

Mount Rainier

NATIONAL PARK

Washington



The National Park System, of which this park is a unit, is dedicated to conserving the scenic, scientific, and historic heritage of the United States for the benefit and enjoyment of its 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 Elevation of Mount Rainier established as 14,408 feet above sea level by the Geological Survey, United States Department of the Interior.
- 1915 First public travel by automobile to Paradise Valley.
- 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 Road completed.
- 1956 Elevation of Mount Rainier reestablished as 14,410 feet above sea level by the Geological Survey, United States Department of the Interior.
- 1957 Stevens Canyon Road completed.

WILD ANIMALS

It is dangerous for you to get near wild animals though they may appear tame. Some have become accustomed to humans but they still are wild and may seriously injure you if you approach them. Regulations prohibiting feeding, teasing, touching, or molesting wild animals are enforced for your own safety.

COVER: Mount Rainier from Mirror Lake, Indian Henrys Hunting Ground.

MOUNT RAINIER

NATIONAL PARK

Open all year



MOUNT RAINIER, from a base amid rugged peaks, lifts its summit nearly 2 miles above the Cascade Mountains of central Washington. Here rises a mighty mountain mass ribbed with lavas, and deeply cut by glaciers that still fill its canyons. Flower meadows, alpine lakes, cascading rivers, and dark forests are all elements of its foreground. Mountain and foreground combine in a natural masterpiece, one of our country's major scenic wonders, well deserving its place among the Nation's National Parks.

While each National Park differs from the 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. The park contains almost 380 square miles and is 24 miles across at its widest point.

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, 14,410 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 Mountain Range. Over a long period of geologic time, earth movements gradually elevated the region to form a platform standing from 8,000 to 10,000 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.

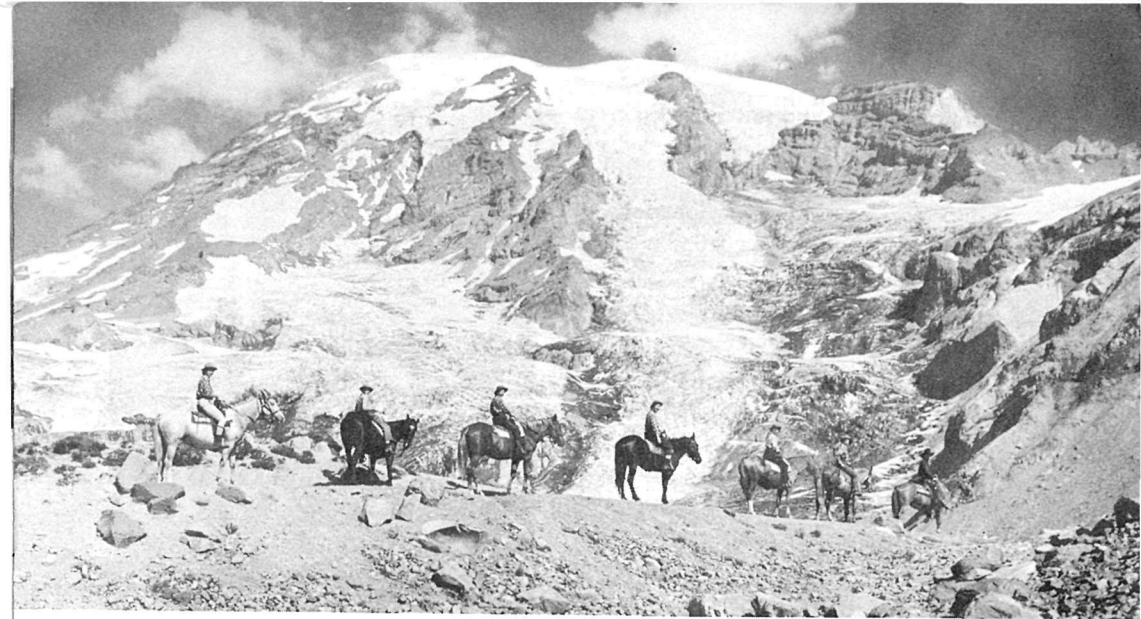
After the Cascade Mountain Range was uplifted and considerably dissected, local eruption occurred, which resulted in the building of individual cones rising thousands of feet above it. Of these, Mount Rainier is the highest and grandest of the series which, within the United States, extends from Mount 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. After the first phase, the flows alternated with outbursts of volcanic ash and cinders. In the late stages, the fragmental material was most in evidence. Thus, sheets of massive, dark lava, which formed the immediate base of Mount Rainier, and alternating layers of solid and fragmental lava are clearly visible in the higher ridges. 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 peaks rising from it—Liberty Cap to the north, with an elevation of 14,112 feet; Point Success to the south, 14,150 feet; and Columbia Crest to the east, 14,410 feet. These three peaks appear to form a part of a huge craterlike rim, broken on the west where glaciers have carved a deep gash in the flank and summit of the mountain. Columbia Crest is 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,



