



Tranquillity, in a setting formed by violent eruption.
 Courtesy: Oregon State Highway Commission.

from a distance. Park regulations prohibit feeding deer or bear or molesting any animal. These regulations are enforced for your own safety.

Fishing. You may fish in park streams from June 15 to September 10, and in Crater Lake when the trail is open. No fishing license is required. The limit is 10 fish per day. You may not use or possess bait fish.

Preserving natural features. Other visitors will appreciate your consideration in leaving clean trails and roadsides. Trash containers are provided along roads. Every natural thing—flowers, trees, rocks, wildlife—is to be left undisturbed for others to enjoy. Take from here only pictures and pleasant memories; leave only traces of your footsteps.

ADMINISTRATION

Crater Lake National Park is a part of the National Park System. The System is composed of areas and places that are of such outstanding scenic, historic, and scientific interest that their preservation is considered to be of national importance. These areas are administered by the National Park Service of the U.S. Department of the Interior.

A superintendent is in immediate charge of the park, with offices in the administrative center, 3 miles south of Rim Village. Communications regarding the park should be addressed to the Superintendent, Crater Lake National Park,

Crater Lake, Oreg., during the summer, and to Box 672, Medford, Oreg., from October through May. Inquiries concerning accommodations within, and transportation to, the park should be addressed to Crater Lake National Park Co., Crater Lake, Oreg.

Park rangers are the uniformed protective force of the park. They are responsible for safeguarding its resources for your enjoyment and that of future generations, and they enforce park rules and regulations for your safety. If you need information or direction, or are in difficulty of any kind, see a park ranger. You will find him always ready to be of help.

Park naturalists, also uniformed, are the interpretive staff of the park. They conduct research programs, prepare publications, present evening programs and conducted trips, and engage in other activities that help you to enjoy and understand the park.

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 historic resources of the National Park System. Under this program, parking facilities, campsites, restrooms, and wayside exhibits have been added in Crater Lake National Park, and more are to be constructed. Better trails will make more scenic spots easily available.

VISITOR-USE FEES

Automobile, house trailer, and motorcycle permit fees are collected at entrance stations. When vehicles enter at times when entrance stations are unattended, it is necessary that the permit be obtained before leaving the park and be shown upon reentry. The fees applicable to the park are not listed herein because they are subject to change, but they may be obtained in advance of a visit by addressing a request to the superintendent.

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.

Cover photograph: Courtesy of Oregon State Highway Commission.

U.S. DEPARTMENT OF THE INTERIOR

Fred A. Seaton, *Secretary*

NATIONAL PARK SERVICE
 Conrad L. Wirth, *Director*



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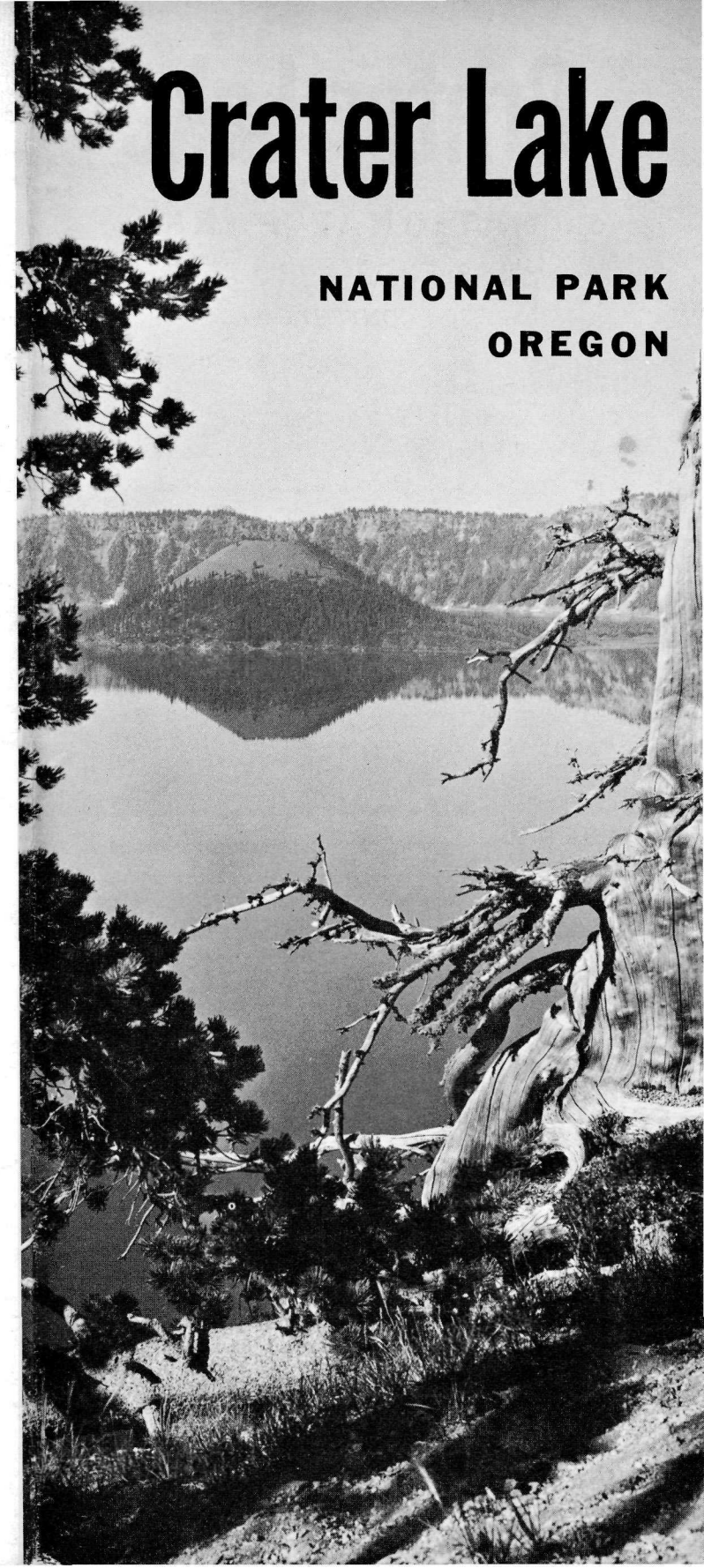
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Crater Lake

NATIONAL PARK
 OREGON



Crater Lake

NATIONAL PARK

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Welcome to Crater Lake National Park, which is a part of the National Park System administered by the National Park Service, U.S. Department of the Interior. We hope your stay will be enjoyable and inspiring, and that you will, while using the park, help us preserve it for the enjoyment of those who will follow you.

