MOUNT RAINIER

NATIONAL PARK

Washington

The National Park System, of which Mount Rainier National Park is a unit, is dedicated to the conservation of America's scenic, scientific, and historic heritage for the benefit and enjoyment of the people.

Historic Events

1792 Capt. George Vancouver, of the Royal British Navy, first white man to record sight of "The Mountain," named it Mount Rainier in honor of his friend, Admiral Peter Rainier.

1833 Dr. William Fraser Tolmie entered northwest corner of what is now the park. First white man to penetrate this region.

1857 Lt. A. V. Kautz and four companions made first attempt to scale Mount Rainier but did not reach summit.

1870 Hazard Stevens and P. B. Van Trump made the first successful ascent via Gibraltar route.

1890 The first woman, Fay Fuller, reached the summit of Mount Rainier.

1899 Mount Rainier National Park established by act of Congress.

1913 United States Geological Survey established the elevation of Mount Rainier as 14,408 feet above sea level.

1915 First public travel by automobile to Paradise.

1916 National Park Service established in the United States Department of the Interior to administer the national parks and national monuments.

1931 Road completed to Sunrise, Yakima Park.

1940 East Side Highway completed.

WARNING ABOUT WILD ANIMALS

Wild animals roam this park. Some are dangerous. Watch them from a distance. Do not alarm them or attract them with food. Be alert while walking or camping —stay in your car when you see them along the highways. Regulations, which we enforce for your safety, prohibit feeding or molesting the wild animals.

MOUNT RAINIER

NATIONAL PARK

MOUNT Rainier National Park is one of the areas of the National Park System owned by the people of the United States and administered for them by the National Park Service of the Department of the Interior. In these areas the scenic features, the wildlife and flora, and the objects of historic, prehistoric, or scientific interest are preserved and displayed for public enjoyment. Twenty-eight of the areas of the National Park System are known as national parks.

While one national park differs from others in many of its scenic features, each tends to complement the others. Thus, the glaciers of Glacier National Park, Montana, Olympic National Park, Washington, and Mount McKinley National Park, Alaska, and the glacier-carved peaks and canyons of Grand Teton National Park, Wyoming, Rocky Mountain National Park, Colorado, and Yosemite National Park, California, present different aspects of the story of glaciers exemplified by the glaciers of Mount Rainier. Likewise, the hot springs and geysers of Yellowstone National Park, Wyoming-Montana-Idaho, the deep lake filling the caldera of ancient Mount Mazama in Crater Lake National Park, Oregon, the recently active volcano of Lassen Volcanic National Park, California, and the active volcanoes of Hawaii National Park, Hawaii, are a part with Mount Rainier of the story of volcanism.

Mount Rainier National Park was established by act of Congress on March 2, 1899. It contains more than 241,571 acres of Federal lands.

"The Mountain"

Mount Rainier, a towering, ice-clad volcano, is the distinctive feature of Mount Rainier National Park. Located some distance west of the Cascade Mountain crestline, the Mountain, 14,408 feet high, is the most superb landmark of the Pacific Northwest. It is made doubly impressive by the mantle of glacial ice that conceals all but the most rugged crags and ridges. In delightful contrast to this bold and forceful landscape are the flower-covered mountain meadows and deep forests encircling it. The Mountain covers approximately one-fourth of the park area.

The Origin of Mount Rainier

A long period of earth history, involving sedimentary rock formation, volcanic eruption on a grand scale, tremendous earth movements, and the sculpturing action of rivers and glaciers, is represented in Mount Rainier National Park. Long before Mount Rainier came into existence as an individual peak, tremendous volcanic flows, together with the formation of sandstones and shales of river and lake origin, built up a thickness of thousands of feet of sedimentary rock and lava in what is now the region of the Cascade Mountains. Over a long period of geologic time earth movements gradually elevated the region as a platform standing from eight to ten thousand feet or more above the sea. Simultaneously, rivers carved their channels to depths of several thousand feet, thus sculpturing the uplifted platform into a network of irregular ridges and peaks, separated by canyons and valleys.