Courtesy Rainier National Park Co.

Nisqually and Wilson Glaciers from the Skyline Trail above Paradise.

except from some viewpoints where the long, exposed rock ridges, 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 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 time 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. 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 and 1 mile wide, is the largest glacier on Mount Rainier. All of the major glaciers extend well below timberline to elevations of about 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, mo-

raines, polished and fluted rocks, great cirques, and the broken, crevassed expanse of blue ice. At times, beautifully colored ice caves developed where the outlet stream flows from beneath the Paradise Glacier.

Recent studies indicate that the ice of the Nisqually Glacier at midelevations 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. Recent studies at slightly higher elevations show thickening of the ice on the Nisqually and the Emmons Glaciers, indicating growth in ice volume. Recession at the extreme terminus of the ice exposes new ground 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.



Courtesy Brockman.

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. Neverthe-

less, the species of the deep woods, such as the threeleaf anemone, alpine beauty, Canadian dogwood, Pacific trillium, calypso, and the spring beauty, 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.

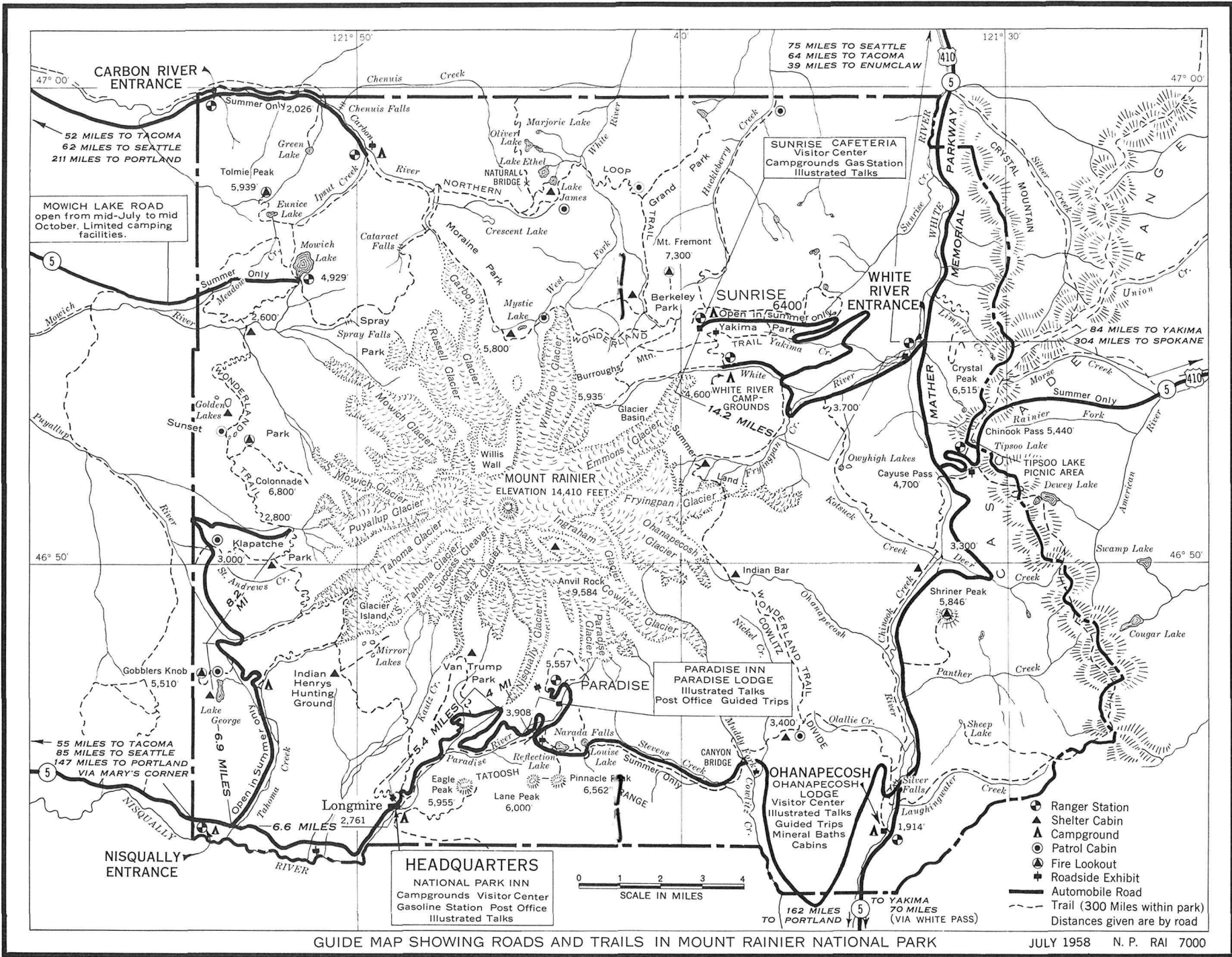
In the mountain parks there are two periods when the flower fields are most striking. The first is normally in early July, depending upon the season, when the avalanche lily, western anemone, marshmarigold, and mountain buttercup take over the meadows from the rapidly receding snowbanks; the second usually 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.

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 timberline; 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 largest 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



