mt. rainier

NATIONAL PARK • WASHINGTON

Mount Rainier, a towering, ice-clad dormant volcano, dominates this National Park. A few miles west of the Cascade Range crest, it rises 14,410 feet, the most superb landmark of the Pacific Northwest. A gleaming mantle of glacial ice on the upper slopes conceals all but its most rugged peaks and ridges. In delightful contrast to this bold landscape are flower-filled alpine meadows and deep forests of the lower slopes. Smaller peaks provide the foreground for this impressive scene.

The park's 378 square miles extend from Mount Rainier eastward to the Cascade Range crest.

Emmons Glacier above Sunrise.

THE ORIGIN OF MOUNT RAINIER

The rocks and landforms of Mount Rainier National Park tell a long, exciting story of deposition, volcanic eruptions, earth movements, and sculpturing by rivers and glaciers.

Long before Mount Rainier existed, volcanic lava flows, mudflows, and ash deposits, altogether thousands of feet thick, built up the lowlands where the Cascade Range was to form. Later, earth stresses gradually elevated this region several thousand feet. As the land rose, rivers cut deep narrow valleys, dissecting the region into ridges and peaks.

During the last million years or so, local eruptions have built cones on top of the Cascade Range which are distributed, in the United States, from northern Washington (Mount Baker) to northern California (Lassen Peak). Of these cones, Mount Rainier is the highest and grandest. These volcanoes formed, in recent geologic time, part of a veritable circle of fire around the Pacific Ocean.

The eruptions that built Mount Rainier were of two types. Early eruptions were, for the most part, lava flows of gray andesite, while later history was marked by explosions of rock debris. Sheets of massive, dark lava formed the inside of the immediate base of Mount Rainier and flowed down flanking canyons. Above them, alternating layers of solid and fragmental lavas from later eruptions are visible in the higher ridges, such as Success Cleaver. Very young, thin deposits of volcanic ash and pumice are widespread around the base of the mountain. Recent studies indicate that the last violent outburst, which threw nut-sized brown particles of pumice over the slopes, occurred about 2,000 years ago.

The broad, rounded top of Mount Rainier is about 1 square mile. From it rise three separate peaks: on the north, Liberty Cap, 14,112 feet; on the south, Point Success, 14,150 feet; and on the east, the summit, Columbia Crest, 14,410 feet. Liberty Cap and Point Success are high points along the irregular rim of a wide depression created about 5,000 years ago when the former top of the volcano slid off in a series of avalanches. More recent eruptions have built a small lava cone within the broad crater-like cavity. Of the two small craters that indent this cone, the largest and youngest is about 1,200 feet across; Columbia Crest is the highest point on its rim. Steam vents persist within both young craters, melting the snow to form small caverns. These have provided refuge for mountaineers caught on the summit by bad weather.

Some marked boulders, weighing several tons, were observed to move 525 feet in 8 years on the Nisqually Glacier. Yearly studies by the U.S. Geological Survey and the park staff show the surface ice of this glacier to be moving about 25 feet per month at the 6,000-foot elevation. Such action slowly moves the ice from upper basins and canyons to lower elevations, where most melting takes place.

From late in the 19th century until recently, the glaciers of Mount Rainier were receding. Vegetation is now slowly advancing into the barren areas thus exposed. Waterfalls plunge into canyons that once were ice-filled, and valley floors formerly buried under ice are now the flood plains of glacial streams.

Recent studies show that the glaciers at higher elevations are again expanding, causing their fronts to move downstream. This may be a temporary advance reflecting a variation in climate.

GLACIERS

From a distance you can see in Mount Rainier's long, exposed ridges, sweeping from the base toward the summit, the symmetrical profile of a cone. But close at hand, this profile is obscured by deep basins and canyons between the ridges. These excavations were cut by water and later were enlarged by glaciers.