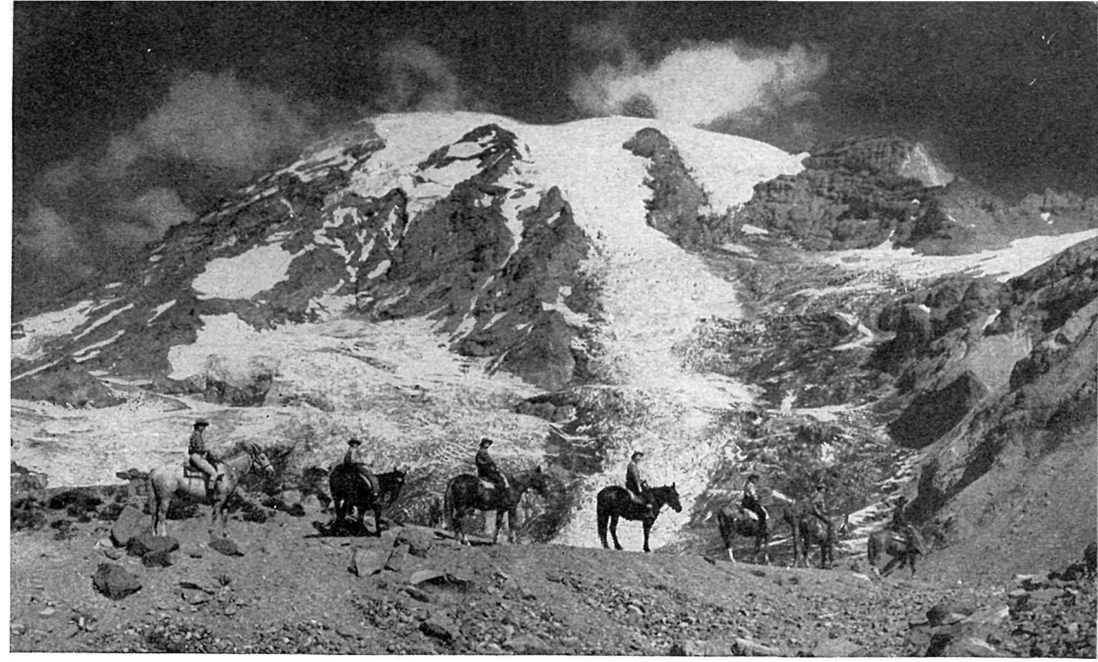
After the Cascade Mountains were uplifted and considerably dissected, local volcanoes broke forth, and resulted in the building of individual volcanic cones rising thousands of feet above the Cascade Mountains. Of these, Mount Rainier is the highest and grandest of the series which, within the United States, extends from Mount Baker in northern Washington to Lassen Peak in northern California. These volcanoes, together with others of South and Central America, Alaska, Kamchatka, Japan, Malaya, the Philippine Islands, the East Indies, and New Zealand, formed a veritable "Circle of Fire" around the Pacific Ocean in recent geologic time.

In the eruptions that built Mount Rainier, liquid lava, which cooled into widespread sheets of dark-colored, columnar andesite, predominated at first. Later, flows alternated with outbursts of volcanic ash and cinders, with fragmental material predominating in the last stages of volcanic activity. Thus, sheets of massive, dark lava form the immediate base of Mount Rainier, alternating layers of solid and fragmental lava are clearly visible in the higher ridges, and volcanic ash is abundant on the upper slopes and is deeply spread over many of the mountain parks.

The summit is approximately 1 square mile in extent. It is broad and rounded, with three separate summits rising from it—Liberty Cap to the north, elevation 14,112; Point Success to the south, elevation 14,150; and Columbia Crest to the east, elevation 14,408 feet. These three summits appear to form a part of a huge crater-like rim, broken on the west where glaciers have carved a deep gash in the flank and summit of the mountain. Columbia Crest is situated on the rim of a smaller but more perfect crater some 1,200 feet in diameter. The basin within this crater is filled with perpetual snow, but much of the year the crater rim is clearly outlined by the exposed rock. Steam vents still persist within the crater, melting the snow to form hollows and small caves. Mountaineers have found a refuge in these caves when forced to spend the night on the summit.

Glaciers

The original smooth-contoured slopes of a composite volcanic cone are not evident on Mount Rainier today,



Rainier National Park Co. photo.