GUIDE MAP SHOWING ROADS AND TRAILS IN MOUNT RAINIER NATIONAL PARK

JULY 1958 N. P. RAI 7000

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 observe. More than 130 species of birds and 50 species of mammals have been recorded. Of these, the raccoon, found at lower elevations, and the ground squirrel, chipmunk, and marmot, at higher elevations, are commonly observed. The Oregon jay, or camprober, 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 goats commonly seen during the summer at and above timberline 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 Sky-scraper 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 animals are completely protected, as in a National Park, it is usually unnecessary and 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 mountain 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 as snow during the winter, and from late fall until late winter the sky is usually overcast. However, during late winter and early spring, many clear, warm days may be expected, interspersed between snowstorms. Depending upon the season, the snow disappears between late May and early July at elevations comparable to that of Paradise Valley.

How To Reach and See the Park

By automobile. State Route 5, known as the National Park Highway, leads to Mount Rainier National Park. Some sections of the approach highways are designated by number and letter, so be sure to select your destination in the park from the vicinity map on page 12 for a direct approach.

The roads from Nisqually Entrance to Paradise and from the northeast boundary to Ohanapecosh are open all year. (See map pages 8 and 9.) After the first heavy snow, usually November 1, the other roads remain closed to travel until spring. Snow

conditions may cause roads to be closed for short periods. Tire chains are required for part of the drive during the winter.

In winter, heavy snows blanket the park at higher elevations. At Paradise, snows may reach an average depth of 20 feet. The winter season normally begins in December, with sufficient snow for skiing remaining until early May.

