Land Management include areas of noteworthy recreation value. The Bureau's current land disposal program may well present the opportunity for the acquisition of such tracts, particularly by State and local agencies.

4. The general lack of natural recreation values, including bodies of water and tree cover, poses a special planning problem in the plains section.

5. Various existing roads and highways still retain a natural roadside character and offer good possibilities for the designation of tourways or pleasure drives. Loop routes, leading westward from Denver and return and featuring points of interest en route, could logically be planned for one-day trips. Protection of the natural character through such means as roadside zoning would be essential.

The recreation section of the Report of the Arkansas-White-Red Basins Interagency Committee recog-

nizes the recreation value and importance of a north-south Rocky Mountain Tourway along the eastern flank of the Rockies connecting the major National Parks.

6. Highway programs will have an important bearing on future park and recreation requirements in the basin section of Colorado. New or improved highways will increase the flow of travel and thereby affect the pattern of recreation needs and use along the routes.

Three interstate highways, all feeding into Denver, are proposed as part of the interstate system. A north-south route following U.S. 87 will connect the urban centers along the eastern foothills; another, using parts of U.S. 6 and 138, will enter the city from the northeast; the third route will connect Denver with Kansas communities to the southeast and will generally follow U.S. 40.

A more indefinite proposal, but nevertheless a possibility, is an international highway from Canada to Mexico, utilizing north-south U.S. 287 in eastern Colorado.

7. In view of the accelerated attrition of recreation resources, county, district, and highway zoning should be worked out as an early phase of the broad program. Since the accomplishment of this type of zoning requires public understanding and support, the problem should be brought to general attention whenever the opportunity offers.

8. Stream pollution is a special problem in parts of the basin section. Specifically, the South Platte River and its tributaries east from the foothills are polluted by wastes from the beet industry, and some of the mountain streams near Boulder and Idaho Springs are polluted as the result of mining operations. Pollution correction and control would improve the present scenic and natural character of the streams and would help to restore fishing. New opportunities for picnicking and camping along the stream banks also would result.

AREAS OF RECREATION NEED. Because of the wide variety of both developed and undeveloped recreation resources available on the extensive public land holdings, the need for additional outlets for day and weekend use for local residents has not been apparent until recently. The rapidly increasing park and recreation use, combined with overuse of existing facilities, has brought the need into focus.

In the basin section, the need for additional outlets of this type is judged to exist primarily in a large area along the eastern slope of the mountains and to extend



Congested roadside development dramatizes the need for zoning. Photograph taken in Big Thompson Canyon.

diagonally to the northeastern corner of the State. This area of need is indicated in outline form on plate 10. As the drawing shows, the area includes the major resident population groups.

In defining this area of need, recognition is given to the existence of the large population group to the west that is growing more rapidly than other similar groups in the basin; to the availability of widely distributed recreation resources that are adaptable to development to serve the needs of this population; and to the study and evaluation of the adequacy of existing public areas.

Objectives and Broad Recommendations

The underlying objective in Colorado is the establishment of a balanced, well-rounded system of parks and recreation areas to be administered at appropriate levels of government. Areas comprising such a system are of two types—first, those set aside to preserve important scenic, scientific, and historic resources for public use and enjoyment; and second, those that provide for additional development to meet needs. It is the achievement of a balanced park and recreation system at the State level that now needs major emphasis. The Federal Government has a high interest—more so than in most basin States—and there are a number of Federal agencies directly concerned. In short, the achievement of the broad objective is basically one of cooperation, coordination, and integrated planning at all levels. Individual roles of the

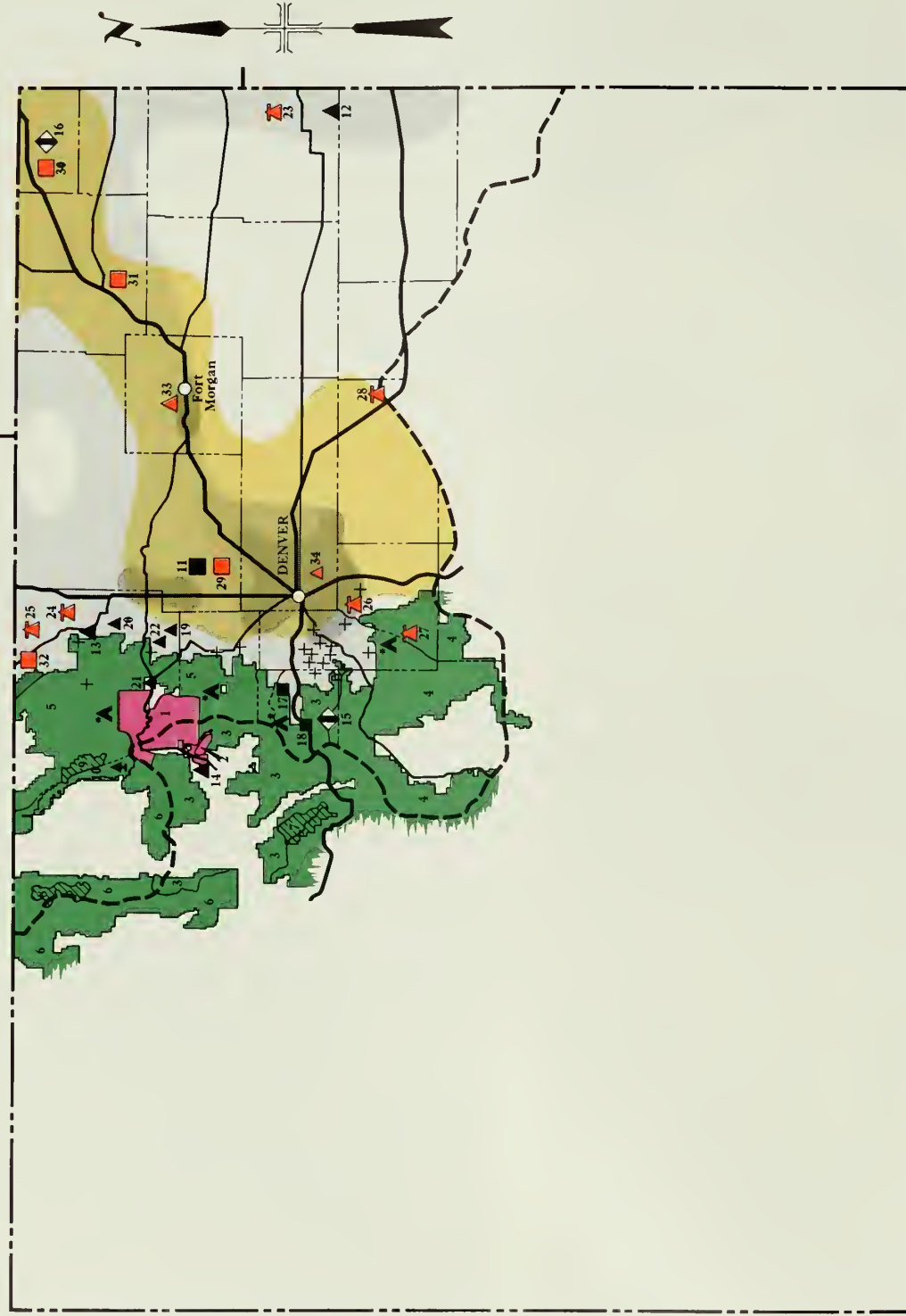
agencies concerned in working toward the broad objective will most logically lie along the following lines.

The role of the Federal Government is the preservation of outstanding recreation resources along the Continental Divide, not only for the use and enjoyment of the people of Colorado but for the people of the United States as well. Thus, the major Federal role in Colorado concerns the Nation at large.

Under its MISSION 66 program, the National Park Service has initiated a plan in Rocky Mountain National Park to provide additional facilities and services to meet future requirements and to increase protection of the area. As a part of the MISSION 66 program, the Service will undertake broad studies to determine whether any additional areas in Colorado should be considered for inclusion in the National Park System, and the Service will include the State in its National Survey of Historic Sites and Buildings. It also will cooperate with the other agencies concerned in developing a statewide plan to meet the broad objective.

The Forest Service, too, is engaged in long-range planning under its study, Operation Outdoors. Based on recreation needs, the plan proposes bringing developments up to date and developing additional recreation opportunities. There is also need for a restudy of existing Wild Areas for possible boundary changes for further control and protection and for additional lands which might qualify. Several proposed reser-

COLORADO



PARK AND RECREATION AREAS

- | FEDERAL | | STATE | | LOCAL | |
|-----------------------|-----------------------|----------------------|----------------------|------------------|----------------|
| NATIONAL PARK SERVICE | Forest | Recreation Areas | Historic Sites | Recreation Areas | Park |
| FOREST SERVICE | Recreation Areas | Historic Sites | Mountain Park System | Recreation Areas | Historic Sites |
| Wild Areas | Game Management Units | Mountain Park System | Mountain Park System | Recreation Areas | Historic Sites |
| Recreation Areas | Game Management Units | Mountain Park System | Mountain Park System | Recreation Areas | Historic Sites |

SCALE OF MILES
0 25 50 75

- Boundary of Missouri River Drainage
- Areas of Present and Future Recreation Need

*DENOTES A NUMBER OF DEVELOPED AREAS

PARK AND RECREATION AREAS

Federal

NATIONAL PARK

1. Rocky Mountain

NATIONAL RECREATION AREA

2. Shadow Mountain

NATIONAL FORESTS

3. Arapaho
4. Pike
5. Roosevelt
6. Routt

WILD AREAS

7. Gore Range—Eagle Nest
8. Mount Zirkel—Dome Peak
9. Rawah

State

FOREST

10. Colorado

HISTORIC

11. Fort Vasquez

RECREATION AREAS

12. Bonny Reservoir
13. Watson Lake
14. Willow Creek

GAME MANAGEMENT UNITS

15. Mount Evans
16. South Platte

Local

HISTORIC

17. Central City
18. Georgetown

RECREATION AREAS

19. Carter Lake Reservoir
20. Horsetooth Reservoir
21. Lake Estes
22. Rattlesnake Reservoir

Suggested Additional Areas for State Park System

PARKS (SCENIC OR NATURAL)

23. Beecher Island
24. Pinyon Tree Grove
25. Red Hills
26. Roxborough Park
27. South Platte
28. The Breaks

HISTORIC

29. Fort Lupton
30. Fort Sedgwick
31. Summit Springs
32. Virginia Dale Stage Station

RECREATION AREAS

33. Narrows Reservoir

Local Park System

RECREATION AREA

34. Cherry Creek Reservoir

TRAVEL ROUTES



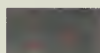
Proposed interstate highways



Existing major highways

POPULATION

AVERAGE DENSITY PER SQUARE MILE



50 people or over



10 to 25 people



25 to 50 people



5 to 10 people



5 people or less

voirs would be situated within forest boundaries, and under existing policy they would be administered by the Forest Service. Each reservoir should be evaluated from the standpoint of its place in the long-range plan as balanced against any losses in resources.

The Fish and Wildlife Service also is developing plans to meet long-range requirements in wildlife management, hunting, and fishing.

The first essential in the achievement of a State park system in Colorado is the provision of adequate staffing and funds for the State Parks and Recreation Board. The importance of a cooperative approach in the planning and development of the system further emphasizes the desirability of obtaining a planning staff as soon as practicable.

In developing the State system, the first goal should be the selection and acquisition of areas to preserve recreation resources of statewide interest.

Comprehensive planning, on a long-term basis, would insure that the immediate advantages to be gained from reservoir recreation are not given undue emphasis at the expense of a balanced State park system. A system of roadside parks to provide inviting rest stops for the tourist in eastern Colorado and tell him something of the story of the State would be a valuable adjunct to the State park system. The State has already begun the development of a roadside park system by the rehabilitation of former sites, but the best public interest indicates that they be studied to determine their proper place in the overall scheme.

Annual attendance for a system of State, county, and nonurban metropolitan parks in the basin section is estimated at a minimum of 4 million visitors by 1980.

Local systems throughout the basin section and the State are needed to supplement the State park system. They would preserve resources that are primarily of local interest and fill needs not otherwise met.

Suggested Solutions

The following suggestions are offered only as a general guide in what is believed to be a logical approach in attaining the basic objective:

POSSIBLE FEDERAL, STATE, AND LOCAL COOPERATION. The mountainous area west of Denver might be studied cooperatively, leading to a coordinated management plan to preserve and develop the resources in the long-term public recreation interest. This solution might offer the best answer in meeting increasing demands for developed areas in Colorado, as well as in preventing over-commercialization and exploitation.

PRESERVATION OF RESOURCES. The suggested areas listed below would form the core, or nucleus, for a well-balanced State park system:

Scenic or Natural

1. Several undeveloped, isolated tracts in the Denver Mountain Park System are so grouped as to lend themselves to consolidation as a larger unit or units. As the overall plan for Colorado develops, it may be desirable to restudy these areas to determine whether they would best be continued under municipal administration or at some other level.

2. The vicinity north of Fort Collins near the State boundary deserves especially careful consideration for its varied recreation resources. The historic Virginia Dale Stage Station is situated in a rugged, scenic setting; the Red Hills are of geologic and scenic interest; and the Upper Box Elder River Canyon is also highly scenic.

3. The Breaks, northwest of Limon in east central Colorado, is an area worthy of consideration for its inherent scenic, geologic, archeologic, and biologic values.



Beecher Island, in the plains section, offers historic and biologic values of recreation interest.

4. Roxborough Park area south of Denver, including the general area to the south and west and incorporating a section of the South Platte River and the Twin Forks Reservoir site, would provide an especially valuable addition to the State park system. It is an almost completely natural, undisturbed area with high scenic and scientific values.

5. The Pinyon Tree Grove, north of Fort Collins, is suggested for consideration for its scenic, geologic, and ecologic interest.

6. The Beecher Island area on the Arikaree River, in eastern Colorado, is the site of an important battle of the Indian-military frontier period. Biological values of recreation interest also are inherent in the natural surroundings, and there are important paleontological values in the cliffs overlooking the river.

7. If still available, a stretch of original, unspoiled river is suggested for permanent preservation. A 3-mile stretch of the South Platte below Cheesman Reservoir might offer a possibility.

8. The fossil-insect area near Florissant in Teller County, west of Colorado Springs, is worthy of consideration for State preservation.

Historic

1. Investigation of noteworthy sites along the Smoky Hill Trail and the Overland Trail, which followed the course of the South Platte, definitely warrant consideration for preservation at the State level.

2. Suggestions for the State system of historical monuments in the Missouri Basin section include the site of a typical military post of the frontier era, such as Fort Sedgwick, and the site of a typical early trading post, such as Fort Lupton.

3. Summit Springs, near Sterling, is the site of an important battle representing the period of the Indian Wars of the late 1860's. It is suggested that the State consider acquisition of the area, which is marked at the present time.

SUGGESTED MEANS OF MEETING RECREATION NEEDS. Various reservoirs now under consideration by the Bureau of Reclamation and Corps of Engineers will, together with those now administered by State and local agencies, provide a major means of meeting active recreation needs. Specific suggestions cannot be made, however, until the overall water-control plan becomes more definite. Many of the existing and proposed reservoirs in the Denver water-supply system would offer important new recreation outlets,

particularly to Denver residents, if development and use were to be permitted.

Cherry Creek Reservoir, south of Denver, also would present distinct recreation opportunities if a conservation pool could be retained along with the primary purpose of flood control. This possibility is being explored informally by the Corps of Engineers and the State.

LOCAL SYSTEMS. Major accent is suggested on the following: (1) Further development and expansion of the areas in the mountain parks in consolidation of holdings and in providing public access to them; and (2) the development of systems in eastern Colorado for local use and enjoyment.

IOWA

Recreation Resources

The Missouri River, the western boundary of Iowa, drains a section of the State extending eastward about 70 miles and somewhat farther along the State's southern boundary. This study covers that drainage area plus a fringe zone along the east about 50 miles wide.

Long famed as the heart of the United States Corn Belt, Iowa is said to have more consistently fertile land than any other area of comparable size in the world. Ninety-six percent of the total land area is either under cultivation or is devoted to uses that are directly related to agriculture.

Iowa's level or rolling open countryside is almost entirely devoted to farms. The natural recreation resources, therefore, consist of the quiet beauty and charm of the rivers and valleys and their bordering wooded hills, with their spring verdure and autumn coloring; the prominent loess bluffs along the Missouri; and the many fine panoramic views of the rich farmlands.

Much of the land now in agriculture formerly supported true, or tall-grass, prairie. Here and there the grasslands were broken by wooded river valleys, some rather extensive. These fine forest stands, predominantly oak-hickory associations, now constitute one of the State's most attractive recreation resources, despite the fact that only a relatively few undisturbed stands remain.

River stabilization and flood-control projects will not result in important new recreation opportunities. On the other hand, Lewis and Clark Lake, formed by the Gavins Point Dam in South Dakota, is expected



Many fine panoramic views such as this one in Stone State Park reveal Iowa's charming countryside.

to become a regional recreation attraction, drawing visitors from northwestern Iowa as well as other surrounding States.

Once rich in prehistoric remains, the State has had most of the obvious surface features of archeologic sites removed by intensive cultivation or construction projects. The few sites remaining are those associated with Western Farmer culture, Indian burial mounds, and the Woodland peoples.

There are few significant historic sites known in the basin section from which Iowa history might be interpreted. There are a number of sites connected with the Lewis and Clark Expedition, notably the Sergeant Floyd Monument near Sioux City. There are also several sites in Council Bluffs associated with the Mormon migration and the Indian frontier.

Planning Considerations

PEOPLE. Statewide, Iowa's population has increased steadily since 1930. In the basin section, however, the trend has been the opposite, a slow but consistent decline to somewhat less than one-fourth of the State's total number of residents.

Population distribution is quite uniform, and the

farms, towns, and villages are evenly spaced throughout the basin section. The heaviest densities are at Sioux City and Council Bluffs, both on the Missouri, and, in the fringe zone, at Des Moines and Ottumwa.

The present general trends, both statewide and for the basin section, will probably continue in the future. By 1980, it is expected that about one-fifth of the State's residents will be living in the basin section.

Despite her rich agricultural background, Iowa is experiencing the current widespread population shift from rural to urban areas. Indications are that the shift will continue and that rural and urban residents in the basin section will be about evenly divided by 1980. It is predicted that the principal urban expansion will take place in the Sioux City and Council Bluffs areas, but that the present patterns of distribution will not undergo any basic change.

Population trends and forecasts are summarized in the following tabulation:

| <i>Year</i> | <i>Population, total State</i> | <i>Population, basin part</i> | <i>Percent Urban, basin part</i> |
|-------------|------------------------------------|-----------------------------------|--------------------------------------|
| 1930 | 2, 471, 000 | 648, 000 | 21 |
| 1940 | 2, 538, 000 | 637, 000 | 34 |
| 1950 | 2, 621, 000 | 610, 000 | 38 |
| 1960 | 2, 756, 000 | 605, 000 | 42 |
| 1970 | 2, 804, 000 | 588, 000 | 46 |
| 1980 | 2, 857, 000 | 571, 000 | 50 |

RECREATION USE AND TRENDS. The great majority of people seem to prefer water-related activities and, in the last few years, the trend in this direction has been accentuated. Boating has experienced the greatest increase, with the number of boat licenses issued in 1956 more than twice the number issued in 1955. The other major recreation activities are swimming, fishing, and picnicking.

There is a definite trend, also, toward increased overnight and vacation use. Camping, permitted in areas with permanent custodians, is gaining in popularity each year, while rental cabins have been in great demand. Requests have exceeded the supply of cabins in recent years.

Hunting, especially for waterfowl and upland game in the marshes and woodlands, also has widespread appeal. Hunting is permitted in the State forests, but not in the State parks and preserves.

Attendance at Iowa's State parks has more than doubled in the last 10 years. Total visitation, which reached an all-time high during the 1955 season, was greater than for any other basin State. During 1953, Iowa ranked 7th in the Nation in the number of State park visitors, although it was 22d in population and 24th in size.



Wooded river valleys are one of Iowa's most attractive recreation resources. Scene at Ledges State Park.

The following tabulation shows attendance figures for the entire State of Iowa and for the section in the Missouri Basin:

| State Park System: | 1946 | 1950 | 1955 | Increase, 1946 to 1955 (percent) |
|--------------------|-----------|-----------|-----------|--|
| Entire State..... | 2,292,000 | 3,625,250 | 5,740,000 | 150 |
| Basin section..... | 765,000 | 1,145,000 | 1,700,000 | 122 |

ECONOMIC IMPACT. The National Association of Travel Organizations has estimated that out-of-State tourist expenditures in Iowa increased from \$71,800,000 in 1951 to \$78,000,000 in 1955. Indications are that this upward trend will continue.

ADEQUACY OF PUBLIC AREAS. There are no parks or recreation areas administered at the Federal level in this part of Iowa. The several types of State areas, together with acreages, are listed below.

| Administration | Type of area | Number | Area (acres) |
|-------------------------------|----------------------|--------|-----------------|
| State: | | | |
| Conservation Commission: | | | |
| Division of Lands and Waters. | State parks..... | 43 | 17,793 |
| | State preserves..... | 5 | 285 |
| | State forests..... | 4 | 4,650 |
| Highway Department... | Roadside parks..... | 40 | 50 |

The authorization in 1917 of a Board of Conservation started the State's park program, and in 1919 the Fish and Game Department deeded to the board 1,300 acres to be known as Backbone, the first State park in Iowa. Establishment, development, and maintenance of the State park system has followed a well-organized pattern during subsequent years. The recommendations of the 25-Year Conservation Plan, published in 1933, have guided acquisition and development of areas in the system.

Park development policy in Iowa accents strongly areas which provide for diversified recreation activities in a relatively natural setting, many of them keyed to water areas. Conversely, inherent values of importance from the standpoint of archeologic and biologic interest have not been as well represented. In the northern part of the basin section, however, the State is acquiring a remnant area of true prairie-type vegetation.



Relaxing at one of Iowa's fine State park lakes.



Water-related activities appeal to all. Pictured is Springbrook State Park.

The extraordinary increase in attendance since World War II has exceeded the capacity of facilities in most State parks, and natural values, in some cases, are deteriorating as a result of overcrowding. In some instances, too, present areas do not fully meet State park qualifications from the standpoint of broad interest or size of area.

The Division of State Parks has developed a long-range plan for general expansion and improvement but, as yet, appropriated funds have not been sufficient to carry out a completely effective program.

Local governmental agencies in Iowa in the past have not provided outdoor nonurban recreation facilities to any great extent. Under recently enacted legislation, however, a number of county park boards are being organized.

SPECIAL CONSIDERATIONS. Several factors are of particular importance in a long-range planning program for the basin part of Iowa. These include the following:

1. Three of the existing parks—Lake Manawa, Brown's Lake, and Lewis and Clark—used primarily for their oxbow lakes, are affected by stabilization of the Missouri River, largely owing to elimination of the June rise from which the lakes were filled. Elimination of these lakes would be a serious loss of developed recreation outlets. The State is seeking solutions to this problem.

2. The Missouri River itself, with clear, stable flow, will be a recreation resource. Goose hunting, camping, and fishing will be greatly improved. Good opportunities for boating will result, and float trips south from Sioux City may even be possible. Development of a marina is a possibility.

3. Although flood-control reservoirs within the basin and fringe zone are expected to receive recreation use, studies indicate that they will be neither natural nor attractive in physical appearance. Waters of the Rathbun Reservoir on the Chariton River, for example, will probably be reddish brown and cloudy and fluctuations in water level will pose many management problems, such as providing and maintaining boat docks and launching ramps.

4. New interstate highways will also affect the priority of development of State parks and recreation areas, particularly roadside parks. A north-south route, passing through Council Bluffs and Sioux City will carry the major traffic load between these two cities and population centers to the north and south. Another north-south route following the general course of U.S. 69 will pass through Des Moines. To carry traffic east and west, an interstate highway will be constructed along the general route of U.S. 6. These routes are indicated on plate 2.

5. The visitor load from the adjoining population concentration to the west is a factor that should be considered in a long-range planning program.

AREAS OF RECREATION NEED. There is a need for additional day- and weekend-use facilities within much of the study area in Iowa. Most of the need, however, will be substantially met through the State's program of expansion and development at existing parks.

It is judged that there will be two general areas within which the State's expansion program alone will not meet present and foreseeable local needs. The larger of these two areas is located along the western boundary of the State, extending north past Sioux City as shown on Plate 11. The major present need in this area stems from Council Bluffs and from Omaha, Nebr., which will continue to make heavy use of

conveniently accessible day-use facilities in western Iowa. Although the local needs of the residents in Sioux City and the vicinity to the north and east are now largely met, it is considered to be an area of future need because of predicted population expansion.

A second smaller area is one of present local recreation need. It includes Des Moines and vicinity, at the eastern edge of the fringe zone.

Objectives and Broad Recommendations

The objective of conserving important recreation resources for public use and enjoyment, and of providing supplemental recreation areas to meet needs, has been achieved to the extent that a substantial system of State parks, preserves, and forests now exists.

The 25-Year Conservation Plan is just coming to an end, and the State is considering revision of that plan in order to continue its long-range program. The many basic factors that have undergone change since the plan was prepared make its revision highly desirable. Bringing the master plan up to date at regular intervals will provide for the flexibility necessary to continued long-range planning.

Since there seem to be but few sites of statewide natural interest in this part of Iowa, most of the State parks here will have to be selected and developed in the manner of recreation areas. However, inclusion of more archeologic and historic sites, and, in some localities, more natural areas—as contrasted with intensive-use areas—would help round out the park system.

The Federal Government provided assistance to develop some Iowa State parks during the Emergency Conservation Work program of the 1930's. Since that time, there has been no Federal participation in development of facilities in the basin part of the State. Assistance of the National Park Service in State planning activities will continue to be available.

In connection with the State's broad program, greater emphasis might be given to parks and recreation areas which contain more diversified values than some of the present ones. Particularly, more natural areas of biologic interest might be brought into the system, and similar additions made to existing parks. Historic and archeologic sites, especially, deserve consideration.

In addition, a continued program of providing recreation area parks in regions where natural recreation resources are lacking will help fill voids in the park system, and means might be worked out for trans-

ferring small parks primarily of local significance to responsible local jurisdiction. This would permit the State Park Division to devote its chief efforts toward the maintenance of major parks.

A logical followup activity is for the State to continue to provide planning assistance to local governments. This phase of the State's program will be especially important during the next few years, when many counties will be forming their own park and recreation systems under the newly granted legislative authority. Within the basin section of Iowa, this applies particularly to the Council Bluffs vicinity.

To satisfy the needs of the traveling public, an expanded network of roadside parks is needed, supplementing those already existing. Such areas are generally planned and administered by the State Highway Department.

Opportunities for more diversified forms of active recreation would help to relieve the overloading of present facilities. Many of the smaller parks and recreation areas, for example, would accommodate more public use if facilities were provided for picnicking and hiking. In general, more overnight camping and organized group camp facilities also are needed.

Provision of interpretive facilities and programs would greatly enhance public appreciation, enjoyment, and use of the parks.

Consideration of tracts of land without regard to qualifications for dam construction and water impoundment might well add areas to the park system that have superior recreation possibilities, but which otherwise might be overlooked.