Nisqually and Wilson Glaciers from the Skyline Trail above Paradise.

except from some viewpoints where the long, exposed rock ridges and cleavers, reaching from the base toward the summit, give the Mountain the symmetrical profile of a cone. The profound basins and deep canyons between such ridges and cleavers have been gouged in the Mountain by glaciers which during the past covered not only the Mountain proper, but most of the lower ranges, canyons, and mountain parks of the Cascades as well. In fact, some of the glaciers of Mount Rainier are believed to have extended into the Puget Sound area. This more extensive glaciation was so recent in geologic times that the sculpturing and molding effects on the landscape are very evident today. The broad-floored and steep-walled canyons of all the larger rivers radiating from Mount Rainier, the numerous cirques, faceted peaks, and saw-toothed ridges of the Cascades, and the many lakes and spectacular waterfalls all owe their origin to the glacial experience of the Mountain area.

The 26 active glaciers remaining on Mount Rainier, although mere remnants of their former size, still cover about 40 square miles and constitute the largest single-peak glacier system in the United States proper. Twelve are major glaciers originating either in large cirques at elevations of about 10,000 feet or from the summit ice fields. The Emmons Glacier, on the northeast side of the Mountain, and the Nisqually, on the south side, are the best known and the most easily visited. The Emmons, approximately 5 miles long, is the longest glacier in the United States proper. All of the major glaciers extend well below timber line to elevations of around 4,000 feet. Of the 14 minor glaciers, Paradise is best known and easiest to reach. In a comparatively small area, it exhibits many of the features

of mountain glaciers—melt water, moraines, polished and fluted rocks, great cirques, and the broken, crevassed expanse of blue ice. At times, beautifully colored ice caves develop where the outlet stream flows from beneath the Paradise Glacier.

Recent studies indicate that the ice of the Nisqually Glacier at mid-elevations is in continuous movement at a rate of about 25 feet per month. Such movement in all of the active glaciers thus slowly carries ice from the basins and canyons of upper elevations, where the deep winter snow pack forms the glacial ice, to lower elevations, where most melting occurs. The heaviest snowfall comes at elevations between approximately 5,000 and 10,000 feet as the summit is often above the storm clouds, both in summer and winter. The accumulated snowfall adds to the weight of the ice and is thus partly responsible for the movement of the glaciers out of their basins. In modern times the melting at the lower levels has exceeded the replenishment by downward movement. Each glacier thus is becoming shorter. The recession of the Nisqually and Emmons Glaciers has averaged about 75 feet per year for the past 20 years, while the Paradise Glacier is melting back at the rate of from 40 to 50 feet per year. Thus, each year new ground is exposed to the eyes of man for the first time in history. The slow advance of vegetation to cover the newly exposed barren rock, the formation of waterfalls where streams today plunge abruptly into canyons that were once ice-filled, the formation of small lakes—these and many other processes of landscape development are strikingly apparent over a period of years.

Brockman photo.

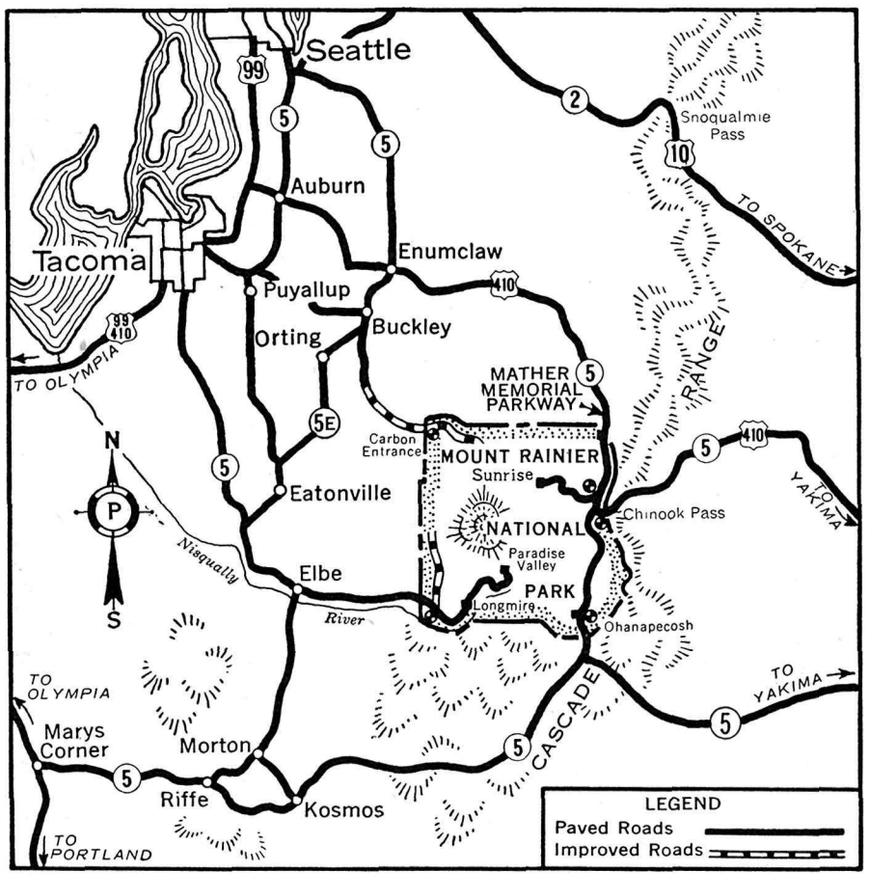
Avalanche Lily.