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.

In this park you will find beauty, beauty in a wonderful combination of form and substance and sparkling color—great curving walls of rock and sand, green spires of fir and hemlock, and the brilliant reflections of Crater Lake. All this is part of a remarkable story of a volcano.

As you view Crater Lake, let your imagination carry you back a few thousand years to the time when this spot was occupied by the summit of Mount Mazama, a mighty volcano towering to an elevation of more than 12,000 feet. This great volcano discharged a tremendous quantity of ash and lava which, along with subterranean withdrawals, caused the mountaintop to collapse, creating the caldera that now contains the unbelievably blue Crater Lake. The lake is the central feature of this 250-square-mile National Park on the crest of the Cascade Range in southern Oregon.

A major charm of Crater Lake is that the entire lake and its setting can be taken in by the eye at one time; yet its size is impressive. You may be surprised to learn that the lake is 6 miles wide, 1,932 feet deep, and has 20 miles of shoreline. The surrounding cliffs rise as much as 1,980 feet to the uneven caldera rim, which ranges from 6,683 to 8,156 feet in elevation.

HOW TO ENJOY THE PARK

First, read this booklet. The few minutes spent will help you to plan your visit and to make your experiences much more meaningful.

Second, stop at the visitor center at Rim Village. The exhibit building and the Sinnott Memorial Overlook building compose this visitor center.

In the exhibit building you may enjoy displays of wild flowers, rocks, wildlife, and other natural features. The naturalist in attendance will be happy to help you schedule your activities. He will explain the processes of nature that created the Crater Lake scene and other processes that are continuing to change it. Here, too, you may look over and purchase publications which will help you to understand the formation of the lake or guide you to a knowledge of park flowers or wildlife. The schedule of naturalist activities is posted here.

We urge you to attend the evening campfire programs and to explore the forests and lake with the naturalists as your guides. (For a description of these activities, see page 8.)

You may complete your orientation by visiting Sinnott Memorial Overlook building, which is just a few steps from the exhibit building. From the broad terrace, you will have the feeling of being suspended in space inside the caldera as you view the magnificent panorama. Mounted fieldglasses with explanatory labels will give added significance to the features you can see. In the back exhibit room, paintings and photographs portray the varying moods of the lake.

Now you are ready to see the park for yourself.



Phantom Ship. Courtesy: Oregon State Highway Commission.

WHAT TO SEE AND DO ON YOUR OWN

You will want to explore much of the park by yourself. Roads lead to most places of interest, and delightful trails will guide your footsteps to others. The little book *Along Crater Lake Highways* will be an invaluable aid to your automobile explorations. Also, look for the interpretive markers at many of the turnouts; they tell of the natural forces which have made the beauty that you see all around you.

Rim Drive, encircling the caldera, presents numerous observation points from which to view and photograph the lake. You will begin to comprehend the size and scenic grandeur of Crater Lake once you have taken this 34-mile drive.

The Pinnacles are an easy 6 miles from Rim Drive at Kerr Notch. Here, you will see the needlelike spires of pumice and scoria rising out of the 200-foot-deep canyon of Wheeler Creek. Long ago, this area was a veritable "valley of 10,000 smokes," where small, loose rock fragments solidified around the gas and steam vents. Later, water erosion carried away the softer surrounding material,

revealing the harder pinnacles. In Sand Creek canyon and in Godfrey Glen in Annie Creek canyon, you may see similar spires and fluted columns.

Cloudcap, reached by a short spur from Rim Drive, provides an excellent observation point. At an elevation of over 7,800 feet, among the windswept whitebark pines, you look down 1,600 feet to the lake surface, gaining a view which complements that from Sinnott Memorial Overlook.

North Entrance Road leads through lodgepole pine forests and the *Pumice Desert*. Try to visualize this area just after it was devastated by the flowing avalanche of pumice (a frothy lava) that covered it during the climatic eruptions of Mount Mazama. The lodgepole pine, a pioneer plant, has succeeded in reclaiming most of the area except the Pumice Desert. Even here the lodgepole may eventually win out and grow on top of a pumice cover that is as much as 200 feet thick. When you drive along State Route 62 from either the South or West Entrances, you will see forests that now grow where molten lavas once poured down the mountain-side. You will also see vertical walled canyons cut through the lavas by Annie Creek and Castle Creek.

Wizard Island is actually a volcano within a volcano. You can reach it by boat and climb the trail to the summit, about 760 feet above the lake. Once on top, you can climb down into the crater, which is about 90 feet deep and 300 feet wide.

Launch trips around the lake will give you a closeup view of the inside of a volcano and of the multicolored lava cliffs that are even more impressive when viewed from below. The *Phantom Ship* may remind you of a ship under sail in waters made even bluer by their closeness. Naturalists accompany these trips to explain the natural features. These trips start from the foot of Cleetwood Trail, and an enjoyable part of this experience is the walk into the caldera over this trail. You may secure further information about the trips at the visitor center or at the Crater Lake Lodge.

Hiking brings you into close contact with nature. You will be surprised to find how many things you notice while hiking that you would not otherwise see. A number of short trails terminate at points of interest which you will not want to miss. (You can purchase Geological Survey topographic maps, particularly useful on longer hikes, at the exhibit building.)

Cleetwood Trail, located on the northeast wall above Cleetwood Cove, leads to the lakeshore. This recently con-

structed trail descends gradually for 1.1 miles through a mixed evergreen forest to the boat landing. The launch trips start from this boat landing. You should allow 35 minutes for the trip down the trail and 45 minutes for the climb back.

Garfield Peak offers magnificent views of the lake and the surrounding region from its summit, 8,060 feet above sea level and almost 1,900 feet above the lake. You can reach the summit of the peak by following a 1.5-mile trail eastward from the lodge.

Discovery Point Trail is a delightful walk in the opposite direction from Garfield Peak. On this trail, you may stand near the place that Hillman stood when he, as the first white man to see the lake, made his exciting discovery more than a hundred years ago.

The Watchman, a peak on the west rim, rises more than 1,800 feet above the lake. You can reach the summit by taking an 0.8-mile trail from Rim Drive. Here you can see the fire lookout in operation. Exhibits in a lower room of the lookout building describe the life and death of a forest. Exceptional views extend in all directions, and on clear days you can see snowy Mount Shasta, more than 100 miles away in California.

