12-1973

Capitol Reef Wilderness Study

United States Department of the Interior, National Park Service

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wilderness study

CAPITOL REEF
NATIONAL PARK • UTAH
WILDERNESS STUDY
Preliminary – Subject to Change

Capitol Reef
National Park
Utah

December 1973
CORRECTION TO WILDERNESS STUDY REPORT
for
CAPITOL REEF NATIONAL PARK, UTAH

June 1974

The lands shown in this report as potential wilderness additions total 15,470 acres. This correction deletes 13,660 acres of Utah State land, thus the correct potential wilderness additions total 1,810 acres.

FINDINGS

NINE UNITS WITHIN CAPITOL REEF NATIONAL PARK, TOTALING 181,230 ACRES, HAVE BEEN FOUND SUITABLE FOR WILDERNESS DESIGNATION AND ARE PROPOSED FOR INCLUSION IN THE NATIONAL WILDERNESS PRESERVATION SYSTEM. IN ADDITION, POTENTIAL WILDERNESS ADDITIONS OF 15,470 ACRES INCLUDING LAND PRESENTLY MINED, LEASED FOR OIL AND GAS, AND NON-FEDERALLY OWNED, ARE RECOMMENDED FOR INCLUSION IN THE NATIONAL WILDERNESS PRESERVATION SYSTEM WHEN THE SECRETARY OF THE INTERIOR DETERMINES THAT THEY QUALIFY.
THE REGION

Capitol Reef National Park is located in south-central Utah within portions of Wayne, Garfield, Sevier, and Emery Counties. Situated on the western edge of the Colorado Plateau, this scenic land is adjacent to Dixie and Fishlake National Forests and Goblin Valley State Park. Other Park Service areas nearby include Zion and Bryce Canyon National Parks, and Cedar Breaks National Monument to the west; Canyonlands National Park and Arches National Park to the east; and Glen Canyon National Recreation Area to the south and east.

While basically dry, the area is still a land of many contrasts. The Fishlake, Boulder, and Henry mountains with their lakes and streams form an interesting comparison to the Waterpocket Fold. Rivers such as the Fremont (Dirty Devil) and the Escalante offer some variety and relief from the aridity of the country.

The population census of 1970 indicates that only 1,483 people reside in Wayne County, while 3,157 live in Garfield. The closest town with reasonably complete facilities, Richfield, population 4,471, lies 75
miles northwest of Capitol Reef. Torrey, population 84, only 5 miles away, is the nearest town.

Other nearby towns are also very small. The nearest major city is Grand Junction, Colorado, 190 miles northeast of the park. Salt Lake City is 230 miles away. To the south, Flagstaff, Arizona, and Albuquerque, New Mexico, are about 300 and 400 air miles away, respectively.

The people of this region have made a living from raising and selling livestock and related crops. Because most of the land is Government owned, many people are employed by Federal agencies, such as the Bureau of Land Management, National Park Service, and Forest Service. These agencies provide most of the employment. However, the tourist trade is growing rapidly and will play an increasingly important role in the regional economy.

The "reef," a major geologic feature, is an unusual earth uplift extending for 150 miles from Thousand Lake Mountain southeast to the Colorado River. It is a portion of the geologically well-known Waterpocket Fold, or flexure, and is intricately dissected by deep gorges in multicolored sedimentary rocks. The west slope rises sharply, the eastern decline less so. Dome-like peaks of the Navajo Sandstone formation account for the name "Capitol Reef." Over the years, water and wind have carved the cliffs into many domes, towers, and pinnacles. Early geologists called such cliffs "reefs" because of their resemblance to coral formations.

THE PARK

Ranging in elevation from 3,900 to 7,800 feet, Capitol Reef National Park includes 15 exposed sedimentary formations; several igneous formations of dikes, plugs, and sills; a Pleistocene mudslide; petrified wood; and such erosional features as arches, natural bridges, hogbacks, cuestas, mesas, fins, and canyons.

The most important feature of all is, of course, the Waterpocket Fold – named for its pockets and tanks that collect water from rain and snow. The fold is considered by many geologists to be the best known and most noted classic landform in the United States. The fold is a monocline – a formation that dips steeply at first and then changes to a gentle slope. The crest of the fold rises about 2,000 feet above the surrounding area, with stream-carved gorges cutting through the fold in
a few places. These gorges have walls hundreds of feet high and sometimes less than 50 feet apart.

Climate
The climate of Capitol Reef is typical of the arid desert. Temperature extremes are common. In the south desert, the temperature has been recorded as high as 110 degrees, while at park headquarters it may get as cold as minus-10 degrees during the winter. Similarly, within a single day temperatures vary greatly. The nature of the Waterpocket Fold creates a microclimate at the base of the escarpment such that in summer, area temperatures may be 20 degrees warmer than those at higher elevations only a short distance to the west of the park. In winter, the same dip catches and holds the cold air while surrounding areas are beginning to experience spring.

Precipitation is sparse, with only about 6 to 7 inches annually. Snowfall contributes to the precipitation, sometimes leaving as much as 6 feet in the highest reaches of the park.

Water
The surface water of Capitol Reef comes from four major sources: Oak Creek, Pleasant Creek, Halls Creek, and the Fremont River. Other sources of water include Sulphur Creek, Spring Canyon, Polk Creek, and Camper Spring.

An unusual source of water are those very waterpockets that gave the geologic fold its name. These depressions in the rocks on the tableland of the park catch and hold rain and melting snow and may at times contain thousands of gallons of water.

Vegetation
Microclimates created by various elevations and by the fold itself make it possible to have several different types of vegetation within the park boundaries. In the desert area, cactuses and Fremont barberry predominate. In higher elevations, pinyon pines and junipers have created a pygmy forest. Along streams and washes, the Fremont cottonwoods, willows, tamarisks, grasses, and birches form a bright green path through the usually stark environment. Springtime adds its color, with the blossoms of the vetches, locos, blue lupine, firecracker, low and Palmer penstemon. Above the ledges of the fold and in the upper canyons, Douglas-fir and ponderosa pine occur individually and in small groves. Squawbush, bitterbrush, rabbitbrush, and buffaloberry are common throughout much of the park.
Wildlife

Wildlife of the Capitol Reef area is meager, mostly nocturnal animals. There is a variety of reptiles, mammals, birds, and insects.