Rope tows operate during the skiing season (December 1 to May 1) at Paradise and Cayuse Pass. Warming huts, snack bars, and first-aid rooms are available but no overnight facilities are operated in the park in winter.

Park roads closed in winter ordinarily are open for travel between June 15 and July 1. Mowich Lake road is usually open from mid-July to mid-October. (See map pages 8 and 9.)

By trail. There are 300 miles of trails that await you if you would know the park intimately. Many of the trails will take you into truly primitive wilderness areas, through alpine meadows, past waterfalls and placid lakes, with ever-changing views of Mount Rainier.

The 90-mile Wonderland Trail completely encircles Mount Rainier. Parts of this trail offer excellent 1-day hikes; and campsites with shelter cabins, spaced 8 to 12 miles apart, make possible extended hiking and pack trips of a week or more.

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.

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. Unless posted as closed, lakes are open to fishing from July 4 to September 30, inclusive; and the season for streams conforms to that of the State of Washington. Complete regulations governing fishing are on file at all ranger stations.

Visitor Centers

The visitor center at Longmire is open all year. Here, and at other visitor centers, you may obtain helpful information regarding the biological, geographical, and historical features of the park. Yakima Park Visitor Center contains exhibits telling the story of mountain building. Ohanapecosh Visitor Center tells the story of the deep forest.

Park Rangers and Park Naturalists

Park rangers and park naturalists are stationed in the park to help you. If you are in any difficulty, see one of these men in the distinctive park ranger uniform.

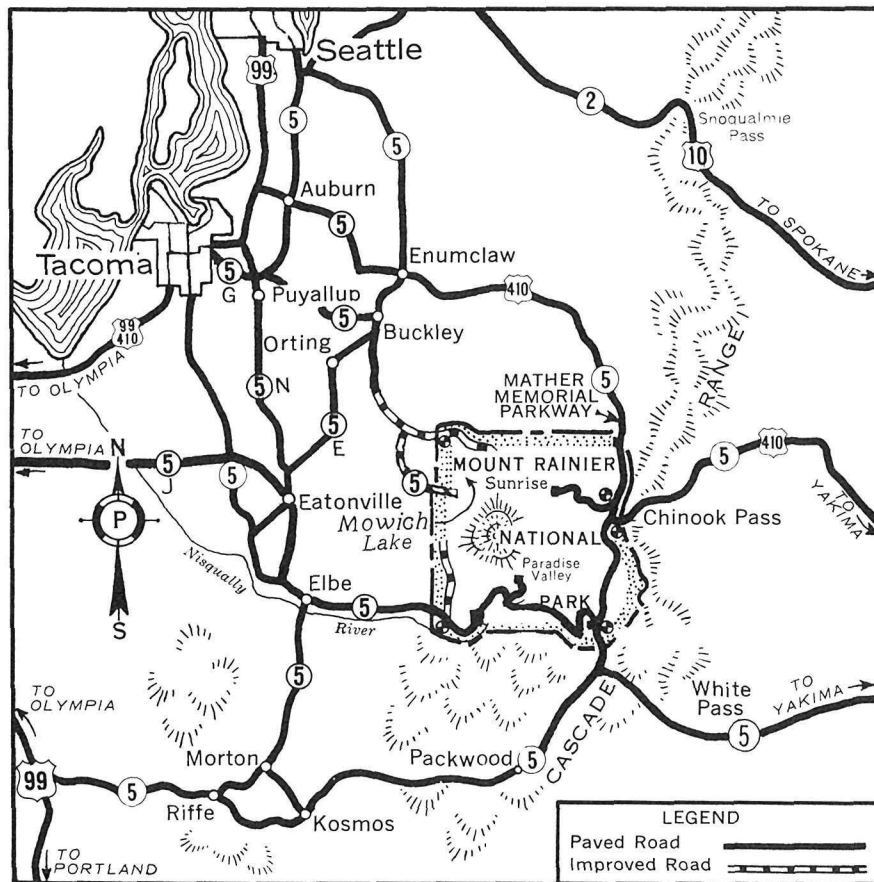
Park rangers are responsible for visitor safety, enforcement of park rules and regulations, fire detection and suppression, operation of entrance stations, and safeguarding the park's resources for your enjoyment and that of future generations. They also handle lost and found property and

receive suggestions and complaints.