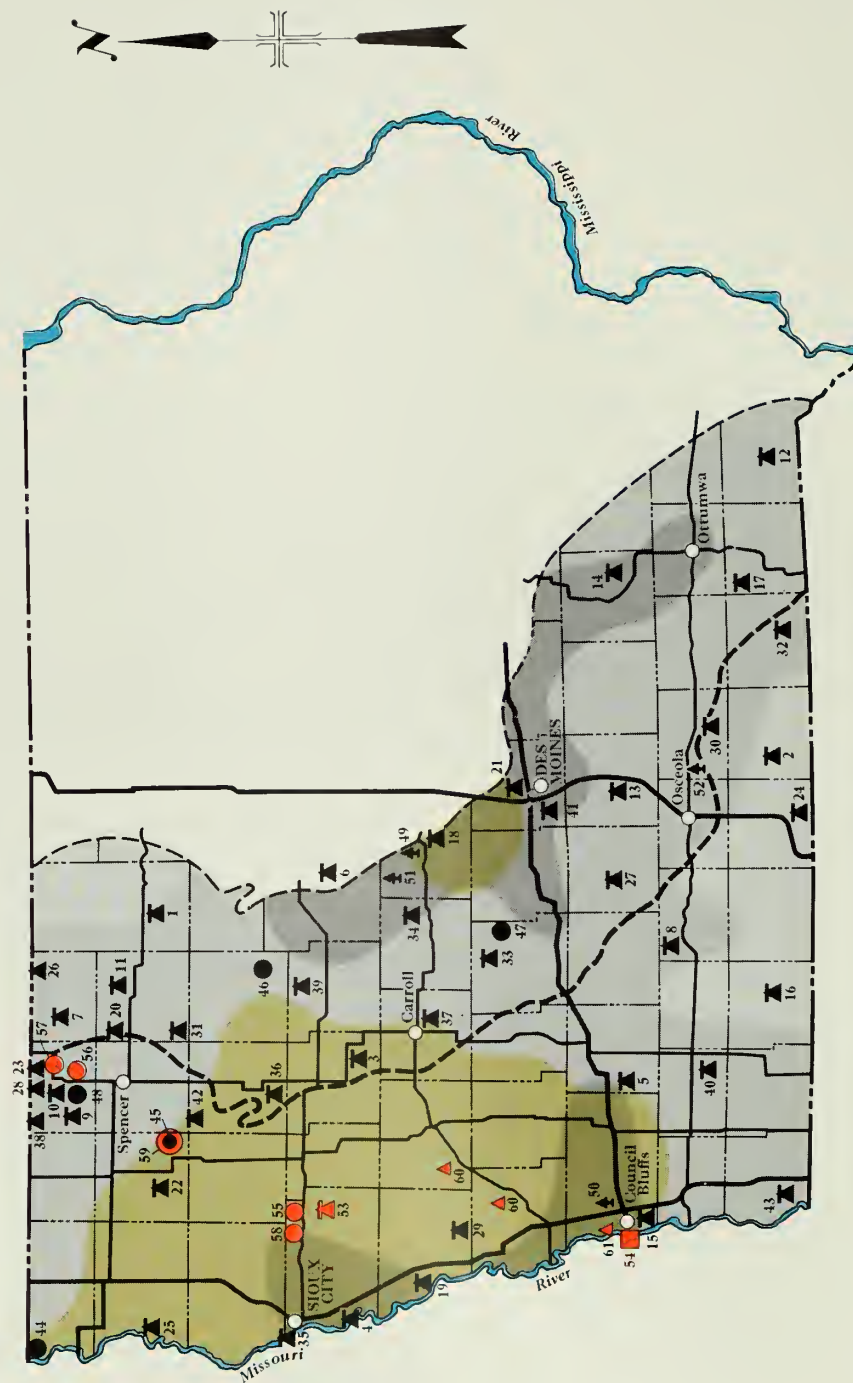
The local role in achieving a comprehensive statewide program for diversified recreation consists of the preservation, development, and administration of recreation resources of local importance, where possible, but primarily of meeting local needs. Under a State law, passed in 1955, counties may contribute materially in these respects. Acquisition, development, and maintenance can be undertaken if county residents vote in favor of creating a County Conservation Board. Fifteen counties—five in the basin and related fringe area—have now established such boards.

Cities and purely local agencies can furnish non-urban facilities of types usually required in regions of heavy population.

Suggested Solutions

The following discussion is intended merely as a broad guide toward Iowa's long-range objectives.

I O W A

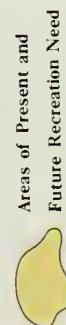
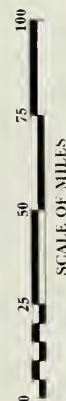


PARK AND RECREATION AREAS

- STATE
- ▲ Parks
 - ▲ Forests
 - Preserves
- BOUNDARIES
- Boundary of Missouri River Drainage
 - Boundary of Fringe Zone

SUGGESTED ADDITIONAL PARK AND RECREATION AREAS

- STATE PARK SYSTEM
- ▲ Parks
 - Historic Sites
 - Archeologic Sites
- LOCAL PARK SYSTEM
- ▲ Recreation Areas



State

PARK AND RECREATION AREAS

PARKS

1. Ambrose A. Call
2. Allerton Reservoir
3. Black Hawk Lake
4. Browns Lake
5. Cold Springs
6. Dolliver Memorial
7. Fort Defiance
8. Green Valley
9. Gull Point
10. Inn Area
11. Kearny
12. Lacey-Keosauqua
13. Lake Ahquabi
14. Lake Keomah
15. Lake Manawa
16. Lake of Three Fires
17. Lake Wapello
18. Ledges
19. Lewis and Clark
20. Lost Island
21. Margo Frankel Woods
22. Mill Creek
23. Mini-Wakan
24. Nine Eagles
25. Oak Grove
26. Okamanpedan
27. Pammel
28. Pikes Point
29. Preparation Canyon
30. Red Haw Hill
31. Rush Lake

32. Sharon Bluffs
33. Springbrook
34. Spring Lake
35. Stone
36. Storm Lake
37. Swan Lake
38. Trappers Bay
39. Twin Lakes
40. Viking
41. Walnut Woods
42. Wanata
43. Waubonsie

PRESERVES

44. Gitchie Manitou
45. Indian Village
46. Kalsow Prairie
47. Lennon Mill
48. Pillsbury Point

FORESTS

49. Holst
50. Petrus Memorial

51. Pilot Mound
52. Stephens

Suggested Additional Areas for State Park System

PARKS (SCENIC OR NATURAL)

53. Little Sioux River

HISTORIC

54. Grenville M. Dodge Home

ARCHEOLOGIC

55. Correctionville Mounds
56. Iowa Indian Village
57. Okoboji Mounds
58. Oto Indian Village
59. Wittrock Indian Village (enlargement)

Local Park System

RECREATION AREAS

60. Boyer River
61. Missouri Bluffs

TRAVEL ROUTES



Proposed interstate highways



Existing major highways

POPULATION

AVERAGE DENSITY PER SQUARE MILE



50 people or more



25 to 50 people



10 to 25 people

Specific solutions, in many cases, will be developed through comprehensive studies which the State and Federal agencies are undertaking. In this connection, the National Park Service, under MISSION 66, is cooperating in a nationwide recreation plan and has resumed the historic sites survey. Both of these will be cooperatively carried out and fully coordinated with the States' planning activities and with other Federal programs concerned with recreation resources, notably water-control projects. Expansion of the staff of the Division of State Parks to provide planning personnel who might give attention to these cooperative planning activities would be mutually advantageous.

PRESERVATION OF RESOURCES. The following are examples of natural, cultural, or scientific resources which might be added to the State park system within the basin section and the fringe zone:

Scenic or Natural

1. Tributary streams offer possibilities for large scenic parks. An excellent example is the Little Sioux River. A park in this general locality would also be accessible to the population centers in the north-central part of the basin section.
2. In addition, some existing areas can be expanded to help protect their inherent values from destruction by overuse, as discussed above. The need for the expansion of facilities applies to nearly every major park in the system.

Historic

The home of Grenville M. Dodge, famous railroad builder, financier, and public figure, which was erected in Council Bluffs in the late 1860's or early 1870's, is worthy of preservation. Future historic sites surveys may reveal additional specific features meriting preservation for their recreation interest.

Archeologic

1. The Iowa Indian Village site, 3 to 4 miles south of Lake Okoboji, represents the Western Farmers culture.
2. The Wittrock Indian Village site, also of the Western Farmers period, located near Sutherland and comprising 5.42 acres, is under ownership of the Conservation Commission. It offers an excellent opportunity for archeological interpretation

and, if enlarged to include an adjacent wooded area, would permit complementary recreation activities.

3. One of the Oto Indian Village sites, near Correctionville, would require museum facilities for interpretation of the Western Farmers culture.
4. The Okoboji Indian Burial Mounds in the vicinity of Spirit Lake may be of Woodland or Western Farmers culture, or both.
5. The Correctionville Mounds—6 undisturbed Indian Mounds on a high bluff beside U.S. 20—have interpretive potential to supplement the values of an area well-suited to wayside picnic-area development.

SUGGESTED MEANS OF MEETING RECREATION NEEDS. Iowa has been progressive in providing for active recreation. The policy of constructing lakes where feasible is but one manifestation of this attitude.

The development of natural areas as suggested above would provide for additional active recreation if the areas acquired are sufficiently large. Similarly, archeologic and historic sites might contribute.



Creating attractive areas, such as Lake of Three Fires State Park, to fill recreation needs has been an important phase of the State park program.

Other specific areas are not suggested at this time specifically to provide recreation outlets since accomplishments under the 25-Year Conservation Plan have provided areas well distributed in relation to population needs.

TOURWAYS AND PLEASURE DRIVES. Excellent opportunities for pleasure driving exist throughout the State, and a system of tourways utilizing existing highways could add much to the pleasure of tourists and residents alike. The tourways might be planned normally as circle routes starting and ending at the cities or larger towns or connecting State parks and other sites of public interest. The control of roadsides to eliminate undesirable developments would be important and might be accomplished through zoning.

LOCAL SYSTEMS. A well-rounded, balanced system of county and city nonurban parks and recreation areas, supplementing the State Park System and providing for local needs, is of primary importance in the general vicinity of Council Bluffs.

The natural recreation resources of several areas in this rolling, wooded section definitely warrant preservation as local parks. At the same time, their location and accessibility are such that, with appropriate development, they would serve as excellent outlets for local recreation needs.

Especially noteworthy examples in the Council Bluffs area are to be found along the Boyer River to the northeast; along the Missouri River bluffs and adjacent land in the immediate vicinity, already heavily used by local residents; and in the scenic hills bordering the Missouri to the south.

Although basically a local undertaking, the organization and development of areas such as these will require joint State and local effort both on the basis of the necessary overall planning and the considerable segment of population that is to be served.

As a first step, the local plans should be coordinated with, and incorporated in, the statewide master plan.

KANSAS

Recreation Resources

Approximately the northern half of Kansas lies within the Missouri River Basin. It is in this part of the State, in the heart of the Great Plains, that the geographical center of the United States (not including Alaska) is located.

Contrary to popular misconception, Kansas is characterized by varying land forms of scenic and recreation interest. The surface features range from gently rolling to irregular countryside, dominated by the expansive plains so often described as typical of the State, broken here and there by more rugged topographic variations.

Land elevations range in height from about 700 feet above sea level in the southeastern part of the State to more than 4,000 feet near the Colorado border.

The eastern half of Kansas formerly supported the true tall-grass prairie, but it is now largely agricultural land. Oak-hickory woodlands are fairly common in the extreme eastern part of the State, and this section has the more abundant natural recreation resources. The western half of the State, where the mixed prairie formerly existed, is devoted to wheat raising or to grazing. Occasional badlands and other unique or unusual formations and topographic features are carved from the grasslands. These are noted locally as points of interest to tourists.

Kansas has had a long and colorful history. In 1541, the Spanish explorer Coronado probably pene-



Kansas has land forms of scenic and recreation interest.
Photograph taken in Wabaunsee County.

trated to the northern part of the present State. It has since passed through many eras under several nations, but most of the historic resources now remaining concern its history and growth as related to the United States. Major themes represented in the basin part of the State are the Indian-military frontier; transportation and communication, including the Pony Express and the Oregon and Santa Fe Trails with their interesting historic landmarks; the Civil War, mainly covering events leading to that conflict; and the industrial and political themes. Other, though much more limited, resources are identified with the period of explorations and fur trade and with early settlement.

Archeological and paleontological finds are interesting, numerous, and significant, both from the standpoint of scientific value and of public recreation interest. Evidences of prehistoric man in the basin section include the very ancient culture of the Big Game Hunters, predating 6000 B.C.; and the Western Farmers culture of the most recent prehistoric period. Cretaceous time, the geologic period which immediately preceded the present age of mammals, is represented by the chalk bluffs of west-central Kansas. They are famous the world over for the reptilian fossils they contain.

In addition to the natural, cultural, and historical recreation resources, water-control projects of the Missouri River project and the many State park and lake impoundments provide important recreation opportunities. In normal water years, Kansas has nearly 50,000 surface acres of impounded water, included in 36 State parks, 5 Federal reservoirs, 4 State waterfowl refuges, 42 city and county lakes, and many lakes resulting from strip mining of coal.

Planning Considerations

PEOPLE. With approximately half the State's area, the basin section supported about half the total population in 1950. Nine cities in the eastern half—Kansas City, Salina, Topeka, Leavenworth, Atchison, Manhattan, Lawrence, Fort Scott, and Junction City—accounted for 35 percent of the population in the basin section.

In contrast, counties in much of the extreme western part of the State are sparsely populated, some having no communities large enough to merit urban classification. The shift from rural to urban has been steady since 1930, and it is expected to continue during the next 25 years. Population characteristics and trends,

together with forecasts, are presented in the tabulation below.

| Year | Population, total State | Population, basin part | Percent Urban, basin part |
|------------|----------------------------|---------------------------|------------------------------|
| 1930 | 1, 881, 000 | 954, 000 | 37 |
| 1940 | 1, 801, 000 | 915, 000 | 40 |
| 1950 | 1, 905, 000 | 963, 000 | 45 |
| 1960 | 2, 135, 000 | 1, 089, 000 | 49 |
| 1970 | 2, 352, 000 | 1, 200, 000 | 54 |
| 1980 | 2, 585, 000 | 1, 318, 000 | 59 |

RECREATION USE AND TRENDS. Present recreation development is centered around water areas that have been impounded primarily to create fishing, and most of the facilities are those that contribute to or support that activity. Thus, fishing and boating, together with hunting which takes place generally throughout the State, have dominated the outdoor recreation activities of the people. In line with the national trend, however, recreation interests are widening in scope and, to varying extent, facilities for such activities as picnicking, camping, and swimming have been provided at existing areas. Pleasure driving also is receiving more attention.

The State estimates the attendance for 10 of the State parks at approximately 450,000 persons annually.

At Cedar Bluff Reservoir in western Kansas, recreation use during 1956 was estimated at 88,746 visitors, more than double the attendance reported for 1955. Attendance at Kirwin Reservoir, a part of the Kirwin National Wildlife Refuge in north-central Kansas, is estimated at 11,300 visitors for the same year.

The Corps of Engineers estimates that attendance at Kanopolis Reservoir, in the central part of the State, increased from 250,000 in 1950 to nearly 600,000 in 1956.

ECONOMIC IMPACT. Kansas is crossed by a number of east-west transcontinental highways and its economy is greatly benefited by travel and tourism.

According to statistics compiled by the National Association of Travel Organizations, tourist expenditures in the State rose from \$80,000,000 in 1951 to \$100,000,000 in 1955. The tourist industry now holds fourth place in the State's economy. The fact that nearly 8,652,000 tourists were recorded in 1952, when an official tourist record was maintained, clearly points to the importance of the traveling public as a consideration in the State's park and recreation planning.

ADEQUACY OF PUBLIC AREAS. Public park and recreation areas in Kansas have been provided almost entirely through State, county, and municipal programs. In the basin section, the only federally

administered areas which offer recreation facilities are the Kirwin National Wildlife Refuge (Kirwin Reservoir) and Kanopolis Reservoir, administered by the Fish and Wildlife Service and the Corps of Engineers, respectively.

The following table summarizes present parks and recreation areas in the basin section:

| Administration | Type of area | Number | Area (acres) |
|------------------------------------|----------------------------|--------|--------------|
| Federal: | | | |
| Fish and Wildlife Service | National wildlife refuge | 1 | |
| | Developed recreation areas | 12 | 320 |
| Corps of Engineers | Reservoir | 1 | |
| | Developed recreation areas | | 1,600 |
| State: | | | |
| Forestry, Fish and Game Commission | State parks and lakes | 19 | 8,274 |
| | Reservoir recreation areas | 2 | 16,000 |
| Highway Department | Historic structure | 1 | |
| Historical Society | Historic sites | 3 | |
| Special Commissions | Historic sites | 5 | |
| Local: | | | |
| City and county | Lakes | 23 | 23,600 |

¹ In addition to the acres listed for developed recreation facilities, the Fish and Wildlife Service administers an additional 10,500 acres as a National Wildlife Management Area at Kirwin Reservoir. This entire area is used extensively for recreation pursuits, such as hunting, fishing, and boating.

² Approximation.

With the exception of Frontier Historical Park at Fort Hays, which is supervised by a special State board of managers, all State parks and lakes are administered by the Kansas Forestry, Fish and Game Commission. Recreation areas at Cedar Bluff and Webster Reservoirs also are administered by the commission. These two reservoirs were completed by the Bureau of Reclamation as part of the Missouri River Basin project.

The commission's program is supported by receipts from the sale of fishing and hunting licenses, which can be expended only for such types of recreation development as directly relate to sport fishing and hunting. State park development, therefore, necessarily stresses these two pursuits rather than the diversified forms of recreation usually provided in park systems built with funds appropriated specifically for that purpose.

State parks and lakes are distributed quite uniformly throughout the basin section. These, together with the reservoir recreation areas and the system of city and county lakes, provide outlets for fishing and related activities that are within relatively easy reach of the residents. In addition to a general need for more diversified facilities, there is a more limited need for additional areas to meet present and future recreation demands.

This conclusion is supported by the findings of an interview-type survey conducted during the spring of



City and county lakes, such as Lake Wabaunsee, provide nearby recreation outlets for the residents.

1955 by the Government Research Center of the University of Kansas. The survey results showed that from one-fourth to one-third of the group interviewed expressed a desire for additional recreation facilities and areas.

Land acquisition has been considerably more generous than has been the case in many States. In the basin section, only 1 State area contains less than 100 acres. The majority range from 400 to 700 acres, and 2 are in excess of 1,000 acres. While the average acreage is somewhat less than a general desirable standard for State parks, the question of which areas may need additional lands can be resolved only through more detailed study of requirements at each site.

Some State parks, notably Scott County, preserve important scenic or cultural recreation resources. More, though, has been accomplished toward the preservation of the State's historical heritage. Historic sites administered by the State Historical Society and the several areas operated or supervised by special commissions with funds from the State, include examples of the early exploration, Indian wars, Civil

War, and transportation and communication themes. In a special category of historical interest is the Eisenhower museum and boyhood home, operated by the Eisenhower Foundation in Abilene.

Farming operations, urban and industrial expansion, highway construction and, in some cases, Federal water-control projects are resulting in losses to valuable scientific, historical and archeological areas.

An important step in the Kansas State park movement has been the establishment of the State Park and Resources Authority by the 1955 legislature. The enabling legislation charges the authority with the specific duties of conducting investigations and research relative to the State's natural resources, and with the adoption of a State resource plan. The plan may include the general location, character and extent of State parks and recreation areas, and the authority is vested with the control and supervision of such "parks, lakes and areas of recreation, scenic or historic significance" as it may require. Funds appropriated for 1956, however, were unfortunately not adequate to allow full activation of the authority.

SPECIAL CONSIDERATIONS. Several factors are of special significance in the long-range park and recreation planning for Kansas. The most important of these are as follows:

1. The need for preservation of important natural, cultural, and historical areas at appropriate levels of government.

2. The general lack of tree cover and natural recreation outlets, combined with a hot though variable summer climate.

3. The growing volume of tourist travel in the State. Convenient waysides, together with overnight facilities for tourists in conveniently accessible parks are statewide needs. The proposed interstate highway system will further increase and, to a degree, channel both tourist and resident travel. Proposed routes shown on Plate 2 will generally follow U.S. 40 from Kansas City west across the basin; U.S. 50 and 50S from Kansas City southwesterly to the new Kansas Turnpike and on out of the basin; and a north-south route from Salina to Wichita and the turnpike via U.S. 81.

4. The need for vacation areas to serve the resident population in east-central and northern Kansas.

5. The part that the Federal water-development program will play in the total recreation picture. Reservoirs to be completed under the Missouri River project will provide further important opportunities for water recreation. Because of the advanced stage

of the State's lake development program, however, they will not play as significant a part as is the case in other plains States. Their chief advantage will lie in their more extensive and deeper water areas and in providing water recreation during times when some of the smaller State lakes with more limited water supply may not be entirely usable. On the other hand, they tend to force development of recreation areas where the reservoirs themselves are located, rather than where development is needed, and may hamper attainment of a planned and balanced park system.

AREAS OF RECREATION NEED. The need for additional and more diversified developments for day and weekend use for local residents exists generally throughout the State, as discussed above, but especially in the more heavily populated south-central and eastern portions of the basin section. This area, within which a need also exists for additional areas, is delineated on a judgment basis and in general outline, on plate 12. It includes the large urban centers of Kansas City and Topeka and extends westward through the Junction City, Salina, and Abilene region. It is recognized that this area of need contains undeveloped recreation resources at Federal reservoirs and some State parks and lakes that are not yet developed to their full potential.

A much smaller area of similar local need also exists in and around the Goodland-Colby area in the extreme west.

Objectives and Broad Recommendations

The basic, long-range objective is the development of a balanced, well-rounded system of public parks and recreation areas to preserve important scenic, scientific, and historic areas to be administered at appropriate levels of government, and at the same time to provide supplemental development to meet present and future recreational needs.

As seen above, the Kansas State Park System is largely geared to the active side of the recreation picture, with emphasis on special aspects. Nevertheless, the system takes good advantage of available natural qualities, and park development is designed to retain that character. In creating and utilizing recreation resources to meet recreation needs, the system represents an excellent start toward the basic objective. The program is an active one, which has seen the completion of five new State lakes in the basin section during the past few years.



Chalk bluff formations in Gove County are known the world over for their reptilian fossils.

As the comprehensive State park system evolves, it will be important to re-evaluate all existing areas to determine their proper place in the overall plan. A number of areas, such as Scott County State Park, will definitely qualify for permanent inclusion in the system. Others may prove to be of less than State significance and more suitable for local administration or perhaps as waysides. Still others may serve the best public interest if managed primarily as fish and wildlife areas.

Considering the gains that have been made in the development of the statewide system, first emphasis should be given to the acquisition of areas with inherent recreation resources worthy of preservation regardless of their location, even though early development may not be feasible. In this connection, virgin or near-virgin eastern woodlands should be preserved for public use and enjoyment if possible. Chalk bluff formations, as another example, contain unique ecological associations and definitely warrant

consideration. River bottomlands, too, might qualify in areas of sufficient size for study and recreation.

An interpretive program will be an important requirement for maximum public use, enjoyment, and appreciation of the public parks, and will contribute materially to the protection of the recreation resources involved. While means are limited, this program could be initiated through such media as trailside exhibits and self-guiding tours, thus eliminating the need for onsite personnel.

A primary goal in the objective is the formulation of a statewide, long-range master plan to guide and unify the general program and to place proper emphasis and value on the various types of recreation resources that are available. It should be developed through close cooperation of interested Federal, State, and local agencies. It is urged that the Kansas State Park and Resources Authority undertake the preparation of such a plan as soon as sufficient funds become available. Inclusion of professional and technical personnel on the staff would be fundamental to the attainment of long-range objectives.

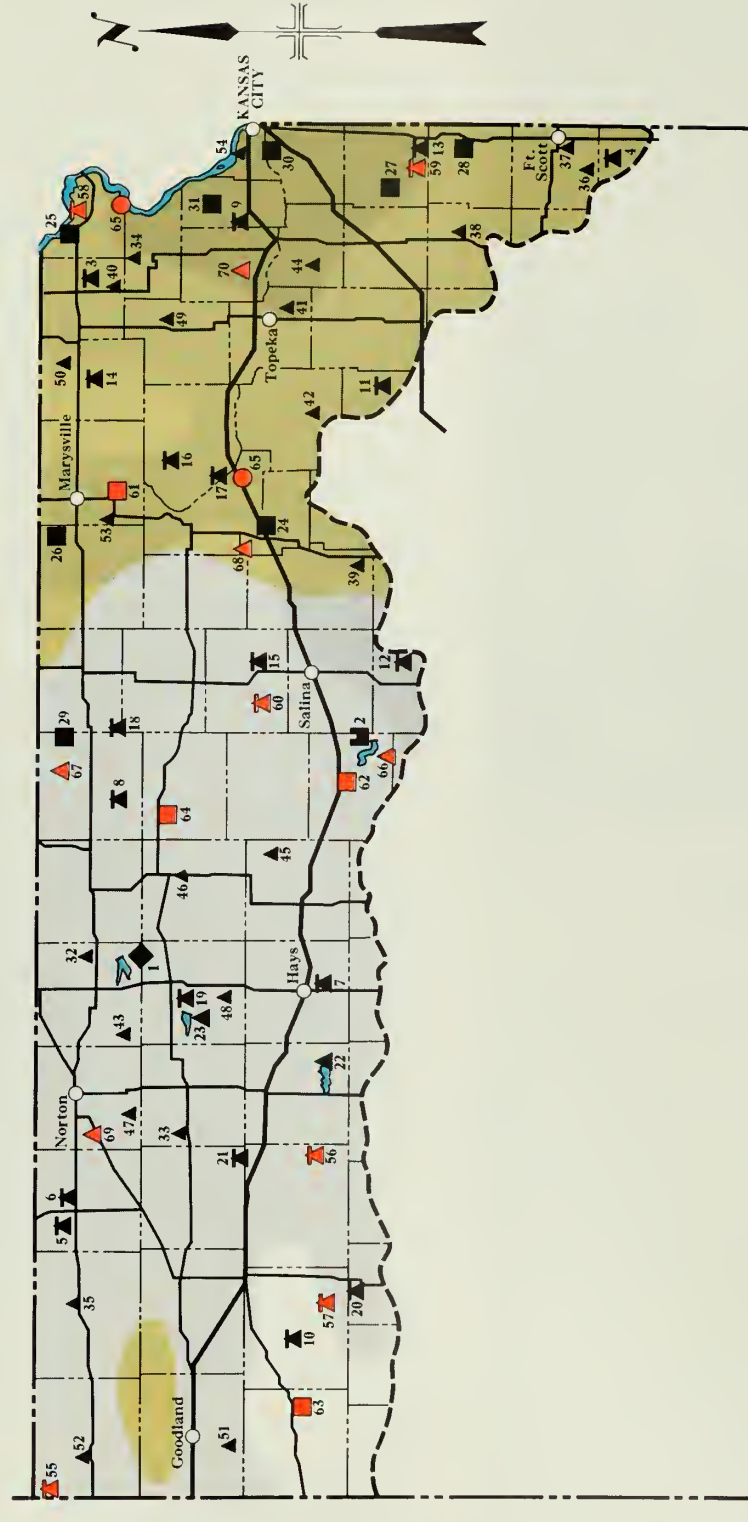
While a well-rounded State park system for Kansas residents is the basic consideration, increasing tourist travel in the State merits recognition. The convenience, comfort, and enjoyment of both out-of-State tourists and of resident travelers could be increased by the following:

1. The designation of pleasure drives or tourways that are away from the major highways. Various circle routes connecting parks and other attractive areas or points of interest could be planned. Protection of the natural character of the roadside could be accomplished through zoning. The development of interpretive signs along the routes would add much enjoyment to the drives.
2. A planned system of waysides along major travel arteries. Provision should be made for shade trees or shelters and minimum facilities for the comfort of travelers.
3. Continuation of the State's fine historical marker system and its incorporation into the statewide master plan.

Suggested Solutions

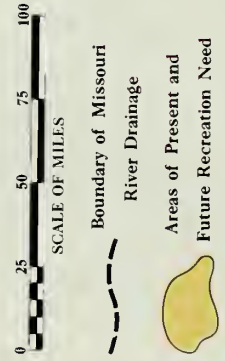
The following discussion is intended to serve only as a general guide in the long-range objective for the basin section of Kansas. Specific and detailed solutions can be made upon completion of further cooperative studies and the statewide plan. Studies under

KANSAS



PARK AND RECREATION AREAS

- | FEDERAL | | STATE | |
|---------|---|-------|---------------------------|
| ◆ | FISH & WILDLIFE SERVICE Wildlife Refuge with developed Recreation areas | ▲ | Parks and Lakes |
| ■ | CORPS of ENGINEERS Reservoir Recreation areas | ▲ | Recreation Areas |
| | | ■ | Historic Sites |
| | | ▲ | LOCAL Recreation Areas |



SUGGESTED ADDITIONAL PARK AND RECREATION AREAS

- STATE PARK SYSTEM
- ▲ Parks
 - ▲ Recreation Areas
 - Historic Sites
 - Archeologic Sites

PARK AND RECREATION AREAS

Federal

NATIONAL WILDLIFE REFUGE

1. Kirwin Reservoir

RESERVOIR RECREATION AREAS

2. Kanopolis

State

PARKS AND LAKES

3. Brown County
4. Crawford County No. 2
5. Decatur County No. 1
6. Decatur County No. 2
7. Frontier Park
8. Jewell County
9. Leavenworth County
10. Logan County
11. Lyon County
12. McPherson County
13. Miami County
14. Nemaha County
15. Ottawa County
16. Pottawatomie County No. 1
17. Pottawatomie County No. 2
18. Republic County
19. Rooks County
20. Scott County
21. Sheridan County

RECREATION AREAS

22. Cedar Bluff Reservoir
23. Webster Reservoir

HISTORIC SITES

24. Fort Riley
25. Highland Presbyterian Mission
26. Hollandburg Pony Express Station
27. John Brown Memorial Park
28. Marais des Cygnes
29. Pikes Pawnee Village
30. Shawnee Mission
31. Springdale Covered Bridge

Local

RECREATION AREAS

32. Agra City Lake
33. Antelope Lake
34. Atchison County Lake
35. Atwood Lake
36. Bourbon County Lake
37. Fort Scott City Lake
38. Garnett City Lake
39. Herrington City Lake
40. Horton City Lake
41. Lake Shawnee
42. Lake Wabaunsee
43. Logan City Lake
44. Lone Star Lake
45. Lucas Lake
46. McMillan Lake
47. Norton County Lake
48. Plainville Lake

49. Prairie Lake
50. Sabetha City Lake
51. Sherman County Lake
52. St. Francis City Lake
53. Waterville City Lake
54. Wyandotte County Lake

Suggested Additional Areas for State Park System

PARKS (SCENIC OR NATURAL)

55. Arikaree Canyon
56. Castle Rock
57. Chalk Bluffs
58. Missouri Bluffs
59. Pidgeon Lake
60. Rock City

HISTORIC

61. Alcove Springs
62. Fort Harker
63. Fort Wallace
64. Waconda Springs

ARCHEOLOGIC

65. Kansa Village Sites

RECREATION AREAS

66. Kanopolis Reservoir
67. Lovewell Reservoir
68. Milford Reservoir
69. Norton Reservoir
70. Perry Reservoir

TRAVEL ROUTES



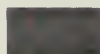
Proposed interstate highways



Existing major highways

POPULATION

AVERAGE DENSITY PER SQUARE MILE



50 people or over



10 to 25 people



25 to 50 people



5 to 10 people



5 people or less



Rock City receives heavy use as a local attraction.