Within the park, deer, rabbits, foxes, bobcats, porcupines, and several species of rodents make up the major mammal population. There are a few cougars, ringtailed cats, and a rare coyote. Several species of reptiles are also found; the only two poisonous varieties are the Great Basin and the faded midget rattlesnakes, which are not common and are rarely seen.

There are over 100 varieties of birds, including the usual desert ground birds; birds of prey such as golden eagles, hawks, and owls; and a fairly large number of waterfowl. Serving as a migration route for bluebirds, the park sometimes hosts hundreds of them at a time.

THE INDIANS

Pre-Columbian Indians of the Fremont culture lived here in open caves and built stone structures for corn storage. They raised corn on the flat ground near the streams. Smooth cliff walls are marked with many petroglyphs of unusual size and style—enduring figures pecked into the stone many centuries ago.

Archeological work in Capitol Reef National Park has not been extensive. In the early 1900's, four French archeologists performed some studies within the area, but the results of their work are not recorded in National Park Service files. Later, in 1931, Noell Morss of the Peabody Museum, Harvard University, carried out studies within the area. On the basis of this work, Morss formulated the initial definition of the Fremont culture—a prehistoric entity that figures prominently in the archeology of Capitol Reef. Later studies by Gunnerson (1957) and Lister (1958) added sites to the archeological inventory of the area. In 1963, the University of Utah carried out an archeological survey of the area under a contract agreement with the National Park Service. This work, though not exhaustive, is the nearest thing to an intensive examination of the area's archeological resources. In this survey, 54 sites were visited on the Fremont River, Sulphur Creek, and Pleasant Creek. An attempt was made to examine lands on the higher mesas, but because of the difficulty of access, this
examination was spotty. Survey of the area, therefore, is far from complete, and surveys of the new additions to the area remain to be carried out.

In the work completed to date, five kinds of sites have been described:

*Open Habitation Areas* are small tracts on stream terraces, often at the bases of cliffs, exhibiting chipped-stone tools, pottery, ashes, rock circles, and grindingstones, or any combination of such features.

*Chipping Stations* are sites where stone tools and flint debris resulted from stone-tool manufacture.

*Rock Shelters* are indentations in cliff faces, or overhangs near the bases of cliffs, containing the remains of human occupation.

*Petroglyphs* are drawings pecked, incised, or rubbed into cliff faces, preponderantly of the Fremont culture art style. They depict humans and animals—the latter representative of several species, but for the most part mountain sheep.

*Storage Sites* are small rooms or bins set in cliff ledges, made of sandstone slabs, mud mortar, and basalt boulders. Others are slab-lined cists in rock-shelter floors.

Evidence from several studies indicates that the area was occupied prehistorically, particularly between A.D. 800 and 1100. The people appear to have been horticultural. Population seems to have been light, and it has been suggested that occupation of the area was intermittent or seasonal. Materials collected from the sites, as well as the petroglyphs, overwhelmingly suggest that the occupation was by people of the Fremont culture. Evidence for later occupations is scant, consisting only of one petroglyph of horses and bison, and a campsite where sherds, attributed to the historic Paiute, were found.

**HISTORY**

Capitol Reef has a long history of adventurers and pioneers, but it is still primitive, with some areas of the park not yet surveyed. Although
early history is sketchy, the first European known to have seen Capitol Reef was Colonel John C. Fremont in 1853.

John Wesley Powell, in 1875, gave the Fremont River its name. Professor A. H. Thompson, a geographer with Powell, made the first geographic and geologic reconnaissance of the area. He is responsible for many of the names still in use.

But it was not until Neils Johnson located a homestead near the junction of the Fremont River and Sulphur Creek that men other than Indians lived there. Since then, little has happened in the Capitol Reef area. Cutler Behunin pioneered a route through Capitol Gorge in 1884. Butch Cassidy led his Wild Bunch through a network of trails across the area from Brown’s Hole to Robber’s Roost.

Capitol Reef did not become a tourist attraction until the late 1930’s, but even then only the most hardy and adventurous sightseers wandered into the area. The area drew attention in the 1950’s when uranium was discovered. With construction of the first paved road in 1962, large numbers of tourists began to discover the park’s wonders.

STATUS OF OTHER NEARBY WILDERNESS

National Forest units of the National Wilderness Preservation System have been established in: La Jarita, Maroon Bells-Snowmass, Mount Zirkel, Rawah, and West Elk in Colorado; Gila, Pecos, San Pedro Parks, Wheeler Peak, and White Mountain in New Mexico; and Mount Baldy, Chiricahua, Galiaro, Mazatzal, Sierra Ancha, and Superstition in Arizona. Wilderness recommendations have been sent to Congress for Flat Tops in Colorado, Pine Mountain and Sycamore Canyon in Arizona, and the High Uintas in Utah. Forest units being studied include Eagle Nest and Weminuche in Colorado, Aldo Leopold in New Mexico, and Blue Range in Arizona.

Petrified Forest National Park Wilderness area in Arizona is nearby. Wilderness recommendations in several other parks have been sent to Congress: Bryce Canyon National Park and Cedar Breaks National Monument in Utah; Mesa Verde National Park, Great Sand Dunes, and Black Canyon of the Gunnison National Monuments in Colorado; Carlsbad Caverns National Park and Bandelier National Monument in New Mexico; and Chiricahua National Monument and the Grand Canyon complex in Arizona.
Eight roadless areas exceeding the wilderness-act minimum requirement of 5,000 acres exist in Capitol Reef National Park, as shown on the accompanying map. These range in size from 8,400 to 74,700 acres.