Several times during the ice age, some of the Mount Rainier glaciers advanced many miles beyond present park boundaries. The last extensive glaciation was so recent in geologic time (ending perhaps only 10,000 years ago) that its sculpturing 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 many cirques (glacier-carved basins) of the Cascade Range, and the numerous lakes and spectacular waterfalls all owe their origins to sculpturing by water and ice.

The 41 glaciers remaining on Mount Rainier cover about 34 square miles, although they are mere remnants of their former selves. Fifteen are classed as major glaciers, originating either in large cirques at elevations between 10,000 and 12,000 feet, or at the summit icecap. Emmons Glacier, on the northeast side of the mountain, and the Nisqually, on the south side, are the best known and most easily visited large glaciers. The Emmons, about 4 miles long and 1 mile wide, is the largest on Mount Rainier.

Of the smaller glaciers, Paradise and Stevens Glaciers are the easiest to reach. They are 3 miles from Paradise Visitor Center. In a comparatively small area near these glaciers there are many features of typical valley glaciers—melt water, moraines, polished and fluted rocks, a large cirque, and a broken, crevassed expanse of blue ice several hundred feet thick. At times, beautifully colored ice caves develop where outlet streams flow from beneath Paradise Glacier.

How do these glaciers form? An excess of winter snow accumulates over summer melting, continuing over many years, gradually compacted into ice. The thick mass of ice creeps downhill due to its own weight. This moving mass of ice is then a glacier.

A glacier is at once a plow, a file, and a sled. As a plow, it churns up loose soil and pieces of bedrock; as a file, it uses this material to rasp away and polish solid rock in its path; as a sled, it carries away the plowed-up and filed-off rock, plus rock that has fallen from valley walls. As Mount Rainier's glaciers slowly move down the mountainside, they transport vast quantities of rock debris, including large boulders. Glaciers advance and retreat in response to very delicate changes in climate.

CLIMATE

The snow which feeds Mount Rainier's glaciers originates as clouds over the Pacific Ocean. As the moisture-laden, westerly winds move inland, the first barrier they meet is the Cascade Range. Rising to pass over the mountains, they are cooled, and the condensing moisture falls as rain and snow. The heaviest precipitation falls on the windward slope, especially between 5,000 and 10,000 feet. Paradise receives about 100 inches in a year.

Clouds and fog often obscure the mountain. However, some warm, clear weather may be expected from about July 1 to mid-September. In many years, Indian-summer weather continues well into October, when autumn colors are at their best.

Snow falling from November until April accounts for most of the yearly precipitation. The record snowfall at Paradise occurred during the winter of 1955-56, when 80 feet of snowfall accumulated into 30½ feet of snowpack. Many of the snowfields above 6,000 feet are perennial.

During late winter and early spring occur many clear, warm days, interspersed with snowstorms sometimes lasting several days. Snow usually disappears in early July at elevations comparable to that at Paradise. The glaciers which project below the perennial snowline do so only because of the large amount of snow and ice at their heads.

FLOWERS AND FORESTS

Mount Rainier is famous for its colorful display of wildflowers. Climatic variety and short, intense growing seasons produce an abundance of flowers and number of species found in few areas of comparable size. Changes in the flora from lower park boundaries to the upper slopes of Mount Rainier are comparable to the change between Puget Sound and the Arctic Circle.

At no time, from early spring to early autumn, can you fail to find a flower display somewhere in the park. Blooming begins in May in the forests and progresses up the mountainsides as the snow melts.

Flowers of the deep forests are most numerous in July, when Pacific trillium, bunchberry dogwood, threeleaf anemone, and the colorful calypso are at their best. Beargrass grows in the sunlit areas.

In the mountain parks there are two good shows. The first comes in early July, when avalanche fawnlily, yellow lambstongue fawnlily (glacier lily), western pasqueflower, marshmarigold, and mountain buttercup take over the meadows from receding snowbanks. Some wildflowers push right up through the snow. The second display occurs about a month later, when Indian paintbrush, lupines, speedwell or veronica, valerian, American bistort, cinquefoil, and many others tint these same meadows.