The Hollenberg Ranch Pony Express Station represents a phase of the historical heritage of Kansas.

the National Park Service's MISSION 66 program include cooperation in formulating a nationwide recreation plan and a comprehensive survey of historic sites. These studies will be integrated with plans the State may undertake. Collectively, they will provide specific solutions. These cooperative phases of park and recreation planning lend further emphasis to the desirability of retaining planning personnel on the staff of the State Park and Resources Authority.

PRESERVATION OF RESOURCES. The following are examples of natural, cultural, or scientific resources which might be considered for the park system:

Scenic or Natural

A number of areas which may be worthy of preservation can be cited at this stage and are listed below. It is suggested that they be given consideration as units of the State or local systems when the statewide plan is formulated. There are, of course, other possibilities not listed here.

1. Arikaree Canyon Area in Cheyenne County. This area possesses scenic badlands character.
2. Castle Rock and Monument Rocks in Gove County. This area has an outstanding chalk exposure of great ecologic and paleontologic interest. The area might be combined with nearby Wildcat Canyon.
3. Chalk Bluffs, in Logan County, on the Smoky Hill River. This area is of good scenic interest, with canyons and picturesque chalk formations.

4. Rock City in Ottawa County. This interesting area of geologic value receives heavy local use as a special local attraction.

5. Pigeon Lake Area in Miami County. This may be the largest timber area in Kansas, and it may offer opportunity for the enlargement of Miami County State Park.

6. A portion of the Missouri River Bluffs, northwest of St. Joseph, Mo., might also be considered for preservation.

Historic

1. Waconda Springs, Mitchell County (historic and archeologic).

2. Alcove Springs, Marshall County.

3. Fort Wallace, Wallace County.

4. Old Fort Harker, near Kanopolis, representing the military theme.

5. Several historic churches, inns, and residences of State or nationally prominent personages are examples of other historic sites or features which are worthy of preservation as part of the State's historical heritage.

6. Expanded development and interpretive facilities are needed at some of the historic sites now preserved, such as Pike's Pawnee Village and others.

Archeologic

1. The major known archeologic sites in the basin part of Kansas include (1) the Kansa Village site near Manhattan, occupied by the tribe which gave the State its name; and (2) what is believed to be an earlier Kansa site near Doniphan on the river bluffs. Both should be considered for preservation and interpretation at the State level for their public interest.

2. A small museum, depicting the important archeological story of Scott County State Park would contribute greatly to public use and enjoyment of that area.

SUGGESTED MEANS OF MEETING RECREATION NEEDS. As discussed above, the primary means of meeting present and future recreation needs in Kansas is through more diversified development at existing areas.

In addition to the recreation areas it now administers at Cedar Bluff and Webster Reservoirs, the State has indicated an interest in Lovewell and Kanopolis. Administration of recreation areas at reservoirs which may be completed in the future would fill needs in some sections, their value depending to a large degree

on operating characteristics. Several additional Bureau of Reclamation reservoirs may be completed in the west-central part of the basin portion, and a number of sites are under study by the Corps of Engineers in the eastern section. All will have to be evaluated on an individual basis to determine their place in the recreation plan and whether their importance justifies State or local administration.

MINNESOTA

Recreation Resources

Minnesota, the land of 10,000 lakes, has long been a popular vacation and outdoor recreation area. This survey covers the Red River of the North drainage, including part of the lake region, and the Missouri River drainage, as well as a 30-mile fringe zone east of these drainages.

The flat fertile valley of the Red River of the North, the prairie character of the southwest, the many lakes, streams, and swamps, the rolling countryside, colorful oaks, maples, birch, and aspen, the deep coniferous forests still reminiscent of the North Woods, with the associated Legends of Paul Bunyan, Tales of Hiawatha, and the Land of the Sky Blue Waters—all contribute an attractive variety to the scenery and to recreation potentials.

The varied scenery, climate, and recreation developments, make Minnesota a summer vacation land, while cold winters with deep snows are ideal for winter sports.

Recreation resources throughout this part of Minnesota vary considerably in character and in the possibilities they afford.

The Red River of the North drainage along with its related fringe area includes three sub-areas with differing physiographic characteristics:

1. The lake bed of ancient Lake Agassiz. This area is extremely flat and offers little opportunity for recreation development except along river valleys, in the Red Lake vicinity, or where historic sites or biological values warrant preservation.

2. The Lake Region. This section, surrounding Detroit Lakes, includes one of the most popular vacation and resort areas in the State. It draws heavy use from resident population, as well as from distant States. Aside from its natural attractions, it has numerous resort facilities developed by private enterprise, plus many summer homes or cottages. It includes, also, certain archeological sites of interest.



"Land of the Sky-Blue Water"



A restored mission, located in Lac qui Parle State Park, was initially erected in the 1850's.

3. The remaining portion of Red River of the North drainage. This section is intermediate in character, ranging from flat to rolling, and it includes scattered lakes.

Basically, the Missouri River drainage and related fringe zone is typical of the long-grass prairie. Its land forms are gently rolling in character, with granite and quartzite outcroppings over wide areas. Scattered and generally shallow lakes form a belt along the eastern fringe; hardwoods occur around these lakes and along stream courses. Agriculture is the predominant land use. Recreation opportunities are largely of local interest, though camping facilities are in much demand by travelers.

Major historic values relate to the Sioux uprising of 1862; the early fur trade and exploration; the period of the Red River of the North settlement; and the development of the lumbering and mining industries. The State has set aside several areas in the basin associated with the Sioux uprising. Other themes are not yet adequately represented in historic parks.

Unfortunately, and with but few notable exceptions, outstanding known archeological remains in this

section have been destroyed by plowing or by the unrestrained digging of relic hunters.

Planning Considerations

PEOPLE. The study area has shown a steady increase in population since 1930. Diversified agriculture predominates as the major land use and there are no metropolitan areas. Population distribution ranges from 10 or fewer persons per square mile in the northern lakes region, to 3 areas of 25 or more persons per square mile in the vicinity of Crookston in the north; Moorhead, Fergus Falls, and Alexandria in the central area; and Worthington, Fairmont, and Redwood Falls in the south. The remaining area averages approximately 15 persons per square mile. Population trends and forecasts are as follows:

| Year | Population, total State | Population, basin part | Percent Urban, basin part |
|------|----------------------------|---------------------------|------------------------------|
| 1930 | 2,564,000 | 346,000 | 17 |
| 1940 | 2,792,000 | 385,000 | 20 |
| 1950 | 2,982,000 | 377,000 | 25 |
| 1960 | 3,224,000 | 380,000 | 30 |
| 1970 | 3,364,000 | 384,000 | 35 |
| 1980 | 3,519,000 | 387,000 | 40 |

RECREATION USE AND TRENDS. Until recently, residents of this part of Minnesota had almost unrestricted recreation opportunities. Now, however, these opportunities are becoming more and more restricted. People must rely primarily on public parks and forests and private lake developments for their recreation outlets.

Recreation interests are becoming wider, and people are traveling farther for greater variety and "greener pastures." Minnesota's recreation opportunities, however, still cater to the more leisurely vacation, in contrast to some regions where the sightseeing tourist takes it on the run.

The lakes and forests lend themselves to the type of recreation activity desired by the people. Activities such as fishing, boating, camping, picnicking, and sightseeing receive the greatest amount of participation. Hunting of waterfowl, upland game, and large game in the region also is a popular recreation pursuit of the people.

Much of the resident and tourist recreation activity is centered in the parks and in private development. Sightseeing, camping, and picknicking are the three major activities in the parks at the present time and are all increasing rapidly.

Private recreation developments throughout Minnesota are quite extensive. Individually owned cabins,

resorts, and boat rental enterprises (confined primarily to the lake region) constitute the major outdoor private recreation developments. They are fast taking up all suitable lake-shore areas.

Tourist camping is becoming more popular each year. The Division of State Parks is hard pressed to meet the demand. For the entire State, camper days have increased from 18,000 in 1940 to 91,000 in 1954 and 125,000 in 1955. This represents an increase of 37 percent in the last year alone.

Those parks which possess outstanding scenic qualities receive greatest demand for camping, regardless of their proximity to major highways. They are used by campers who remain several days, a week, or more. Camping at parks with lesser scenic qualities appears to be more directly related to the distance from major highways and is composed largely of transient campers on one night stopovers.

Group camping facilities are used to their maximum reasonable limit. In 1956, there were 34,000 camper days of use for these developments. In 1957, 44,000 camper days were contracted for before the season started.

Attendance at Minnesota State parks and recreation reserves indicates the pressure the present system is experiencing and trends which can be anticipated. Over the entire State, attendance in 1948 was 1,931,634. In 1953, it dropped slightly to 1,901,950, probably as a result of the newly instituted "sticker plan" combined with rundown condition of older facilities and a shortage of new ones. By 1955, however, attendance had risen sharply to 2,423,661.

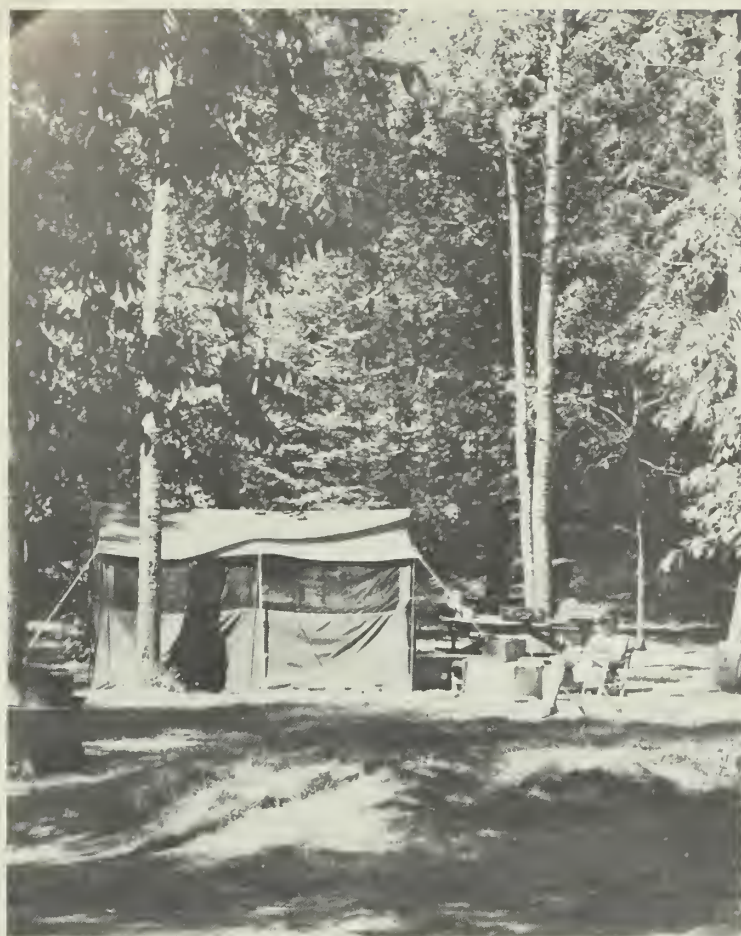
In the study area covered by this report, attendance at State areas increased between 1948 and 1953, reaching 812,000. It is estimated that these areas may have attendance reaching 1,100,000 by 1960; 1,700,000 by 1970; and, perhaps, 2,100,000 by 1980.

ECONOMIC IMPACT. Within the basin area of Minnesota, the tourist industry is big business, ranking perhaps second to diversified agriculture. Within the State as a whole, it ranks fourth, following manufacturing, farming, and mining.

Estimates of the number of tourists and their expenditures in the State show the following:

| | 1948 | 1954 |
|--------------|---------------|---------------|
| Tourists | 1,900,000 | 2,800,000 |
| Expenditures | \$116,583,000 | \$197,405,000 |

ADEQUACY OF PUBLIC AREAS. There is a variety of areas administered at both the Federal and State level in this part of Minnesota.



Minnesota's recreation opportunities cater to the more leisurely vacation.

The existing areas offering public recreation opportunities in the study area are listed below:

| <i>Administration</i> | <i>Type of area</i> | <i>Number</i> | <i>Area (acres)</i> |
|-----------------------------|----------------------------|---------------|---------------------|
| Federal: | | | |
| National Park Service. | National monument | 1 | 116 |
| Forest Service | National forest | 1 | |
| | Camp and picnic grounds | 18 | ¹ 303 |
| | Winter-sports area | 1 | ¹ 400 |
| | Organized camp | 1 | ¹ 83 |
| | Resorts | 300 | ¹ 202 |
| Fish and Wildlife Service. | National Wildlife refuges | 2 | |
| | Developed recreation areas | | 30 |
| State: | | | |
| Department of Conservation: | | | |
| Division of State Parks. | State parks | 11 | 37,350 |
| | Recreation reserves | 3 | 787 |
| | Wayside parks | 6 | 288 |
| | State monuments | 2 | |
| Division of Forestry. | State forests | 14 | 1,334 |
| | Developed recreation areas | | ² 75 |

¹ In addition to the acres listed for developed recreation facilities, the Forest Service administers an additional 561,000 acres of land as National Forests, and Fish and Wildlife Service administers an additional 89,800 acres as wildlife refuges in the study part of Minnesota. These additional areas, though undeveloped, are used extensively for recreation pursuits, such as hunting and fishing.

² Approximation.

In the past, the residents of the basin part of the State gave little thought as to where they could go for recreation. The abundance of natural recreation resources—lakes, streams, forested areas, and unposted lands—made hunting, fishing, boating, swimming, camping, and most related forms of recreation a simple matter. Today, however, natural recreation resources are constantly diminishing; recreation opportunities are becoming more and more restricted by posted lands, lake-shore developments, and conversion of much woodland to cropland. Even some of the natural lakes, because of filling, lowering of the water table, or decline in surface drainage, have come to the point where expensive dredging operations may have to be considered.

The creation of a State park system in the late 1800's has justifiably earned Minnesota the reputation for having one of the more progressive State park systems in the basin and in the country. Early parks were set aside primarily for their historical or natural values, rather than for active recreation. The system and individual areas reflect careful original planning. In the newer areas and developments, it is evident the State continues to appreciate the value of planning.

In the face of today's demands, some existing State parks do not contain sufficient land to withstand the impact, and some cannot provide space for future expansion. Collectively, they will not be able to withstand anticipated use pressures without supplemental areas and developments.

On many lakes, private cabins, resorts, and private boat rentals have taken up most of the suitable lake shore and tend to limit public use and, thereby, the total number of persons who might enjoy these resources. While resorts and boat-rental enterprises provide the bulk of vacation facilities and water access, there is the danger that an over-commercialized atmosphere may develop, leaving little opportunity to enjoy the tranquility of relatively undisturbed lakes and woodlands. Because of the particular significance of these natural lake regions to Minnesota and to the Nation, this matter is of special concern. It points up the desirability of early acquisition of lake shores for public use and a consideration of cooperatively developed zoning measures as a means of protecting public interests.

While the State has paid particular attention to preservation of valuable areas, there are still important natural, cultural, and active recreation resources unpreserved which merit consideration.

SPECIAL CONSIDERATIONS. Several factors of special importance should be considered in the long-range planning program of the basin portion of Minnesota. These include the following:

1. The interstate highway proposals will be of interest to the park and recreation program since they will largely channel tourist flow into and through the State and will affect the use of specific park areas. In the basin part of Minnesota, interstate proposals include the general routes of U.S. 10 and 52 connecting Minneapolis, Minn., and Fargo, N. Dak.; an east-west route along the southern border generally following U.S. 16; and a route primarily using U.S. 69 and 65 which will be located just east of the fringe zone as it crosses the southern part of the State.

2. The route of the proposed Great River Road (formerly Mississippi River Parkway) through the Red River Basin, will closely follow the Mississippi River from the north shore of Lake Winnibigoshish to Itasca State Park and will then extend northward, passing Red Lake on the west shore, to the Canadian border. There it will join a proposed highway in Canada to be located west of the Lake of the Woods. The proposed Canadian route will make possible an automobile access to the Northwest Angle. The Great River Road, in addition to affecting the plan of travel, will represent a significant type of recreation in itself, encompassing as it will the natural, cultural, and active recreation resources that largely determine its route.

3. Designating and protecting other scenic drives or tourways throughout the State can provide additional enjoyment to resident and tourist alike. Opportunities are many and could be planned as circle routes connecting State parks and other points of public interest. As an example, a scenic drive along the Minnesota River, connecting parks and historic sites, could be most attractive. Minnesota is already doing much to improve and maintain attractive roadsides.

AREAS OF RECREATION NEED. Based on an analysis of the trends affecting park and recreation area use, there are four areas of need in the study portion of Minnesota, shown on plate 13. There is a need for local day- and weekend-use type of public recreation development in the Big Stone and Lake Traverse, the Detroit Lakes and Fergus Falls, and the Crookston and Thief River Falls regions. These areas of need do not have adequate public-use developments to



Beautiful Lake Itasca on the route of The Great River Road.

meet the needs of the population. The other area of need around the Bemidji, Walker, and Park Rapids region requires additional recreation developments to meet the increasing pressures of the people. Throughout the balance of this part of the State, foreseeable needs can be met by additions suggested for certain of the existing areas.

Objectives and Broad Recommendations

In Minnesota, where a comprehensive State Park and Recreation Area System has been developed, specific recommendations of the original plan have been exhausted, and unanticipated pressures require further planning ahead. The primary objective should be to further round out the system, preserving additional areas in the public interest and adding areas and facilities to match foreseeable needs. Necessarily, this should be cooperatively accomplished, with each level of government playing its part.

The Federal role will be concerned primarily with outstanding values of national significance and with providing additional facilities as in the National Forests and Wildlife Refuges where authority allows. Comprehensive studies programmed by the National



Students listening to a nature talk.

Park Service under MISSION 66 contemplate the cooperative development of a nationwide recreation plan, and completion of the historic sites survey. The former will include consideration of the ultimate desirable composition of the National Park System and outstanding or unique areas or sites which might qualify to fill voids.

Much of the burden falls on the State park organization. However, State and National Forests could and should contribute materially. Supplementing the basic objectives above, full use and enjoyment of the areas would be materially enhanced by development of planned interpretive programs and the use of interpretive facilities. This is already being done at one or more of the major State areas and should be undertaken at others when means can be provided. The use of self-guiding trails and interpretive signs or displays represent means which can be used without on-site personnel.

Consideration should be given to the trend toward a longer outdoor recreation season including, particularly, winter-use activities.

Much has already been done by the Highway Department in Minnesota to increase traveling pleasure through the provision of roadside areas and a planned

program of roadside planting and maintenance. To take care of increasing travel, additional roadside areas would be desirable, particularly in the southern part of the State where convenient and attractive places to stop are more difficult to find. The designation and protection of scenic drives or tourways combined, where appropriate, with historic markers is suggested as another program which could add to the State's attractions.

Development of a current master plan for the State park system will, of course, be basic in defining and meeting objectives. Full consideration should be given to outstanding, unspoiled, natural areas, with special attention to lakes and other areas of unusual biological interest, and to historical and archeological sites of State significance. Such resources are rapidly being lost all over the Nation.

Certain general areas in Minnesota are of special value to the State and of interest to the Nation at large as popular vacation attractions. Along with development of the State park system and as part of long-range planning, means should be explored to protect and, where possible, enhance these resources in the best public interest. County or State zoning,

carefully coordinated with management and development plans for public areas, represents one possibility.

Since a number of Federal and State programs will be involved in developing a balanced overall plan, full cooperation will be essential. Much mutual benefit would result if the State could assign a trained planner to these problems, particularly during the next few years when related Federal studies will be under way. The effectiveness of the overall plan in recognizing and planning for State interest will, in fact, depend to a degree on such assistance.

Suggested Solutions

Many of the specific recommendations as to areas which should still be set aside or developed will result from more detailed studies on the part of the State, from comprehensive studies being undertaken by the National Park Service under MISSION 66, and by the Forest Service and the Fish and Wildlife Service under comparable programs. Certain broad solutions, however, are suggested for consideration.

PRESERVATION OF RESOURCES. The following areas are mentioned to serve as a general guide to achieving the long-range objective of a balanced State park system. They are examples of natural, cultural, and historical resources of statewide significance. Most of those listed are located where they would also provide active recreation to meet needs if sufficient lands were acquired and developed:

Scenic or Natural

1. A sizable area (from 2,000 to 3,000 acres) located in the Fergus Falls, Detroit Lakes, and Wadena region. A segment of this region should be preserved for the enjoyment of the public.

2. A sizable northern area, including unspoiled lake country. Earlier studies recommended the Northwest Angle as a possibility. Whether this area or other areas in northern Minnesota best qualify will depend on further appraisal of resources available.

3. An area in the vicinity of Red Lake, perhaps incorporating unusual ecological interests in that region and perhaps, also, adjoining the proposed Great River Road extension.

Historic

1. A major area on Big Stone Lake, combining typical physiographic features of that region with historic values.

2. Analysis of historic sites worthy of preservation at various levels of government must await completion of the historic sites survey which, in cooperation with State studies, will consider this matter. Tentatively, it appears that consideration might be given to the following: Remnants of the Pembina Trail (Red River Valley Ox-Cart Trail) in Red Lake County; Georgetown (near Moorhead); a British fur-trading post of approximately 1812; and a post of the Columbia Fur Company of the early 1820's near Browns Valley on the shore of Lake Traverse.

Archeologic

1. Otter Tail Lake Mounds, a prehistoric burial mound group.

2. Flat Lake Mounds, an excellent group of intact prehistoric mounds.

3. Grand Mound, northwest of Littlefork, Minn., which is by far the largest mound remaining in the State.

SUGGESTED MEANS OF MEETING RECREATION NEEDS. The Fergus Falls, Detroit Lakes, and Wadena region is the most densely populated section of Red River of the North drainage, with no existing public areas to serve the people. Areas recommended above for preservation would probably fill these local requirements.

An area should be selected in the Crookston, Thief River Falls, and McIntosh locality, with the primary purpose of providing needed recreation for local people. There are a number of small lakes in this region which should be studied to determine their adaptability from an aesthetic viewpoint, the feasibility of providing the required activities, and adequacy of water supply. If a suitable lake cannot be found, the areas with the best topographic features and tree cover could be selected along the streams or rivers. Boating and swimming should be considered in making the selection.

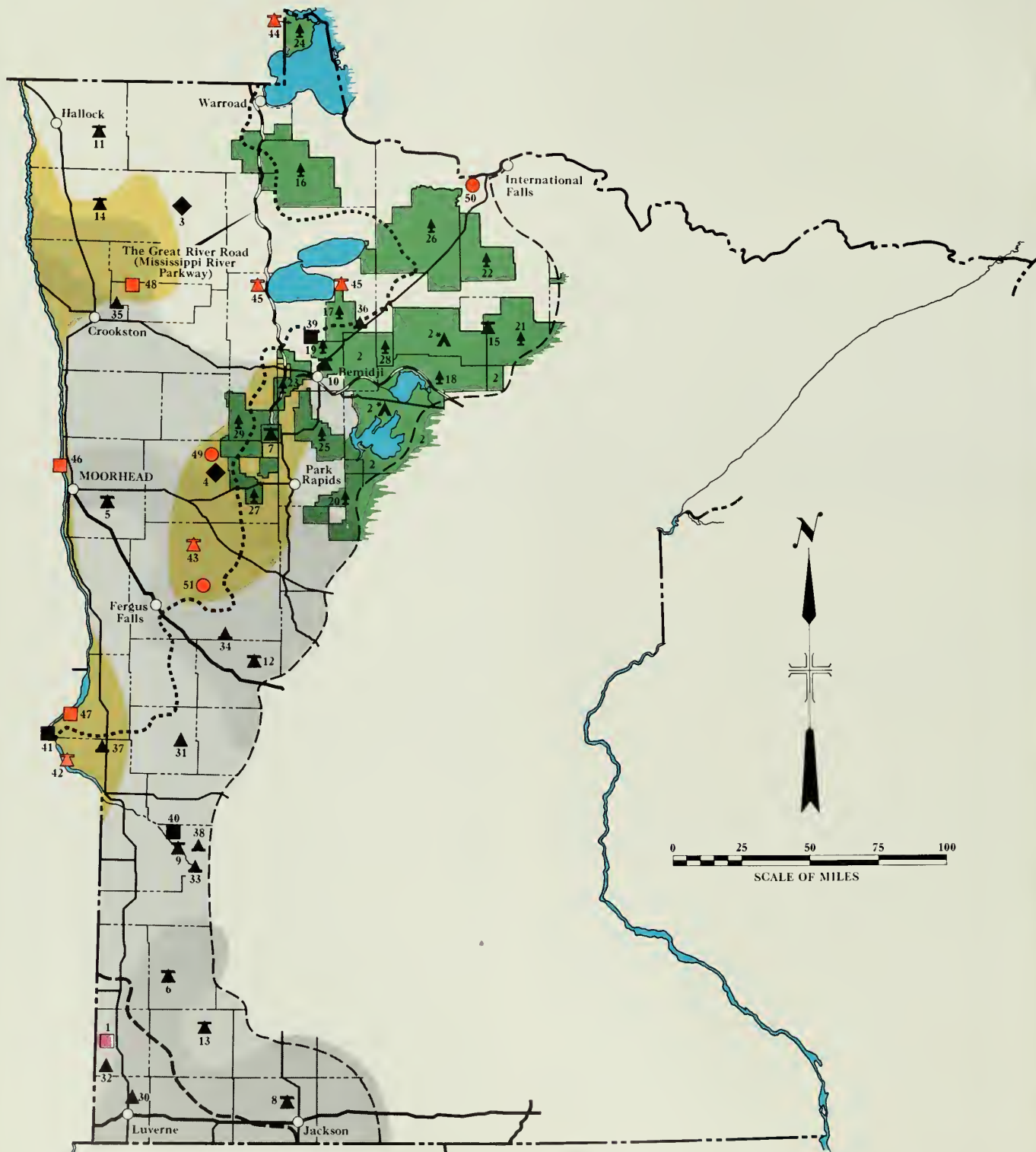
To meet increasing pressures in the Bemidji, Park Rapids, and Walker region, the following means might be explored:

1. Development of areas within State and National Forests for camping and picnicking.

2. Development of satellite areas around Itasca for camping, picnicking, and water access. These should incorporate attractive surroundings, but they should be keyed primarily to provide diversified activities.