Mount Scott, directly across the lake from The Watchman, offers a somewhat longer hike. To reach the fire lookout on its summit, you must climb 1,230 feet over 2½ miles of trail. The grade is easy, however. Here, 8,926 feet above sea level, and almost 2,800 feet above the lake, you will be on the highest point in the park. The fire lookout stations on Mount Scott and The Watchman are major aids in protecting the forests of Crater Lake National Park and the surrounding National Forests from the ravages of fire.

Castle Crest Wildflower Garden, 0.4 mile southeast of park headquarters, has a self-guiding nature trail with a guide booklet, and so you can stroll leisurely through forest and meadow, meeting the plants and, we hope, some of the wildlife.

THE NATURALIST PROGRAM

The National Park Service provides free naturalist services during the summer, so that you may have a more enjoyable visit and gain greater appreciation for the superlative natural features preserved in this park. Programs of current interpretive activities are conspicuously posted. Regardless of your age or interests, there is an activity for you.

Information may be obtained from the naturalist on duty at the exhibit building or from any other uniformed employee.

Talks on the origin of Crater Lake are given several times each day at Sinnott Memorial Overlook.

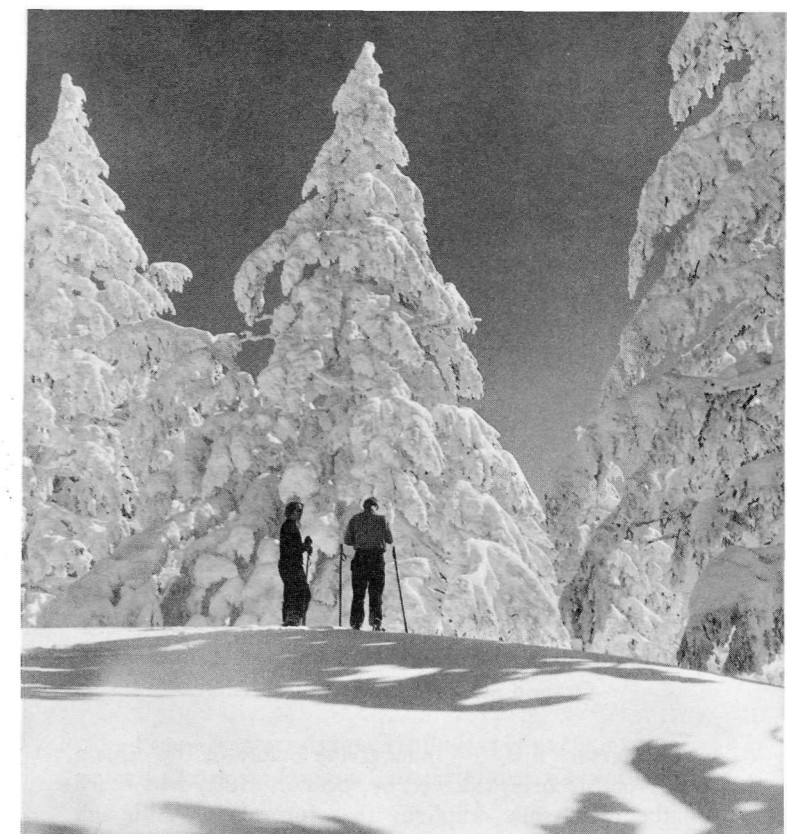
A *campfire program*, consisting of announcements of the following day's activities, group singing, and a slide-illustrated talk, is held each evening at the Mazama Campground campfire circle south of Annie Spring junction. Similar programs are held indoors at Community House in Rim Village. A half-hour illustrated talk is also presented each evening at the Crater Lake Lodge. Talk topics change each night.

Guided trips are scheduled daily to points of interest within the park. Three-hour hikes along Garfield Peak or Discovery Point Trails start from the exhibit building. Rim Drive bus trips begin at the lodge. Boat trips start at the foot of Cleetwood Trail. The head of this trail is about 11 miles north and east around Rim Drive from Rim Village.

WINTER VISITS

You may thrill to the experience of driving between towering snowbanks along the park's open-all-year roads. Lying on the crest of the Cascades, which intercept moisture-laden clouds from the Pacific Ocean, Crater Lake National Park receives more than 50 feet of snow annually. The snowy splendor delights camera enthusiasts and also holds special appeal for those who seek the solitude and unblemished beauty of winter landscapes.

For your enjoyment, the National Park Service maintains two ski trails from Rim Village to park headquarters. You



From October through May, heavy snowfalls sometimes decorate the trees.

will want to climb the snowbank at Rim Village to see the deep blue of Crater Lake contrasted with the glittering whiteness of the surrounding snow-covered walls.

On weekends and holidays from about September 15 to June 15, the warming room at Rim Village offers light refreshments and souvenirs. Overnight accommodations are available at several locations a short distance outside the park.

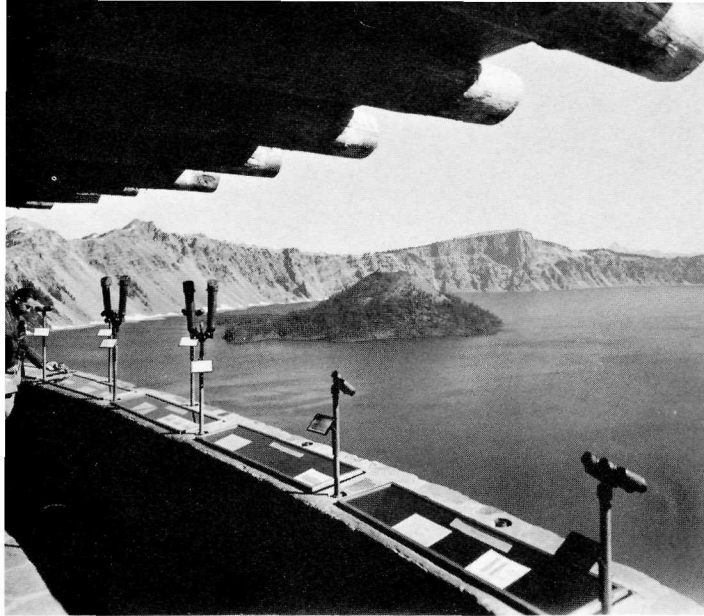
You may enter the park and drive to Rim Village by either the South or West Entrance. The North Entrance and Rim Drive are closed by snow during the winter. You should be well supplied with gasoline and oil; the service station is not open in winter. Tire chains may be mandatory at any time and should be carried. A towrope and shovel are desirable accessories. Park rangers are on duty to render service all year.