Area E, 74,700 acres, north of Utah State Highway 24, contains some of the most spectacular rugged desert wilderness found anywhere. Here are many dome-like rock formations; deep, twisting Chimney Rock Canyon; and South Desert. The 14,600-acre area H contains the Hartnet, a high plateau overlooking the South Desert to the south and Cathedral Valley to the north. Area F includes some impressive cathedral formations in its 9,000 acres; most of the rest of the cathedral formations are present in 8,400-acre area G.

South of Utah State Highway 24 are four other roadless areas. To the west of the Scenic Drive is area D, of 15,600 acres, with a portion of the Fremont River, Sulphur Creek, Pleasant Creek, and Miners Mountain. Area C, 37,100 acres in size, extends from Utah 24 south to Oak Creek. Found here are such scenic standouts as Ferns Nipple and the Golden Throne. Further south lies 30,500-acre area B, which extends from Oak Creek to Burr Trail. Scenic Red Canyon and portions of the Circle Cliffs and Muley Twist Canyon are here. Area A, 31,300 acres, lies to the south of area B. It begins south of Burr Trail and extends to the south boundary. Contained are the Red Slide and some of the Circle Cliffs, Muley Twist Canyon, and Halls Creek.
Within these eight areas are the park’s major features and a varied range of environments with great scenic appeal. Several factors affect the designation of portions of the roadless areas as wilderness. These have been analyzed for their impact on the resources of Capitol Reef and taken into account in developing the preliminary wilderness proposal.

NON-FEDERAL LAND

Scattered widely throughout the park are 21,410 acres of State land and 1,702 acres of private land. One section near the north boundary is subject to a grazing permit with life-tenure provisions. Long-range objectives call for the eventual Federal acquisition of all the State and private land.

MINING

There are three areas with leases for oil and gas in the park’s southern section below Oak Creek. Mining is an unacceptable use in a national park wilderness. These leases will all have expired before 1981.

Within the park are over 11,000 mining claims. Validity examinations by the Bureau of Land Management will continue to be made as funds are appropriated.

Three widely scattered areas on Federal land are being mined: Rainy Day mines near Muley Twist Canyon, North Coleman Canyon, and Jones Bench. The validity of these is being reviewed.

GRAZING LEASES

The act of Congress providing for the establishment of the park authorized the continuation of domestic-livestock grazing during the period of every lease and for one period of renewal thereafter. All grazing will cease by 1992 except on privately owned acreage. Grazing lands proposed for wilderness are those where no mechanized equipment is used, and where developments such as stock ponds, corrals, and fencing, are sufficiently inconspicuous so the imprint of man’s work is substantially unnoticeable. Roundups in wilderness areas are to be made using horses; vehicles may be used on existing roads elsewhere. Stock driveways are included in wilderness where no mechanical means are used.
WATER RIGHTS

There are no outstanding alien water rights in the park. Water is diverted upstream outside the park’s boundary in Deep, Polk, and Lake Creeks. This has created an adverse ecological impact on the northernmost portion of Waterpocket Fold, and the northwestern section of South Desert and Cathedral Valley. Grazing leases allow for stock watering at all open water within the area covered.

ROADS

Within Capitol Reef National Park, many roads were established for grazing and mining purposes. Some of these have been utilized for park purposes, and some new roads have been constructed to complete the circulation system as shown in the master plan. No existing roads that are to remain or routes of proposed roads are included in the proposed wilderness. However, a number of old roads not needed for park use are included. There are also many vehicle tracks associated with mining or seismic exploration during the uranium boom of the 50’s. While too numerous to show on maps, they also lie within the proposed wilderness. All of these are to be obliterated and the land restored to as natural an appearance as possible.

UTILITIES

An overhead powerline bisects the park along Utah 24, and a telephone line parallels the Fremont River from park headquarters through the west boundary. Another overhead powerline penetrates from the west along Pleasant Creek to the Sleeping Rainbow Guest Ranch inholding. All of these areas are excluded from the wilderness proposal. Also excluded is a corridor along Oak Creek, south of Utah 24, which may be needed for a future utility crossing. The establishing act of Congress in 1972 made provision for such a utility right-of-way.

MINOR IMPROVEMENTS

Scattered throughout the park are minor physical improvements such as fencing, corrals, line shacks, water troughs, stock ponds, irrigation canals, cabins, mines, oil- and gas-well sites, and farm equipment. Some of these are outside the proposed wilderness; those within are inconspicuous.
Preliminary Wilderness Proposal

Nine units of wilderness totaling 181,230 acres, as shown on the plan, are proposed for designation as wilderness in Capitol Reef National Park.

Contained within these units, which include 75 percent of the park, are representative portions of all its physiographic types.

Summary

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<th>Roadless Unit</th>
<th>Potential Wilderness</th>
<th>Wilderness Unit</th>
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Total 221,200 acres 181,230 acres 15,470 acres

Unit 1

This proposed 5,230-acre wilderness area includes Halls Creek Gorge and a portion of Halls Creek. It is about 7 miles long, with a width varying from ½ to 1½ miles. It is bounded on the north by a State inholding and elsewhere by the park boundary. Potential wilderness additions of 700 acres are two State school parcels.

There are more sources of water here than anywhere else in the park, due to the many drainages, which flow into its lowest portion, at 3,900-foot elevation. Cut into the beautiful white-to-yellow Navajo Sandstone are many intimate side canyons, through which small
intermittent streams flow — a welcome resource in this arid land. Halls Creek Gorge offers a spectacular example. These canyons are ideal for backcountry hiking, even on the hottest day, when the cold water and cool shade provide welcome relief. Halls Creek acquires more water as it flows southward, resulting in more willow and cottonwood trees.

A 7-mile segment of a dirt road that crosses and recrosses Halls Creek will be obliterated.