3. Development of additional self-contained areas with all requisites of a State park.

MINNESOTA



PARK AND RECREATION AREAS

- | FEDERAL | STATE |
|---|------------------|
| NATIONAL PARK SERVICE | Parks |
| FOREST SERVICE | Forests |
| Recreation Areas | Recreation Areas |
| FISH & WILDLIFE SERVICE | Wayside |
| Wildlife Refuge with developed Recreation areas | Historic Sites |

- Boundary of Missouri River Drainage
- Boundary of Red River Drainage
- Boundary of Fringe Zone
- Areas of Present and Future Recreation Need

SUGGESTED ADDITIONAL PARK AND RECREATION AREAS

- STATE PARK SYSTEM
- Parks
 - Historic Sites
 - Archeologic Sites

*DENOTES A NUMBER OF DEVELOPED AREAS

PARK AND RECREATION AREAS

Federal

NATIONAL MONUMENT

1. Pipestone

NATIONAL FOREST

2. Chippewa

NATIONAL WILDLIFE REFUGES

3. Mud Lake
4. Tamarac

State

PARKS

5. Buffalo River
6. Camden
7. Itasca
8. Kilen Woods
9. Lac qui Parle
10. Lake Bemidji
11. Lake Bronson
12. Lake Carlos
13. Lake Shetek
14. Old Mill
15. Scenic

FORESTS

16. Beltrami Island
17. Blackduck
18. Bowstring
19. Buena Vista
20. Foothills
21. George Washington
22. Koochiching
23. Mississippi Headwaters
24. Northwest Angle
25. Paul Bunyan
26. Pine Island
27. Smoky Hills
28. Third River
29. White Earth

RECREATION AREAS

30. Mound Springs
31. Pomme de Terre
32. Split Rock Creek

WAYSIDES

33. Camp Release
34. Inspiration Peak
35. Old Crossing Treaty

36. Pine Tree

37. Toqua Lakes

38. Watson

HISTORIC SITES

39. Count Beltrami

40. Lac qui Parle Mission

41. Sam Brown

Suggested Additional Areas for State Park System

PARKS (SCENIC OR NATURAL)

42. Big Stone Lake

43. Fergus Falls, Detroit Lakes, Wadena Region

44. Northwest Angle

45. Red Lake

HISTORIC

46. British Fur Post

47. Columbia Fur Company Post

48. Red River Valley Ox-Cart Trail

ARCHEOLOGIC

49. Flat Lake Mounds

50. Grand Mound

51. Otter Tail Lake Mounds

TRAVEL ROUTES



Proposed interstate highways



Existing major highways



Proposed Great River Road

POPULATION

AVERAGE DENSITY PER SQUARE MILE



25 to 50 people



10 to 25 people



5 people or less

To assure that the total scene within each park may be enjoyed without the disturbing elements of surrounding developments and incompatible use and to allow for necessary future expansion, each existing State park should be studied to determine whether additional buffer zones would be desirable. Solutions might be by purchase or, in places, through zoning.

Effort should be made to eliminate those existing park areas from the State system which, on completion of an overall plan, appear to be more appropriately the responsibility of a local public agency.

MISSOURI

Recreation Resources

Extending westward in a broad fan shape from its confluence with the Mississippi just upstream from St. Louis, the Missouri River drains central and most of western and northern Missouri. The watershed includes slightly more than half the State. For planning purposes, this study also includes the narrow section of the Mississippi drainage in northeastern Missouri and takes into account the findings and proposals of the inter-agency report of 1955 on the Arkansas-White-Red Basins adjoining the Missouri drainage on the south.

Missouri's major recreation resource and, at the same time, its outstanding attraction as a vacation State is the famed Ozark country, with its unspoiled streams, hardwood forests, and rugged highlands. This beautiful region is also noted for its picturesque rock formations, valleys, and springs. The northern Ozarks lie within the basin.

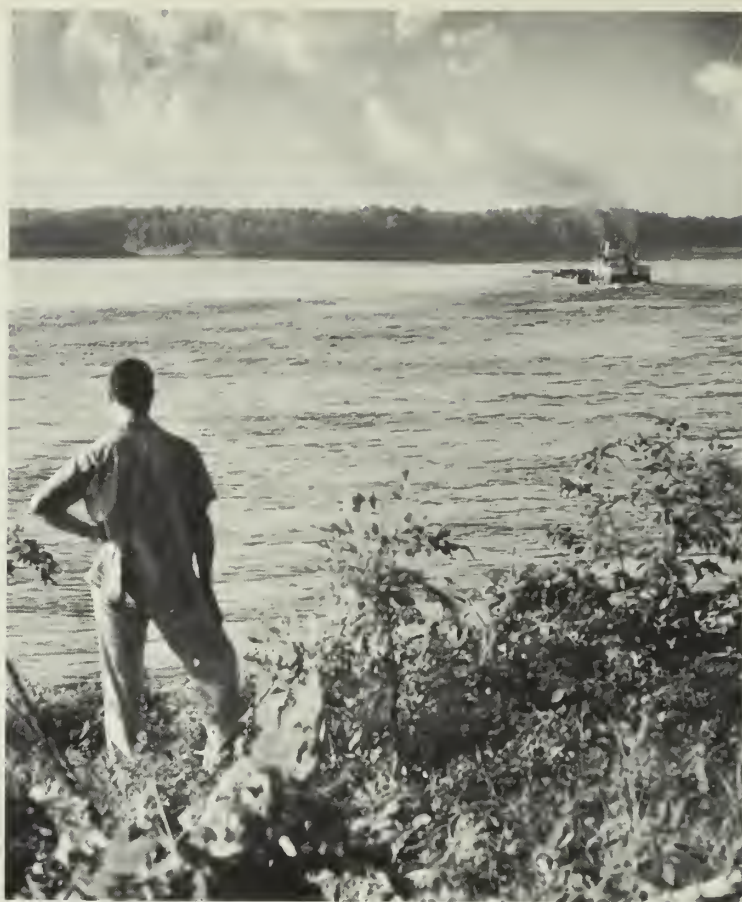
Although the countryside of northern Missouri is not a renowned vacation land, it, too, has attractive natural recreation resources, ranging from level fields to rolling, green prairies and pleasant wooded hills.

From the recreation standpoint, the dominant ecological type in the State is the oak-hickory forests of the lower Missouri drainage. These forests follow water courses westward from the Ozarks, gradually giving way to open land that was formerly tall-grass prairie but which is now in diversified agriculture.

The flood plains of some of the rivers in northern Missouri, such as the Grand River valley, still have mixed stands of virgin bottomland hardwoods.

Missouri possesses a wealth of both historical and archeological resources.

Historical resources of public recreation interest cover seven major themes or periods—exploration and



The "meeting of the waters"—where the Missouri and the Mississippi join.

fur trade, pre-Civil War (1830–60), Civil War, overland migration, industrial, cultural, and political.

In a special category of historical interest is the Truman birthplace at Lamar, Mo., recently acquired by the State Park Board, and the Truman-Wallace home at Independence.

The complete range of aboriginal cultures is represented, from some 10,000 years ago up to those overlapping historical times. Many of the sites with interesting prehistoric remains are located where supplemental forms of recreation also could be enjoyed.

Planning Considerations

PEOPLE. Missouri is the most heavily populated of the Missouri Basin States. Kansas City is the largest metropolitan area in the basin, and St. Louis, just outside the extreme southeast corner, is the eighth largest city in the United States. St. Louis residents make heavy use of the recreation resources within the basin section. The population is quite evenly distributed, with an irregular belt of heavy concentration roughly following the Missouri River



Rolling green hills of northern Missouri.

from St. Louis to Kansas City and on northward to the Iowa boundary. Many of the smaller urban places also are within or near this belt. Population growth has been slow but steady since 1930. The proportion of urban and rural residents is about evenly divided at the present time. The rural to urban shift, however, is a steady trend and is expected to continue in the foreseeable future. Trends and forecasts illustrating population changes are shown below:

| Year | Population, total State | Population, basin part | Percent Urban, basin part |
|---------|----------------------------|---------------------------|------------------------------|
| 1930.. | 3, 629, 000 | 1, 657, 000 | 44 |
| 1940 | 3, 785, 000 | 1, 662, 000 | 46 |
| 1950 | 3, 954, 000 | 1, 693, 000 | 53 |
| 1960... | 4, 187, 000 | 1, 759, 000 | 60 |
| 1970 | 4, 298, 000 | 1, 762, 000 | 67 |
| 1980 | 4, 397, 000 | 1, 759, 000 | 74 |

RECREATION USE AND TRENDS. The recreation resources of Missouri offer residents and tourists the opportunity to participate in a variety of activities. Hunting of upland game and waterfowl and fishing are popular recreation activities. Other activities such as horseback riding, visiting historic sites, sightseeing, and relaxing are also enjoyed. In addition, in line with the national trend, interest in all forms of water recreation is rapidly increasing, as is family camping and organized group camping.

Nonurban recreation use in Missouri increased remarkably during the 10-year period from 1946 to

1955. Overall State park attendance increased nearly 4 times, while attendance at State parks in the basin part more than doubled from 1952 to 1954. Increase in use, primarily of vacation facilities, in the Mark Twain National Forest was even greater than the overall increase in the State park system.

The following table summarizes these use trends:

| | 1946 | 1950 | 1955 | Increase, 1946 to 1955 (percent) |
|-----------------------------|----------|-------------|-------------|--|
| State park system. | 445, 000 | 1, 245, 553 | 2, 106, 800 | 373 |
| Mark Twain National Forest. | 135, 370 | 610, 231 | 710, 920 | 425 |

ECONOMIC IMPACT. The tourist industry is of major economic importance to Missouri. A substantial part of the economy of the Ozark region, in particular, is dependent upon income from that source. Economically the tourist industry ranks third in importance to the State. Expenditures from that source have risen from \$218,600,000 in 1951 to \$275,500,000 in 1955.

ADEQUACY OF PUBLIC AREAS. Public park and recreation areas in Missouri have been provided by State, Federal, and municipal agencies as summarized in the following table:

| Administration | Type of area | Number | Area (acres) |
|---------------------------|--------------------------------|--------|-----------------|
| Federal: | | | |
| Fish and Wildlife Service | National wildlife Refuges | 2 | 1, 230 |
| | Developed recreation areas | 1 | 1, 230 |
| Forest Service | National forest | 1 | 1, 230 |
| | Campgrounds and picnic areas | 1 | 2 |
| State: | | | |
| Park Board | State parks | 16 | 35, 937 |
| | Memorial shrine | 1 | |
| Conservation Commission: | | | |
| Fish and Game Division | Fish and game management areas | 7 | 28, 377 |
| Forestry Division | State forests | 2 | 3, 492 |
| Highway Commission | Roadside parks | 50 | |
| | Overlook towers | 13 | |
| Local: | | | |
| Municipalities | Parks | 5 | 1, 692 |
| Johnson County | Historic site | 1 | |
| Private foundation | Historic site | 1 | |

¹ In addition to the acres listed for developed recreation facilities, the Forest Service administers an additional 1,350,000 acres of land as a National Forest, and the Fish and Wildlife Service administers an additional 16,000 acres as wildlife refuges in the basin part of Missouri. These additional areas, though undeveloped, are used extensively for recreation activities, such as hunting, fishing, boating, and sightseeing.

And in addition to the areas listed above, many privately operated developments in the northern Ozarks, such as resort hotels, outfitter's camps, and commercial caves, provide public recreation opportunities.

Development of Missouri's State park system began at a time when areas with outstanding recreation resources were readily available, and the basic system was developed around them. Missouri's parks are, in fact, justly noted for scenic, geologic, biologic, and historic features. The State parks in the basin part typify those qualities.



Fishing is a popular pastime in Missouri. Scene at Pershing State Park.

Some of the parks offer naturalist services accenting nature study and the conservation of natural resources.

Recreation facilities on lands under the jurisdiction of the Forest Service, Fish and Wildlife Service, the State Highway Commission, and the State Conservation Commission are important. The Conservation Commission works closely with the State Park Board, as well as with local agencies, in the protection and management of fish and wildlife resources of the areas administered by the other agencies. The Highway Commission's system of roadside parks, providing pleasant and attractive rest stops for tourists, also is a major contribution to recreation. A further important contribution is made by the Highway Commission. Under existing legislation, the commission constructs and maintains all park access roads.

Historic sites or features of major interest are preserved in the State park system, most notably Arrow Rock and Pershing State Parks. Other historic resources are administered by local agencies and private foundations. Collectively, the overland migration, Civil War, and fur-trade themes are represented.

Van Meter State Park contains an outstanding earthwork known as the Old Fort, attributed to the Hopewell Indians. Otherwise, no significant archeological resources are yet preserved in the basin section.

The high level of the postwar economy has brought to Missouri, as to other States, increasing pressures on

all types of recreation resources. Historical and archeological resources of public interest, as well as recreationally important natural and scientific resources, are fast disappearing through increased cultivation, urban development, pothunting, and encroaching construction of various forms, notably highways. If constructed, flood-control reservoirs in the upper Gasconade country of the Ozarks would cause further losses in outstanding natural recreation resources, while those in the Osage Basin would affect less important values. In the main, however, opportunities created might offset these losses.

Parks and recreation areas in Missouri today are beset with the same major problem that is common throughout the United States. Recreation use and demands, which could not be foreseen only a few years ago, now often exceed the capacity of the areas and facilities.

The need for areas providing day and weekend facilities for Missouri residents exists in general throughout the basin section, but it is especially acute near the large metropolitan area of Kansas City.

State park system areas are, on the whole, of ample size to retain the true park atmosphere and to absorb recreation use without deterioration of values. Thus, despite the heavy use and pressures, the State has been able to preserve the inherent values for which the parks were established.

Four of the areas in the State park system are of approximately 100 acres or less. Two of these are dominantly scenic or historic in character.

SPECIAL CONSIDERATIONS. Because of their special nature, the following factors are of particular importance in long-range planning for the basin part of Missouri:

1. The high scenic and recreation qualities of the upper Gasconade watershed, retained in their present largely unspoiled form for the people of Missouri and the Nation, are an important consideration.

2. The proposed interstate highway system will further increase travel and will, in turn, accentuate recreation needs and use along their routes. In the basin part of Missouri, the proposals include a route approximating present U.S. 40 from St. Louis to Kansas City; two routes radiating from Kansas City through northwest Missouri via U.S. 69 and 275, respectively; and another interstate highway along the general route of U.S. 66 from St. Louis through the northern Ozarks to Springfield, Joplin, and westward out of the State.



The scenic free-flowing Gasconade River.

3. A total of 11 flood-control reservoirs are currently under consideration in the basin section of Missouri. Those on the Gasconade River will be of particular interest to the State since they would alter the stream's natural free-flowing character. Some of those in the north would be valuable recreation assets of State importance, despite other problems which might arise. Two of the four that are under consideration in the southwest will also have good recreation value, while the other two may be "dry dams" with no recreation significance. They would, on the other hand, result in losses to present recreation resources.

AREAS OF RECREATION NEED. There are two principal areas in the basin section in which additional outlets for day and weekend use for local residents are either needed at the present time or may be needed in the foreseeable future. These areas, determined on a judgment basis, are indicated in general outline on plate 14. As the drawing shows, the larger of the two areas is situated in western Missouri and extends from the Iowa border to the southern boundary of the basin. This general area contains two localities of present local need, one extending from Kansas City northeastward to the general vicinity of Excelsior Springs, and the other from Nevada, in the southwest part of the basin section, to the Bolivar-Buffer-

Osceola area. The remainder of the general area is one of probable future need.

A present local need also exists in the smaller area shown in the northeastern corner of the State.

Objectives and Broad Recommendations

Missouri has an excellent, well-balanced State park system, carefully developed through the years in accordance with sound advance planning. It has been carried out in line with the basic objective of a balanced system in which significant scenic, scientific, and historical resources are preserved in the long-range public interest, with supplemental areas and development to meet active recreation needs.

The State Park Board is expanding present developments and adding new areas of natural and historic value to the system. Phases of the objective that need more emphasis at the State level are mainly the incorporation of archeological features of recreation value; the preservation, for public recreation purposes, of representative examples of the major historic eras that are part of the State's rich heritage; and interpretive programs, through which the qualitative experience of recreation is greatly enhanced.

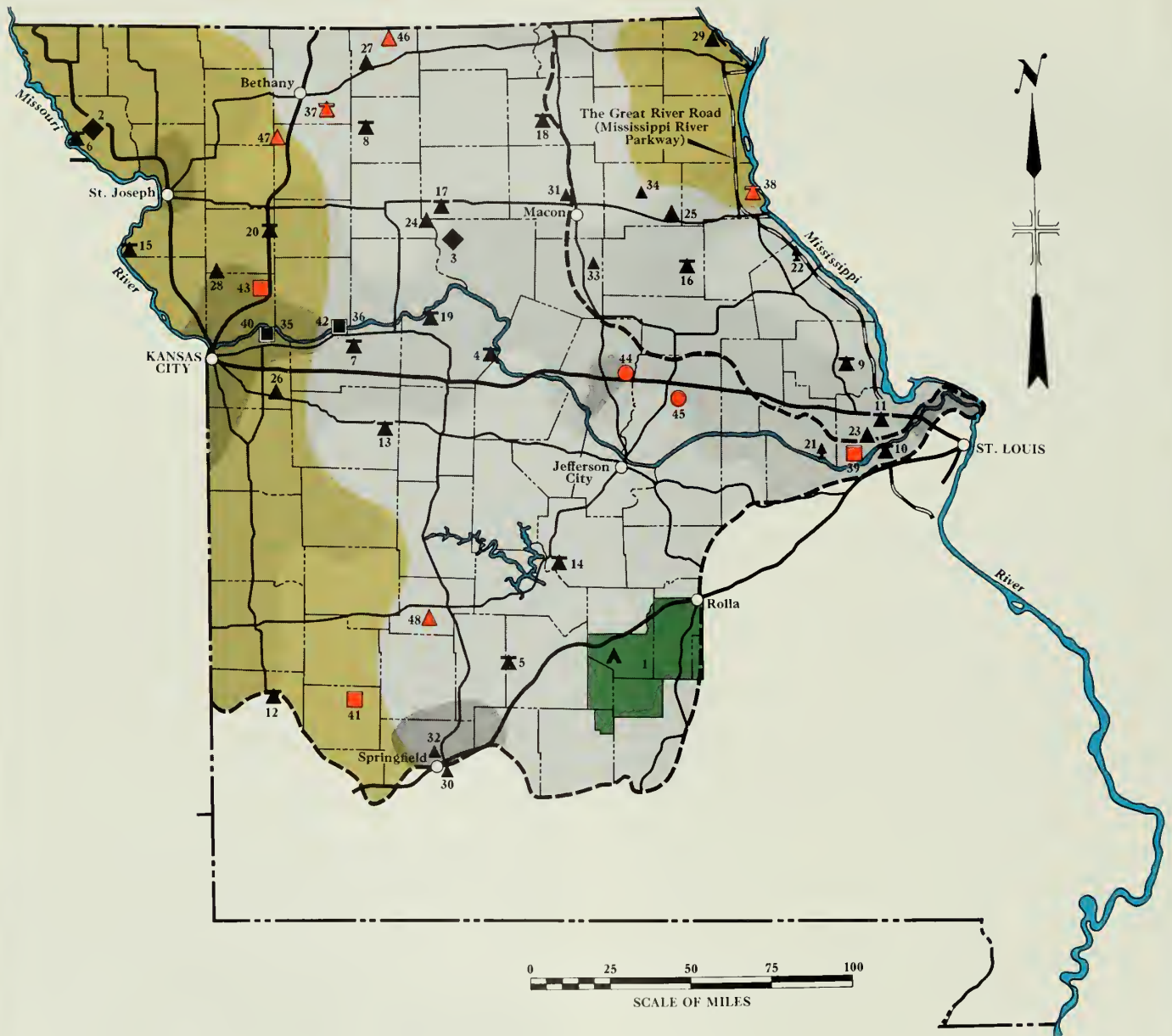
On the basis of present and predicted trends in recreation use, it is believed that the State park system will need to be designed to accommodate at least 7 million visitors annually by 1980, with about 4 million annually in the basin part.

At the Federal level, there is definite need for areas developed for day and weekend use in the Mark



This structure in Fort Zumwalt State Park reputedly dates from the War of 1812.

MISSOURI



PARK AND RECREATION AREAS

- | FEDERAL | | STATE | |
|---------|---|-------|------------------|
| | FOREST SERVICE | | Parks |
| | Recreation Area | | Recreation Areas |
| | FISH & WILDLIFE SERVICE | | Forests |
| | Wildlife Refuge with developed Recreation areas | | |
| LOCAL | | | |
| | Recreation Areas | | |
| | Historic Sites | | |

SUGGESTED ADDITIONAL PARK AND RECREATION AREAS

- STATE PARK SYSTEM**
- Parks
 - Recreation Areas
 - Historic Sites
 - Archeologic Sites

Areas of Present and Future Recreation Need

BOUNDARIES

- Boundary of Missouri River Drainage
- Boundary of Fringe Zone

PARK AND RECREATION AREAS

Federal

NATIONAL FORESTS

1. Mark Twain

NATIONAL WILDLIFE REFUGES

2. Squaw Creek
3. Swan Lake

State

PARKS

4. Arrow Rock
5. Bennett Spring
6. Big Lake
7. Confederate Memorial
8. Crowder Memorial
9. Cuivre River
10. Dr. Edmund A. Babler Memorial
11. Fort Zumwalt
12. Harry S. Truman Memorial
13. Knobnoster
14. Lake of the Ozarks
15. Lewis and Clark
16. Mark Twain
17. Pershing Memorial

18. Thousand Hills
19. Van Meter
20. Wallace

FORESTS

21. Daniel Boone Memorial
22. Dupont Reservation

RECREATION AREAS

23. August A. Busch
24. Fountain Grove
25. Hunnewell
26. James A. Reed Memorial
27. Lake Paho
28. Trimble Wildlife Management Area
29. Upper Mississippi River

Local

RECREATION AREAS

30. Fellows Lake
31. Macon Lake
32. McDaniels Lake
33. Moberly Lake
34. Shelby Lake

HISTORIC

35. Fort Osage
36. Lexington Battlefield

Suggested Additional Areas for State Park System

PARKS (SCENIC OR NATURAL)

37. Grand River Valley
38. Mississippi River Bluffs

HISTORIC

39. Daniel Boone Home
40. Fort Osage
41. Hulston Mill
42. Lexington Battlefield
43. Watkins Mill

ARCHEOLOGIC

44. Grahams Cave
45. Research Cave

RECREATION AREAS

46. Mercer Reservoir
47. Pattonsburg Reservoir
48. Pomme De Terre Reservoir

TRAVEL ROUTES



Proposed interstate highways



Existing major highways



Proposed Great River Road

POPULATION

AVERAGE DENSITY PER SQUARE MILE



50 people or over



25 to 50 people



10 to 25 people

Twain National Forest. The Forest Service's long-range plan, Operation Outdoors, will consider these and other needs.

The need for additional park and recreation systems at the local level has been recognized and, under recent legislative authority, several counties have initiated development programs. Jackson County, for example, south of Kansas City, has already begun an extensive development program. The principles of the basic objective also should be applied by local agencies so as to achieve balanced, well-rounded systems at the local level.

Suggested Solutions

PRESERVATION OF RESOURCES. The following suggestions are intended only as a general guide. Many other possibilities exist, and more definitive solutions and recommendations will be reached under the MISSION 66 program of the National Park Service, the nationwide recreation plan, and the historic sites survey in cooperation with the State and other agencies concerned. Most of the areas suggested below as worthy of preservation for their scenic, scientific, or cultural interest are so located that they would also serve active recreation needs if sufficient lands were acquired.

In addition to the Hopewell Indian culture in Van Meter State Park as noted above, a highland to the east contains the most significant archeological remains of the Missouri Indians, an important tribe providing the name of the river and the State. The nearby Mellor Mounds afford a spectacular view of the Missouri and the Lamine River valley, and they are an outstanding archeological site of the Hopewell Indian culture. An area combining Van Meter with the Missouri Indian sites, plus the detached Mellor Mounds, should be evaluated for State or National significance.

Recreation resources of statewide significance are inherent in the following areas, sites, or features. They are suggested as examples for preservation as particularly desirable future additions to the present State park system:

Scenic or Natural

1. Methods of solution concerning the Gasconade country will have to be studied to determine how recreation resources may be best preserved in the

public interest. These studies must take into account the current 11-point river study.

2. The preservation of a representative example of virgin bottomland hardwoods, such as still exists along sections of the Grand River valley, is suggested for consideration in the long-range plan. These woods are fast disappearing, and the flood-control program for the Grand River will further hasten their clearing.

3. The Missouri River bluffs, particularly in central and eastern Missouri, possess outstanding natural recreation resources. A typical section might well be preserved for its statewide interest. Consideration in the long-range plan might also be given to the preservation of a segment of the Mississippi River bluffs. The section near Hannibal and northward is exceptionally scenic and has rare plants.

Historic

1. Two potential areas are of particular interest in that they combine significant historical features with scenic values. Both areas are situated in parts of the basin section where local recreation needs now exist and, in addition to the historical values, are adaptable to the development of facilities for day and weekend use. One area includes the historic Watkins Woolen Mill in Clay County. Much of the original equipment is still intact. The second area, in Dade County, includes the old Hulston Mill, one of the early gristmills in Missouri. It is still in operation.

2. Other historic sites or structures of State significance that are suggested for State administration include the Daniel Boone home, in St. Charles County; Lexington Battlefield, in Lafayette County, now administered by a private foundation; and old Fort Osage, near Kansas City, administered by Johnson County.

Archeologic

Examples of archeologic sites of statewide public recreation interest include Graham's Cave east of Columbia, containing evidence of occupation during a 9,000-year period of prehistory, and Research Cave in Calloway County, with a combination of archeological and historical interests.

SUGGESTED MEANS OF MEETING RECREATION NEEDS. The following contemplated reservoirs appear to offer the most significant recreation potentialities for

northern Missouri: Mercer, Pattonsburg, Linneus, and Braymer, in that order. With favorable reservoir operation, the first two, for example, might be incorporated in the State park system as additional areas serving recreation needs. The others would more logically be administered by local agencies, as would Stockton Reservoir, an authorized unit on the Osage River.

The State Park Board definitely proposes the establishment of a State park at Pomme de Terre Reservoir, now under construction in the southwestern part of the basin section.

TOURWAYS AND PLEASURE DRIVES. Where the opportunity exists, highway scenic drives could be incorporated in the long-term plan. These drives could utilize existing roads and highways, with roadside zoning excluding undesirable developments and billboard advertising.

LOCAL SYSTEMS. Because of its small size and local influence, Lewis and Clark Lake State Park does not fully qualify for inclusion in the State park system. The State, therefore, may wish to consider arrangements for transferring the area to a local level.

MONTANA

Recreation Resources

To the Nation at large, Montana spells the West and the vacation land of the northern Rockies. Here lie the headwaters of the Missouri and the western edge of the basin. While not evenly distributed, recreation resources of the State are of very high quality.

The scenery and refreshing summer climate, forests and wildlife, mountain lakes and streams, and the wilderness quality still retained by much of the area make the mountain section an attraction to tourists and vacationers. Some of the finest mountain fishing and big-game hunting left in the country are found here.

The eastern half of the State, by sharp contrast, is typical Great Plains country. Areas naturally adapted or attractive for outdoor enjoyment are few. Where they do exist, they relate to the Missouri and its larger tributaries, the Yellowstone, Big Horn, Tongue, and Powder Rivers, and to isolated variations, such as badlands, canyons, caves, and lesser-mountain outcrops.

Ecological associations run a broad gamut from alpine along the Continental Divide, eastward through

subalpine, montane, and pine-juniper and oak-juniper, the latter extending at higher elevations to about the middle of the State. Farther east are the short-grass prairie lands, with deciduous woodlands in the stream valleys.

Historically, while relatively young, the State retains the special Western appeal in the several themes represented. These include exploration and the early fur trade of 1804-60, an era sparked by the Lewis and Clark Expedition; the discovery of gold in the 1860's; the Indian wars ending in the 1880's; the stockman's frontier of 1865-1900; and the statehood era starting in 1889.

Archeologically, the surface has been barely scratched. Finds to date are largely composed of pictograph caves, buffalo "kills," and tepee rings.

Planning Considerations

PEOPLE. For its size, Montana has a relatively small and widely scattered population, with distribution ranging from 0 to 3 persons per square mile, except for concentrations up to 10 per square mile around the larger cities. The State population did, however, continue to grow slowly through the 1930's and since then. The tabulation below shows population trends and forecasts:

| Year | Population, total State | Population, basin part | Percent Urban, basin part |
|-------|----------------------------|---------------------------|------------------------------|
| 1930. | 538,000 | 373,000 | 27 |
| 1940. | 559,000 | 380,000 | 34 |
| 1950. | 591,000 | 396,000 | 41 |
| 1960. | 649,000 | 441,000 | 48 |
| 1970 | 680,000 | 466,000 | 55 |
| 1980. | 693,000 | 478,000 | 62 |

It is anticipated that population distribution over the State will remain much the same during the next 25 years, but with present concentrations making proportionately more growth.

RECREATION USE AND TRENDS. The recreation interests of the residents and tourists in the State are associated with outdoor activities. Fishing, big-game hunting, and camping are major recreation activities of the people. Also, active participation in boating and water-related sports, family-type outings, and sightseeing is increasing and this trend should continue.