DISCOVERY OF CRATER LAKE

As you stand on the caldera rim and gaze across the blue water of the lake—so remote, so unexpected in the high mountains, so impressive in its rugged surroundings—you may wonder how this scene affected the first people who saw it.

Crater Lake, a 20-square-mile mirror. Courtesy: Oregon State Highway Commission.





Sinnott Memorial observation station. Courtesy: Oregon State Highway Commission.

To the very first, the Indians, the beauty of the caldera was probably overshadowed by the stories they had heard of the cataclysmic eruptions that formed it. Although Crater Lake was well known to the Klamath Indians, few moccasined feet trod the mountain's game trails. To them, the place of the mountain and the lake was the "battleground of the gods."

It was on June 12, 1853, according to records, that the first white man saw the lake. On that date, John Wesley Hillman, a young prospector leading a party in a futile search for a rumored "Lost Cabin Mine," topped a ridge and suddenly saw the lake spread out before him. He named it Deep Blue Lake, and reported his discovery when he returned to Jacksonville, a mining camp in the Rogue River Valley near Medford.

On October 21, 1862, Chauncey Nye, leading a party of prospectors from eastern Oregon to Jacksonville, stumbled upon the lake. Thinking that he had made a first discovery, he named it Blue Lake.

Two soldiers who were stationed at Fort Klamath "discovered" the lake on August 1, 1865. They demonstrated more imagination—and a greater depth of feeling—when they named it Lake Majesty.

Four years later, some visitors from Jacksonville gave it the present name of Crater Lake.

Before 1885 Crater Lake had few visitors and was not widely known. On August 15 of that year William Gladstone Steel, from Kansas, after 15 years of longing to see the lake, stood for the first time on its rim. Inspired by its beauty, Steel conceived the idea of preserving it as a National Park.

For 17 years, with much personal sacrifice, Steel devoted time and energy to this end. And his efforts were not in vain. The park was established on May 22, 1902. Steel continued to devote his life to development of the park, serving as superintendent and later as park commissioner, which office he held until his death in 1934.

INDIAN LEGENDS ABOUT CRATER LAKE

The terrible destruction of Mount Mazama was witnessed by man. Mount Mazama pumice has been found overlying Indian cultural remains in various caves throughout central Oregon.

Legends of the Klamath Indians tell how the "Chief of the Below World," Llao, a lesser diety, passed through the summit crater and sometimes stood on the mountain's top. And at times, Skell, "Chief of the Above World," stood on top of Mount Shasta, some 100 miles to the south. The legends tell also of a war between the gods, a time of great explosions—rocks flying through the air, flames destroying the forests and the Klamaths' homes, and 7 days of darkness lighted only by the glare of flaming mountains. The climax of the battle came when Llao's throne, Mount Mazama, collapsed within itself.

The Indians' account of the mountain's destruction is remarkably similar to the geologists' explanation.

You may read other legends about the lake water, Wizard Island, and Llao Rock in Ella E. Clark's book *Indian Legends of the Pacific Northwest*. (See page 26, "Other Publications.")

HOW CRATER LAKE WAS FORMED: THE GEOLOGIC STORY

Origin of the mountain. The slope that you ascend to the rim and the caldera wall, rising 500 to 2,000 feet above the water, are remnants of Mount Mazama.

In comparatively recent geologic time, numerous volcanic peaks were formed near the western edge of a vast lava plateau that covered parts of what is now Oregon, Washington, Idaho, Montana, Nevada, and California. These peaks, among which Mount Mazama was one of the most commanding, formed a part of the Cascade Range. Tremendous volcanic activity built Mount Mazama out of successive lava flows and accumulations of volcanic debris—ash, cinder, and pumice. Later, streams and glaciers carved valleys in the sides of the volcano and deposited rock debris on its flanks. You can see for yourself the layered character and different formations of the mountain. They are clearly exposed in many places within the caldera wall.

Forming of dikes. Volcanoes, in addition to extruding surface flows of lava, often force molten rock into great underground fissures. Subsequent hardening of this magma results in dikes, or walls, that are frequently harder than the enclosing rock. At Crater Lake the destruction of the

mountain and erosion have exposed several dikes within the caldera wall. One of the finest examples you will see is the Devils Backbone.

Actions of streams and glaciers. Annie Creek, Castle Creek, and other streams are at work cutting their canyons ever deeper, even as they have been doing for centuries. These same streams earlier cut canyons down which glaciers flowed. Within the caldera wall are cross sections of stream-cuts and accumulations of water-carried gravel and boulders.

Look for markers indicating where glacial ice—carrying sand, pebbles, and boulders—scratched and polished rock surfaces over which it moved. Glacial polish and thick beds of glacial debris are common around the mountain. They occur on the surface rock and between earlier layers, showing that glaciers existed at various stages in the history of the mountain. You can see a large glacial deposit near the waters' edge at the bottom of Cleetwood Trail.

Characteristic U-shaped valleys, such as Kerr Notch, Sun Notch, and Munson Valley on the southerly slopes of Mount Mazama, result when glaciers modify the V-shaped, youthful, stream-carved canyons. The lava flows that formed Llao Rock filled an ancient glacial valley. As you can see, the bottom of the flow is U-shaped.

Forming of the caldera. Many geologists have concluded that the basin occupied by the lake resulted from the collapse and subsidence of the volcanic cone of Mount Mazama. This explanation was first proposed by J. S. Diller, of the U.S. Geological Survey, who considered that the support of the summit was weakened by drainage of great quantities of molten rock through subterranean cracks. Extensive study by Prof. Howel Williams, of the University of California, led him to practically the same conclusion.

In his delightful, popular, and scientifically accurate book, *Crater Lake, The Story of Its Origin*, Williams describes great quantities of pumice extending more than 80 miles northeast of Mount Mazama. This pumice was blown from the mountain in a catastrophic event and was carried northeastward by the prevailing winds. Analysis shows that this material derived from the heart of the volcano and is not fine fragments of the original mountain walls.

Following this eruption, the crater is believed to have literally boiled over, pouring out great quantities of frothy material in a series of glowing avalanches. These avalanches must have traveled at a terrific speed down the valleys, for those to the south and west did not begin to deposit their load until they had reached a distance of 4 to 5 miles. The greater quantity flowed down the mountain to the south and southwest for distances as great as 35 miles from the source. The total volume of the ejected lava was about 5 cubic miles. It is believed that an additional 1.5 cubic miles of old rock was carried away at the same time.