Flowers and Forests

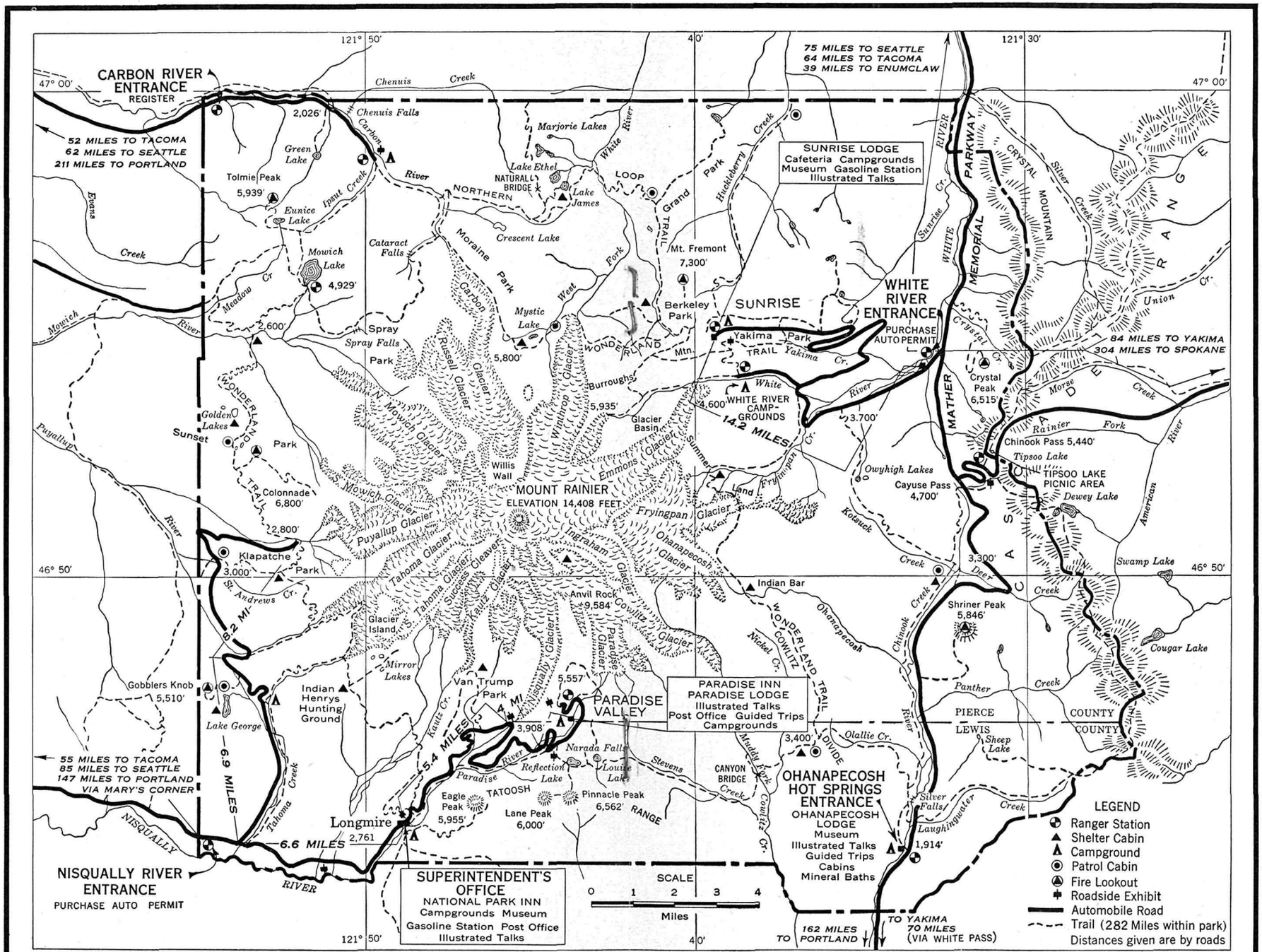
Mount Rainier National Park is justly famous for the beauty of its floral display. Probably no area excels that surrounding the Mountain in abundance of flowers or in the number of individual species. The reason lies in the variety of topography, exposure, soil, and climatic conditions especially favorable to plant growth.