The effects of altitude and habitat are reflected as definitely, but less conspicuously, in tree growth. Lowland forest, penetrating the park in the largest river valleys, reaches its upper limits around 3,000 feet. These dense, cathedral-like forests have some trees of great size. The lowland forest contains principally Douglas-fir, western hemlock, and western redcedar. Grand fir grows up the valleys to about 2,500 feet; above, it is replaced by Pacific Silver fir and noble fir.

FIRST FOUR PHOTOS · BY BOB and IRA SPRING

Aerial view of summit crater showing ice cap and crevasses.

Conquering Mount Rainier's summit.

Mount Rainier's flower meadows—famous throughout the world.

Spring comes to the high country—lambstongue fawnlilies push through snow.

A sanctuary for wildlife.

You can easily identify the true firs by their erect cones, which disintegrate at maturity. Other cone-bearing species have pendant cones which do not break up when ripe.

Intermediate forest lies between the dense lowland forest and the parklike meadows, and contains some species of both. Noble fir, Pacific silver fir, western white pine, and Alaska-cedar are characteristic. The lowland western hemlock, with its nodding top, here gives way to the smaller mountain hemlock, with its dark purple cones.

In mountain meadows above 5,000 feet trees grow in clumps. Alpine fir and mountain hemlock are typical. In the Sunrise region, whitebark pine, sentinel of the high country, and Engelmann spruce are found.

WILDLIFE

The majestic setting of forests and flowers is enlivened by abundant animal life. Protected from encroachment of civilization, Mount Rainier's slopes provide homes and food for more than 130 species of birds and 50 species of mammals. Wilderness trails offer some of the best opportunities for seeing wildlife.

Many of the animals appear tame. But, be wary. A few have lost their fear of man; they can be dangerous.

Some animals make seasonal migrations, following receding snows up the mountain in spring and descending at the approach of winter. Mule deer range from timberline in summer to the lowland forests in winter. Elk, found along the east side of the park, make similar migrations.

Black bears also roam the forests. They come in several color phases—black (most common), brown, blond, or cinnamon.

Mountain goats are frequently seen in summer above timberline near glaciers. Look for these crag-dwellers above Van Trump and Klapatche Parks, and at Skyscraper Mountain, Emerald Ridge, the Colonnade, and the Cowlitz Chimneys.

Raccoon, Douglas squirrel, golden-mantled ground squirrel, chipmunk, porcupine, snowshoe hare, and beaver are common at lower elevations. Others to watch for are the marmot (abundant in rock slides above 5,000 feet), marten, red fox, coyote, bobcat, and the secretive cougar.

Birds are most numerous in thickets and mountain parks, especially along streambanks and lakeshores. Above timberline, watch for white-tailed ptarmigans, white in winter and mottled gray in summer; pipits; and gray-crowned rosy finches. In mountain meadows, look for the gray jay, or camp robber; Clark's nutcracker; mountain bluebird; and raven. Along forest trails you are most likely to see woodpeckers, robins and other thrushes, warblers, kinglets, and chickadees.

HISTORY

On May 8, 1792, Capt. George Vancouver of the British Royal Navy saw a "round snowy mountain" from near what is now Port Townsend on Puget Sound. He named it after his friend, Rear Adm. Peter Rainier.

Such an imposing and unknown mountain was bound to challenge the adventurous. The first was Dr. William Fraser Tolmie, a physician and surgeon employed by the Hudson's Bay Company to help establish Fort Nisqually, at the head of Puget Sound. On August 29, 1833, with five Indians, he started from the fort on an extensive botany survey. Approaching by way of the Puyallup River, he became the first white man known to have entered what is now Mount Rainier National Park. Several prominent features bear his name.