Accompanying these eruptions, which occurred within the past 8,000 years, cracks developed in the flanks of the

volcano; other cracks opened beneath it, probably parallel to the Cascade Range, draining out an estimated 10 cubic miles of molten rock. Soon the top of the mountain collapsed into the void produced by these ejections and withdrawals. Thus was one of the highest points in Oregon changed into the great pit containing our country's deepest lake. With the aid of Williams' book, you can locate much of the geologic evidence upon which this theory rests.

By projecting the slopes of the mountain remnant upward—conforming to the slopes of similar volcanoes—geologists have estimated that approximately 17 cubic miles of the upper part of Mount Mazama was destroyed by the collapse.

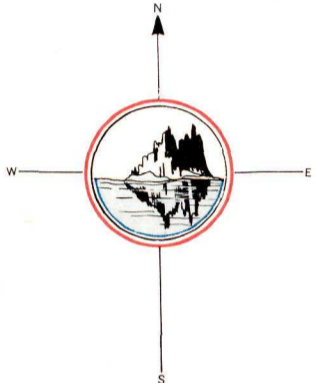
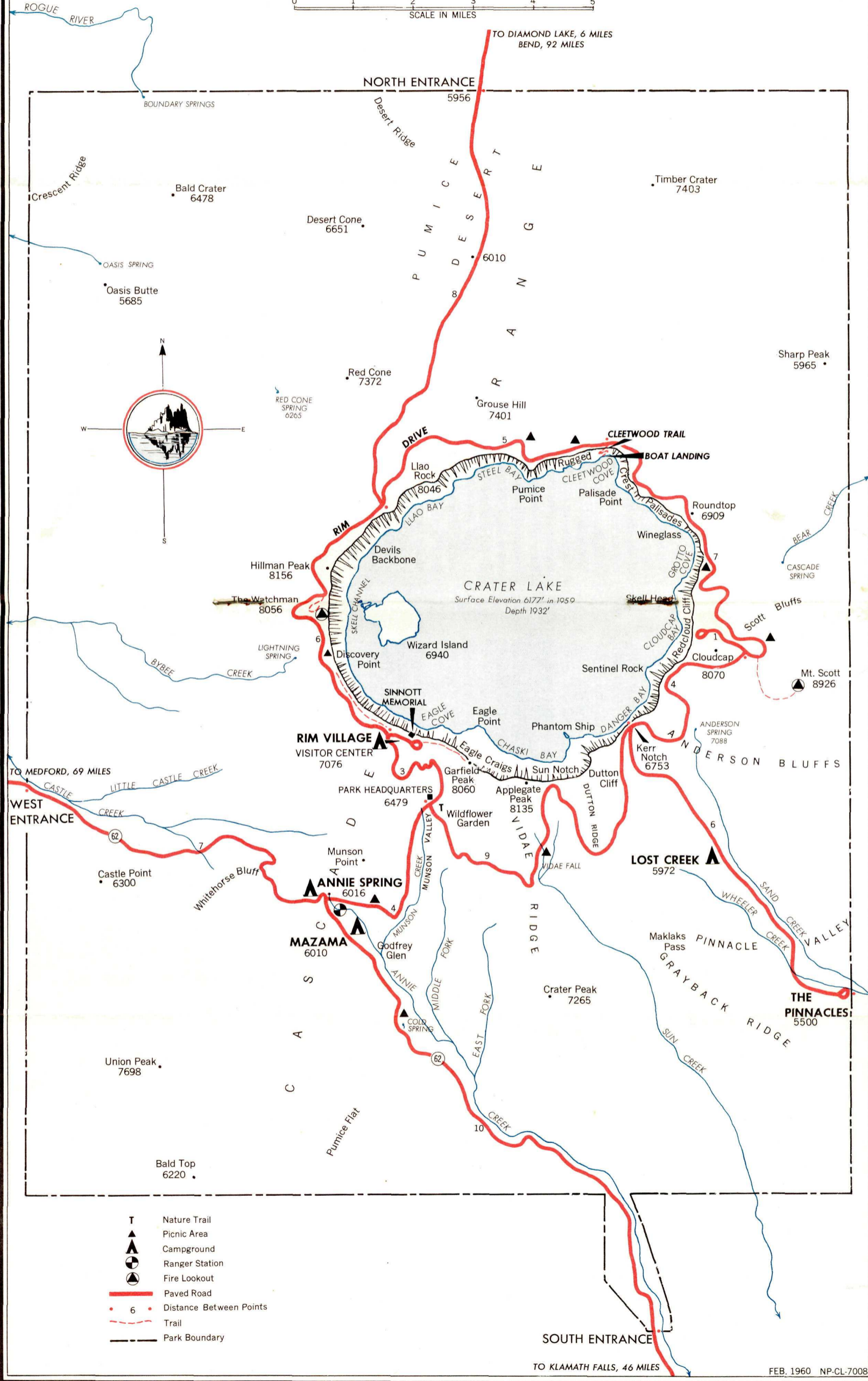
The growth of Wizard Island. After the destruction of the peak, volcanic activity within the caldera produced a small volcanic cone now known as Wizard Island. You can see only the top of this young mountain, the lowest part of which is more than 1,900 feet below the surface of the present lake. Soundings show that two other cones lie within the caldera, hidden from your eyes by the lake water.

The Pinnacles, picturesque reminders of ancient fumaroles. Courtesy: Oregon State Highway Commission.



CRATER LAKE NATIONAL PARK

OREGON



- T Nature Trail
- ▲ Picnic Area
- ⊙ Campground
- ⊙ Ranger Station
- ⊙ Fire Lookout
- Paved Road
- 6 Distance Between Points
- - - Trail
- - - Park Boundary

SOUTH ENTRANCE

TO KLAMATH FALLS, 46 MILES



Note the crater at the top of Wizard Island.

Origin of the lake. The water of Crater Lake comes from rain and snow. The average annual precipitation is 69 inches, most of which falls as snow. As you can see, the lake has no significant inlet, and we know of no outlet, except seepage. The water level fluctuates only slightly from season to season. Evaporation and seepage are in a state of relative balance with precipitation. The annual variation is from 1 to 3 feet, the level being highest in spring and lowest in autumn.

Depth of the lake. Only six lakes in the world are deeper than Crater Lake. In the Western Hemisphere, only Great Slave Lake in Canada is deeper—about 80 feet deeper.

In 1888, a U.S. Geological Survey expedition, under the direction of Capt. Clarence E. Dutton, made a total of 94 soundings in the lake. Using crude wire-and-weight gear, the party calculated the greatest depth to be 1,996 feet.