Postwar park and outdoor recreation use has increased sharply in line with national trends. No conclusive estimate can be reached to guide forecasts, since the present State park areas represent only the nucleus of a system and since much of the activity



Montana's spectacular mountain scenery attracts vacationers from throughout the Nation. Glacier National Park.

undoubtedly takes place in the large undeveloped Federal holdings or other lands not set aside for the public. Available records and forecasts show the following:

| | 1946 | 1950 | 1955 | Increase, 1946 to 1955 (percent) |
|--|----------|----------|----------|--|
| State parks | 25, 000 | 25, 000 | 92, 000 | 268 |
| National Forest, Developed Areas | | 820, 000 | | |
| National Parks and Monu- ments ¹ | 254, 000 | 559, 300 | 811, 700 | 219 |
| Corps of Engineers reservoirs | | 83, 000 | 102, 000 | |

¹ Includes estimate for Montana portion only of Yellowstone National Park.

ECONOMIC IMPACT. Another gage of the increasing use and significance of recreation resources lies in travel trends. Vacation and tourist travel to Montana increased from 1.9 million people spending 36 million dollars in 1946 to 3.2 million spending over 89 million dollars in 1955—making the tourist industry third in the State, after mining and agriculture. If present trends continue, the State expects the industry to rank second within the next 10 years.

ADEQUACY OF PUBLIC AREAS. Basic to an understanding of the present situation is the fact that

Montana is a very large State with large Federal holdings, and with a relatively small population, attracting tourists who in total outnumber the residents. Most of the publicly administered parks and recreation areas in Montana have been established by Federal and State agencies.

Existing parks and recreation areas in the basin section of Montana are summarized below:

| Administration | Type of area | Number | Area (acres) |
|-------------------------------------|--------------------------------------|--------|--------------|
| Federal: | | | |
| National Park Service | National parks | 2 | 1, 142, 257 |
| | National monuments | 2 | 965 |
| Forest Service | National forests | 6 | |
| | Camp and picnic grounds | 202 | 2 900 |
| | Resorts and concessions | 124 | 2 1, 010 |
| | Winter-sports areas | 10 | 2 455 |
| | Wilderness areas | 3 | 1, 325, 000 |
| Fish and Wildlife Service | Wild areas | 3 | 142, 562 |
| | National wildlife refuges | 3 | |
| | Developed recreation areas | | 1, 092 |
| Corps of Engineers | Reservoir | 1 | |
| | Developed recreation areas | | 1, 800 |
| State: | | | |
| Highway Commission | State parks | 7 | 4, 193 |
| | State monuments | 2 | 19 |
| | Reservoir recreation area | 1 | |
| | Roadside parks | 75 | |
| Local: | | | |
| Hill County | County park | 1 | 11, 000 |
| Blaine County | Historic site | 1 | 160 |

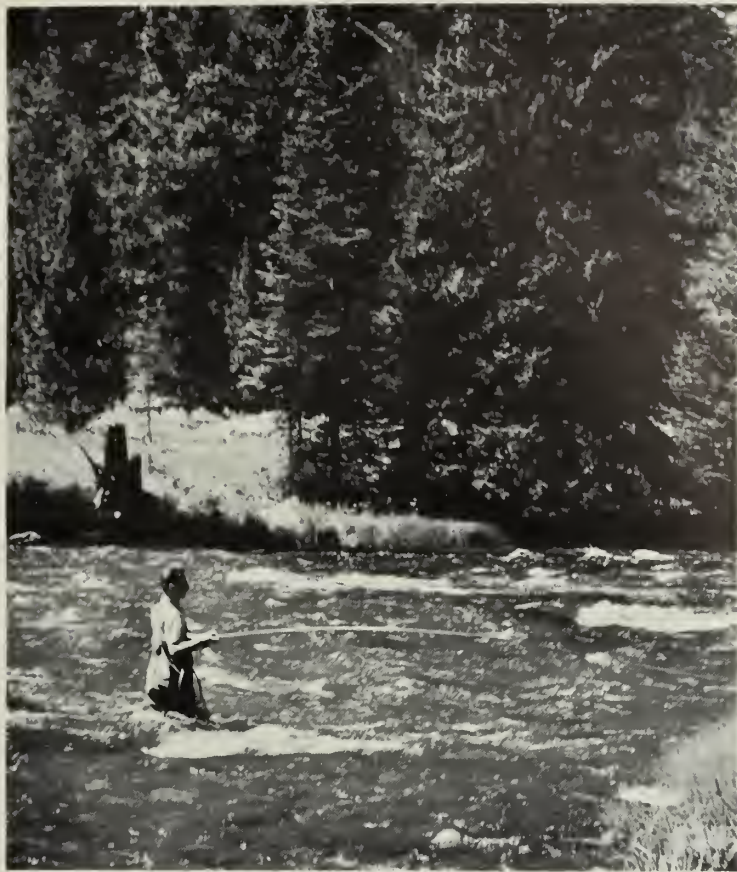
¹ Includes part of Yellowstone National Park in Montana only.

² In addition to the acres listed for developed recreation facilities, the Forest Service administers an additional 10,000,000 acres as National Forests, and the Fish and Wildlife Service administers an additional 1,000,000 acres as wildlife refuges in the basin part of Montana. The additional areas, though undeveloped, are used extensively for recreation pursuits, such as hunting, fishing, sightseeing, and hiking.

Some of the Nation's outstanding scenic, scientific, and historical resources are preserved in the areas of the National Park System that are within, or partly within, the basin section of the State. Several wilderness areas have been administratively set aside in the National Forests. The State park areas, under the jurisdiction of the State Park Division of the Highway Department, form a solid nucleus from which to expand, but they are few in number and small in acreage.

The present system of parks and recreation areas is obviously inadequate to safeguard public interests in preserving valuable recreation resources, to handle present use, and meet anticipated needs.

Much of the load is now borne by the small, though numerous, recreation developments in the National Forests and by undeveloped opportunities for recreation. This latter situation, in particular, cannot reasonably continue as populations rise and natural wild areas shrink.



The Madison River is one of the most famous trout streams in the country.

In parts of the mountain section, the need for accessible day and weekend areas is becoming acute. In the Great Plains part of the State, the need already exists and will have to be met there within reach of the population.

SPECIAL CONSIDERATIONS. Because of their special significance, several factors should be considered in any long-range park and recreation program in Montana. These include the following:

1. Of special concern in Montana are the resources and, in particular, the fragile wilderness areas which, if lost, cannot be replaced.

2. Water-control projects are creating some new recreation opportunities of real value. At the same time, some offer problems. A number have been built, and many more are being considered. Most of them are located on the higher tributaries where additional bodies of water are less needed for recreation purposes and where some may encroach on recreation resources of high value. To a degree, they disrupt an orderly development of a balanced park system, creating pressure for recreation development where they happen to be, rather than where needs or long-range planning dictate.

3. Development of modern highways, in particular the proposed interstate highway system, will have considerable influence in establishing the pattern of tourist flow and local travel as well. Three interstate routes are proposed in the basin part of Montana, as shown on plate 2. One route, following east-west U.S. 10, will connect Glendive, Miles City, Billings, and Butte. A north-south route, along the eastern flank of the mountains, will extend southward from the Canadian border through Great Falls, Helena, Butte, and on south to Idaho. The third route will extend south from Billings. These routes may lead to increased and more diversified use of recreation resources of the mountains and of all areas in the southern part of the basin section.

AREAS OF RECREATION NEED. In and near the mountains, assorted types of developed and undeveloped recreation opportunities are generally well distributed and still available to the public. There is currently a need, however, for additional reasonably accessible public areas for day and weekend outings to serve the scattered groups of resident population to



Headwaters of the Missouri River at Three Forks, Mont.

the east. Broadly defined on a judgment basis, and indicated in general outline on plate 15, this area of need lies primarily along the eastern foothills of the mountains, including the urban populations in Great Falls, Helena, Bozeman, and Billings. It also extends westward to include the Butte-Anaconda area in the mountains, and along U.S. 10 to the eastern border to encompass the Miles City-Glendive areas. To the north, it includes the large group of rural population in the Sidney region of northeastern Montana. Certain local areas within this general region contain recreation potentials in the form of existing reservoirs which are not yet fully developed.

Toward the eastern end of the State, there is also a need for vacation areas within perhaps 150 to 200 miles of resident population.

Objectives and Broad Recommendations

Stated oversimply, the objective is to preserve important recreation resources—scenic, scientific, and historical—for public enjoyment, and to provide supplemental opportunities to meet public needs. In Montana, more than most States, this must be cooperatively achieved because of large Federal holdings involved.

In the Federal program the National Park Service, under MISSION 66, is bringing development and management in the parks and monuments up to the point where foreseeable needs will be met consistent with Service objectives. In addition, comprehensive studies concerned with values of national significance will consider the ultimate composition of the National Park System and the significance of areas which might qualify to fill voids.

Under Operation Outdoors, it is anticipated that the Forest Service will point toward expansion of recreation facilities in the National Forests and a re-evaluation of wilderness areas, considering boundary adjustments or expansion where desirable and strengthening safeguards to the degree their authority allows.

The Bureau of Land Management can make an important contribution to the statewide system through the classification of lands it administers by giving full consideration to recreation values and making suitable areas available to public agencies for park or recreation purposes. This contribution would be especially important to the State.

The State, recognizing its present park composition and distribution, should undertake expansion as rapidly as means can be provided. Primary objectives

could well point toward the acquisition of additional scenic, scientific, and historic areas of State interest and significance while expanding the acreage and development of existing areas so as to preserve the values concerned and to meet pressing needs. Supplemental areas to meet overall State needs should follow, recognizing, however, that certain local requirements may most properly be met by counties or municipalities. Development of planned programs of interpretation can add immeasurably to public enjoyment and should be instituted as management and protection staffs are augmented. In the meantime, a start can be made through such mediums as interpretive signs and self-guiding trails. The State Parks Division plans to initiate a small program along these lines.

Basic to this total program is the development of a long-range master plan for the State park system. Enlargement of the State Parks Division staff also is fundamental to realizing the objectives and would be to the mutual advantage of the planning agencies concerned.

Consideration should be given to selecting, establishing, and developing an additional area of considerable size along the Rockies to serve resident and tourist requirements for diversified vacation and recreation use. It is believed such an area would be a valuable addition to the State park system and will be necessary in the foreseeable future to take care of increasing use. At the same time it will assist in relieving pressures in the National Parks and Wilderness Areas.

Roadside parks provide welcome opportunities for traveler rest stops. Existing areas should be supplemented, selecting locations with future travel routes and loads in mind, and, where practical, making use of scenic or historically interesting sites. This program can be combined to advantage also with historical markers, in which field the State has already made notable strides.

The long-range, overall plan for the State should give consideration to designating appropriate highways for pleasure drives and circle tours. Zoning or some means of retaining a natural wayside and eliminating billboard advertising and other objectionable developments would be essential.

Suggested Solutions

Supplementing the broad recommendations above, certain solutions suggest themselves to meet stated



Picturesque badlands in Makoshika State Park.

objectives. It is not intended that they pinpoint specific recommendations, but rather to offer a guide to achieving a balanced park system of public areas.

FEDERALLY ADMINISTERED PARKS AND RECREATION AREAS. Management, protection, and development programs at the 2 National Parks and 2 National Monuments will be brought in line with foreseeable needs, consistent with National Park Service objectives. Whether other areas may be considered for addition to the National Park System in Montana will depend on comprehensive studies being undertaken. Particular attention will be given to important natural values in the Rockies and to areas associated with the Lewis and Clark Expedition.

In the National Forests, the designation of additional areas for recreation and proposal for additional developments in existing recreation areas will, likewise, undoubtedly be considered in the Forest Service program, Operation Outdoors.

Plans also are being developed by the Fish and Wildlife Service to meet the long-range needs for hunting, fishing, and wildlife management that are of special importance to Montana.

STATE PARKS AND RECREATION AREAS. Five of the seven existing State parks in the basin section now have limited acreage. Expansion of these areas is desirable to insure the preservation of the qualities concerned or to incorporate outstanding features or values not now included.

It is suggested that consideration be given to adding several thousand acres to Makoshika State Park to include badlands formations and fossil deposits of exceptional interest. Bridger Mountain State Park might be increased to 1,000 acres, while Missouri River Headwaters, an important historical area, could well be enlarged from the present 9 acres. At Bannack State Monument, the incorporation of 100 acres might be considered to retain the historic character of Montana's first territorial capital and to interpret the early mining era represented. It is suggested that Hooper State Park be expanded to at least 100 acres to incorporate additional natural values.

Each of these five State parks, plus Lewis and Clark Caverns, need additional development and interpretive provisions to provide for public use and enjoyment of the areas.

The State Parks Division now administers recreation areas at Canyon Ferry, Tiber, and Fort Peck Reservoirs. Further recreation development at these areas should be completed as increasing use warrants and as means are provided.

Whether additional reservoirs will be constructed in the near future is problematical. Many are included in the long-range plans of the Bureau of Reclamation. Each reservoir should be considered for recreation on its own merits if and when it materializes.

PRESERVATION OF RESOURCES. Additional areas preserving important natural, historical, or archeological values are needed to round out the State park system. Consideration of the following areas are suggested:

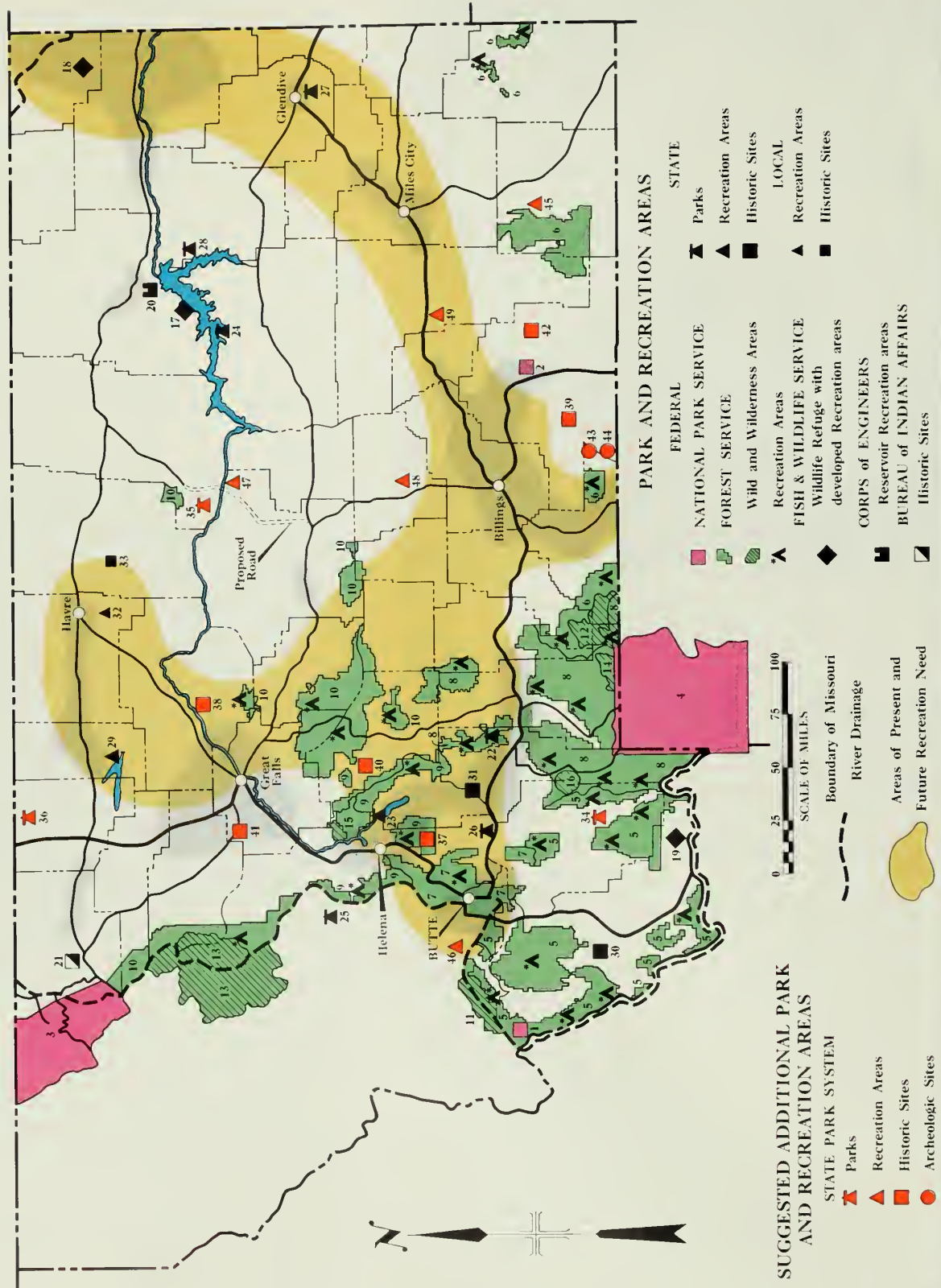
Scenic or Natural

1. A typical segment of the Sweetgrass Hills.
2. A section of the Upper Madison River drainage.
3. The Missouri River Breaks area.

Historic (Representing the Indian-military phase)

1. Fort C. F. Smith.
2. Fort Shaw.
3. Rosebud Creek Battlefield.
4. Fort Benton.

MONTANA



Federal

NATIONAL MONUMENTS

1. Big Hole Battlefield
2. Custer Battlefield

NATIONAL PARKS

3. Glacier
4. Yellowstone

NATIONAL FORESTS

5. Beaverhead
6. Custer
7. Deerlodge
8. Gallatin
9. Helena
10. Lewis and Clark

WILDERNESS AREAS

11. Anaconda-Pintlar
12. Beartooth
13. Bob Marshall

WILD AREAS

14. Absaroka
15. Gates of the Mountains
16. Spanish Peaks

PARK AND RECREATION AREAS

NATIONAL WILDLIFE REFUGES

17. Fort Peck
18. Medicine Lake
19. Red Rock

RESERVOIR RECREATION AREA

20. Fort Peck

HISTORIC SITE

21. Browning Museum

State

PARKS

22. Bridger Mountain
23. Canyon Ferry
24. Hell Creek
25. Hooper
26. Lewis and Clark Caverns
27. Makoshika
28. Rock Creek

RECREATION AREAS

29. Tiber Reservoir

HISTORIC SITES

30. Bannack
31. Missouri Headwaters

Local

RECREATION AREA

32. Hill County

HISTORIC SITES

33. Bearpaw Battlefield

Suggested Additional Areas for State Park System

PARKS (SCENIC OR NATURAL)

34. Madison River
35. Missouri River Breaks
36. Sweetgrass Hills

HISTORIC

37. Elkhorn
38. Fort Benton
39. Fort C. F. Smith
40. Fort Logan
41. Fort Shaw
42. Rosebud Creek Battlefield

ARCHEOLOGIC

43. Yellowtail Bison Kill
44. Yellowtail Camp Sites

RECREATION AREAS

45. Camps Pass Area
46. Lost Creek Area
47. Missouri River Crossing
48. Roundup Hills Area
49. Yellowstone River Valley

TRAVEL ROUTES



Proposed interstate highways



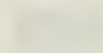
Existing major highways

POPULATION

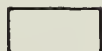
AVERAGE DENSITY PER SQUARE MILE



10 to 25 people



5 to 10 people



5 people or less



Bannack State Monument, Montana's first Territorial Capital.

5. The old mining town of Elkhorn.
6. Fort Logan.

Archeologic

1. Yellowtail Bison Kill (used by prehistoric Indians of unknown culture).
2. Yellowtail Camp Sites (outstanding group of tepee rings of undetermined age).

SUGGESTED MEANS OF MEETING RECREATION NEEDS. To assist in meeting needs for day and weekend use, consideration of the following is suggested:

1. Missouri River crossing area at the upper end of Fort Peck Reservoir. This area is particularly well adapted to serving needs resulting from travel along a north-south highway now under construction, connecting U.S. 2 and State Route 18.
2. Camps Pass area, near Broadus.
3. Yellowstone River valley in the general vicinity of Forsyth or Myers.
4. Roundup Hills area.
5. Lost Creek area near Anaconda. The State is now negotiating for this area. The actual size has not been determined.

SCENIC DRIVES OR TOURWAYS. In considering tourways and pleasure drives, the following routes offer possibilities:

1. A Lewis and Clark Tourway using existing roadways that follow the route of the famous expedition along the rivers.

2. Yellowstone National Park to Glacier National Park via U.S. 89 or alternate over parts of U.S. 10, 91, and local highways.

3. Billings to Yellowstone via U.S. 10 and 89, returning via existing scenic drive U.S. 12, the Red Lodge-Cooke City route.

Other possibilities suggest use of secondary roads for more leisurely travel, visiting en route, mining towns, historic points, parks and recreation areas, and many of the scenic, though less publicized, areas in and along the mountains.

NEBRASKA

Recreation Resources

Nebraska is the one State which lies wholly within the Missouri River Basin. For the most part, it is typical of the Great Plains, although the rolling hills of the eastern third are more accurately true prairie. As such, it has not developed naturally as a vacation State or a major tourist attraction. There are, however, a number of localities or sections possessing very attractive qualities, little known to the traveler or, for that matter, many of the residents. Such areas include the Missouri River Bluffs, the valley of the Niobrara River and some of its tributaries, the Pine Ridge country, and the Wildcat Range. The Sand Hills region, with its many small lakes and lush grass, has a special character and appeal.



Smith Falls, on a tributary of the Niobrara River, is seldom seen.

Ecologically, the State does not cover a wide range. The short-grass prairie of the western portion becomes true prairie in the east and merges with an oak forest association along the Missouri and in the southeastern corner. River bottoms throughout contain stands of cottonwood, elm, green ash, boxelder, and other moisture-loving trees.

Wildlife, from a recreation standpoint, features upland game and waterfowl, deer, some pronghorn, and fur-bearing animals. Fish are mostly of the warm-water species, although trout are found in clear, cool streams tributary to the Niobrara and to the White.

Nebraska's climate is one of extremes. Hot, dry summers make recreation in connection with bodies of water especially desirable. Winters are usually too variable to provide for extensive winter sports. The State is noted for its beautiful spring and autumn seasons.

Historically, Nebraska is notable for its major travel routes. Both the Oregon and Mormon Trails cross

it east to west; while the Missouri on the east served early explorers, missionaries, gold seekers, and settlers. Major themes represented include early exploration and the fur trade, the overland migrations, the Indian wars, and the homestead movement.

Archeologically and paleontologically, Nebraska is famous. Prehistoric cultures have been identified by scientists as the Foragers, Woodland Hunters, and Early Western Farmers. Fossil exposures have yielded rich finds representing several geologic periods from early Pennsylvanian through the Pleistocene epoch of the Quaternary period.

In addition to natural and historical recreation resources, water-control projects have provided supplemental opportunities. County and local irrigation interests have built 30 or more reservoirs over the years, and Federal agencies, under the current Missouri River project, have completed seven. Numerous other sites are proposed in the Lower Platte and Niobrara drainages.

Planning Considerations

PEOPLE. The population of Nebraska in 1950 was 1,325,510, following a loss during the 1930's and a small gain between 1940 and 1950. A continued gain, though at a slower rate than the national average, is anticipated during the next 25 years, as shown by the following tabulation of population trends and forecasts:

| Year | Total State population | Percent urban population |
|------|------------------------|--------------------------|
| 1930 | 1,378,000 | 31 |
| 1940 | 1,316,000 | 39 |
| 1950 | 1,325,000 | 46 |
| 1960 | 1,418,000 | 52 |
| 1970 | 1,497,000 | 58 |
| 1980 | 1,576,000 | 65 |

The majority of urban areas, particularly those with larger populations, lie in the eastern one-quarter part and along the Platte River. The eastern concentration, including metropolitan Omaha and Lincoln (68 percent of the population in one-fourth of the State), represents, in fact, one of the major segments in the basin inadequately provided with outdoor recreation opportunities, and it is hundreds of miles in all directions from natural vacation areas.

Future population density will probably be similar to the present pattern. The higher density in the east will become more accentuated, while in much of the central and western parts, it is expected to become lighter.



New lakes provide fun for all! Photograph taken at Swanson Lake.

RECREATION USE AND TRENDS. The usual cross section of outdoor activities are popular in Nebraska, adapted, of course, to the resources available and to the climate. Fishing, boating, swimming, and, in fact, any activity relating to bodies of water, have special appeal. While fishing and hunting have predominated in the past, other activities such as picnicking, pleasure driving, and boating are now popular pursuits. Reservoirs in Nebraska, with their attractive bodies of water and located in areas lacking natural recreation resources, have increased resident activity of fishing, camping, boating, and other related sports.

Quantitatively, a sharp rise in park attendance has been experienced in Nebraska, as elsewhere. The following figures illustrate the trend:

| | 1946 | 1950 | 1955 |
|----------------------------------|---------|---------|---------|
| State parks and recreation areas | 183,310 | 229,300 | 603,205 |
| National Monuments | 59,900 | 63,750 | 73,800 |
| National Forest Recreation Area | 3,700 | 24,000 | 16,739 |
| Corps of Engineers reservoirs | | 6,000 | 296,000 |

¹ State parks only—does not include recreation areas.

ECONOMIC IMPACT. Figures on tourist travel are not available. However, use by out-of-State populations is not now a major factor in public park and recreation area use, largely because of the absence of well-known attractions. Travel through the State, and vacations devoted to visiting relatives, would probably show increases comparable to national trends.

In terms of dollar value, the tourist industry in Nebraska is about one-third the value of agriculture. Figures compiled by the National Association of Travel Organizations show that income from the tourist trade totaled \$72,675,000 in 1951 and \$78,000,000 in 1955.

ADEQUACY OF PUBLIC AREAS. In Nebraska, provision for public outdoor recreation has been largely through State areas. The 2 National Monuments and the 1 National Historic Site preserve important historic values. The 2 National Forests are basically afforestation projects and hence do not represent natural recreation opportunities, but they do incorporate 1 developed recreation area. For the balance, the



Hunting is a popular Nebraska pastime.

public uses State areas and undeveloped lands open to them.

At present Federal and State parks and recreation areas are numerous, although a number are small and inadequately developed. Twenty-six of the State areas, for example, have less than 100 acres each. Existing areas include the following:

| Administration | Type of area | Number | Area (acres) |
|--|----------------------------|--------|--------------|
| Federal: | | | |
| National Park Service | National monuments | 2 | 3,615 |
| Forest Service | National forest | 1 | |
| | Developed recreation areas | | 140 |
| Fish and Wildlife Service | National wildlife refuge | 1 | |
| | Developed recreation areas | | 2315 |
| Corps of Engineer | Reservoirs | 2 | |
| | Developed recreation areas | | 32,500 |
| State: | | | |
| Game, Forestation and Parks Commission. | State parks | 7 | 2,429 |
| | Recreation areas | 44 | 9,179 |
| | Reservoir recreation areas | 3 | 14,760 |
| | Public hunting grounds | 2 | 3,923 |
| Game, Forestation and Parks Commission, jointly with Historical Society. | Fort Robinson | 1 | 100 |
| Historical Society, jointly with municipality. | National historic site | 1 | 84 |

In addition to the acres listed for developed recreation facilities, the Forest Service administers an additional 207,000 acres of land as National Forests. Although hunting is not permitted, the area is used for other recreation pursuits, such as sightseeing and hiking.

In addition to the acres listed for developed recreation facilities, the Fish and Wildlife Service administers an additional 141,000 acres as wildlife refuges. These areas, though undeveloped, provide and are used for recreation pursuits, such as hunting, fishing, and sightseeing.

Approximation.

At the time the State Game, Forestation and Parks Commission was established in 1929, it assumed administration of the 4 State parks then in existence, plus 4 recreation grounds and 12 "meandered lakes." Since then, the system has grown to 7 State parks and 44 recreation areas, plus 3 reservoir recreation areas administered by the commission.

Of the present areas, 9 preserve important natural or historical values. Five parks provide overnight cabins, and 3 have facilities for organized camping. Two State recreation areas also have overnight cabins, and the majority provide areas for overnight camping. Recreation areas were set aside primarily for, and still accent, fishing and hunting. In addition, most provide incidental facilities for picnicking and boating, and a few for hiking and swimming. The commission also is cooperating with the State Historical Society in historical preservation at Fort Robinson and is developing a part of that area and certain buildings for recreation use.

The reservoir recreation areas are filling a need for diversified water-related activities in the southwest corner of the State, while arrangements being negotiated for administration of areas at Lewis and Clark Lake will provide needed and significant opportunities in the northeast.



Scotts Bluff National Monument, a landmark of western migration.

In general, disposition of areas does not balance closely with population distribution, and present facilities in most cases are not developed on a scale sufficient to provide for present or potential use.

SPECIAL CONSIDERATIONS. Special considerations of particular interest to Nebraska in developing a balanced system of parks and recreation areas include the following:

1. A general lack of tree cover in the Great Plains section and around reservoirs, combined with a hot though variable summer climate, in the selection and development of areas.

2. Concentrated population in the east, where natural surroundings are not readily adapted to large scale, diversified types of recreation improvements for frequent day and weekend use.