UNIT 2

This proposed 28,750-acre wilderness area includes another portion of Halls Creek, plus Red Slide, Muley Tanks, Brimhall’s Double Arch, much of Muley Twist Canyon, Wagon Box Mesa, and Grand Gulch. This unit is about 13 miles long, with a width varying from 2½ to 6½ miles. It is bounded on the north by Burr Trail and another graded road that parallels Halls Creek by the Post; on the east, and most of the west by the park boundary; and on the south by a State section and the park boundary. Potential wilderness additions of 3,880 acres consist of seven State school parcels, two oil and gas lease areas, and the Rainy Day Mines and access road.

This unit is the most outstanding of all for wilderness designation, and also the one most fragile and susceptible to damage by outside influences because of its narrowness.

An 11-mile segment of a dirt road that crosses and recrosses Halls Creek will be obliterated.

Near the southern end of this area is the Red Slide, a large, ancient mudflow that slid into the Grand Gulch. Pedestals of red material 3 to 4 feet in diameter rise up from the ground, in some instances as high as 20 feet. These are capped with harder material — slabs of Dakota Sandstone — whose yellowish color contrasts picturesquely with the red pedestals. The Red Slide itself contrasts with the yellow Navajo Sandstone underneath.

Near the north is the mouth of Muley Twist Canyon, which has been cut deeply into the rocks for 20 tortuous, twisting miles. Twelve miles are in this unit. This is excellent hiking country. A rainbow of rock colors can be seen within its walls — white, red, purple, green, gray, brown, and finally yellow where it has cut through solid Navajo Sandstone on the way to its mouth in Grand Gulch.
The highest part of unit 2 is Wagon Box Mesa, over 7,000 feet above sea level. Here are the park’s most extensive exposures of the pale red and greenish Chinle formation capping the north portion of the mesa, and the light gray to yellow Shinarump capping the south portion. Below both are large exposures of the ripple-marked red sandstone of the Moenkopi formation.

UNIT 3

Wilderness unit 3 includes 28,110 acres; it is bordered by the Burr Trail on the south, a road along most of the eastern and northern sides, and the park boundary on the west. It is almost 18 miles from north to south, and varies from 1.7 to 4 miles in width. Potential wilderness additions of 4,470 acres consist of six State parcels, an oil- and gas-lease area, and much of the North Coleman Canyon, where there is mining activity.

This unit, like unit 2, is ideally suited for wilderness backcountry use, although it is drier. Oak Creek is the only year-round water source. Several side canyons invite exploration, as do the 5 miles of Muley Twist Canyon. Most of Oyster Shell Reef, a long hogback ridge, is in this unit. Large exposures of the white-to-reddish-brown Kayenta formation are included and surround scenic Red Canyon. Eventually, bighorn sheep will be reintroduced, with the hope this magnificent animal can become reestablished in its former range.

UNIT 4

In the southeastern portion of the park, adjacent to Tarantula and Swap Mesas, is 6,050-acre unit 4. It is long and narrow — 13 miles long by ½ to 1½ miles wide — and flanked by the park boundary on the east and an improved gravel road along its other sides. Potential wilderness additions of 700 acres consist of two State parcels.

This unit parallels the flat plateau land along a portion of the park’s eastern boundary. Steep cliffs drop off along exposures of the colorful bluish-grey, black, white, light yellow, and brown Mancos Shale down into the Grand Gulch. The southern end of the yellowish Oyster Shell Reef is here. The cliffs complement the more colorful and less steep Waterpocket Fold country to the west.
UNIT 5

This unit of 35,010 acres is bounded by the Oak Creek road to the south, the park boundary on the east, Utah 24 to the north, and by minor roads on the west. Potential wilderness additions consist of 320 acres of State land and a portion of a private inholding. The unit is approximately 14 miles long and varies from nearly 3 to 6 miles in width.

Pleasant Creek forms a narrow band of greenery, made possible by a constant flow of crystal-clear water, contrasting appealingly with the colorful barren rock canyon through which it passes. Two other spectacular canyons are the Capitol and Grand Washes.

This land is an artist’s palette of color. Along the eastern face of the Waterpocket Fold, huge half-round dishes of reddish rock lie against the contrasting yellow-to-white Navajo Sandstone. Along the western face, the many shades of reds and browns of the Kayenta and Wingate formations accent the light colored Navajo Sandstone above. Many rounded, dome-like formations top this portion of the Waterpocket Fold. The most prominent are Ferns Nipple and the Golden Throne.

This unit is readily accessible by road. Innumerable views are possible from Utah 24 and the Scenic Drive. A system of trails makes it accessible to the hiker.

UNIT 6

West of the Scenic Drive is a 7,650-acre wilderness unit that includes over 3 miles of the Fremont River and its canyon. The river here has cut down into the oldest rock in Capitol Reef, the light yellow Coconino Sandstone. It is over 250 million years old, and is found in only a few other places in the park. A portion of Miners Mountain, with colors of reds and browns, make up most of the unit.

About 8 miles from northwest to southeast, ½ mile to 3 miles wide, this unit is bounded on the north by an overhead telephone line, on the west by the park boundary, the south by an overhead powerline along Pleasant Creek, and on the east by the Scenic Drive and a minor road. Potential wilderness additions of 640 acres consist of a State school parcel and part of a private inholding.
UNIT 7

This unit of 2,240 acres contains outstanding deposits of the reddish-brown ripple-marked Moenkopi Sandstone, and a portion of Sulphur Creek, with its scenic goosenecks. Exposed by Sulphur Creek are the oldest rocks in the park. Light yellow Coconino Sandstone lines the creek bottoms, with whitish Kaibab Limestone above, topped with the reddish-brown Moenkopi Sandstone on the top.

The park boundary is on the west, an overhead telephone line is on the south, the north rim of Sulphur Creek is on the north, and section lines bound this unit on the east.