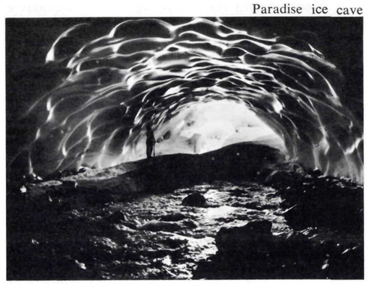
Not until 1857 was a serious attempt made to climb the mountain. Then Lt. A. V. Kautz, stationed at Fort Steilacoom, accompanied by Dr. O. R. Craig from Fort Bellingham, an Indian guide named Wapowety, and four soldiers, made the assault. Shortage of food, however, prevented Kautz from gaining the actual summit.

Interest in climbing Mount Rainier lay dormant for some years. But in August 1870, two active young men, Hazard Stevens and P. B. Van Trump, tried and succeeded. Led part of the way by Sluiskin, an Indian guide, the two men followed what is today called the Gibraltar route. On August 17 they reached the crest. They expected to return the same day, but bad weather and coming darkness forced them to stay on the summit overnight. In search of a protected spot, they discovered a small crater and steam caves. While a blizzard raged outside, they spent the night in one of these caves. When they returned the following day, Sluiskin was both surprised and overjoyed. Seeing their sunburned and windburned faces, he at first thought they were ghosts.

James Longmire—among others—made an ascent in 1883, and during his return discovered the mineral springs in the meadows of present-day Longmire.

Longmire dreamed of developing this area in the wilderness as a health resort. He staked his claim and later, under the mineral act, secured title to the land around the springs. In 1884, Longmire constructed the first building near the present park headquarters. Six years later, with the help of his sons, he pushed a crude road through and built a small hotel at Longmire's Springs.

Early visitors were greatly impressed by the mighty glacier-clad mountain and the surrounding lush alpine meadows. In 1894, a concerted effort was made to preserve this area as a National Park. However, it was not until March 2, 1899, that President McKinley signed the bill establishing it as the fifth National Park in the United States.



Paradise ice cave

TO HELP YOU ENJOY THE PARK

Free evening illustrated and campfire programs are offered at Longmire, Ohanapecosh, Paradise, Sunrise, Ipsut Creek, and other places throughout the park. Consult bulletin boards for time and place.

At these locations and Box Canyon there are guided walks and hikes; visitor center services include exhibits, orientation talks, and sales publications and slides.

Self-guiding nature trails leave from Longmire, Kautz Creek, and Sunrise.

If you have any questions, ask the man in the National Park Service uniform.

By Road

Roads in the park provide spectacular views of Mount Rainier and its surroundings. The roads from Nisqually Entrance to Paradise and from the northeast boundary through Ohanapecosh are open all year, although snow conditions may cause them to be closed for short periods. Carry tire chains in winter.

Stevens Canyon, White River-Sunrise, West Side, Carbon River, and Mowich Lake Roads are closed for the winter after the first heavy snowfall, usually about November 1. They ordinarily are opened between June 15 and July 1.

Mather Memorial Parkway, a section of U.S. 410 beginning and ending in Snoqualmie National Forest, passes through Mount Rainier National Park over Chinook Pass. It was named in honor of Stephen T. Mather, first Director of the National Park Service. This road takes you through magnificent mountain scenery, from deeply shaded evergreen forests to alpine lakes in flower-spangled meadows. Chinook Pass is closed in winter.

Along the Trails

More than 300 miles of well-marked and maintained trails invite you to explore the park. Trips range from 15-minute walks over self-guiding nature trails to hikes of a week or more. Leading from all campgrounds and other developed areas, the trails take you to the beauty spots of this mountain wonderland, from dense lowland forests to glaciers and high peaks with ever-changing views of Mount Rainier.