3. Reservoir projects provide welcome opportunities for recreation in some cases but, in others, may encroach on unspoiled areas of considerable State significance, such as in the Niobrara Basin. At the same time, they tend to force development of recreation facilities where the reservoirs are located, rather than where they are more urgently needed.

4. The need for expanded vacation development within reasonable reach of resident populations and for day-use areas within reach of metropolitan concentrations.

5. The proposed interstate highway system will be a major factor in determining the flow of tourist travel and will affect the use of certain areas. In Nebraska, it will utilize the general route of U.S. 6 and 34, connecting Omaha, Lincoln, and Grand Island, and will then extend westward across the State on or near the location of U.S. 30.

AREAS OF RECREATION NEED. Aside from preserving significant areas and values, the primary goal in Nebraska is the provision of expanded, more diversified or, in some cases, additional outlets for day and weekend use to serve local residents. While a part of central Nebraska has unmet needs, it is sparsely populated. The major area of need, as noted, lies in the east and southeast, while a smaller area of need exists at the western end of the State. These two regions are indicated on Plate 16.

Objectives and Broad Recommendations

In view of the present and foreseeable situation in Nebraska, the basic need is for a comprehensive system of parks and recreation areas, cooperatively planned and balanced to fit the State's particular requirements. The backbone of such a system, desirably, should be areas set aside to preserve outstanding scenic, scientific, and historical values. These should be supplemented by areas that are selected or



Missouri River Bluffs offer good park potential for residents of eastern Nebraska.

developed to meet otherwise unmet needs by location and type.

Necessarily, the major burden will fall on the State, although certain areas are or may properly be administered by the Federal Government, on the one hand, or by counties and municipalities on the other.

The role of the Federal Government in Nebraska is not as great as in many of the basin States. The National Park Service now administers two areas in the State. While studies to date have not revealed additional sites which qualify as national areas, the Service has resumed the historic sites survey and will cooperate in formulating a nationwide recreation plan, both in connection with the MISSION 66 program. The survey and plan will include more detailed studies of recreation resources and determine the level of significance of major historic sites in the State.

In view of the ecology of the State, it is not likely that additional areas will be provided in National Forests.

In furthering development of a State park system, the following general recommendations are suggested:

1. Development of a detailed State plan to serve as a guide or master plan.
2. Evaluation of the present system to determine the importance of existing areas in the State plan. A number would qualify as, or as a part of, major

areas. Some may prove to be of less than State significance and more properly administered locally or as waysides.

3. Full consideration of the distribution of areas in relation to population and to diversification of facilities.

4. Administration of additional reservoir recreation areas when available, taking care, however, not to create imbalance.

5. Institution of interpretive programs and facilities to provide for fuller public enjoyment and appreciation of the areas.

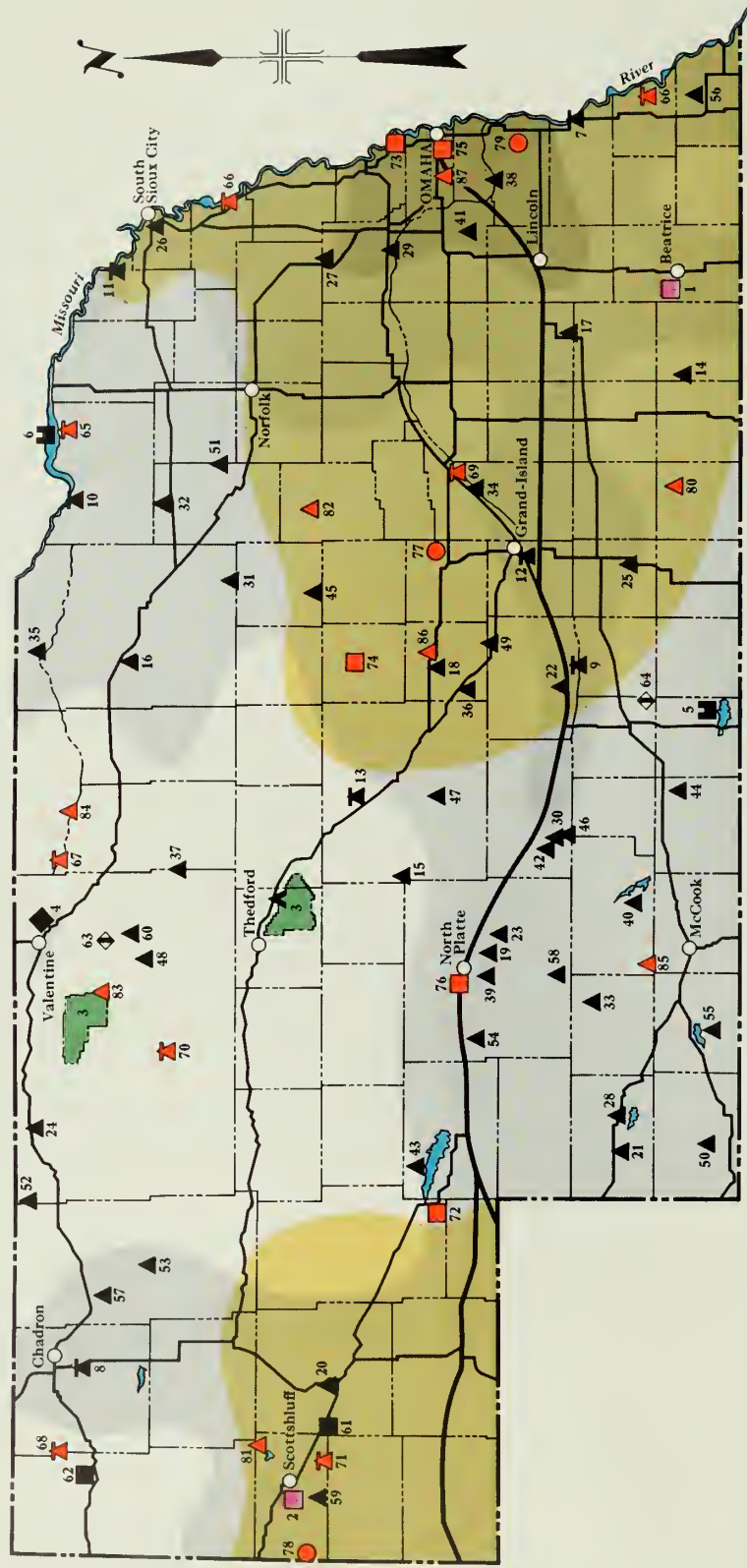
Supplementing State parks, the enjoyment and comfort of tourists and resident travelers could be increased by:

1. Providing a planned system of roadside areas along major travel routes. These should be large enough to allow motorists to pull well off the highway to take advantage of shade trees.

2. Considering designation and protection of pleasure drives or tourways, preferably off the congested major highways. Opportunities are numerous and normally might be designed as circle routes or connecting parks and other attractive areas.

3. A planned system of historical markers combined, where practical, with roadside areas and designated tourways.

NEBRASKA

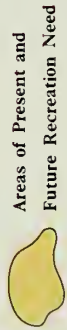
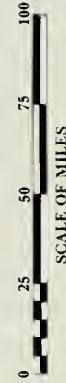


PARK AND RECREATION AREAS

- | FEDERAL | | STATE | |
|---------|---|-------|------------------------|
| | NATIONAL PARK SERVICE | | Parks |
| | FOREST SERVICE | | Recreation Areas |
| | Recreation Area | | Historic Sites |
| | FISH & WILDLIFE SERVICE | | Public Hunting Grounds |
| | Wildlife Refuge with developed Recreation Areas | | |
| | CORPS of ENGINEERS | | |
| | Reservoir Recreation Areas | | |

SUGGESTED ADDITIONAL PARK AND RECREATION AREAS

- | STATE PARK SYSTEM | |
|-------------------|-------------------|
| | Parks |
| | Recreation Areas |
| | Historic Sites |
| | Archeologic Sites |



PARK AND RECREATION AREAS

Federal

NATIONAL MONUMENTS

1. Homestead
2. Scotts Bluff

NATIONAL FORESTS

3. Nebraska

NATIONAL WILDLIFE REFUGES

4. Fort Niobrara

RESERVOIR RECREATION AREAS

5. Harlan County
6. Lewis and Clark

State

PARKS

7. Arbor Lodge
8. Chadron
9. Fort Kearney
10. Niobrara
11. Ponca
12. Stolley
13. Victoria Springs

RECREATION AREAS

14. Alexandria
15. Arnold Lake
16. Atkinson Lake
17. Blue River
18. Bowman Lake
19. Box Elder Canyon
20. Bridgeport
21. Champion
22. Cottonmill Lake
23. Cottonwood Canyon
24. Cottonwood Lake
25. Crystal Lake
26. Crystal Lake

27. Dead Timber
28. Enders Reservoir
29. Fremont Lakes
30. Gallagher Canyon
31. Goose Lake
32. Grove Lake
33. Hayes Center
34. Hord Lake
35. Hull Lake
36. Litchfield
37. Long Lake
38. Louisville Lakes
39. Maloney Lake
40. Harry Strunk Lake
41. Memphis Lake
42. Midway
43. Otter Creek
44. Oxford Lake
45. Pibel Lake
46. Plum Creek
47. Pressey
48. Rat and Beaver Lakes
49. Ravenna Lake
50. Rock Creek
51. Rowell Lake
52. Shell Lake
53. Smith Lake
54. Sutherland
55. Swanson Lake
56. Verdon Lake
57. Walgren
58. Wellfleet
59. Wildcat Hills
60. Willow Lake

HISTORIC SITES

61. Chimney Rock
62. Fort Robinson

PUBLIC HUNTING GROUNDS

63. Ballards Marsh
64. Sacramento Lake

Suggested Additional Areas for State Park System

PARKS (SCENIC OR NATURAL)

65. Lewis and Clark Lake
66. Missouri Bluffs
67. Niobrara Valley
68. Pine Ridge
69. Prairie Island
70. Sandhills
71. Wildcat Hills

HISTORIC

72. Ash Hollow Battlefield
73. Fort Atkinson
74. Fort Hartsuff
75. James C. Mitchell House
76. Scouts Rest

ARCHEOLOGIC

77. Palmer Village
78. Signal Butte
79. Sterns Creek Site

RECREATION AREAS

80. Angus Reservoir
81. Lake Minatare
82. Loretto Reservoir
83. Merritt Reservoir
84. O'Neill Reservoir
85. Red Willow Reservoir
86. Sherman Reservoir
87. Sand Pits west of Omaha

TRAVEL ROUTES



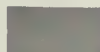
Proposed interstate highways



Existing major highways

POPULATION

AVERAGE DENSITY PER SQUARE MILE



50 people or over



10 to 25 people



25 to 50 people



5 to 10 people



5 people or less

Suggested Solutions

While specific or detailed solutions will develop from the comprehensive cooperative studies programmed and from the State plan when prepared, certain possible solutions suggest themselves at this stage.

PRESERVATION OF RESOURCES. Listed below are possibilities which should be considered in selecting areas to be preserved for inherent values and others to meet needs:

Scenic or Natural

1. Pine Ridge—near Chadron and Fort Robinson.
2. Niobrara Valley—natural area in conjunction with Meadville Reservoir (proposed) or Long Pine Valley.
3. Lewis and Clark Lake—adjacent natural area.
4. Missouri Bluffs—preferably in southeast Nebraska.
5. Wildcat Hills—expansion of present area.
6. Prairie Island—Platte River Island.
7. Sand Hills Area—lakes and grasslands in combination with preservation of the prairie chicken.

Historic

1. Ash Hollow Battlefield—Indian-military phase.
2. James C. Mitchell House, Omaha—early settlement.
3. Scouts Rest, North Platte—westward expansion.
4. Fort Hartsuff, near Ord—Indian-military phase.
5. Fort Atkinson—fur trade, early military.
6. Selected Oregon Trail sites.
7. Selected Lewis and Clark sites—Council Bluffs and Calumet Bluff.

Archeologic

1. Signal Butte—Big Game Hunter, Forager Culture.
2. Sterns Creek Site—Woodland Hunter, Western Farmer.
3. Palmer Village—Pawnee Culture.

Areas to Meet Needs

1. Existing reservoirs—Minatare, Lewis and Clark Lake.
2. Proposed reservoirs—Sherman, Merritt, Red Willow, O'Neill, Loretto, Angus.

3. Missouri River potential.
4. Sandpit area west of Omaha.

NORTH DAKOTA

Recreation Resources

North Dakota is drained by the river systems of the Missouri and the Red River of the North. Thus, the entire State lies within the study area of this report.

More than 90 percent of North Dakota's rich land is in farms, and the State ranks high in the production of wheat, flaxseed, rye, and barley. The State flower, the wild prairie rose, and the State bird, the western meadowlark, exemplify North Dakota's grassland character. The geographical center of North America lies in Pierce County, in the north-central part of the State.

North Dakota possesses a number of special types of natural recreation resources. In the eastern and central sections are numerous potholes and lakes set in the midst of vast grain fields, affording ideal nesting places and food for huge numbers of waterfowl. Thus, North Dakota has the unique distinction of being known as the "duck factory" of the United States.



North Dakota, the "duck factory" of the Nation.



Badlands country of North Dakota. Little Missouri Valley and Hay Creek.

The western part of the State, a part of the Great Plains, presents a scene of rolling, rough topography. The nationally known Badlands country of North Dakota, with its spectacular and colorful erosions, has been carved by the Little Missouri River as it winds its course through this western section.

Varied scenery of outstanding beauty is offered by the Pembina hills in the northeast, a deep valley, eroded into the high upland plains by the Pembina River; the Turtle Mountains in the north; and the Killdeer Mountains in the west, which are island-like areas of rounded, wooded hills.

North Dakota covers two main ecological types. The region of the former tall-grass prairies, now in agriculture, extends from the northwest corner of the State down to the central section, and includes the entire eastern and northern part of the State. In the southwest part of the State are the short-grass plains, now given over to grazing.

The stream valleys support deciduous woodlands of cottonwood, elm, ash, and burr oak, which are rich in wildlife.

Hundreds of miles of shoreline, and thousands of acres of water, have been, or will be, created by the Federal reservoirs now completed or planned as part of the Missouri River Project. In the aggregate, the recreation resources of these reservoirs will represent an immense potential for outdoor recreation of varied types.

The historic periods of exploration and the fur trade, and particularly the era of the Indian wars,

are well represented in North Dakota. Sites associated with the old Indian reservation system, however, are few, as are those identified with the settlement and industrial and cultural development of the settlers. Of special note is Theodore Roosevelt National Memorial Park near Medora.

Archeologic sites, as recreation resources, are mainly Indian village remains associated with the Western Farmer culture.

Planning Considerations

PEOPLE. Since North Dakota is an agricultural State, it follows that the population is mostly rural. Only 27 percent of the State's population was classed as urban in 1950. This figure represented an increase of 6 percent over 1940. The 13 urban places in North Dakota are fairly well distributed over the State, although the largest cities and the greatest population concentration are in the Red River Valley section. The State's two largest cities, Fargo and Grand Forks, are located in the valley. The largest population segments in central and western North Dakota are in the Bismarck-Mandan area, Dickinson, and Minot.

The overall low density and wide distribution of the population presents a problem of providing day- and weekend-use facilities within reasonable distance of its citizens. The basic distribution pattern in the next 25 years is likely to remain as it is today, but with an increase in the number of urban residents.

The following tabulation sums up the urban-rural characteristics of the resident population, together with forecasts to 1980:

| Year | Total State population | Percent urban population |
|------|------------------------|--------------------------|
| 1930 | 681,000 | 17 |
| 1940 | 642,000 | 21 |
| 1950 | 620,000 | 27 |
| 1960 | 657,000 | 33 |
| 1970 | 682,000 | 39 |
| 1980 | 707,000 | 45 |

RECREATION USE AND TRENDS. Perhaps because the people of North Dakota live close to the land, hunting has been a popular activity. With the coming of the water-development program, the people are also becoming enthusiastic fishermen. According to the National Survey of Fishing and Hunting, conducted in 1955 by Crossley S-D Surveys for the Fish and Wildlife Service, a higher percentage of persons living in the western north-central section of the country, including North Dakota, take part in fishing than do residents of any other States. Hunting appears to be more popular only among residents of the mountain States, and then by insignificant margins. Picnicking, swimming, and horseback riding are also popular leisure pastimes. Reservoirs completed to date, by both the Federal Government and by the State

through the program of the State Water Conservation Commission, have given further emphasis to fishing, boating, swimming, and camping. It is expected that these activities will assume even greater importance as Federal impoundments are added, and as further improvements are made on the other waters of the State.

Attendance at North Dakota's State parks has nearly doubled within the past decade. The increase in attendance at Theodore Roosevelt National Memorial Park, in western North Dakota, totaled 75 percent from 1950 to 1955. Another indication of present recreation demands is that of attendance at developed areas within the National Wildlife Refuges. Although recreation development is properly limited in recognition of primary refuge objectives, 1953 visitor attendance at 7 developed areas was estimated at 100,000. Recreation use for the State park system is shown in the following tabulation:

| | 1947 | 1950 | 1955 | Increase, 1947 to 1955 (percent) |
|-------------------|----------|----------|----------|--|
| State park system | 175, 256 | 246, 200 | 334, 500 | 92 |

ECONOMIC IMPACT. According to figures compiled by the National Association of Travel Organizations, out-of-State tourist expenditures in North Dakota



Water impoundments, such as Dickinson Reservoir, become "the ol' swimmin' hole."



The Marquis de Mores, pioneer rancher and meatpacker, built this elaborate "chateau" in 1883.

increased from \$34,800,000 in 1951 to \$40,000,000 in 1955. These figures indicate that tourism, as an economic asset, ranks as one of the leading industries of the State.

ADEQUACY OF PUBLIC AREAS. The State Historical Society of North Dakota, acting through a State Parks Committee, administers the State parks, recreation areas, and historic and archeologic sites. The only exception is the recreation development at Heart Butte Reservoir, administered by the State Game and Fish Department. In 1904, the first small historic sites were acquired by the society. Most of the State's many valuable parks and historic sites were acquired from that date to 1934, but little development could then be undertaken because of limited State funds. Wisely, the Historical Society's efforts centered first on the acquisition of areas so that the inherent values concerned might be preserved until they could be made available for public use and enjoyment.

That opportunity came in 1934, when the Historical Society took full advantage of Federal assistance

offered through the public works programs of that decade. Some areas which had been held by the Historical Society for many years were developed, and new areas were acquired. The present State park system embodies excellent examples of North Dakota's recreation resources. Fort Abraham Lincoln State Park, for instance, is one of the outstanding archeological and historical attractions in the basin. A number of areas with inherent scenic and natural recreation resources of statewide interest, however, are not yet represented in the system. The preservation of historic sites and features, on the other hand, have received the most attention. They represent mainly the periods of exploration and fur trade and Indian wars, with the cultural and industrial periods represented at Chateau de Mores in western North Dakota.

The following table summarizes present parks and recreation areas in the State:

| <i>Administration</i> | <i>Type of area</i> | <i>Number</i> | <i>Area (acres)</i> |
|------------------------------|---|---------------|---------------------|
| Federal: | | | |
| National Park Service.... | National memorial park..... | 1 | 70,374 |
| Fish and Wildlife Service... | National wildlife refuges.... | 8 | ..... |
| | Developed recreation areas | | 1,415 |
| Corps of Engineers..... | Reservoir..... | 1 | ..... |
| | Developed recreation areas | | 7,200 |
| State: | | | |
| Historical Society..... | State parks..... | 4 | 2,841 |
| | Recreation areas..... | 6 | 457 |
| | Historic sites..... | 43 | 760 |
| | Archeologic sites..... | 5 | 79 |
| Game and Fish Department. | Reservoir..... | 1 | ..... |
| | Developed recreation areas | | 12,000 |
| Local: | | | |
| Counties..... | Nonurban parks and recreation areas. | 9 | 2,328 |
| | Reservoir recreation areas..... | 2 | 11,000 |
| | Recreation areas at State and municipal reservoirs. | 8 | ..... |
| Cities: | | | |
| Dickinson..... | Reservoir recreation area..... | 1 | 3,000 |
| Bismarck..... | Archeologic site..... | 1 | ..... |
| Valley City..... | Historic site..... | 1 | ..... |

¹ In addition to the acres listed for developed recreation facilities, the Fish and Wildlife Service administers an additional 288,000 acres as wildlife refuges. This additional area, though undeveloped, provides and is used extensively for recreation pursuits, such as hunting, fishing, and sightseeing.

The public works program of the 1930's resulted, also, in The North Dakota Park and Recreation Area Plan, published in 1939. The means have not yet developed whereby the State could fully realize the major recommendations of the study.

Some of the existing State areas, such as Turtle River State Park and several recreation areas, are perhaps too small to preserve permanently inherent resources or to provide for diversified recreation development. While the State historic sites preserve

the actual site or feature involved, a number of them incorporate only a fraction of an acre.

The State Water Conservation Commission has general jurisdiction of numerous small impoundments throughout the State, constructed by various Federal agencies during the 1930's. The commission is continuing this program, and it cooperates with other State agencies in creating and restoring lakes and small reservoirs which have local recreation value.

Counties and cities have shown increasing interest in administering their own parks and recreation areas. Several of these local governments have contracted with the Bureau of Reclamation and Corps of Engineers to administer recreation areas on completed reservoirs. Recently enacted laws of North Dakota permit counties to establish, either individually or jointly, county recreation boards. These boards are granted broad powers, including taxation and eminent domain.

Major Federal activities in the park and recreation field in North Dakota have involved assistance in the State's planning and park development through the Works Progress Administration, the Civilian Conservation Corps, the refuge program of the Fish and Wildlife Service, and National Park Service cooperative activities since World War II. One unit of the National Park System—Theodore Roosevelt National Memorial Park—was established in the State in 1947. The area preserves historical values of national significance, as well as outstanding natural qualities in the heart of the North Dakota Badlands.

As noted above, many of the Federal wildlife refuges in the State provide recreation opportunities. Most of the facilities are provided by the Fish and Wildlife Service but, in some cases, recreation areas are developed and maintained by local groups.

Some historical and archeological resources, such as fort sites and Indian campgrounds, will be lost because of reservoir construction. Salvage programs, however, will save much of the material which might otherwise be lost.

SPECIAL CONSIDERATIONS. There are facts of special importance which should be considered in the long-range planning program in North Dakota. These include the following:

1. The multi-purpose water development program of the current Missouri River Project will be of immense recreation benefit to North Dakota. Of notable importance is the possible restoration of Devils and Stump Lakes in east-central North Dakota.

In some cases, reservoirs and other features will attract numbers of tourists.

2. Of special importance is the preservation, for the people of the State, of noteworthy natural areas not yet protected.

3. Vacation accommodations for residents, primarily camping facilities and housekeeping cabins, is another special consideration at the State level.

4. Roadside areas are important supplements to State park systems. Most of North Dakota's main highways are pleasant routes, free from distracting elements, and more consideration might well be given to the provision of convenient waysides, including campgrounds, across the State. There also are excellent possibilities for the designation of scenic drives or tours, with protection of the natural roadside character by zoning.

5. Highway programs in North Dakota, particularly the proposed interstate system, will directly affect park and recreation planning through increased travel and accentuated recreation use in the vicinity of the routes. As proposed, the interstate system in North Dakota will follow the east-west route of U.S. 10, passing through Fargo and Bismarck. A north-south route through Fargo and Grand Forks generally following U.S. 81 and State Route 44, will carry traffic between southern population centers and the Canadian boundary, where it will tie in with a Canadian route to Winnipeg.

AREAS OF RECREATION NEED. Present recreation needs for additional day- and weekend-use facilities for North Dakota residents, are indicated on plate 17 as existing principally in three areas of the State. These areas, shown in general outline form, have been determined on a judgment basis, taking into account the location and scope of present developments as they relate to population, and recognizing that they contain recreation potentials not yet developed. Two of the areas of need are considered to be in the more heavily settled Red River Valley section, including the urban center of Fargo. The third area extends from the eastern vicinity of Bismarck to the northwest corner of the State, roughly following the Missouri River. Minot is the largest urban center in this area.

Future needs are expected to be fairly evenly distributed across the State, although the requirements of the eastern half of the State will somewhat exceed those of the western half.

Objectives and Broad Recommendations

The basic, long-range objective is the establishment of a balanced, statewide system of public parks and recreation areas to serve the resident population, plus additional requirements necessary to accommodate North Dakota's visitors. A comprehensive system that will fulfill that objective is made up of two major types of areas—those preserving significant natural, cultural, and historical values at appropriate levels of government, regardless of location; and supplemental areas so located, developed, and maintained as to meet present and future recreation needs not otherwise provided for.

It is estimated that an integrated system of Federal, State, county, park district, and municipal nonurban areas in North Dakota will receive a minimum of 2,100,000 visitor days of use by 1980.

As noted in the foregoing, important contributions to the general objective have been or are being realized at each level of government—national, state, and local.

The greatest overall gains have been made in the field of historic and archeologic preservation on the part of the State; accomplishments in this direction have been outstanding. For balance in the State system, the preservation of natural recreation resources, together with outlets to satisfy existing and future needs for day, weekend, and vacation use both for residents and tourists, now need the major emphasis. North Dakota's most outstanding natural recreation resources are not yet despoiled by other uses, and the opportunity still exists to include them in the State park system. Together with cultural and historic resources, these natural areas, properly developed, would provide a park and recreation system superior to those in States so heavily populated that ideal space requirements can never be fully realized.

Although the many water projects will, in the aggregate, be of immense value in providing needed recreation outlets, they will require careful evaluation in the broad scheme so as to avoid overemphasis on this aspect at the ultimate expense of a balanced system.

The State maintains excellent interpretive facilities at one State park and at two historic sites, dealing with the historic and archeologic values of the areas. Much would be added to public appreciation and

enjoyment of the State's total heritage if the interpretive program were broadened to cover important historic themes and archeologic cultures, as well as natural recreation resources at other areas. In fact, the State's major problem in the field of history is development and interpretation, rather than preservation.

Under the long-range objective, the programs of the public agencies will most logically center around the following:

The role of the Federal Government will include the administration and maintenance of Theodore Roosevelt National Memorial Park along with long-range plans provided for that area under the MISSION 66 program of the National Park Service.

Assistance and cooperation will be provided the State in overall park and recreation planning which will include continued assistance in the development of the International Peace Garden.

Recreation facilities of limited scope will be developed and maintained at Federal Wildlife Refuges where such facilities are consistent with the primary purpose for which these areas have been established.

In developing the State System, the first goal should be the acquisition, protection, and development of areas of natural and cultural values of State importance for extensive recreation use.

Comprehensive planning on a long-term basis would insure the administration and cooperative development of areas of State significance on Federal impoundments for intensive recreation use without sacrificing a balanced State park system.

Assistance must be given to counties and park districts in locating and planning lesser areas for preservation of recreation resources and to meet local needs. Further assistance must be furnished the State Highway Department in locating and planning roadside parks, overlooks, interpretive signs, and historical markers along highways.

On a local level, attention will center on the acquisition, development, and maintenance of parks and recreation areas of less than State significance. These may take the form of county, district, or nonurban municipal parks and include administration of reservoir recreation areas of local interest. Additional areas developed primarily for intensive day use should be established in strategic locations of need where existing or proposed State areas will not adequately serve local people.

At least eight State and Federal agencies, plus a number of counties, cities, and private clubs and organizations are concerned with outdoor recreation in North Dakota. With the coming of the water-resource development program and its many implications, it becomes of basic importance that all efforts at recreation resource development be welded into a coordinated, long-range master plan that will serve the best public interest.

The North Dakota Park and Recreation Area Plan of 1939, brought up to date to reflect present conditions and to take into account the water-development program, would form the core of the coordinated plan.

The addition of planning and supervisory personnel to the present State historical staff, along the lines suggested in the 1939 plan, is strongly urged as a fundamental goal. Some further enlargement of the staff to include planning personnel for the cooperative phases of the statewide program that are outlined below, would be especially desirable.

The suggested solutions that follow are set forth only in broad terms, to serve as a general guide in attaining statewide objectives. More detailed studies, leading to specific solutions, will be conducted in cooperation with local, State, and Federal agencies concerned, as a followup to this report and in connection with the nationwide recreation plan, a part of the National Park Service's MISSION 66 program.

FEDERALLY ADMINISTERED AREAS. Under MISSION 66, development and management of Theodore Roosevelt National Memorial Park will be brought up to date and expanded in line with National Park Service objectives, including additional emphasis on the interpretation of the area's historical and natural values.

Where no conflict occurs with basic values, consideration undoubtedly is being given to the provision of recreation facilities to meet present and future demands at Federal Wildlife Refuges in the long-range refuge plan now under study by the Fish and Wildlife Service.