In 1959, a U.S. Coast and Geodetic Survey party completely resounded the lake. Using a modern sonic depth finder, this group found the greatest depth to be 1,932 feet. The latest techniques revealed that the 1888 figure was off by a mere 64 feet!

Color of the lake. The deep blue of the lake is believed

to be caused chiefly by the scattering of sunlight in water of exceptional depth and clearness, the blue rays of sunlight being bent back upward and the rays of other colors being absorbed.

WILDLIFE

The green meadows and forests that now cover the once bleak volcanic landscape provide food and shelter for many birds and other animals. Your visit will be enriched as you learn more about these interesting creatures.

Mammals You May See

The appealing golden-mantled ground squirrels scampering around every parking turnout can hardly escape your notice. They are often confused with the two species of chipmunks, which are smaller and shyer. It is easy to tell the difference: The ground squirrel has a stockier body, with a white strip between two dark stripes on each side of the back, and no stripes on the face; the two species of chipmunk have stripes on the face. We recommend that you enjoy these animals without handling them; they may bite, and they occasionally carry serious disease.

The small, tree-inhabiting Douglas squirrel, or chickaree, may scold you from the safety of a tree limb. This squirrel, dark gray-brown above and pale orange to light gray below, is common. Another mammal that spends much time in trees, but is seldom seen there, is the porcupine. You are more likely to see it along the road at night.

Look for the large, fat-bodied, yellow-bellied marmot in the rock slides. You may also hear the plaintive, bleating "yenk, yenk" of the tiny pika, or "rock rabbit," issuing from crevices in the talus.

Golden-mantled ground squirrel.



Badger, beaver, coyote, bobcat, and mountain lion are rare. You are more likely to see the beautiful red fox.

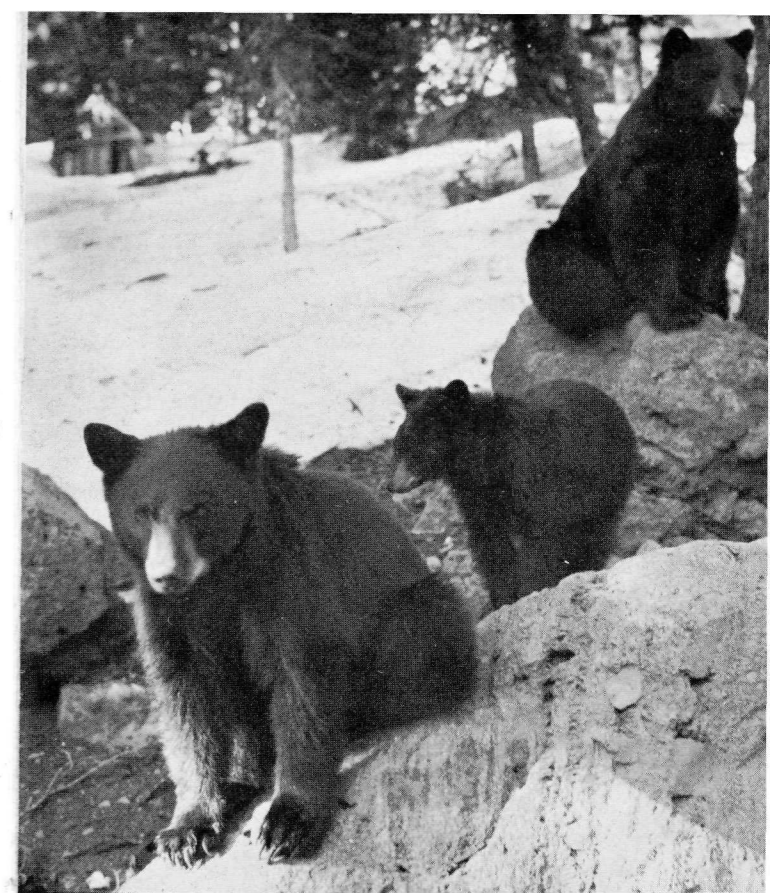
The black bear is fairly common and may be encountered in many parts of the park. Usually it is black, but it may also be any of several shades of brown, just as hair color varies among people. Do not let bears get close to you. Many people have been painfully clawed because these animals have lost their natural fear of man and have learned to beg for food. **DO NOT FEED THE BEARS!** Feeding them is unlawful, and violating this regulation seriously endangers you and other park visitors by encouraging the bears to beg. When they beg, they approach closely, and, unpredictably, they may suddenly turn on the person from whom they are begging and inflict serious wounds.

The comparatively small and dark black-tailed deer of the Pacific Coast is the more common form of deer, particularly on the west side of the park. Look for the larger, lighter colored mule deer around meadows along Rim Drive on the east side of the park.

Birds You May See

You will soon come to recognize several of the park's more conspicuous birds. However, many of the 160 recorded species are secretive and are seldom seen. On the rim, you will find the harsh-voiced Clark's nutcracker. You can easily recognize this bird, which is the size of a small crow, has a long, sharp, black bill, an overall light-gray body, and white patches on black wings and tail. Also numerous at times on the rim are the dark-blue Steller's jay, which has a long blackish crest, and the uncrested gray jay, which has a short bill, a dark patch on the back of the head, a white

Clark's nutcracker.



Black bears—mother and cubs.

crown, and whitish underparts. The gray jay may be the uninvited guest at your picnic.

Look for the larger birds often seen within the caldera. Bald eagles have nested on Wizard Island; and both the bald eagle and the golden eagle may be seen flying over the lake. From the top of the Devils Backbone, you are likely to see ravens flying near the crags. Llo Rock is the home of peregrine falcons. California gulls are seen regularly on the lake, and several species of ducks and geese use the lake during migration.

Other species you are most likely to observe are the great horned owl, red-tailed hawk, sparrow hawk, nighthawk, rufous hummingbird, olive-sided flycatcher, mountain chickadee, red-breasted nuthatch, dipper (water ouzel), robin, hermit thrush, Swainson's thrush, mountain bluebird, golden-crowned kinglet, Audubon's warbler, western tanager, evening grosbeak, Cassin's finch, gray-crowned rosy finch (vicinity of snowbanks), pine siskin, red crossbill, Oregon junco, chipping sparrow, and fox sparrow. Listen for the booming call of the blue grouse in the fir forests during the spring.

You will find more information about the birds in Dr. Donald S. Farner's book *The Birds of Crater Lake National*

Park. Park naturalists and rangers will welcome your questions and help you to become better acquainted with the pleasures of bird watching.