UNIT 8

This, the largest proposed wilderness unit in Capitol Reef, comprises 64,290 acres of perhaps the most ruggedly beautiful and remote rockscapes in America. It is here the Waterpocket Fold begins. The unit is bounded by Utah 24 on the south, the park boundary on the west, the steep escarpment of the Hartnet on the north, and Deep Creek on the east. It stretches 8 miles north to south and averages the same distance east to west. Potential wilderness additions consist of eight parcels of State land and part of a private inholding — a total of 4,240 acres. Many intermittent streams have cut deep, twisting canyons through an infinite variety of colored rocks — yellows, oranges, buffs, reds, browns, tans, whites, blacks, greys, and greens. Chimney, Water, and Deep Creek Canyons are prime examples. The interior of this maze of twisting, intersecting canyons has a remote wilderness quality. Here is ideal hiking country for both the experienced backpacker and the novice who wants a shorter stay. Water is extremely scarce, however, and must be carried.

The South Desert, a portion of which lies in unit 8, is a long, barren trough that parallels the Waterpocket Fold to the east. The colors are predominantly light shades, in contrast to the bentonite hills on the east and the reds and browns to the west. Found here is the park’s most extensive evidence of ancient volcanic activity — dikes, sills, and plugs — once-molten rock that was forced into cracks and fissures. Also erratics — black, rounded basalt boulders — are present in large numbers. Once part of lava flows to the west, these boulders were moved eastward by glacier melting-waters. Long-range plans call for the restoration of pronghorn antelope in the South Desert area.
Paradise Flats, in the far western portion, contain petroglyphs, associated with ancient Indian habitation.

UNIT 9

Unit 9, 3,900 acres, is located along the north boundary of Capitol Reef. It is irregular in shape, consisting of rugged terrain. Potential wilderness additions of 520 acres are composed of a State parcel and Federal land subject to a grazing permit with life tenancy.

Outstanding features are the Cathedral Valley formations, so named because of sandstone monoliths. These formations, extending over 500 feet above their flat grassland surroundings, are of a reddish-brown color, with many capped by a harder, contrasting greenish-grey sandstone. Among these are the most spectacular examples in the park of volcanic activity—dikes, sills, and plugs. The dark dikes are especially impressive; they appear to march through and over the landscape.

POTENTIAL WILDERNESS ADDITIONS

Certain areas classified in the master plan for management in a primitive condition do not now qualify as wilderness because of conflicting uses or interests. These are proposed as potential wilderness additions for inclusion at such time as they qualify and become available Federal lands.

Most of the non-Federal lands with mining leases and active mining are proposed as potential wilderness additions. A special provision is recommended in the legislation establishing wilderness at Capitol Reef to give the Secretary of the Interior authority to designate these as wilderness when he determines they qualify. These lands total 15,470 acres.
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**ACREAGE**

- **GROSS PARK ACREAGE**: 241,671
- **FEDERAL LANDS**: 218,559
- **NON-FEDERAL LANDS**: 23,112
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<td>64,290</td>
</tr>
<tr>
<td></td>
<td>9</td>
<td>8,400</td>
<td>3,800</td>
</tr>
<tr>
<td></td>
<td>H</td>
<td>14,600</td>
<td>NONE</td>
</tr>
</tbody>
</table>

TOTAL

221,200 181,230 15,470

LEGEND

- PARK BOUNDARY
- MAJOR ROAD
- MINOR ROAD
* STOCK TANK
X X FENCE
□ CORRAL
Power LINE

NOTE: ALL ROADS SHOWN WITHIN WILDERNESS ARE TO BE OBLITERATED.
DISCUSSION

It has long been the practice of the National Park Service to prepare and maintain a Master Plan to guide the use, development, interpretation, and preservation of each particular park. Graphics and narrative specify the objectives of management. In a sense, these Master Plans are zoning plans. They not only define the areas for developments, they also define the areas in which no developments are to be permitted.

Parks do not exist in a vacuum. It is important in planning for a park that the teams take into account the total environment in which the park exists. Of particular significance are the plans for and the availability of other park and recreation facilities within the region at the Federal, State, and local levels, as well as those of the private sector for the accommodation of visitors, access to the national parks, the roads within them, wildlife habitat, etc. Accordingly, the Master Plan Team first analyzes the entire region in which the park is located and the many factors that influence its management.

Moreover, where national parks and national forests adjoin, such as Mount Rainier, Yellowstone, and Grand Teton National Parks, the National Park Service and the U.S. Forest Service formalized, in 1963, a joint effort to analyze the resources and visitor needs and develop cooperative plans for the accommodation of these requirements which will best insure the achievement of both of our missions. This program formalizes and broadens the informal efforts made for many years by many park superintendents and forest supervisors to coordinate management programs, including visitor facilities and services. Such cooperative programs are authorized by section 2 of the act of August 25, 1916, establishing the National Park Service.
ADMINISTRATIVE POLICIES

Master Plan
A Master Plan will be prepared for each area to cover specifically all Resource Management, Resource Use, and Physical Development programs. An approved Master Plan is required before any development program may be executed in an area.

Master Plan Teams
All Master Plan Teams should be composed of members having different professional backgrounds, such as ecology, landscape architecture, architecture, natural history, park planning, resource management, engineering, archeology, and history. Where available funds and program needs permit, the study teams for the national parks should include outstanding conservationists, scientists, and others who possess special knowledge of individual parks. Also, the teams should consult with authorized concessioners during the Master Plan study.

Land Classification
A sound system of evaluation and classification for lands and waters in a park or monument is a prerequisite for master planning. This is necessary to provide proper recognition and protection of park resources and to plan for visitor enjoyment of the values of the area. The system serves, also, as a basis for recommending lands for “wilderness” classification in accordance with the Wilderness Act and provides a basis for making many other Master Plan judgments.

The land classification system to be used is similar to that proposed by the Outdoor Recreation Resources Review Commission and prescribed for application to Federal lands by the Bureau of Outdoor Recreation. Under this system, lands may be segregated into any one of six classes:

- Class I—high density recreation areas;
- Class II—general outdoor recreation areas;
- Class III—natural environment areas;
- Class IV—outstanding natural areas;
- Class V—primitive areas, including, but not limited to, those recommended for designation under the Wilderness Act;
- Class VI—historic and cultural areas.