The flowers of the heavily wooded lower elevations embody many features of interest, though they are not so generally known or appreciated as the flowers of the subalpine meadows, largely because the latter offer more striking effects en masse. Nevertheless, the species of the deep woods, such as the threeleaf anemone, alpine beauty, Canadian dogwood, Pacific trillium, calypso, and the springbeauty, actually outnumber those typical of the higher elevations. Many interesting plants may be seen in bloom by early May, but the flowers of the forests are most numerous in July.

In the mountain parks there are two periods when the flower fields are most striking. The first is normally in early July, depending upon the season, when the avalanche lily, western anemone, marshmarigold, and mountain buttercup take over the meadows from the rapidly receding snowbanks; the second usually occurs about a month later when the paintbrushes, lupines, speedwell or veronica, valerian, bistort or mountain dock, and many others tint these same meadows in a variety of colors. Often in late summer, where the shade of a clump of trees has retarded the melting of a snowbank, one may find groups of "early" flowers entirely surrounded by those of the later season.



Main Approach Highways to Mount Rainier National Park.



GUIDE MAP SHOWING ROADS AND TRAILS IN MOUNT RAINIER NATIONAL PARK Revised Oct. 1952 N. P RAI 7000

Habitat, quite as much as season, is reflected in the flower display. Thus the saxifrages, phlox, Alaska spirea, polemonium, and Lyall lupine are among those growing near timber line; while under the drier conditions of the hillsides, dense mats of red and white heather, or mountainheath, are most conspicuous. From the borders of red and yellow mimulus along each rivulet to the brilliant red penstemon massed on the barren rocky cliffs, and from the humble coltsfoot, first flower to appear at low elevation in May, to the last lingering gentian in September, each season and each environment provides its own special exhibit.

The effects of altitude and of habitat are reflected quite as definitely, if less conspicuously, in the forest growth. The lowland forest, penetrating the park by way of the larger river valleys, reaches to an average elevation of around 3,500 feet. Characterized by heavy density of stands and great size of individual trees, and impressive in its shaded, velvet-green beauty, the lowland forest is made up principally of Western hemlock, Douglas-fir, and Western redcedar. The Sitka spruce occurs in the vicinity of Carbon River. Grand fir may be found, and above 2,500 feet amabilis fir, noble fir, and Western white pine are encountered, although the three last-named species are more characteristic of the intermediate forest. This intermediate forest lies between the dense forests of the lower areas and the parklike subalpine meadows and contains some of the species of both. The noble fir, amabilis fir, Western white pine, and Alaska yellowcedar are characteristic, and the Western hemlock of the lowlands here gives way to the mountain hemlock. Above about 5,200 feet there are subalpine meadows characterized by tree islands rather than thick forests. Alpine fir and mountain hemlock are the typical trees, although some amabilis fir and Alaska yellowcedar also occur. In the Yakima Park area, whitebark pine and Engelmann spruce are found.