LIFE IN CRATER LAKE WATERS

The Klamath Indians believed ferocious monsters to dwell in the mysterious blue waters of Crater Lake. We know that this is not true, but Crater Lake does contain a surprising number of plants and animals. Much of this life came into the water naturally, and some was introduced by man. Thirty-seven fingerling rainbow trout were planted in the lake by William G. Steel in 1888. Other plantings were made up to the early 1940's, when this practice was discontinued. Populations of rainbow trout and kokanee (landlocked form of sockeye salmon) are now maintained through natural reproduction.

You may see the harmless valley garter snake on shore or in the water. Among the rocks, look for crayfish, snails, caddis fly larvae, the Crater Lake newt, and the long-toed salamander. Freshwater shrimp are among the forms restricted to the water. Just as important are the microscopic animals and plants that you cannot see, for they supply food for the larger animals. You may see the glassy skeletal remains of diatoms which are deposited as a thick ooze on the floor of Fumarole Bay and elsewhere around Wizard Island. Larger forms of algae give a green color to the tiny pools on the west end of the island.

You will agree, after gazing into the depths, that Crater Lake water is extremely clear. Further proof is found in the layer of aquatic moss (*Drepanocladus aduncus*) found on the lake floor at depths between 60 and 425 feet. Only great clarity would permit necessary light to reach this depth. Moss is not known to grow at such an extreme depth elsewhere in the world.

FORESTS AND WILDFLOWERS

As you will see, the distribution of plants is dependent on several factors, including climate and soil type. Generally, as you climb upward the air becomes cooler and storms bring heavier precipitation. These changing "climatic zones" produce characteristic groupings of plants and animals, called life zones. Three such zones, occurring within the park, contain over 570 species of ferns and flowering plants.

Trees and Shrubs

As you drive through the Transition life zone on the lower western slopes of Mount Mazama, look for scattered stands of Douglas-fir. You may see the drier part of this zone, characterized by the ponderosa pine, at South Entrance. Associated with the ponderosa pine are white fir,

sugar pine, and a few Douglas-fir. Broad-leafed trees, such as quaking aspen and black cottonwood, are present in moist locations. The snowbrush ceanothus and greenleaf manzanita extend upward into the Canadian life zone.

Nearly pure stands of lodgepole pine blanket large areas in the Canadian life zone. Elsewhere, you will find western white pine, Shasta red fir, subalpine fir, and mountain hemlock. Shrubs include the currants, whortleberry, pinemat manzanita, and bearberry honeysuckle. Photographers delight in the showy red berries of the Pacific red elder and the Pacific mountain-ash.

In the rim area around Crater Lake, Canadian life zone plants mingle with those of the Hudsonian life zone. Mountain hemlock and Shasta red fir are common to both zones. Whitebark pine, found sparingly near Rim Village, develop into nearly pure stands at higher elevations. You will find their storm-twisted forms near the highest point along the Cloudcap road.

Wildflowers

Colorful meadows of wildflowers are found around numerous springs which form the sources of streams on the outer slopes of the mountain. Look for wildflowers at these places and along the road between park headquarters and Rim Village and along Rim Drive. The flowers add to the pleasure of hiking the park trails. July and August are the best months for wildflowers, although you can find them earlier in lower areas and on warmer exposures.

Blossoms of the spreading phlox, which carpet the barren pumice areas, may be so profuse as to fill the air with their delightful and delicate incense. You may expect phlox and the western pasqueflower to appear shortly after the snow melts. Patches of painted-cup and sulfur eriogonum color the roadsides, followed later by common pearl-everlasting and fireweed.

Plant labels will introduce you to the flowers as you stroll along the Garfield Peak or Discovery Point Trails. Castle Crest Wildflower Garden, near park headquarters, is one of the most attractive and ideal places for studying Crater Lake flora. There you can see orchids, violets, columbine, gilia, painted-cup, bleedingheart, monkshood, aster, and great masses of lupine and monkeyflower, all labeled for identification. You can use the self-guiding trail booklet to learn about the associated trees and shrubs.

The fresh flower display at the exhibit building in Rim Village will help you to recognize the plants that you see along the park roads and trails, and there are several informative publications about the park's wildflowers. The booklet *Along Crater Lake Highways* calls attention to outstanding wildflower locations along roads. You will find *101 Wildflowers of Crater Lake National Park* useful for identifying the commonly seen flowers.



High snowbanks on the road to the rim.

THE CHANGING SEASONS

It has been said that Crater Lake has but two seasons—winter and summer. This is not exactly true, for spring is the season when deep winter snows melt, and summer, during July and August, is more like spring should be. Autumn heralds the coming winter, and yet it provides beauty of earth and sky. You must visit Crater Lake at all seasons to appreciate it fully.

Snow covers the park for nearly 8 months of the year. On your winter drive to Crater Lake, you pass between high snowbanks, and you enter the cafeteria, now a "warming hut," through a snow tunnel. Buildings and campgrounds lose their identity and become as one with the white wilderness. Trees bend gracefully under heavy snow burdens; dazzling white contrasts with blue sky; there is a feeling of immaculate cleanliness and of serenity.

Spring brings the melting of snow, northward flights of ducks and geese, bears emerging from their winter dens, the arrival of summer birds, and deer working their way up from their low winter ranges. You will be greeted by

the golden-mantled ground squirrel and the Clark's nutcracker.

Park crews work hard to clear the roads of snow. The North Entrance road may be open by mid-June; the Rim Drive, early in July. There will be bare ground at places, but you will still travel between impressive snowbanks where bulldozers and rotary plows were used to carve out a passage.

Summer, barely 2 months long, is full of activity: visitors trying to see this masterpiece of nature in too short a time, wildlife caring for their young, and streams bounding down the steep slopes; yet the atmosphere is one of peace and quiet. The days are usually warm and nights are cool, but occasionally storms may lend a feel of winter. Summer is the time when all services are available and the park may be most easily seen.

Autumn weather is unpredictable, with storms punctuating the crisp air and bright blue skies. Rim Drive and the North Entrance road remain open until the first heavy snow. Especially during October, autumn colors of dogwood, maple, willow, and aspen make the drive to the park from the surrounding lowland a delightful experience.

OTHER PUBLICATIONS

You can increase your enjoyment and understanding of the park by reading of it in greater detail. The following publications are among those sold through the Crater Lake Natural History Association, a nonprofit corporation organized for the purpose of assisting in the scientific, educational, historical, and interpretive activities of the National Park Service. You can purchase the publications at the exhibit building and at park headquarters.