Consistent with the Congressionally stated purpose of national parks, a park contains lands falling into three or more of these classes.
Classes I and II identify the lands reserved for visitor accommodations (both existing and proposed), for administrative facilities, formal campgrounds, two-way roads, etc., of varying intensities. Class I and II lands occupy relatively little space in any of the national parks.

Class III identifies the “natural environment areas.” As the name of the category implies, these are “natural environment” lands. These lands are important to the proper preservation, interpretation, and management of the irreplaceable resources of the National Park System. These irreplaceable resources are identified in Class IV, V, and VI categories of lands. It is the existence of unique features (Class IV), or primitive lands, including wilderness (Class V), or historical or cultural lands (Class VI) in combination with a suitable environment (Class III) and with sufficient lands “for the accommodation of visitors” (Classes I and II) that distinguish natural and historical areas of the National Park System from other public lands providing outdoor recreation.

In the natural areas (national parks and national monuments of scientific significance), Class III lands often provide the “transition” or “setting” or “environment” or “buffer” between intensively developed portions of the park or monument (Classes I and II) AND (a) the primitive or wilderness (Class V) areas; and (b) the unique natural features (Class IV) or areas of historic or cultural significance (Class VI) when these two categories exist outside of the Class V lands.

In the historical areas (the administrative policies for which are included in a separate booklet), the “environmental” lands (Class III) serve a similar role in providing the “setting” or “atmosphere” essential to preserving and presenting the national significance of historic properties included in the National Park System.

Often, Classes III and V lands both represent significant natural values. Generally, these values are different in type, quality, or degree. Accordingly, lands having natural values that do not meet Service criteria for primitive or wilderness designation may be classified as Class III even when they do not involve the environment of either Class IV, Class V, or Class VI lands. In natural areas, “natural environment” lands are sometimes referred to additionally as “wilderness threshold” when they abut or surround wilderness.

The “wilderness threshold” lands afford the newcomer an opportunity to explore the mood and the temper of the wild country before
venturing into the wilderness beyond. Here, in the wilderness threshold, is an unequalled opportunity for interpretation of the meaning of wilderness.

Class III lands also serve important research needs of the Service, as well as of many independent researchers and institutions of higher learning.

The only facilities planned in these "natural environment" lands are the minimum required for public enjoyment, health, safety, preservation, and protection of the features, such as one-way motor nature trails, small visitor overlooks, informal picnic sites, short nature walks, and wilderness-type uses. Such limited facilities must be in complete harmony with the natural environment.

Class IV lands are those which contain unique natural features. These lands usually represent the most fragile and most precious values of a natural area. Class IV identifies the terrain and objects of scenic splendor, natural wonder, or scientific importance that are the heart of the park. These are the lands which must have the highest order of protection so that they will remain "unimpaired for the enjoyment of future generations." Nothing in the way of human use should be permitted on Class IV lands that intrude upon or may in any way damage or alter the scene. The sites and features are irreplaceable. They may range in size from large areas within the Grand Canyon to small sites such as Old Faithful Geyser or a sequoia grove.

Class V are the primitive lands that have remained pristine and undisturbed as a part of our natural inheritance. They include in some instances, moreover, lands which, through National Park Service management, have been restored by the healing processes of nature to a primeval state. There are no mining, domestic stock grazing, water impoundments, or other intrusions of man to mar their character and detract from the solitude and quiet of the natural scene. The protection and maintenance of natural conditions and a wilderness atmosphere are paramount management objectives. The only facilities allowed in these lands are of the type mentioned in the Wilderness Use and Management Policy statement.

Class VI are the lands, including historic structures, of historical or cultural significance, such as the agricultural community of Cades Cove in Great Smoky Mountains National Park.
Wilderness Hearings
One of the finest new public land planning procedures introduced by the Wilderness Act is the opportunity for the public to express its views on the preliminary wilderness proposals prior to these proposals being firmly established for recommendations to the Congress. These hearings are held in the State in which the wilderness is proposed.

Notice of such public hearings is published in the Federal Register and newspapers having general circulation in the area of the park at least 60* days prior to the hearings. During this 60*-day period, the Master Plan documents are available for public review at the park, in the appropriate Regional Office, and in the Washington Office. Moreover, public information packets explaining national park wilderness proposals are available at the same time for distribution to all those requesting them.

The Wilderness Act requires that the public hearing be held on the wilderness proposals only. However, it is the practice of the National Park Service to make available the general development plan for the park or monument at the time the preliminary wilderness proposal is released. The Service welcomes public comments and views on these plans. Moreover, once the Congress has defined the wilderness areas within the national parks and monuments, it shall be the practice of the National Park Service to give public notice of 60 days on any proposal to change the classification of any Class I, Class II, or Class III lands within the park or monument. In this way, the Service shall afford the public a continuing opportunity to participate in the planning and management of its national parks and monuments.

* Now 30 days. On August 10, 1972, the Department of the Interior published a notice in the Federal Register reducing the minimum period for public notice of wilderness hearings from 60 days to 30 days, bringing the administrative procedures for wilderness hearings in line with all the departmental procedures for public hearings and publication of notices in the Federal Register. In all instances, when practicable, the National Park Service intends to give more than the minimum 30-day notice. In addition to this advance notice of wilderness public hearings, the hearing record will remain open for 30 days after the hearing date to receive written comments from interested persons or public officials.
DISCUSSION

From the time that Yellowstone National Park was established in 1872, wilderness preservation has undergirded the management of our National Park System. Thus, the national park movement has been a focal point and fountainhead for an evolving wilderness philosophy within our country for almost a century.

It is a fundamental tenet of national park policy, moreover, that where other uses have impaired wilderness values, the national parks and monuments are managed to restore the wilderness character of these areas by the removal of adverse uses.
For example, about 70 years ago, the famous wilderness of Sequoia National Park was perilously close to permanent destruction. So thoroughly had sheep done their work that the once-lush alpine meadows and grasslands were dusty flats. Eroded gullies were everywhere. Much of the climax vegetation was gone, and the High Sierra was virtually impassable to stock parties due to scarcity of feed. In 1893, the Acting Superintendent of Sequoia National Park recommended that cavalry be replaced by infantry: no natural forage was available for horses!