Wildlife

Two factors are primarily responsible for the continued abundance of native mammals and birds in Mount Rainier National Park. The animals are unmolested and pursue their native ways. With the exception of minor areas where the public is accommodated, the primitive forests and meadows and large wilderness areas, which provide homes, food, and protection for these animals, are preserved against any encroachment of civilization. It is no surprise in these conditions to find the animal life relatively easy to approach and to observe. More than 130 species of birds and 50 species of mammals have been recorded. Of these, the raccoons, found at lower elevations, the ground squirrels, chipmunks, and marmots, at higher elevations, are commonly observed. The Oregon jay, or camprobber, and the Clark's nutcracker are popular birds. Blacktail deer may be seen along the roads at lower elevations from late fall until spring, when they move upward as snow disappears. Bears are fairly common, and though usually shy may sometimes be seen. The greatest thrill comes with the view of mountain goat commonly seen during the summer at and above timber line in the vicinity of some of the glaciers. Bands of these magnificent dwellers of the crags may often be seen above Van Trump or Klapatche Parks, on Emerald Ridge, the Colonnade, in the vicinity of Skyscraper Mountain, or the Cowlitz Chimneys. In recent years, small herds of elk, or wapiti, have moved over the crest of the Cascades into the southeastern portion of the park. Where game animals are completely protected, as in a national park, it is usually unnecessary and often unwise to control their predators. A natural animal population prevails, and the fortunate observer may catch a fleeting glimpse of a mountain lion, bobcat, or an occasional coyote.

Weather

It might be expected that in a region having as much as 100 inches of precipitation, views of the mountains and glaciers would be obscured much of the time by clouds and fog. This is true during a portion of the year, but warm, clear weather may be expected during the height of the summer season from about July 1 to early in September. Quite often Indian summer weather continues well into October. Most of the precipitation falls during the winter as snow, and from late fall until late winter the sky is usually overcast. During late winter and early spring many clear, warm days may be expected, interspersed between spring snowstorms. Depending upon the season, the snow disappears between late May and early July at elevations comparable to that of Paradise.

Roads and Trails in the Park

There are 80 miles of paved highways within the park leading into areas that offer representative park scenes. Beyond the roads are many trails which quickly leave behind all evidence of human habitation and take the hiker or horseback rider into truly primitive wilderness areas, through alpine meadows, past waterfalls and placid lakes, with ever-changing views of the mountain.

In addition to the many shorter trails, there is the 90-mile "Wonderland Trail" which completely encircles Mount Rainier. Portions of this trail offer many excellent 1-day hikes; and camp sites with shelter cabins, spaced from 8 to 12 miles apart, make possible extended hiking and packing trips of a week or more duration.

Interpretive Service

Exhibits located in the naturalist headquarters at Paradise, the community house at Sunrise, the forest house at Ohanapecosh, and the park museum at Longmire, together with wayside exhibits along the trails, help to explain the features of importance of the surrounding area. The visitor to Mount Rainier National Park can obtain helpful information by visiting these museums and exhibits. The office of the park naturalist is at Longmire, where study collections of the flora and fauna and a reference library are maintained. He and his staff are always glad to assist visitors in making the most of their stay in

Mount Rainier. Illustrated talks on the natural features of the park are presented at Paradise, Longmire, Sunrise, and Ohanapecosh during the summer months, and, when possible, guided trips conducted to places of special interest.

Fishing

The glacial streams and high altitude lakes of the park do not generally afford good fishing, but the more remote lakes and some of the clear streams yield fair to good catches late in the season. No license is required. Lakes are open to fishermen from July 4 to September 30, inclusive; streams from the fourth Sunday in May to October 15, inclusive, unless posted as closed. Complete regulations governing fishing are on file at all ranger stations.

Mountaineering

Mount Rainier presents a difficult climb over ridges of crumbling lava and pumice and along inclined and deeply crevassed ice fields and glaciers. Independent parties may climb the Mountain provided they have qualified and experienced leaders. To insure safety, all prospective summit climbers must register with a park ranger at the time of starting the climb and upon returning. Climbers must give evidence that they are physically capable, have proper equipment, and have had experience in similar hazardous climbing. Rules for summit climbs may be obtained at the office of the park superintendent.

Winter Use

During the winter months, heavy snows blanket the park at the higher elevations. In the Cayuse Pass-Tipsoo Lake area snows reach an average depth of approximately 15 feet, and the high country becomes a veritable "fairyland." The winter season normally opens in December, with sufficient snow for skiing remaining until early May. The Mather Memorial Parkway is open from the northern park boundary to Cayuse Pass, except during periods of heavy snowfall or when snowslides occur. Skid chains are usually required for at least a part of the drive from the park boundary to Cayuse Pass.