STATE PARKS AND RECREATION AREAS—PRESERVATION OF RESOURCES. It is suggested that Turtle River State Park be expanded to include additional lands with outstanding natural recreation resources. Chateau de Mores interpretive programs might also be coordinated with Theodore Roosevelt National Memorial Park. Many of the present State historic sites could desirably be enlarged to protect fully the values



Pembina River Valley, an area having biologic and geologic interest.

concerned, and to permit development for public enjoyment and appreciation.

The following are cited as examples of localities or sites with innate natural, cultural, or historical values that would make excellent additions to the State park system:

Scenic or Natural

1. The Columnar Cedar area, near Amidon in the southwest corner of the State. This area has outstanding scenic, biologic, and geologic values.

2. A representative example of the picturesque Pembina River Valley in the northeastern corner of the State. This area, of biologic and geologic value, also would serve day, weekend, and vacation use.

3. A sufficiently large part of the Turtle Mountain area along the northern border to preserve and exemplify the natural beauty of the region. This might be done by extensions of existing areas, or a new location may be necessary.

4. A section of the Sheyenne River Valley in southeastern North Dakota, preserving some of its many natural springs, its biological values, and perhaps some of the dunes section. It is ideal for day and weekend use and for group and school camping.

Combined Interests

1. A part of the scenic Killdeer Mountains in the southwestern part of the State, if possible also incorporating the Killdeer Battlefield, an important example of the Indian-military frontier period.

2. Preservation of a large area on the south shore of Devils Lake, combining its natural values with the recreation potential of Devils Lake, and historic Fort Totten, associated with the Indian-military frontier period. Additional recreation interest would be derived from its proximity to an adjoining Federal game refuge. Although lake restoration would greatly enhance the recreation value of the south shore area, preservation is believed desirable even if restoration is not carried out. Aside from this natural area on the south shore, the recreation value of Devils Lake, if restored, is judged to be of State significance. In the long run, it might be most desirable to administer Devils Lake recreation resources at the State level. They could, however, as an alternate possibility, be administered by a county park board or boards. In this connection, a tri-county board for that purpose is being organized. The final solution on this matter will depend on negotiations to be undertaken if and as plans for the restoration materialize.

Historic

1. Old St. Michael's Mission near Devils Lake.
2. The H. T. Ranch, near Amidon, representing the ranching industry.

Archeologic

1. The Bagnell site, in Oliver County, apparently representing the early Western Farmer culture.
2. The Cannonball Village site near the mouth of the Cannonball River.
3. Several of the group of sites in the Emmons County Village that are related to the Oahe Reservoir area.
4. A group of three important Hidatsa villages on the Knife River, which the State is making every effort to acquire.
5. A full-scale interpretive center at Garrison Dam to present important chapters of American history and prehistory that have been obliterated by the reservoir.

SUGGESTED MEANS OF MEETING RECREATION NEEDS. State recreation areas at Garrison Reservoir would be of importance in providing opportunities associated with a large body of water. They would serve the local recreation needs of residents in the central and northwestern part of the State and, at the same time, tourists. Three sites are particularly well adapted to these requirements: An area on the south shore of the reservoir near the dam; a second, located on the north shore at or near the site of old Fort Stevenson; and a third area in the former locality of Sanish. The State Historical Society has indicated an interest in each of the areas.

A recreation area on the north shore of Devils Lake, in which a local organization is interested as discussed above, would provide a fourth major outlet for both residents and tourists.

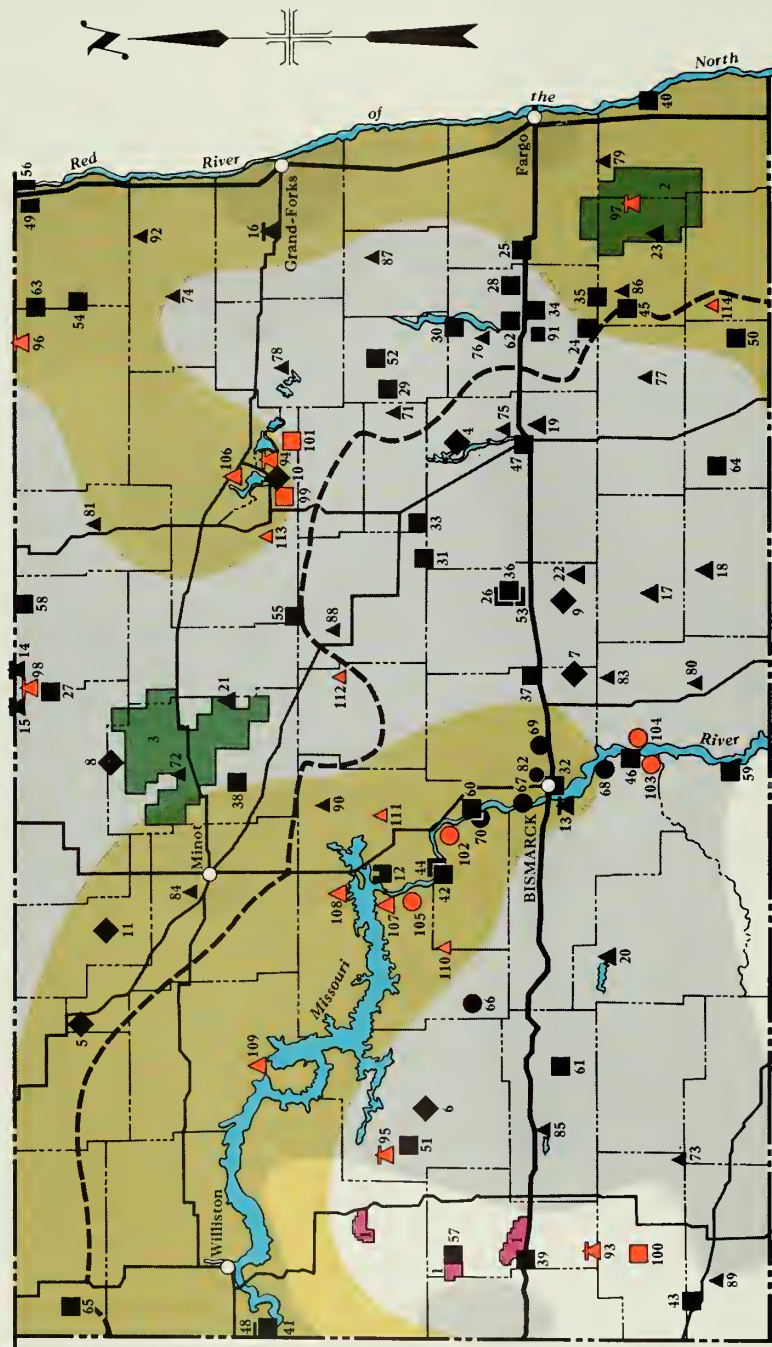
Oahe Reservoir also will extend well into North Dakota. Because of the sparse resident population and severe horizontal fluctuation of this part of the reservoir, resulting recreation values will be of minor significance to North Dakota.

COUNTY, DISTRICT, AND NONURBAN MUNICIPAL PARKS AND RECREATION AREAS. Dickinson, Jamestown, and Lake Ashtabula Reservoirs are administered by county or municipal park boards. In each case, the local boards also have assisted in the recreation development.

A number of other reservoirs, either proposed or under consideration by the Bureau of Reclamation would, with appropriate development, serve local recreation needs. Those which appear to have definite possibilities include the Brush Lake-Lake Williams Chain, and Stony Lake, Lonetree, and Taayer, all in the proposed Garrison Diversion Unit in east-central North Dakota; and the proposed Beulah Diversion Reservoir, in the west-central part of the State. Local agencies, as already noted, are taking steps leading to the development and management of the recreation resources on a portion of Devils Lake, if restored.

Although these various water development projects will play an important part in the local recreation picture, they will require careful evaluation to insure that they do not outweigh the equally important aspect of preserving natural, cultural, and historical resources of local recreation value. The general location and the broad objectives or part each area is to play in the total system, should be outlined at the State level in the form of the master plan as referenced above.

NORTH DAKOTA

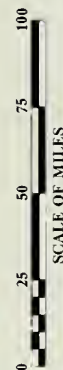


PARK AND RECREATION AREAS

- | FEDERAL | STATE |
|---|--|
| <ul style="list-style-type: none"> NATIONAL PARK SERVICE FOREST SERVICE FISH & WILDLIFE SERVICE Wildlife Refuge with developed Recreation areas CORPS of ENGINEERS Reservoir Recreation areas | <ul style="list-style-type: none"> Parks Recreation Areas Historic Sites Archeologic Sites LOCAL Recreation Areas Historic Sites Archeologic Sites |

SUGGESTED ADDITIONAL PARK AND RECREATION AREAS

- | STATE PARK SYSTEM | LOCAL PARK SYSTEM |
|--|--|
| <ul style="list-style-type: none"> Parks Recreation Areas Historic Sites Archeologic Sites | <ul style="list-style-type: none"> Recreation Areas |



Boundary of Missouri River Drainage

Areas of Present and Future Recreation Need

PARK AND RECREATION AREAS

Federal

NATIONAL MEMORIAL PARK

1. Theodore Roosevelt

NATIONAL FORESTS

2. Shyenenne Purchase Unit
3. Souris Purchase Unit

NATIONAL WILDLIFE REFUGES

4. Arrowwood
5. Des Lacs
6. Ilo Lake
7. Long Lake
8. Lower Souris
9. Slade
10. Sullys Hill Game Preserve
11. Upper Souris

RESERVOIR RECREATION AREAS

12. Garrison

State

PARKS

13. Fort Lincoln
14. International Peace Gardens
15. Lake Metigoshe
16. Turtle River

RECREATION AREAS

17. Beaver Lake
18. Doyle Memorial
19. Fred Smith
20. Heart Butte Reservoir
21. Smoky Lake
22. Streeter Memorial
23. Strong Memorial

HISTORIC SITES

24. Birch Creek
25. Buffalo Creek
26. Burman
27. Butte St. Paul
28. Camp Arnold
29. Camp Atcheson
30. Camp Corning
31. Camp Grant
32. Camp Hancock
33. Camp Kimball
34. Camp Sheardown
35. Camp Weiser
36. Camp Whitney
37. Chaska

38. David Thompson Memorial
39. De Mores (Chateau)
40. Fort Abercrombie
41. Fort Buford
42. Fort Clark
43. Fort Diltz
44. Fort Mandan
45. Fort Ransom
46. Fort Rice
47. Fort Seward
48. Fort Union
49. Gringras Trading Post
50. Hudson
51. Killdeer Battlefield
52. Lake Jessie
53. McPhail's Butte
54. Oak Lawn
55. Palmer's Spring
56. Pembina
57. Roosevelt's Elkhorn Ranch
58. St. Claude
59. Sitting Bull
60. Steamboat Warehouse
61. Sully Corral
62. Wadeson
63. Walhalla
64. Whitestone Hill
65. Writing Rock

ARCHEOLOGIC SITES

66. Crowley Flint Quarry
67. Double Ditch Indian Village
68. Huff Indian Village
69. Menoken Indian Village
70. Molander Indian Village

Local

RECREATION AREAS

71. American Legion Memorial
72. Buffalo Lodge
73. Cedar Creek
74. Golden Park
75. Jamestown Reservoir
76. Lake Ashtabula
77. La Moure County Memorial
78. Nelson County Old Settlers Park
79. Richland County Legion Memorial
80. Seeman

81. Snyder Lake
82. Bismarck Archeologic Site
83. Braddock Dam
84. Burlington Park Dam
85. Dickinson Reservoir
86. Fort Ransom Dam
87. Golden Lake
88. Knodel Dam
89. Rhame Dam
90. Strawberry Lake Dam
91. Valley City Historic Site
92. Vigness Dam

Suggested Additional Areas for State Park System

PARKS (SCENIC OR NATURAL)

93. Columnar Cedar Area
94. Devils Lake
95. Killdeer Mountains
96. Pembina Valley
97. Shyenenne Valley
98. Turtle Mountain Area

HISTORIC

99. Fort Totten
100. H. T. Ranch
101. St. Michael's Mission

ARCHEOLOGIC

102. Bagnell Site
103. Cannonball Village
104. Emmons County Village
105. Hidatsa Villages

RECREATION AREAS

106. Devils Lake, north side
107. Garrison Reservoir near dam
108. Garrison Reservoir north of old Fort Stevenson
109. Garrison Reservoir, Sanish area

Local Park System

RECREATION AREAS

110. Beulah Diversion Reservoir
111. Brush Lake-Lake Williams
112. Lonetree Reservoir
113. Stony Lake
114. Taayer Reservoir

TRAVEL ROUTES



Existing major highways



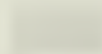
Proposed interstate highways

POPULATION

AVERAGE DENSITY PER SQUARE MILE



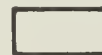
25 to 50 people



5 to 10 people



10 to 25 people



5 people or less

SOUTH DAKOTA

Recreation Resources

South Dakota is normally considered to be one of the Great Plains States. It is, however, appreciably varied in character—scenically, physiographically, and ecologically. The eastern third of the State, originally long-grass prairie spotted with pothole lakes, is now largely diversified cropland. The balance of the State to the west is typically short-grass prairie, with the exception of the Black Hills, which form an ever-green-clad island of mountains centrally located in the Great Plains.

Each of these regions has distinctive characteristics and interests from a recreation standpoint, and each has a definite relation to the State's history.

In the eastern third, natural recreation opportunities are centered primarily around the pothole lakes, concentrated largely in the northeast corner, or deciduous forest stands along some of the stream courses.

In the Great Plains part of the State, natural resources are less adaptable to outdoor recreation enjoyment. The valley of the Missouri River, which roughly bisects the State north and south, is in many places scenically attractive. With the construction of 4 very large reservoirs, 2 completed, 1 under construction, and 1 proposed, this picture is being drastically altered. Most of the original river valley scene will be replaced by more than 300 miles of artificial lakes. Other variations in this region include the colorful and spectacular badlands, of which outstanding parts are preserved in Badlands National Monument as unique recreation resources.

The Black Hills have long been popular as a vacation attraction, drawing visitors from all over the Nation. Actually, a mountain mass of some stature, the Black Hills have many recreation attributes including, in addition to their scenic quality, a wide variety of plant and animal life. The surrounding foothills represent an interesting coniferous forest-prairie transition belt.

In addition to natural recreation resources, a number of federally sponsored reservoirs are creating new and much needed water-related recreation opportunities.

Most of the State's historical resources are associated with the exploration and fur trade period of 1803-65, the Indian-military frontier, and the Statehood era from 1889 to date.



The Black Hills contrast with the treeless prairies to the east.

Archeological remains of recreation interest in South Dakota are mostly those associated with the primitive Western Farmers who settled in fortified villages along the Missouri River a few centuries ago. Evidence of earlier peoples, however, is seldom concentrated at any particular site because of their nomadic habits. The obvious archeological values consist of prehistoric village ruins, petroglyphs, pottery and implement fragments, and burial mounds and quarries. They include what is believed to be the most extensive prehistoric village site in the Great Plains.

Planning Considerations

PEOPLE. Much of the population lives in eastern South Dakota, with the heaviest concentration, about 25 people per square mile, in the extreme southeast corner. Except for the Black Hills vicinity, the area west of the Missouri is sparsely settled. A significant population loss occurred during the drought and depression of the 1930's. Since then population has increased slowly. The basic distribution pattern in the next 25 years is likely to remain much the same as it is today. But the continuing rural-to-urban shift will see the rural residents in the minority at the end

of that time, as the following tabulation of past and estimated future population trends indicates:

| Year | Total State population | Percent urban population |
|-----------|------------------------|--------------------------|
| 1930..... | 693,000 | 19 |
| 1940..... | 643,000 | 25 |
| 1950..... | 653,000 | 33 |
| 1960..... | 692,000 | 42 |
| 1970..... | 718,000 | 50 |
| 1980..... | 744,000 | 58 |

RECREATION USE AND TRENDS. The most popular recreation pursuits in the State are family and group picnicking, family camping, winter sports, waterfowl and game-bird hunting, fishing, swimming, and boating. Big-game hunting also is a major seasonal sport in western South Dakota. Findings from the statistical study of recreation desires and needs in the Niobrara River Basin showed the following priority of popular activities for residents along the southern border of the State: Fishing, picnicking, pleasure driving, hunting, swimming, and hiking.

Attendance at areas of the State park system in 1955 was the third largest of any State system in the basin. The 700 percent increase in use since 1946 was largely due to the provision of new areas and facilities, but the following figures clearly attest to the magnitude of increased outdoor recreation activity in the State. In 1955, too, the Black Hills National Forest received the fourth largest attendance of any in the United States. The 518 percent rise in use in the Black Hills and Custer National Forests took place at areas developed in the early 1930's, with little additional development since then. Nearly 3

million people, it is estimated, enjoyed sightseeing trips through the forests of the Black Hills.

Attendance for the 10-year period is summarized below:

| | 1946 | 1950 | 1955 | Increase, 1946 to 1955 (percent) |
|--|---------|-----------|-----------|--|
| State park system..... | 275,000 | 1,445,217 | 2,226,507 | 709 |
| Black Hills and Custer National Forests..... | 278,195 | 1,186,885 | 1,720,249 | 518 |
| Units of National Park System..... | 647,229 | 1,273,440 | 1,814,709 | 180 |

Aside from the phenomenal increase in use, there appears to be a definite trend toward such activities as picnicking, boating, and swimming, stimulated by reservoirs completed under the Missouri River Project and the smaller ones developed in State areas. Tent and trailer camping also is rising sharply, especially along the tourist routes in the central and eastern parts of the State.

ECONOMIC IMPACT. The tourist industry is playing an increasingly important role in South Dakota's recreation and economic picture. The number of tourists rose from 1.2 million in 1946 to 2.3 million in 1955. At the same time, tourist expenditures rose from 66 to 90 million dollars.

ADEQUACY OF PUBLIC AREAS. Throughout much of South Dakota, parks and recreation areas have been established largely by the State, and partly in cooperation with counties and municipalities. In the western part, and notably in the Black Hills, both Federal and State areas are established. The following tabulation lists the existing park and recreation areas:



Picnicking in the shade or a cool swim, perfect ways to beat the heat.

| <i>Administration</i> | <i>Type of area</i> | <i>Number</i> | <i>Area (acres)</i> |
|---|--|---------------|-------------------------|
| Federal: | | | |
| National Park Service. | National park..... | 1 | 28,059 |
| | National monuments..... | 2 | 123,158 |
| | National memorial..... | 1 | 1,278 |
| Forest Service..... | National forests..... | 2 | ..... |
| | Camp and picnic grounds, resorts and concessions. | 107 | 1,567 |
| | Reservoir recreation areas..... | 2 | ..... |
| Fish and Wildlife Service. | National wildlife refuges..... | 5 | ..... |
| | Developed recreation areas | .. | 1,306 |
| Corps of Engineers..... | Reservoir..... | 1 | ..... |
| | Developed recreation areas | .. | 2,000 |
| State: | | | |
| Department of Game, Fish and Parks. | State parks and recreation areas. | 38 | 279,728 |
| | Reservoir recreation areas..... | 4 | 14,230 |
| | Public shooting grounds..... | 150 | 50,000 |
| Department of Game, Fish and Parks, jointly with Highway Depart- ment. | Roadside parks..... | 40 | 585 |
| Local: | | | |
| Counties and cities, in cooperation with De- partment of Game, Fish and Parks. | Nonurban recreation areas... | 30 | 3,004 |

¹ In addition to the acres listed for developed recreation facilities, the Forest Service administers an additional 2,000,000 acres of land as National Forests, and the Fish and Wildlife Service administers an additional 50,000 acres as wildlife refuges. These areas, though undeveloped, provide and are used extensively for recreation pursuits, such as hunting, fishing, and sightseeing.

² 72,000 acres are in Custer State Park.

Federally administered parks and recreation areas in South Dakota are situated almost entirely in the western part of the State. With but few exceptions, notably Custer State Park in the Black Hills, areas in the State and local systems are east of the Missouri River where the majority of the residents live. Except for Custer, established in the early 1900's, these

State and local systems are entirely post-World War II.

A number of these public areas preserve significant natural and historical resources. At the State level, in particular, they represent rapid strides in providing much needed and more widely dispersed outlets for active recreation. There is, however, the problem of dwindling unspoiled recreation resources, coupled with mounting needs of residents and tourists alike. Most of the areas are already overtaxed, although some were developed expressly to relieve such pressure.

While historical and archeological resources have been and will be lost under the reservoirs in the Missouri River Basin project, extensive research and salvage, especially in archeology, have been stimulated.

Historic sites thus lost include some associated with the Lewis and Clark Expedition; fur trading posts; Indian agencies and military posts of the Indian-military frontier period; and the old Leavenworth Battlefield near the mouth of the Grand River.

Most of the archeological evidence representing various phases of cultural development of the prehistoric and early historic Indians will be lost under the Fort Randall, Big Bend, and Oahe Reservoirs. However, the present archeological program is recovering sufficient data to depict the life of these early agriculturists in broad outline.

The State park system, as completed or now planned, will provide a well diversified range of activities. Certain areas, however, are too small to serve their true function—5 are of 160 acres or less, and 1 is of 60 acres. Some of the artificial or natural



Salvaging and mapping an Indian ceremonial lodge at the site of Oahe Reservoir.

lakes, which are the focal points of nearly all the State and local recreation areas, are too small to meet day-to-day recreation needs. The State, however, has undertaken a 20-year land acquisition program.

Developed under the pressure of postwar needs and the impetus of the water-development program, the State park system has centered mainly on active recreation outlets. With these same demands continuing, there is danger of permanent imbalance in this direction at the expense of the less obviously pressing need for preserving the State's historic and natural resources.

Private enterprise, through the provision of vacation and resort accommodations, is making a real contribution in providing facilities for the public. Certain private organizations, notably the Homestake Mining Company in the Black Hills, have, in fact, developed and maintained public picnic areas, and have maintained the unspoiled natural character throughout their holdings along scenic Spearfish Canyon.

SPECIAL CONSIDERATIONS. Other considerations of particular interest in South Dakota include the following:

1. The overall recreation significance of the Black Hills region.
2. The proposed interstate highway system, shown on the State plans at the end of this section, which generally follows U. S. 16.
3. The general lack of tree cover and of natural recreation outlets in the plains section.

4. Water-control projects which are providing both valuable new recreation opportunities and perplexing problems in the acquisition of additional lands and in providing development and access.

5. The need for additional vacation-type facilities to serve eastern South Dakota residents as well as tourists.

AREAS OF RECREATION NEED. Three general areas in which there are judged to be present or future needs, primarily for day and weekend recreation, are indicated on plate 18. Their delineation takes into account the location and scope of present developments as they relate to population and recognizes that they contain undeveloped recreation potentials. The two eastern areas represent both present and future need, while the southwestern corner of the State is primarily an area of anticipated need.

Objectives and Broad Recommendations

Programs of the several agencies concerned in South Dakota have accomplished much toward the basic objective preservation of significant recreation resources and meeting needs for outdoor recreation pursuits. The job ahead largely concerns two elements:

1. Expanding and perfecting a balanced system of parks and related recreation areas to accommodate an estimated 3,350,000 visitor days of use by 1965, and at least 5,000,000 by 1980.
2. The preservation and development of the recreation resources, in particular those of the Black Hills,



Badlands National Monument is noted for its pinnacles and spires.

for their great general interest and importance to the Nation and to the State.

The Federal role will continue to lie in the preservation and administration of natural, cultural, and scientific resources of national significance, including watershed protection; an accelerated program to provide additional facilities in existing areas where compatible with purposes for which they were established; and continued cooperative assistance to the State, including recreation planning at federally sponsored reservoirs. Much of the burden of providing for resident and tourist needs will continue to fall on the State and local agencies.

To achieve balance in the qualitative aspects of recreation, as against the purely quantitative side, the acquisition and preservation of resources that are of statewide importance will be a matter for early emphasis in the State park system. Appropriate county and city programs will supplement State activity.

The growing desire and need for more frequent day and weekend activity will require expansion and more diversification of existing developments, plus the new areas at strategic spots.

Greater emphasis might well be given to State park and recreation areas of more than local interest. As the State park system evolves, and as the means develop, it may prove that a number of park areas now included in the system can be transferred to lower levels.

The recreation resources of existing and proposed Federal reservoirs will assume increasing importance, especially in the Great Plains section. Properly developed, they could prove a significant attraction to the traveling public as well as to the resident population.

Suggested Solutions

Possible avenues of approach in meeting statewide objectives are outlined below only in broad terms and for general guidance. A prerequisite to accomplishing basic objectives will be a coordinated, long-range statewide recreation plan which can point to specific solutions. Since a number of agencies and a variety of natural and manmade resources are involved, full cooperation will be necessary to give the plan direction and unity of purpose. Trained planning personnel on the staff of the Department of Game, Fish and Parks, who could give attention to this phase of cooperative

planning, as well as area development plans, would pay real dividends.

At the Federal level, contributions to the overall State plan cannot yet be fully determined. The National Park Service, under the MISSION 66 program, will be bringing the management, protection, interpretation, and development of the areas it administers in line with anticipated public requirements. The Service is also cooperating in a nationwide recreation plan and is resuming the historic sites survey. These two broad studies, in considering the ultimate desirable composition of the National Park System and in contributing cooperatively to the overall State plan, will give consideration to remaining unspoiled natural resources in the State and to historic and archeologic sites. Particular attention will be given to the Lewis and Clark Expedition. Consideration may also be given to the remaining areas of relatively undisturbed short-grass prairie in view of the interest that has been expressed in preserving an outstanding example of the ecology characteristic of the Great Plains.

The Forest Service and the Fish and Wildlife Service will both undertake somewhat comparable long-range programs. These will undoubtedly give consideration to providing additional recreation developments in line with their respective authorities to meet the pressures of increasing public use.

Of particular interest to the State and to the public, in general, would be solutions that might be cooperatively developed to preserve and enhance recreation values centered in the Black Hills. The assistance of private interests and local governmental units, in addition to the State and Federal agencies, would be necessary.

Some specific solutions may have to await the completion of subsequent studies and the development of a long-range State plan.

PRESERVATION OF RESOURCES. To serve as a guide, certain examples of natural, cultural, or scientific resources are listed below for consideration as additions to the State park system:

Scenic or Natural

1. Pothole lakes—a representative area in north-eastern South Dakota.
2. Sieche Hollow—in Roberts County.
3. Little White River—a representative prairie and woodlands area in the south-central part.

4. Battle Mountain—east of Hot Springs.
5. Quartzite gorge—adjacent to Palisades Recreation Area (contains archeological values also).
6. Newton Hills State Park—recommended enlargement.
7. Bear Butte—northeast of Sturgis.

Historic

1. Fort Meade—Indian-military phase.
2. Slim Butte Battle Site—Indian-military phase.
3. Wounded Knee Battlefield—Indian wars.

Archeologic

1. Split Rock Creek Mound Group—culture undetermined.
2. Bloom Village—Western Farmer culture.
3. Arzberger Village—Western Farmer culture.
4. Flint Hill Quarry—culture undetermined.



This mass Indian grave, at Wounded Knee, marks the site of the last important conflict between American Indians and the white man.

SUGGESTED MEANS OF MEETING RECREATION NEEDS.

It appears that recreation needs, not met by areas which may be set aside for their inherent values, could be provided for through reservoirs already developed or proposed. Their value could be considerable. It will depend to a large extent, however, on the provision of adequate public access and developed areas for both resident and vacation or tourist use. In view of the fine fishing anticipated, this activity and boating should prove most popular.

At present, the State is administering recreation areas at Angostura, Shadehill, and Coldbrook Reservoirs. In addition, agreements are being negotiated to cover all public lands along the South Dakota side of Lewis and Clark Lake and 10 or 12 sites on Fort Randall Reservoir. As means can be provided, these areas should be adequately developed, in particular Lewis and Clark Lake, which should prove to be a major recreation area.

A number of other reservoirs are proposed in South Dakota, some of which are too far in the future to be reasonably appraised. Scatterwood, Rockyford, and Phillip Reservoirs, proposed by the Bureau of Reclamation, should be considered, but might prove to be of only local significance.