Today, under National Park Service management, Sequoia National Park contains wilderness comparable to any other national park. And in spite of increasing public use, these areas are in a less damaged condition now than they were more than 70 years ago.

To become a unit of the National Wilderness Preservation System, each national park or monument wilderness must be so designated by the Congress. For this to be done, each proposed wilderness unit must be clearly identified so that its boundaries may be legally described in the legislation. Thus, the Wilderness Act requires that the Service, hereafter, clearly identify and appropriately describe the boundaries of those lands that are to be recommended to the Congress for wilderness designation, rather than following past Service practice of referring to all undeveloped lands in a park as “wilderness” or “backcountry.” Importantly, however, the Wilderness Act of 1964 does not establish any new standard or criteria for national park wilderness use and management to replace the old and time-tested concepts enunciated by the Congress for the natural areas of the National Park System and implanted by the Service. For example, the Wilderness Act specifically provides that:

“Nothing in this Act shall modify the statutory authority under which units of the National Park System are created.”

The Wilderness Act of 1964 recognizes, moreover, that all lands which may be included in the National Wilderness Preservation System are not to be managed alike. For example, the Wilderness Act provides for certain multiple uses in wilderness areas of the national forests designated by the act, such as existing grazing; mineral prospecting until 1984, and mining (with authority to construct transmission lines, waterlines, telephone lines, and to utilize timber for such activities);
and water conservation and power projects as authorized by the President.

No such lowering of park values is contemplated by the Wilderness Act for national park wilderness, since that act provides, in part, that:

"... the designation of any area of any park ... as a wilderness area pursuant to this Act shall in no manner lower the standards evolved for the use and preservation of such park ... in accordance with the Act of August 25, 1916, [and] the statutory authority under which the area was created ..."

Moreover, the status of those national parklands not included by the Congress in the National Wilderness Preservation System remains unique, pursuant to previously existing National Park Service legislation, for the Wilderness Act does not contemplate the lowering of park values of these remaining parklands not designated legislatively as "wilderness," nor does the management of such lands compete with any other resource use.

Of course, when Congress designates wilderness areas within the national parks and monuments for inclusion in the National Wilderness Preservation System, it may prescribe such standards and criteria for their use and management as it deems advisable.

MANAGEMENT FACILITIES, PRACTICES, AND USES

Only those structures, administrative practices, and uses necessary for management and preservation of the wilderness qualities of an area will be permitted. These may include, but need not be limited to, patrol cabins and limited facilities associated with saddle- and pack-stock control.

FIRE CONTROL

Wildfire will be controlled as necessary to prevent unacceptable loss of wilderness values, loss of life, damage to property, and the spread of wildfire to lands outside the wilderness. Use of fire lookout towers, fire roads, tool caches, aircraft, motorboats, and motorized firefighting equipment will be permitted for such control.
RESCUE AND OTHER EMERGENCY OPERATIONS

In emergency situations involving the health and safety of persons and to meet recognized management needs, use of aircraft, motorboats, and other motorized or mechanical equipment will be permitted.

REGULATION OF EXCESS WILDLIFE POPULATION

Population control through natural predation will be encouraged. Trapping and transplanting of excess animals will be practiced by park personnel as necessary. If these methods prove insufficient, direct reduction by park personnel will be instituted.

NON-NATIVE PLANTS AND ANIMALS

Non-native species of plants and animals will be eliminated where it is possible to do so by approved methods which will preserve wilderness qualities.

RESEARCH

The Service, recognizing the scientific value of wilderness areas as natural outdoor laboratories, will encourage those kinds of research and data-gathering which require such areas for their accomplishment. The Service may establish reasonable limitations to control the size of the area which may be used for varying types of research projects within national park wilderness; projects exceeding these limitations will be subject to approval by the Director.

FISHING

Fishing is an appropriate use and will be permitted under applicable rules and regulations.

VISITOR-USE STRUCTURES AND FACILITIES

Primitive trails for foot and horse travel are acceptable. Narrow trails, as well as footbridges and horsebridges, which blend into the landscape
will be allowed in wilderness areas, where they are essential to visitor safety. Stock-holding corrals or discreetly placed drift fences will be permissible if needed to protect wilderness values. No improvements will be permitted that are primarily for the comfort and convenience of visitors, such as developed campgrounds and picnic facilities. However, trailside shelters may be permitted where they are needed for the protection of wilderness values.

BOATING

Boating, except with motorboats and airboats, is an acceptable use of park wilderness.

COMMERCIAL SERVICES

Saddle- and pack-stock and guided boat trips in water areas are acceptable uses, but the number, nature, and extent of these services will be carefully controlled through regulations and permits so as to protect the wilderness values.

MINING AND PROSPECTING

Mining and prospecting will not be permitted in national park wilderness. Where these activities are expressly authorized by statute, the area in question will be recommended for wilderness only with provisos that such activities be discontinued and the authorization be revoked. Actively operated claims, based on valid existing rights, will be excluded from the proposed wilderness. It will be the policy to phase out existing active mining claims and acquire the lands involved. When this is accomplished, such lands will be proposed for designation as wilderness if they otherwise meet the criteria for such areas.

INHOLDINGS

Unless acquisition by the United States is assured, inholdings will be excluded from the area classified as wilderness. It will be the policy to acquire such inholdings as rapidly as possible, and as they are acquired, the lands will be proposed for designation as wilderness if they otherwise meet the criteria for such areas.
WATER DEVELOPMENT PROJECTS

Water development projects, whether for improvement of navigation, flood control, irrigation, power, or other multiple purposes are not acceptable in wilderness areas. Where these activities are authorized by statute, the area in question will be recommended for wilderness only with the proviso that such authorization be discontinued.