After the first heavy snows, other roads in the park remain closed to travel until spring, except for the Paradise Highway, which is open from the Nisqually Entrance to Longmire or beyond, depending upon local conditions. (See map on pages 8 and 9.)

The Paradise Highway may be expected to reopen for travel over the entire route about June 1; other routes closed during the winter months ordinarily reopen between June 15 and July 1.

No accommodations are available in the park during the winter months.

Approach Highways

Mount Rainier National Park is easily accessible through the summer months over paved highways from Seattle, Tacoma, Yakima, and Portland. There are no connecting roads to the east side of the park from the Longmire-Paradise section or from

Brockman photo.

Skiing on Mount Rainier's Slopes is a Thrill for Both Amateurs and Experts.

Carbon River to other sections of the park.

Railroad, Bus, and Airplane Services

The gateway cities to the park—Seattle and Tacoma—are reached by a number of railway, bus, and air lines. Information on these services may be secured from travel agencies.

Free Public Campgrounds

Comfortable campgrounds at Longmire, Paradise Valley, Sunrise, and Ohanapecosh are equipped with fireplaces, wood, tables, water, and sanitary facilities. Small community kitchens are maintained at Longmire and Sunrise. Campgrounds at White River, Tahoma Creek, and Carbon River, although less developed, have similar facilities. At Tahoma Creek water must be taken from the stream. Campground facilities are not available during the winter.

Administration

The park is administered by the National Park Service, United States Department of the Interior. The park superintendent is the officer in immediate charge, and all communications regarding the park should be addressed to him at Longmire, Wash., the park headquarters. On his staff are rangers and naturalists who are concerned with the preservation and proper use of the park, as well as with helping visitors to enjoy their stay.

Motor Coach Service to and from the Park

From late June to early September daily motor bus service is available from Tacoma and Seattle to Longmire, Paradise Valley, and Sunrise. Children under 12 years of age are charged at one-half fare rates. During the winter season there are no regularly scheduled public transportation facilities available to points within the park.

Transportation rates may be obtained by writing the Rainier National Park Co., Box 1136, Tacoma 1, Wash.

Hotel and Cabin Facilities

At Paradise Valley (late June to early September).—Various types of hotel rooms are offered at Paradise Inn, with dining room and fountain service and a souvenir shop. Guide service available for trail trips and summit climbs.

At Sunrise (late June to early September).—There are no overnight accommodations. A cafeteria and fountain operate at Sunrise Lodge, where some staple groceries may be purchased.

At Longmire.—The National Park Inn is open from May 1 to about October 31. Hotel and cottage rooms, a la carte meal and fountain service, as well as fresh milk, limited groceries, gasoline, and oil are available.

At Ohanapecosh.—The Ohanapecosh Lodge is open throughout the summer months, American or European plan. Housekeeping cabins are available at daily or weekly rates. A small store is operated throughout the summer season. Modern bathing facilities are offered under the supervision of a trained attendant for those desiring to use the hot mineral waters.

Inquiries regarding accommodations, rates, and reservations at Paradise Valley, Sunrise, or Longmire should be addressed to the Rainier National Park Co., Box 1136, Tacoma 1, Wash.; at Ohanapecosh to the Ohanapecosh Hot Springs Lodge, Packwood, Wash.

Mountain Topics

James Longmire established a homestead around the mineral springs at Longmire in 1884 and completed a wagon road to this point in 1891.

Hazard Stevens and P. B. Van Trump, who were the first men to climb Mount Rainier, were guided as far as the head of Mazama Ridge by Sluiskin, a Yakima Indian.

President Taft was a passenger in the first car to reach Paradise in 1911. The road was not yet completed, and horses were hidden in the forest to appear, much to the amazement of the President, each time his car bogged down in the mud.

When the Paradise Road was under construction at Glacier Bridge in 1907, the terminus of the Nisqually Glacier was only a few hundred feet above the bridge site.

There is no positive proof that Mount Rainier has been active as a volcano within historic time, although there are reports that clouds of smoke were seen over the crater in the late 1800's. Clouds of dust blown from the pumice fields, however, often simulate smoke from an eruption.

Mount Rainier (14,408 feet) is the fourth highest peak in the United States exclusive of Alaska. The three higher peaks are Mount Whitney (14,495 feet) in Sequoia National Park, Calif., and Mount Elbert (14,431 feet) and Mount Massive (14,418 feet), both of which are in Colorado.