Park naturalists are the park's interpretive staff. They are prepared to help you understand what you see in the park and are responsible for all interpretive services. These services, which are free of charge, include:

Illustrated talks. Informal programs are given each evening at Paradise; and each evening except Sunday at Ohanapecosh, Yakima Park, and Longmire. They include slides or movies dealing with the natural history or history of the park.

Guided walks. A schedule of guided walks is posted on bulletin boards at important interest centers.



Main approach highways to Mount Rainier National Park.



Courtesy Brockman.

Skiing on Mount Rainier's slopes—a thrill for both beginners and experts.

Transportation to the Park

Seattle and Tacoma—gateway cities to the park—are reached by railway, bus, and airlines.

From late June to early September, daily bus service is available from Tacoma and Seattle to Longmire, Paradise Valley, and Sunrise. During the winter, 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.

Free Campgrounds

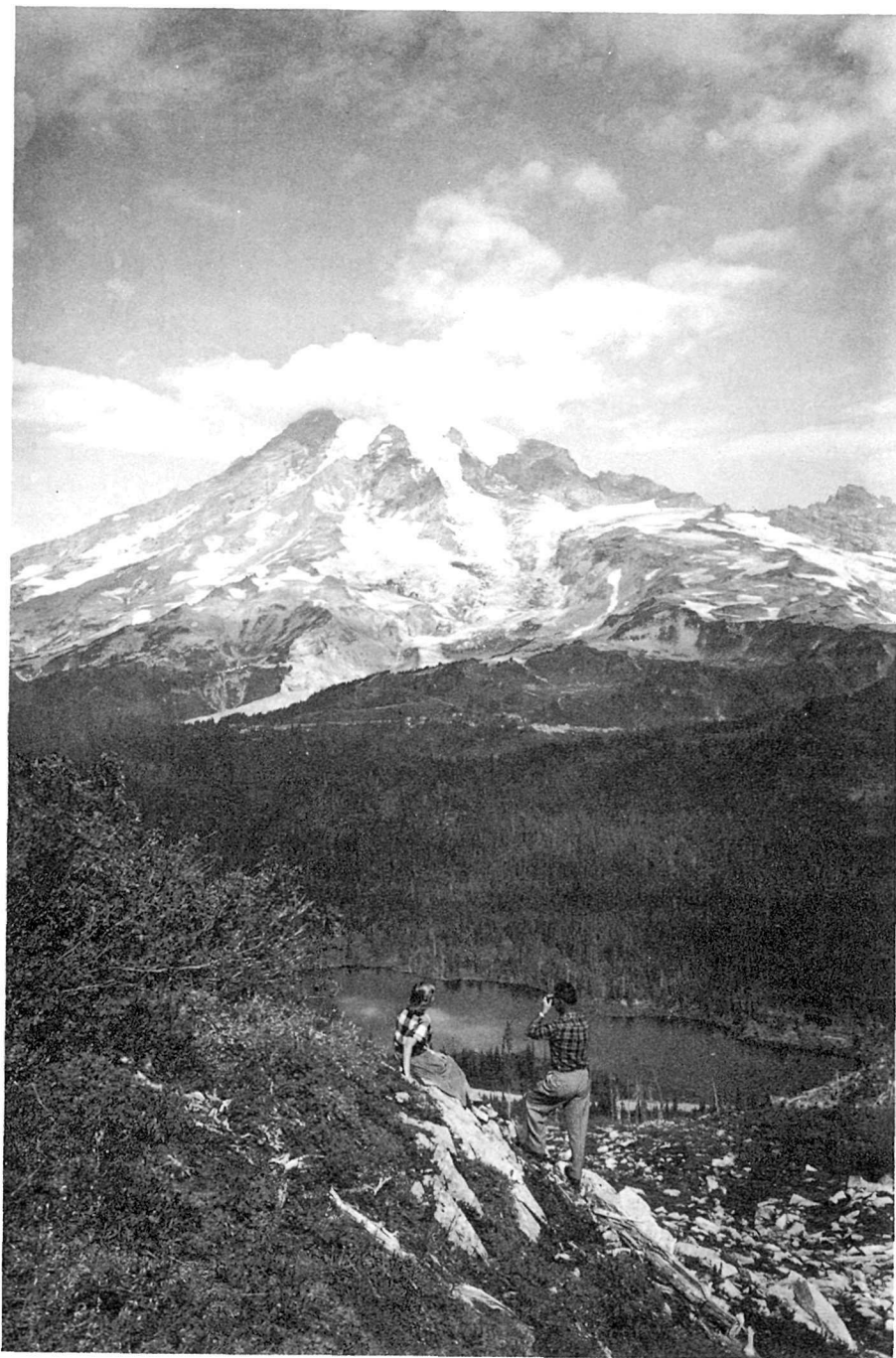
Comfortable campgrounds at Longmire, Yakima Park, and Ohanapecosh are equipped with fireplaces, tables,