If you are looking for wilderness adventure, the Wonderland Trail is a dream come true. Almost entirely in primeval surroundings, this 90-mile, around-the-mountain route winds through snowfields, meadows, and forests. It drops into deep, shadowy canyons, and climbs to ridges with panoramic views.

Campgrounds and shelter cabins along the Wonderland Trail are indicated on the map. Shelter cabins, open on one side, are equipped with outdoor fireplaces only; bring your own sleeping and cooking gear. Shelters may be full so a tent or tarp is advisable. To avoid carrying food for the entire trip, you can have someone meet you at a campground with supplies for the next part of your journey.

We suggest that your goal for each day be about 9 miles. Maybe you believe you can hike farther, but remember, this is rough country. And to enjoy it thoroughly you should take time to look around. Ten days after hitting the trail you will have completely encircled Mount Rainier. Your experience will need no embellishment in the telling.

Parts of the Wonderland Trail afford excellent 1-day hikes, for it intersects roads at several places. For a selection of short trips along this trail, see the map.

Shelter cabins on other trails are at Van Trump Park, Berkeley Park, Lake James, and Lake George.

A Guide to the Trails of Mount Rainier National Park, which describes each trail in the park, is on sale at all visitor centers.

Please observe the following regulations:

Be careful with fire. Hikers must obtain fire permits in advance. Observe the fire rules.

Be a good camper. Preserve the park's natural beauty by not disturbing trees, flowers, or birds and other animals. Never cut green boughs for beds. Leave a clean and sanitary camp. You are requested to carry out your unburnable trash.

Vehicles of any kind are prohibited on all park trails.

Mountaineering

Climbing Mount Rainier is no easy task. The route is over ridges of crumbling lava and along inclined and deeply crevassed glaciers and icefields. Yet about 800 climbers now reach the summit each year. Independent parties with qualified, experienced leaders may climb the mountain between May 30 and Labor Day when the routes are officially open. In the interest of safety, all summit climbers must register with a park ranger at the beginning and end of their trip. Climbers must give evidence that they are physically capable, have proper equipment, and have had experience in similar hazardous climbing. Regulations for summit climbs may be obtained from the office of the superintendent.

Routes will vary depending on the conditions of the glaciers. The ascent on the more popular south side route is made in 2 days; the first night is spent at Camp Muir, a rock shelter at 10,000 feet. Early next morning, the climbers continue to the summit, now roped together. The return is usually by Camp Muir, where a short rest stop is taken, and then back to Paradise.

Professional guide service, instruction, and rental equipment are available from the concessioner at the Paradise Visitor Center.

Fishing

The glacial streams and upland lakes are generally too cold to support much aquatic life, but some of the remote lakes and clear streams yield fair to good catches. No license is required in the park. Unless posted as closed, lakes are open to fishing from July 4 through October 31. Your catch may not exceed 12 fish, and you may not possess more than one daily limit. In all park waters, the minimum length is 6 inches. The season for streams, which changes from year to year, conforms to that of the State of Washington. You can obtain complete fishing regulations at any ranger station or visitor center, or by writing to the superintendent.

Further Reading

Other publications about the park may be purchased in the park or ordered from the Mount Rainier Natural History Association, a nonprofit organization, at Longmire, Wash. 98397. A price list will be sent upon request.

Road mileages between points within Mount Rainier National Park and nearby cities

	ENUMCLAW	TACOMA	SEATTLE	PORTLAND	YAKIMA
NISQUALLY ENTRANCE	57	55	80	149	100
LONGMIRE	63	61	86	155	94
INSPIRATION POINT	69	71	95	165	84
PARADISE	71	74	98	168	87
BOX CANYON	61	79	98	166	76
STEVENS CANYON ENTRANCE	51	77	88	156	66
OHANAPECOSH	52	78	89	155	64
CAYUSE PASS	40	66	77	167	65
CHINOOK PASS	43	70	80	170	61
WHITE RIVER ENTRANCE	38	64	75	172	69
SUNRISE	52	78	89	186	83

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HOW TO REACH THE PARK

For a direct approach to your destination in the park, consult a current road map.