The largest Western redcedars of the park are in the Ohanapecosh district. Some are 11 feet in diameter at the base.

The volcanic ash soil which covers the mountain parks is easily disturbed and erodes rapidly. Even a few hikers cutting across trails will produce lasting scars.

The volume of water flowing from the glaciers increases tremendously during the hot summer days. Thus, rivers which may be safely forded in the morning become raging torrents, impossible to cross, by late afternoon.

The picking of wildflowers is prohibited in all national parks. Some flowers depend entirely upon the seeds that are produced one season to replant the next year's crop. A single flower picked from a natural setting will thus reduce the beauty of the scene the next year.

A magnificent natural feature as awe-inspiring as the Mountain becomes less impressive if viewed from a site littered with trash, tin cans, and other debris. Please do not scatter refuse along the roadsides, trails, and parking areas. Use the receptacles provided for disposal.

Only a tenderfoot will discard a match or cigarette before he is positive it is out. An experienced mountain man will crush his cigarette and break his match with his thumb on the burnt head.

Mountain goats, which are seen only at high elevations during the summer, descend to lower ridges during the winter and are often seen from the road between Nisqually Entrance and Glacier Bridge.

Park regulations prohibit the feeding of deer. Many park deer have lost their instinctive fear of man and have learned to beg for tidbits. Such artificial foods as they may thus receive are often injurious to their health, encourage dependency upon an uncertain source of supply, and lessen the animal's resistance to disease and its ability to shift for itself.

While apparently friendly, the bears are wild animals and should be treated as such. It is extremely dangerous and contrary to park regulations to feed, molest, touch, or tease the bears. Observe them only from a safe distance.

For information or assistance ask a man in uniform.

UNITED STATES DEPARTMENT OF THE INTERIOR
Douglas McKay, Secretary
NATIONAL PARK SERVICE, Conrad L. Wirth, Director

HELP US PROTECT THIS PARK

Regulations are designed not only to protect the natural features of the park but also to aid visitors in the full enjoyment of this scenic area. You are requested to assist the park administration by respecting the simple rules and the rights of others. The following synopsis and suggestions are for your guidance; complete rules and regulations may be seen at any ranger station. Park rangers are here to help you as well as to enforce the regulations. Consult them freely.

Entrance Hours.—Park gates are open for entry or departure from 6 a. m. to 11 p. m.

Automobiles.—A permit, which is good for the calendar year at all park entrances, should be obtained from the park ranger upon entering the park. Automobiles and motorcycle fees, $1; trailer fee, $1 additional. These fees are deposited in the United States Treasury and are not available for expenditure in the park.

Fires.—Throwing away cigarettes, cigars, matches, or any other burning material along roads and trails is prohibited. Smoking while traveling on trails is not allowed. Fire permits must be obtained from park rangers for building fires at any point other than at auto campgrounds. Build fires only at designated places; extinguish COMPLETELY before leaving.

Warning About Bears.—Feeding, touching, or molesting of bears is prohibited; the animals are wild and may bite or strike. If not molested, the bears seldom harm persons. Bears will break into camps or autos for odorous food.

Dogs, Cats, Firearms.—Dogs and cats are prohibited in the park unless on leash, crated, or otherwise under physical restrictive control at all times. The animals are not allowed on trails. The director of the National Park Service may designate areas in which dogs and cats will not be allowed. Unless adequately sealed, cased, broken down, or otherwise packed to prevent their use while in the park, firearms are prohibited, except upon written permission from the superintendent.

Trees, Flowers, and Animals.—Within the park the destruction, injury, or disturbance in any way of trees, flowers, birds, or animals is prohibited. However, dead and fallen trees may be used for firewood, except in campgrounds where wood is provided.

Keep Park Clean.—Keep your camp clean. As far as possible, burn garbage in your campfire; place cans and residue in containers provided. If no container is provided, bury the refuse. Do not throw lunch papers, wrappers, or other trash along roads or trails. Carry the material until you can burn it or place in receptacle.

Lost and Found Articles.—Lost or found articles should be reported to a park ranger.

Suggestions and Recommendations.—Suggestions and recommendations as to improvements in any phase of the park operation and management should be communicated to the superintendent.

Revised 1953

U. S. GOVERNMENT PRINTING OFFICE: 1953