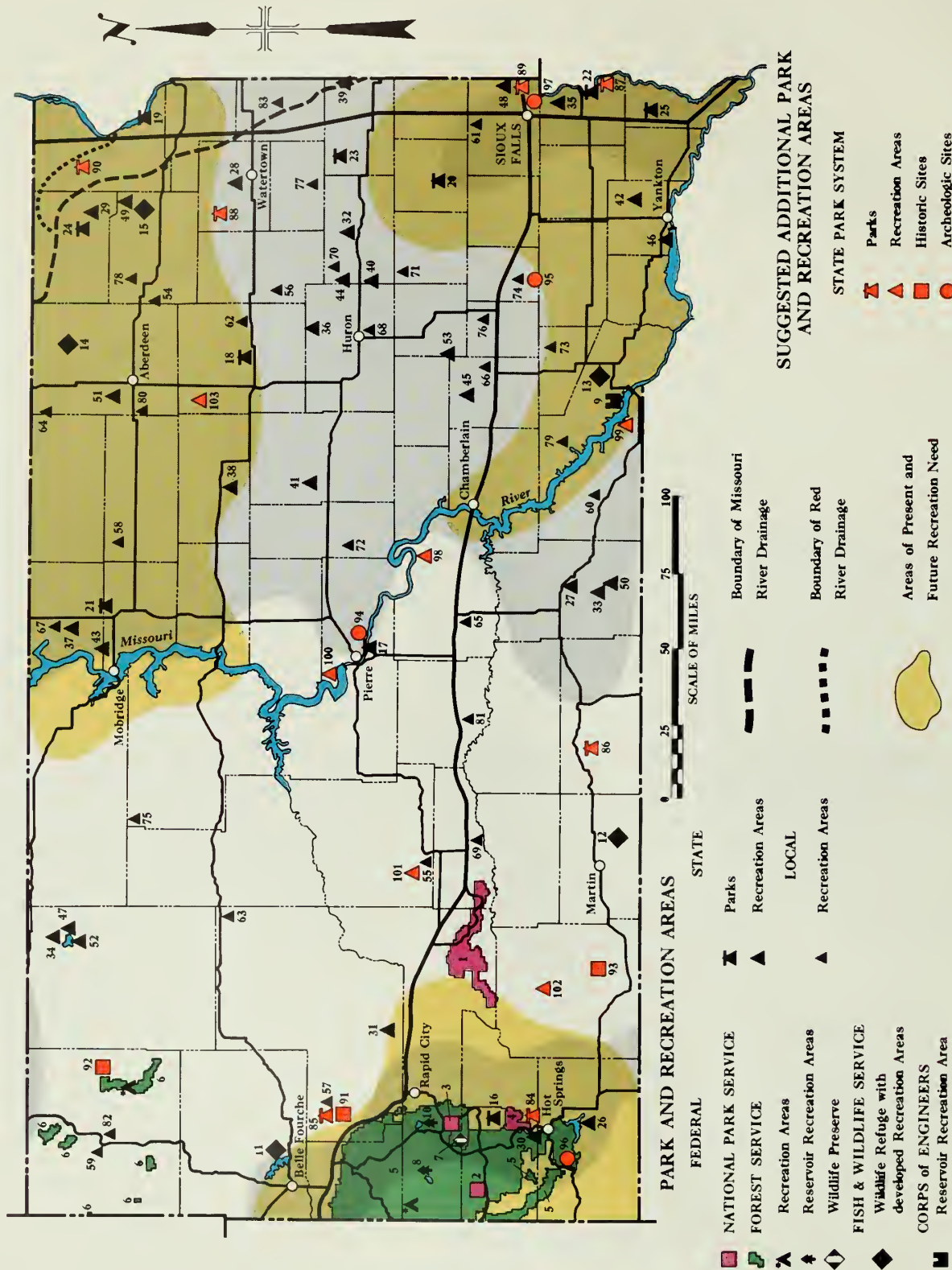
Oahe Reservoir, now under construction, and Big Bend Reservoir, proposed by the Corps of Engineers, should offer possibilities for State recreation areas. Big Bend, in particular, may prove to be quite attractive and adaptable to recreation use. As an added interest, significant archeological sites will remain above high water near the shoreline.

For maximum public appreciation and enjoyment of State park and recreation areas, a planned program of interpretation should be initiated at an early date. At historic sites, this program would be coordinated by or with the State Historical Society. Where on-site personnel cannot be provided, self-guiding trails and interpretive signs would represent a worthwhile start.

For the pleasure and convenience of tourists and residents alike, the system of roadside parks should be further expanded, and historical markers placed at appropriate sites.

Three segments only of the Missouri River will remain upon completion of the main-stem reservoirs. With clearer and more stable flow of water, these reaches of the Missouri may prove popular for fishing, boating, and associated activities. Such opportunities should be watched and considered if and when demand develops.

S O U T H D A K O T A



*DENOTES A NUMBER OF DEVELOPED AREAS

PARK AND RECREATION AREAS

Federal

NATIONAL MONUMENTS

1. Badlands
2. Jewel Cave

NATIONAL MEMORIAL PARK

3. Mount Rushmore

NATIONAL PARK

4. Wind Cave

NATIONAL FORESTS

5. Black Hills
6. Custer

WILDLIFE PRESERVE

7. Norbeck

RESERVOIR RECREATION AREAS

8. Deerfield
9. Fort Randall
10. Pactola

NATIONAL WILDLIFE REFUGES

11. Belle Fourche
12. La Creek
13. Lake Andes
14. Sand Lake
15. Waubay

State

PARKS

16. Custer
17. Farm Island
18. Fisher Grove
19. Hartford Beach
20. Lake Herman
21. Lake Hiddenwood
22. Newton Hills
23. Oakwood Lakes
24. Roy Lake
25. Union County

RECREATION AREAS

26. Angostura Reservoir
27. Beaulieu Lake
28. Carpenter Hill
29. Clear Lake
30. Coldbrook Reservoir
31. Curlew Lake

32. De Smet Forest

33. Dog Ear Lake

34. Flat Creek

35. Lake Alvin

36. Lake Byron

37. Lake Campbell

38. Lake Faulkton

39. Lake Hendricks

40. Lake Iroquois

41. Lake Louise

42. Lake Marindahl

43. Lake Molstad

44. Lake Osceola

45. Lake Wilmarth

46. Lewis and Clark Lake

47. Llewellyn Johns Memorial

48. Palisades

49. Pickerel Lake

50. Rahn Lake

51. Richmond Lake

52. Shadehill Reservoir

53. Twin Lakes

Local

RECREATION AREAS

54. Amsden Dam

55. Bad River

56. Bailey Lake

57. Bear Butte

58. Bowdle-Hosmer

59. Buffalo

60. Burke Lake

61. Dells of the Sioux

62. Doland

63. Durkee Lake

64. Elm Lake

65. Fate Dam

66. Fish Lake

67. Harried

68. Huron Memorial

69. Kadoka

70. Lake Agnew

71. Lake Carthage

72. Lake Chapelle

73. Lake Corsica

74. Lake Hanson

75. Lake Isabel

76. Lake Mitchell

77. Lake Norden

78. Lake Pierpont

79. Lake Platte

80. Mina Lake

81. Murdo

82. Tiperrary Lake

83. Ulven

Suggested Additional Areas for State Park System

PARKS (SCENIC OR NATURAL)

84. Battle Mountain
85. Bear Butte
86. Little White River
87. Newton Hills (enlargement)
88. Pothole Lakes
89. Quartzite Gorge
90. Sieche Hollow

HISTORIC

91. Fort Meade
92. Slim Butte Battle Site
93. Wounded Knee Battlefield

ARCHEOLOGIC

94. Arzberger Village
95. Bloom Village
96. Flint Hill Quarry
97. Split Rock Creek Mound Group

RECREATION AREAS

98. Big Bend Reservoir
99. Fort Randall Reservoir
100. Oahe Reservoir
101. Phillip Reservoir
102. Rockyford Reservoir
103. Scatterwood Reservoir

TRAVEL ROUTES



Proposed interstate highways



Existing major highways

POPULATION

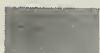
AVERAGE DENSITY PER SQUARE MILE



25 to 50 people



5 to 10 people



10 to 25 people



5 people or less

SCENIC DRIVES OR TOURWAYS. Consideration should be given in the long-range plan to the designation of appropriate highways for pleasure driving or as circle tours. Zoning to control billboard advertising and commercial development would be essential. Highways and roads offering good possibilities include the following:

1. A scenic drive along the Big Sioux River, extending from Canton to Newton Hills State Park and on southward.

2. A route following Split Rock Gorge from near Sioux Falls, extending northeast past Palisades State Recreation Area to Garretson, State Route 11.

3. Roads throughout the Black Hills except where towns or existing developments make a controlled roadside infeasible.

4. A Lewis and Clark Tourway along the Missouri River. Until such time as the project might be implemented on a regional basis, the South Dakota Historical Society is erecting markers along present highways near the reservoirs and at other points overlooking the Missouri River, calling attention to various historic sites.

WYOMING

Recreation Resources

Approximately two-thirds of Wyoming lies in the Missouri River Basin, the Continental Divide running from a point near its northwest corner southeast to a point near the middle of its south border. In common with neighboring Mountain States, north and south, it contains recreation resources of very high quality, offering sharp contrast to more arid sections typical of the western Great Plains.

The Big Horn, Medicine Bow, Wind River, and Absaroka Mountains, with their glaciers and rugged peaks, many lakes and streams, and their forested slopes and mountain valleys present magnificent scenery and recreation values in an atmosphere of still largely unspoiled wilderness character. Thermal displays in Yellowstone are world-renowned.

In the eastern part of the State are large areas of grassland, some of it very arid. Naturally adaptable recreation opportunities are not plentiful and are usually associated with the major stream valleys, or variations such as the Black Hills extension in northeast Wyoming, and Laramie Peak and surrounding forested hills.



Medicine Bow Mountains.

Ecologically, Wyoming covers a very wide range. In and along the mountains are the alpine, subalpine, and the montane provinces whose characteristic plant and animal associations are widely known. Peculiar to Wyoming in the basin and typical of northern desert is the sagebrush country lying between the Rocky Mountains and Big Horn Mountains and extending south almost to the Laramie Mountains. The Red Desert, in this area, has in part true wilderness qualities. Elsewhere, east of the mountains, are the short-grass prairies.

Historically, though young, Wyoming has special appeals. Significant themes are concerned with early exploration and the fur trade, the Indian wars, the covered wagon migrations, and the early range cattle industry. The famous Oregon-California Trail, route of emigrants, stage coaches, and Pony Express riders, crossed Wyoming, leaving many noted landmarks.

Archeological resources, so far discovered, comprise aboriginal rock quarries, boulder lodge circles, rock carvings and paintings, and scattered evidence of hunting groups representing thousands of years of occupation by nomadic peoples.

Combined with a refreshing summer climate, these resources collectively pull vacationers and tourists from all States and from many foreign lands. Dude ranching and a flavor of the old west add special appeal.



Branding time on a dude ranch.

Irrigation had an early start in Wyoming, and a number of reservoirs have been constructed, notably the North Platte chain of six plus a few that are scattered on the Big Horn and Belle Fourche drainages. Many others, mostly in the mountain section, are authorized or are being studied.

Planning Considerations

PEOPLE. Wyoming, with an area of approximately 98,000 square miles, had a 1950 population of 291,000, an average density of three people per square mile. Distribution is generally sparse over the whole State, the largest concentrations being at Cheyenne and Casper. Population growth, however, is above national average, and the shift from rural to urban has accelerated, as shown in the following tabulation of population trends and forecasts:

| Year | Population, total State | Population, basin part | Percent Urban, basin part |
|-----------|----------------------------|---------------------------|------------------------------|
| 1930..... | 226,000 | 186,000 | 32 |
| 1940..... | 251,000 | 209,000 | 37 |
| 1950..... | 291,000 | 247,000 | 50 |
| 1960..... | 330,000 | 284,000 | 56 |
| 1970..... | 377,000 | 328,000 | 62 |
| 1980..... | 425,000 | 374,000 | 68 |

RECREATION USE AND TRENDS. Residents and visitors alike are interested in the usual cross section of outdoor activities. Because of the natural resources of the State, camping, dude ranching, back-country pack trips, fishing, and big-game hunting have special appeal. Boating and water sports are on the increase, with reservoirs providing additional and larger bodies of water.

Quantitatively, the picture is difficult to assess. Outstanding features, notably Yellowstone National Park, draw many tourists who also use other areas and developments. Much of the resident activity takes place in the large National Forests and other undeveloped though attractive areas. No State park system, as such, has been developed, and attendance figures for reservoirs are not available. Attendance at Yellowstone and the two National Monuments shows the following trend:

| 1946 | 1950 | 1955 | Increase, 1946 to 1955 (percent) |
|---------|-----------|-----------|--|
| 855,107 | 1,196,212 | 1,485,025 | 73 |

ECONOMIC IMPACT. Records maintained by the Wyoming Highway Department on total tourist visitation and expenditures support this rapidly increasing use trend. In 1937 tourists numbered 1,206,700, and they spent 14 million dollars. In 1955 there were 3,200,000 visitors who spent 127 million dollars. The tourist industry clearly makes a major contribution to Wyoming's economy.

ADEQUACY OF PUBLIC AREAS. Wyoming is a State with large Federal land holdings, and until recently no State park organization had been established and activated. A few of the counties and larger cities have set aside and developed public parks and recreation areas, but most of the developed areas are administered by the Federal Government.

The following table summarizes present public recreation areas:

| Administration | Type of area | Number | Area (acres) |
|----------------------------|-----------------------------|--------|------------------------|
| Federal: | | | |
| National Park Service... | National park..... | 1 | ¹ 2,070,641 |
| | National monuments..... | 2 | 1,408 |
| Forest Service..... | National forests | | |
| | Camp and picnic grounds. | 157 | ² 1,309 |
| | Resorts and concessions. | 39 | ² 986 |
| | Winter sports areas... | 7 | ² 990 |
| | Wilderness areas..... | 6 | 265,967 |
| | Wild areas..... | 2 | 164,000 |
| Bureau of Indian Affairs. | Roadless area..... | 1 | 220,000 |
| Fish and Wildlife Service. | National wildlife refuges.. | 3 | ..... |
| Department of the Army. | Historic site..... | 1 | ..... |

See footnotes at end of table.

| <i>Administration</i> | <i>Type of area</i> | <i>Number</i> | <i>Area (acres)</i> |
|---------------------------------|---|---------------|---------------------|
| State: | | | |
| Parks Commission..... | Reservoir recreation areas..... | 5 | 11,358 |
| Board of Charities and Reform. | State parks..... | 2 | 1,320 |
| Historical Landmark Commission. | Historic sites..... | 2 | 42 |
| Highway Department.... | Roadside parks..... | 25 | |
| Local: | | | |
| Counties..... | Nonurban park and recreation areas..... | 3 | 1,350 |
| Cities..... | Historic park..... | 1 | |

¹ Includes only that part of Yellowstone National Park that is in Wyoming.

² In addition to the areas listed for developed recreation facilities, the Forest Service administers an additional 6,600,000 acres of land as National Forests, and the Fish and Wildlife Service administers 49,000 acres as wildlife refuges in Wyoming. Although the wildlife refuges do not have developed recreation facilities, the refuges and the undeveloped forest land are used extensively for recreation pursuits, such as hunting, fishing, sightseeing, and hiking.

In addition to the established areas listed, there are 14 privately owned historic sites, with markers provided by the Landmark Commission.

As seen above, public park and recreation areas are contained largely in federally administered areas. The State Parks Commission, since it was founded in 1953, has assumed administration of five reservoir recreation areas, but it has not yet undertaken development of a comprehensive park system.

At present, resident needs for day and weekend areas are not acute except in sections at some distance from mountains or completed reservoirs. The concentration of population, coupled with lack of recreation resources in the southeast corner of the State, provides a notable example of such an acute-need area.

The heavy and increasing load of tourists, however, is causing serious over-use in National Parks and National Forest developed areas.

At the same time, valuable scenic, scientific, and historic areas, some of which should be preserved for present and future generations, are being lost.

SPECIAL CONSIDERATIONS. Several factors of importance should be considered in the long-range planning program of Wyoming. These are as follows:

1. Water-control projects are of particular interest to Wyoming. A number of those built are providing valuable new recreation opportunities. Some of those now planned will do likewise. Most of the proposed projects, however, would be located in mountain valleys, where additional bodies of water are less needed for recreation purposes and where they will, in some cases, encroach on or destroy high recreation values or wilderness areas.

2. Since tourist travel is of unusual significance in Wyoming, the proposed interstate highway will be

a considerable factor, contributing to the increase and determining the pattern of flow. To a degree, it will influence use of park and recreation areas. The proposal in Wyoming would include an east-west route along U.S. 30, a north-south route generally following U.S. 87, and a second east-west route from Sheridan to Rapid City, S. Dak., via U.S. 14.

3. As one of the three main Rocky Mountain States, wilderness and mountain resources represent the important key to development of a balanced park and recreation plan. Much of the area is in Federal ownership and still largely undisturbed by the advance of civilization. However, public use, on the one hand, and assorted resource development programs, on the other, are making rapid inroads. Significant, too, are the vast areas of short-grass prairie, parts of which are still relatively undisturbed in Wyoming and a few other States. The preservation of such an area for public enjoyment has long been of interest to conservation groups, and some research studies have been undertaken.

4. Rapidly increasing recreation needs and use, plus accelerated resource development programs in particular reservoirs, create added problems for the new State Parks Commission in undertaking planned development of a balanced State park system.

AREAS OF RECREATION NEED. With a small resident population and widely dispersed natural recreation resources, the need for additional public areas is only recently being felt in Wyoming. The need, where it exists, is for reasonably accessible day- and weekend-use areas largely in arid sections away from the mountains where recreation outlets, on the whole, must necessarily be developed around other than natural values. From the standpoint of the larger population groups, available facilities, and similar factors, it is judged that the general area of recreation need extends southeast across the State from the vicinity of Lovell and Powell, as indicated on plate 19. On that basis, the population concentration in and around Cheyenne and along the southeastern border is by far the largest group falling in this category. It is recognized that this general area of need contains considerable recreation potential not yet developed.

The smaller area of recreation need, shown in the northeastern corner of the State, is considered primarily an area of possible future rather than immediate need, as are the general vicinities of Cody and Casper.



The Lake Guernsey museum structure dates from Civilian Conservation Corps days.

Objectives and Broad Recommendations

The basic long-range objective is the establishment of a balanced system of public parks and recreation areas, preserving significant scenic, scientific, and historic areas at appropriate levels of government, and supplemented by areas developed to meet needs not otherwise met. It should be planned to permit residents and visitors to use and enjoy the State's outdoor heritage to full advantage because resources of State, regional, and national significance are involved.

A cooperative approach to planning and development will be important because the State program is still small and large Federal holdings include outstanding recreation opportunities. This points to the desirability of expanding the staff of the State Parks Commission to include planning personnel as soon as feasible.

As soon as means can be provided, development at existing State areas should be expanded, and the State system itself broadened to include areas with scenic, scientific, and historic values. Where major areas of need are discerned, voids should be filled. Needs of scattered smaller communities, not otherwise met, may in some cases be properly provided for through county or municipal areas. Reservoir developments can play an important part in this program, but care should be taken not to jeopardize a balanced or properly distributed system.

Further provision for public enjoyment should be provided through development or expansion of interpretive facilities. This will become increasingly im-

portant in State areas as the system of parks expands. While means remain limited, consideration of interpretive signs and self-guiding trails are suggested as mediums which do not require on-site personnel.

The overall State plan should consider distribution of areas designed to relieve over-use and incompatible use where it is now developing.

Unusually valuable and fast-diminishing mountain areas, still retaining wilderness qualities, deserve special consideration. They will undoubtedly be given attention in long-range studies which the National Park Service, under MISSION 66, and the Forest Service, under Operation Outdoors, have launched.

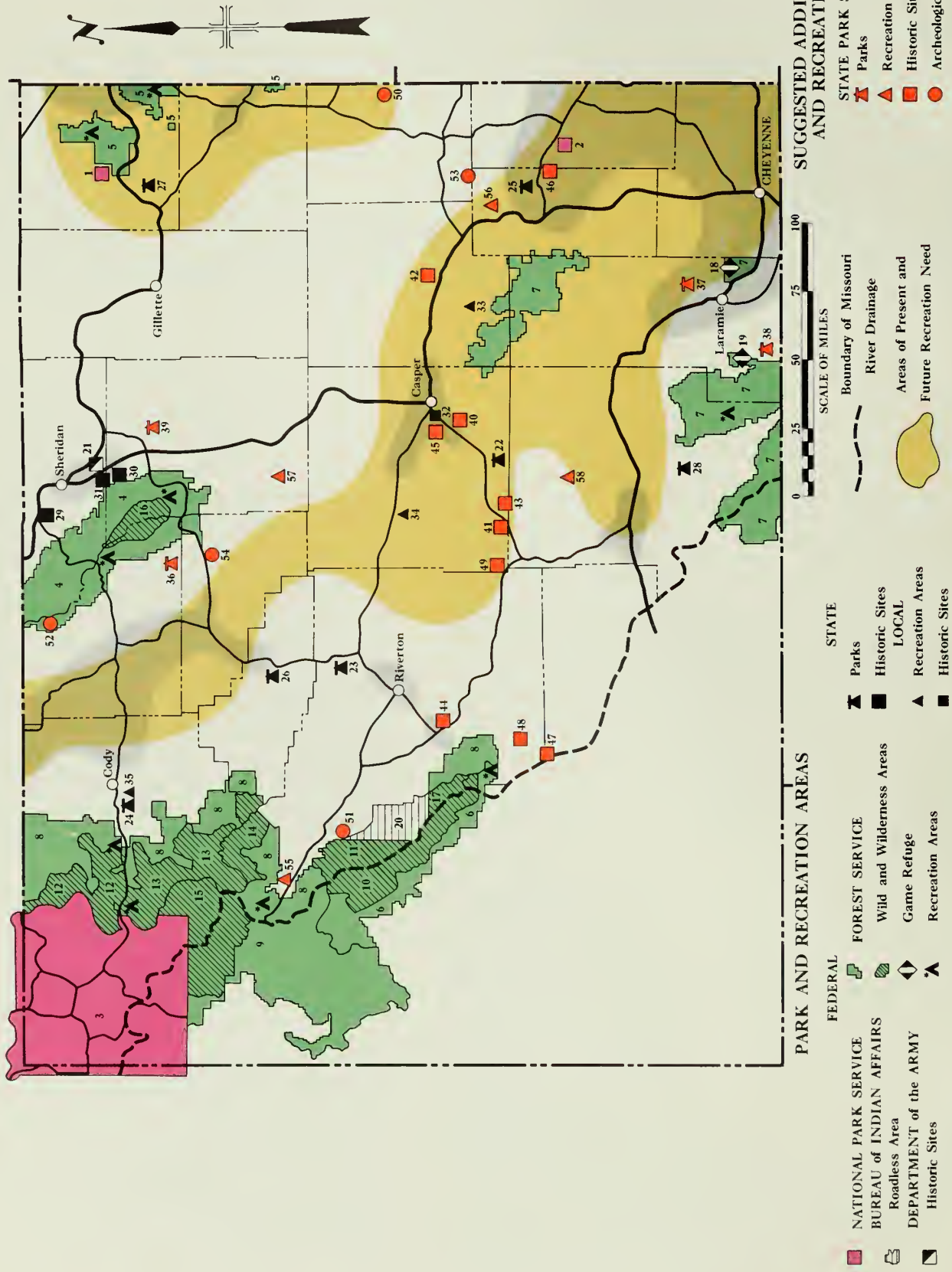
Additional parks and recreation areas and more roadside areas should be provided for the traveler, with consideration given to zoning or marking scenic drives or tourways.

Suggested Solutions

Basic to meeting park and recreation needs in Wyoming is the development of a comprehensive plan which could reach more definitive recommendations. Certain methods of solution are set down below.

Areas of the National Park System in the basin part of Wyoming include Yellowstone National Park and two National Monuments, Devils Tower and Fort Laramie. Under MISSION 66, development and management will be brought up to date and expanded, consistent with Service objectives, to meet foreseeable needs. Proposals are also under consideration to

W Y O M I N G



*DENOTES A NUMBER OF DEVELOPED AREAS

PARK AND RECREATION AREAS

Federal

NATIONAL MONUMENTS

1. Devils Tower
2. Fort Laramie

NATIONAL PARKS

3. Yellowstone

NATIONAL FORESTS

4. Big Horn
5. Black Hills
6. Bridger
7. Medicine Bow
8. Shoshone
9. Teton

WILDERNESS AREAS

10. Bridger
11. Glacier
12. North Absaroka
13. South Absaroka
14. Stratified
15. Teton

WILD AREAS

16. Cloud Peak
17. Popo Agie

GAME REFUGES

18. Pole Mountain
19. Sheep Mountain

ROADLESS AREA

20. Wind River Mountains

HISTORIC SITE

21. Fetterman Massacre

State

PARKS

22. Alcova
23. Boysen
24. Buffalo Bill
25. Guernsey
26. Hot Springs
27. Keyhole
28. Saratoga Hot Springs

HISTORIC SITES

29. Connor Battlefield
30. Fort Phil Kearney
31. Wagon Box Fight

Local

HISTORIC SITE

32. Fort Casper

RECREATION AREAS

33. Ayres Natural Bridge
34. Hells Half Acre
35. Shoshone Cavern

Suggested Additional Areas for State Park System

PARKS (SCENIC OR NATURAL)

36. Big Horn Mountains
37. Laramie Mountains
38. Medicine Bow Range
39. Petrified Forest

HISTORIC

40. Astorians Camp
41. Devils Gate
42. Fort Fetterman
43. Independence Rock
44. Lander
45. Mormon Ferry
46. Register Cliff
47. South Pass
48. South Pass City
49. Split Rock

ARCHEOLOGIC

50. Coyote Gap Quarry
51. Dinwoodie Lakes
52. Medicine Wheel
53. Spanish Diggings
54. Ten Sleep Shelters

RECREATION AREAS

55. Du Noir Reservoir
56. Glendo Reservoir
57. Hole-in-the-Wall Reservoir
58. Seminoe Reservoir

TRAVEL ROUTES



Proposed interstate highways



Existing major highways

POPULATION

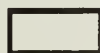
AVERAGE DENSITY PER SQUARE MILE



10 to 25 people



5 to 10 people



5 people or less

expand the two National Monuments to better preserve and interpret values for which they were set aside. Whether additional areas will be considered for addition to the system in Wyoming will depend on broad studies to be undertaken soon.

The National Forests now provide many recreation developments in the State and incorporate seven wilderness areas, administratively so designated. The Bureau of Indian Affairs also has set aside a Roadless Area to preserve the wilderness values in the western part of the Wind River Reservation. Plans of the Forest Service will undoubtedly consider expansion of present facilities, designation of additional recreation areas, and a reevaluation of wilderness area boundaries and size.

At Boysen, Buffalo Bill, Alcova, Keyhole, and Guernsey Reservoir recreation areas, now administered by the State, available lands are generally adequate. Facilities, however, should be expanded in step with public use and as means are provided or can be devised. At Guernsey this is largely a matter of rehabilitation.

Administration of additional reservoir recreation areas would fill needs in certain places, and agreements are being negotiated to cover Glendo and Seminoe. Other possibilities should include consideration of Yellowtail, Moorhead, Du Noir, and Hole-in-the-Wall Reservoirs if built. Beyond these, the many other reservoir proposals in long-range planning programs are highly problematical.

The acquisition of new areas, when it can materialize, should desirably be pointed first at preservation of scenic, scientific, and historic values of importance to the State. To meet the needs of population concentration in southeastern Wyoming, consideration should be given to an area adjoining the Medicine Bow Range or the Laramie Mountains. Such a solution could include both natural areas of value and opportunities for more diversified recreation activity. Elsewhere in the State, consideration might be given to the petrified forest area near Buffalo.

Areas of archeological interest include Coyote Gap Quarry and Spanish Diggings, used generally throughout the period of occupation by prehistoric peoples; Dinwoodie Lakes, campsites, rock shelters, and petroglyphs, possibly of Shoshonean origin; Medicine Wheel, of uncertain age and derivation; and Ten Sleep Shelters, containing cultural evidence similar to findings in western Texas.



The ghost town of South Pass City bleaches in the sun.

Notable historic areas of statewide interest include Oregon Trail sites such as Register Cliff, "Mormon Ferry," Independence Rock, Devils Gate, Split Rock, and South Pass; the winter camp of the returning Astorians; the 1830 fur traders' rendezvous site near Lander; the sites of Fort Fetterman and Fort Phil Kearney; and South Pass City of the mining frontier.

Areas administered by other State agencies include, at present, Hot Springs State Park and Saratoga Hot Springs under the State Board of Charities and Reform; Ayers Natural Bridge by Converse County; and Hell's Half Acre by Natrona County. As plans for a State park system develop, it is suggested that consideration be given to these areas to determine whether they should be incorporated or continued under present agencies.

SCENIC DRIVES OR TOURWAYS. This program, a matter largely of zoning or control of unsightly development and billboards rather than acquisition or development, would add immeasurably to public enjoyment of Wyoming's scenery. Possibilities for different routes are almost unlimited. Consideration should be given to circle or loop trips; to joining parks or other scenic attractions; and, where possible, to use of secondary or less congested travel routes.



Hot Springs State Park at Thermopolis.

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