water, and sanitary facilities. Smaller campgrounds are at White River, Tahoma Creek, Sunshine Point, and Carbon River. There are limited camping facilities at Mowich Lake. At Tahoma Creek, water must be taken from the stream. Campground facilities are not available during the winter.

There are no trailer hookups for electricity, water, or sewage.

Hotel and Cabin Facilities

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.



Mount Rainier from Backbone Ridge.

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

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

Ohanapeosh. The Ohanapeosh Lodge is open throughout the summer, American or European plan. House-keeping 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 or Longmire should be addressed to the Rainier National Park Co., Box 1136, Tacoma 1, Wash.; at Ohanapeosh to the Ohanapeosh Hot Springs Lodge, Packwood, Wash.

Religious Services

Protestant and Catholic services are held from July 1 until Labor Day.

Mission 66

Mission 66 is a program designed to be completed by 1966 which will assure the maximum protection of the scenic, scientific, wilderness, and historical resources of the National Park System in such ways and by such means as will make them available for the use and enjoyment of present and future generations.

Administration

Mount Rainier National Park is administered by the National Park Service of the United States Department of the Interior. A superintendent, whose address is Longmire, Wash., is in immediate charge.

Mountain Topics

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 (14,410 feet) is the fifth highest peak in the United States. The four higher peaks are Mount Whitney (14,495 feet) in Sequoia National Park, California, and Mount Elbert (14,431 feet), Mount Harvard (14,420 feet), and Mount Massive (14,418 feet) in Colorado.

The largest western redcedars of the park, some with 11-foot base diameter, are in the Ohanapeosh district.

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.



UNITED STATES DEPARTMENT OF THE INTERIOR

Fred A. Seaton, 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 help you enjoy this scenic area. You are requested to assist the park administration by respecting the 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.

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 left alone, the bears are seldom harmful. Bears will break into camps or autos for food.

Lost and found articles should be reported to a park ranger.

Dogs and cats are allowed in the park if on leash, crated or otherwise under physical restrictive control at all times. They are not allowed on trails or in other areas which the superintendent may designate.

Firearms. 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. 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.

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.

Suggestions for improvements of any phase of the park operation and management should be communicated to the superintendent.

VISITOR USE FEES

Automobile, housetrailer, and motorcycle permit fees are collected at entrance stations. The fees applicable to the park are not listed herein because they are subject to change.

All National Park fees are deposited as revenue in the U. S. Treasury; they offset, in part, appropriations made for operating and maintaining the National Park System.