Butcher, Devereux. *Exploring our National Parks and Monuments*. Houghton Mifflin Co., Boston. 1954.

Clark, Ella E. *Indian Legends of the Pacific Northwest*. Univ. of Calif. Press, Berkeley, Calif. 1953.

Crater Lake Natural History Association. *Nature Notes from Crater Lake*. Crater Lake Nat. History Assoc., Crater Lake, Oreg.

Farner, Donald S. *The Birds of Crater Lake National Park*. Univ. of Kans. Press, Lawrence, Kans. 1952.

Moll, Ernest G. *Blue Interval*. Crater Lake Nat. History Assoc., Crater Lake, Oreg. 1935. (Poetry about Crater Lake.)

Ruhle, George C. *Along Crater Lake Highways*. Crater Lake Nat. History Assoc., Crater Lake, Oreg. Rev. 1960.

Shankland, Robert. *Steve Mather of the National Parks*. Alfred A. Knopf, New York. 1951.

Sharpe, Grant, and Sharpe, Wenonah. *101 Wildflowers of Crater Lake National Park*. Univ. of Wash. Press, Seattle, Wash. 1959.

Story, Isabelle F. *The National Park Story in Pictures*. U.S. Government Printing Office, Washington, D.C. 1957.

Tilden, Freeman. *The National Parks: What They Mean to You and Me*. Alfred A. Knopf, New York. 1951.

Williams, Howel. *Crater Lake, The Story of its Origin*. Univ. of Calif. Press, Berkeley, Calif. 1942.

HOW TO REACH THE PARK

By automobile. Paved State highways connect with the park road system at all entrances. West Entrance: State Route 62 connects, through Medford, with U.S. 99, 199, and 101. South Entrance: State Route 62 connects with U.S. 97. North Entrance: State Route 230 connects with U.S. 97. The roads through the West and South Entrances to the rim are maintained as all-year roads. The North Entrance road and Rim Drive are closed from approximately September 25 to July 1, depending on snow conditions.

By common carrier. Buses operate between Crater Lake and Klamath Falls on a daily schedule during the summer. Klamath Falls is served by the Southern Pacific Lines, West Coast Airlines, Greyhound Bus Lines, and Trailways buses.

WHERE TO STAY

Free campgrounds are open from about July 1 to September 30, depending on snow conditions. Mazama and Annie Spring Campgrounds, near the junction of the South and West Entrance roads, and Rim Campground, at Rim Village, have fireplaces, tables, water, and flush toilets. Lost Creek Campground, on the road to The Pinnacles, has fireplaces, tables, water, and pit toilets. Housetrailers are welcome, but there are no utility connections.

Reservations for campsites cannot be made in advance. For campground rules, consult the campground bulletin board and see page 29 of this booklet. If you need advice, ask a park ranger. And a word of caution: Bears may take your food if you leave it unprotected in camp.

Lodge and cabins, located at Rim Village, are open from about June 15 to September 10. You should make reservations well in advance and send a deposit. You can write to the Crater Lake National Park Co., Crater Lake, Oreg., for information and reservations.

Picnic areas are provided for short stops. They have tables and pit toilets. Fires are not permitted. You may choose from among the eight areas that are conveniently located along park roads, as shown on the map in this booklet.

SERVICES

Food and supplies. The dining room at Crater Lake Lodge is open during the same period that the lodge is in operation. The cafeteria in Rim Village serves meals from 7 a.m. to 8:30 p.m. during the summer. During the winter, on weekends and holidays, it serves light refreshments when used as a warming room.

Store. There is none; but you can buy some groceries at the cafeteria in Rim Village.

Equipment rental. You can rent rowboats and fishing tackle at the boat landing at the foot of the Cleetwood Trail. Private boats are not permitted on the lake.

Mail. A branch post office is located in the administration building at park headquarters. Mail should be addressed to you in care of General Delivery, Crater Lake, Oreg. Guests of the Crater Lake National Park Co. should have mail addressed in care of the Crater Lake Lodge.

Church. Protestant church services and Sunday school are conducted at Community House, Rim Village, and at the campfire circle in Mazama Campground. Schedules are posted on bulletin boards and are announced at campfire programs. Catholic services are held in nearby towns.

Tours. Launches make the trip to Wizard Island several times each day. A 2½-hour launch trip around the lake leaves the boat landing at 9 o'clock each morning during

the boating season. Scenic bus trips, around Rim Drive, leave the lodge daily. Naturalists go with groups on all trips except those to Wizard Island.

Telephones are located at park headquarters, at the lodge, cafeteria, and Annie Spring Entrance Station.

Gasoline. A gasoline station is open during the summer near park headquarters. No storage or repair facilities, however, are available within the park. In case of accident or mechanical failure, towing service must be obtained from outside the park.

YOU CAN PROTECT YOUR PARK

The beauty and primitive atmosphere of Crater Lake National Park exist today because, since the park was established in 1902, our Government and our visitors have believed in the ideal of preserving it for future generations. We should do no less for those who follow us.

The National Park Service has established practical rules for your safety and to help you to protect your park.

For yourself. You are on a vacation and should be careful, but your vacation may be spoiled if you are careless. Stay on the trails—and above all, *do not venture over the caldera wall*, except on the trails. The volcanic origin of the rock and soil here make for the most treacherous footing. Avoid trips alone.

Your car. All park roads are safe if you drive carefully. Maximum speed limits are posted; however, you will see more and have a more enjoyable visit if you drive slowly.

Your camp. Use only the designated campgrounds which are provided for your convenience. Burn all possible trash in your campfire; place all other refuse in garbage cans. Use only dead and down material for your campfire. Please maintain quiet between 10 p.m. and 6 a.m. Remember, a good camper is a clean camper.

Pets. You may bring your dog or cat with you. However, to protect wildlife, and in consideration for others, it must be kept in your car, on a leash, or caged at all times. Pets are not permitted in public buildings, on trails, or beyond the rim wall.

Fires and smoking. Your carelessness may start a fire, leaving behind a desolation of blackened forest, of dead animals, and even dead people. Build your fire only in a campground fireplace and extinguish it completely with water whenever you leave. Do not smoke while you are walking. If you have to smoke, stop and clear a small patch of ground in which to deposit your matches, ashes, and extinguished tobacco. When driving, use your ash tray. Throwing burning material from your car is unlawful. Report fires immediately to the nearest park ranger.

Wild animals. You may see bear, deer, and other animals. All are wild; some are dangerous. Watch them

Mount Scott's hollowed flanks tell of past glaciers.