GRAZING

Grazing is not an acceptable use in national park wilderness. Except where grazing is conducted under permits which may be expected to expire at a fixed or determinable date in advance of legislative action on a wilderness proposal, lands utilized for this purpose will not be proposed for wilderness designation. It will be the policy to phase out such operations as rapidly as possible, and as this is done, the lands will be proposed for designation as wilderness if they otherwise meet the criteria for such areas.

TIMBER HARVESTING

Timber harvesting will not be permitted in national park wilderness.

HUNTING

Public hunting will not be permitted in national park wilderness.

MOTORIZED EQUIPMENT

The use of aircraft for airdrops or for other purposes, and the use of motorized trail vehicles, generators, and similar devices will not be permitted in national park wilderness, except as otherwise provided herein to meet the needs of management.

ROADS AND UTILITIES

Public-use roads and utility line rights-of-way will not be permitted in national park wilderness.
DEPARTMENTAL GUIDELINES FOR WILDERNESS PROPOSALS

United States Department of the Interior

Office of the Secretary
Washington, D.C. 20240

June 24, 1972

Memorandum

To: Director, Bureau of Sport Fisheries and Wildlife
   Director, National Park Service

From: Assistant Secretary for Fish and Wildlife and Parks

Subject: Guidelines for Wilderness Proposals — Reference Secretarial Order No. 2920

In the course of developing wilderness proposals we should strive to give the areas under study wilderness designation but not at the expense of losing the essential management prerogatives that are necessary to fulfill the purposes for which the areas were originally intended. Although each area under study must be considered separately, with special attention given to its unique characters, the following criteria should be adhered to when determining the suitability of an area for wilderness designation.

Management

An area should not be excluded from wilderness designation solely because established or proposed management practices require the use of tools, equipment or structures, if these practices are necessary for the health and safety of wilderness travelers, or the protection of the wilderness area. The manager should use the minimum tool, equipment or structure necessary to successfully, safely and economically accomplish the objective. When establishing the minimum tool
and equipment necessary for a management need within wilderness areas economic factors should be considered the least important of the three criteria. The chosen tool or equipment should be the one that least degrades wilderness values temporarily or permanently.

For the purpose of this paragraph, accepted tools, equipment, structures and practices may include but are not limited to: fire towers, patrol cabins, pit toilets, temporary roads, spraying equipment, hand tools, fire-fighting equipment caches, fencing and controlled burning. In special or emergency cases involving the health and safety of wilderness users or the protection of wilderness values aircraft, motorboats and motorized vehicles may be used. Enclaves, buffer zones, etc., should not be established if the desired management practices are permitted under these guidelines.

Visitor Use Structures and Facilities

An area that contains man-made facilities for visitor use can be designated as wilderness if these facilities are the minimum necessary for the health and safety of the wilderness traveler or the protection of wilderness resources. An example of a wilderness campsite that could be included is one having a pit toilet and fire rings made of natural materials and tent sites. A hand-operated water pump may be allowed. This kind of campsite would not be considered a permanent installation and could be removed or relocated as management needs dictate. Facilities that exceed the “minimum necessary” criteria will be removed and the area restored to its natural state. (See section on Exceptions.)

Areas containing campsites that require, for the protection of the adjacent wilderness values, facilities more elaborate than those allowed in a wilderness campsite should be excluded from wilderness designation.

Prior Rights and Privileges and Limited Commercial Services

Lands need not be excluded from wilderness designation solely because of prior rights or privileges such as grazing and stock driveways or certain limited commercial services that are proper for realizing the recreational or other wilderness purposes of the areas.

Road and Utilities — Structures and Installations

Areas that otherwise qualify for wilderness will not be excluded because they contain unimproved roads, created by vehicles repeatedly
traveling over the same course, structures, installations or utility lines, which can and would be removed upon designation as wilderness.

Research

Areas that otherwise qualify need not be excluded from wilderness designation because the area is being used as a site for research unless that use necessitates permanent structures or facilities in addition to those needed for management purposes.

Future Development

Those areas which presently qualify for wilderness designation but will be needed at some future date for specific purposes consistent with the purpose for which the National Park or National Wildlife Refuge was originally created, and fully described in an approved conceptual plan, should not be proposed for wilderness designation if they are not consistent with the above guidelines.

Exceptions

Certain areas being studied may contain structures such as small boat docks, water guzzlers and primitive shelters that ought to be retained but may not qualify as minimum structures necessary for the health and safety of wilderness users or the protection of the wilderness values of the area. When an area under study for wilderness designation would otherwise qualify as wilderness a specific provision may be included in the proposed legislation for this area, giving the wilderness manager the option of retaining and maintaining these structures. Necessary management practices such as controlled burning shall also be mentioned specifically in the proposed legislation.

Areas being considered for wilderness designation will not be excluded solely because they contain hydrologic devices that are necessary for the monitoring of water resources outside of the wilderness area. When these devices, either mechanical or electronic, are found to be necessary, a specific provision allowing their use will be included in the legislation proposing the wilderness area being considered. For the installation, servicing and monitoring of these devices the minimum tools and equipment necessary to safely and successfully accomplish the job will be used.
Areas being studied for wilderness designation will not be excluded solely because they contain lakes created by water development projects if these lakes are maintained at a relatively stable level and the shoreline has a natural appearance. Where this occurs and there is no other reason for excluding the area, a specific provision describing the water development project and its operation will be included in the proposed legislation along with the recommendation for including it in the wilderness area. Other minimal development of water resources may be suggested for inclusion in wilderness if specific reference is made to them in the proposed legislation. These provisions will allow present maintenance practices to continue.

Areas that contain underground utilities such as gas pipelines and transmission lines will not be excluded from wilderness designation solely for this reason. Where this occurs the areas may be included by making specific mention of them in the proposed legislation indicating that this use would continue and previously established maintenance practices would be allowed to continue.

When non-qualifying lands are surrounded by or adjacent to an area proposed for wilderness designation and such lands will within a determinable time qualify and be available Federal land, a special provision should be included in the legislative proposal giving the Secretary of the Interior the authority to designate such lands as wilderness at such time he determines it qualifies.

Nathaniel P. Reed
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