From late June to early September, daily bus service is available from Tacoma and Seattle, gateway cities to the park, to Longmire and Paradise. In winter no scheduled transportation is provided into the park.

For transportation rates write to the Rainier National Park Co., Box 1136, Tacoma, Wash. 98400.

ACCOMMODATIONS AND SERVICES

Hotels. National Park Inn, at Longmire, is open from early May until October; Paradise Inn is open from late June until Labor Day. Write to the Rainier National Park Company for reservations and rates. There are no overnight accommodations at Sunrise.

Camping. The main campgrounds, at Longmire, Cougar Rock, Paradise, Ohanapecosh, White River, and Sunrise, have fireplaces, tables, water, and sanitary facilities. For those who want solitude and more primitive conditions, small campgrounds are at Tahoma Creek, Sunshine Point, and Ipsut Creek. At Tahoma Creek, water must be taken from the nearby stream. Housetrailers may use campgrounds where there is space, but there are no utility hookups. Campsites cannot be reserved.

Campgrounds are not open in winter, except for Sunshine Point. Opening and closing dates depend on weather and snow conditions. Limited camping supplies are available at Longmire and Sunrise.

Meal service is available at Paradise Inn and cafeterias at the Paradise Visitor Center, Sunrise, and Longmire.

Post offices are at Longmire (all year) and Paradise (summer).

Medical services. There is a registered nurse at Paradise Inn. Hospitals are at Morton, 37 miles from Longmire and 49 miles from Ohanapecosh, and at Enumclaw, 37 miles from the White River entrance. Eatonville, 33 miles from Longmire, has a clinic.

Souvenir gift shops are at Paradise, Sunrise, and Longmire.

Mountain guide service is available only at Paradise.

Church services. The National Council of Churches ministry sponsors Protestant services at Longmire, Paradise, Ohanapecosh, and Sunrise. Catholic services are held only at Paradise. Church services are conducted from July 1 until Labor Day. Schedules are posted.

Service stations are at Sunrise (summer) and Longmire (all year).

HELP PROTECT YOUR PARK

Fire is the park's greatest enemy. Permits, available at any ranger station or visitor center, are required for building fires at any point other than auto campgrounds. Build fires only at designated places. Be sure your campfire is out before you leave it. Be careful with cigarettes and matches. Smoking while walking on trails is not allowed.

Caring for the park. Picking flowers and cutting or damaging trees or other vegetation are prohibited. Rocks and minerals or other material native to the park may not be taken away. Only dead and down trees may be used for firewood. Defacing signs, buildings, or other park property is punishable by law.

Climbing. All summit climbers must register with a park ranger before starting and upon returning.

Hunting is not permitted in the park. Firearms must be broken down or sealed to prevent their use.

You and the animals. Feeding, touching, or molesting any form of wildlife is prohibited. Although they may appear tame, bears and other wild animals can cause serious injury. Enjoy them from a distance.

Pets are allowed in the park if kept under physical restraint at all times. But they may not be taken on trails, cross-country trips, into public buildings, or to campfire programs.

Camping or parking trailers overnight along roadsides or at other areas not designated is not permitted.

Cleanliness. Combustible rubbish must be burned and other refuse placed in cans provided.

Vehicles of any kind are prohibited on all park trails.

ADMINISTRATION—Mount Rainier National Park is administered by the National Park Service, U.S. Department of the Interior.

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 the people.

A superintendent, whose address is Mount Rainier National Park, Longmire, Wash. 98397, is in immediate charge.

THE DEPARTMENT OF THE INTERIOR—the Nation's principal natural resource agency—bears a special obligation to assure that our expendable resources are conserved, that renewable resources are managed to produce optimum benefits, and that all resources contribute to the progress and prosperity of the United States, now and in the future.

U.S. DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

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