

CRATER LAKE

NATIONAL PARK

Oregon



WARNING ABOUT WILD ANIMALS

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

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

CRATER LAKE

NATIONAL PARK

Crater Lake, now a peaceful, inspiring scene in which to enjoy wonders created by both violent and gentle moods of Nature, is the climax of a remarkable volcanic story.

A few thousand years ago there stood a great volcano, mighty Mount Mazama, where the lake now lies. Early Indians were terrified by the volcano's violence, but, today, the terror is gone. After a tremendous discharge of ash and lava, thousands of feet of the mountaintop collapsed, producing a great crater. This crater now holds an unbelievably blue body of water. It is the central feature of the 160,290.33-acre Crater Lake National Park, which is on the crest of the Cascade Range in southern Oregon.

A major charm of Crater Lake is that the whole lake and its setting can be taken in by the eye at one time. Yet its size is impressive. The lake is about 20 square miles in area, 6 miles wide, and has 20 miles of shoreline. Measuring 1,996 feet in depth, it is the second deepest in North America and seventh deepest known in the world.

The surrounding cliffs rise as much as 2,000 feet to the uneven crater rim which averages about 7,000 feet in elevation.

Discovery and History

History says that the Klamath Indians knew of, but seldom visited, Crater Lake before its discovery by white men. The Indians regarded the lake and the mountain as the battleground of the gods. The lake was discovered on June 12, 1853, by John Wesley Hillman, a young prospector leading a party in search of a rumored "Lost Cabin Mine." Having failed in their efforts, Hillman and his party returned to Jacksonville, a mining camp in the Rogue River Valley, and reported their discovery which they had named Deep Blue Lake.

On October 21, 1862, Chauncey Nye, leading a party of prospectors from eastern Oregon to Jacksonville, happened upon the lake. Thinking that they had made a discovery, they

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.

named it Blue Lake. A third "discovery" was made on August 1, 1865, by two soldiers stationed at Fort Klamath, who called it Lake Majesty. In 1869 this name was changed to Crater Lake by visitors from Jacksonville.

Before 1885 Crater Lake had a few visitors but was not widely known. On August 15 of that year William Gladstone Steel, after 15 years of effort to get to the lake, stood for the first time on its rim. Inspired by its beauty, Judge Steel conceived the idea of preserving it as a national park. For 17 years, with much personal sacrifice, he devoted time and energy to this end. Success was realized when the park was established on May 22, 1902. Steel devoted the remainder of his life to development of the park, serving as its second superintendent and later as park commissioner, which office he held until his death in 1934.

The Geologic Story of Crater Lake

ORIGIN OF THE MOUNTAIN. Geologists say that the slope, which visitors ascend to view the lake, and the crater wall rising 500 to 2,000 feet above the water are remnants of a mountain which stood more than 12,000 feet high. This ancient peak, now destroyed, is known as Mount Mazama.

In comparatively recent geologic time, numerous volcanic peaks were formed near the western edge of a

vast lava plateau covering portions of Oregon, Washington, Idaho, Montana, Nevada, and California. These make up the Cascade Range, of which Mount Mazama was one of the commanding peaks. It was built by successive lava flows with some accumulation of volcanic ash. The cone thus formed was modified by streams and glaciers which carved valleys in its sides and deposited rock debris on its flanks. The layered character and different formations of the mountain are now clearly exposed in numerous places within the crater wall.

FORMING OF DIKES. In addition to broad surface flows, it is common for molten lava to be squeezed into cracks, or fissures, that develop in a volcano. Such filling results in dikes, or walls, frequently harder than the enclosing rock. At Crater Lake the destruction of the mountain and subsequent erosion have exposed numerous dikes in the wall, of which the Devil's Backbone on the west side of the crater is the outstanding example.

ACTION OF STREAMS AND GLACIERS. In the layers forming the crater wall there is evidence of the action of water. In some places this is shown by the cutting of valleys; in others, by the accumulation of water-carried gravel and boulders.

Glacial ice, carrying sand, pebbles, and boulders, scratches and polishes rock surfaces over which it moves. Glacial polish and thick beds of glacial debris are common around the mountain. They occur on the surface rock and between earlier layers, show-

ing that glaciers existed at various stages in the history of the mountain.

U-shaped valleys, such as Kerr Notch, Sun Notch, and Munson Valley on the southeast slope of Mount Mazama, are evidence of glaciation. The lava flow which formed Lla'o Rock filled an ancient glacial notch.

FORMING OF THE CRATER. 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 United States Geological Survey, who considered that the support of the summit was weakened by drainage of great quantities of molten rock through subterranean cracks. The pit thus formed grew progressively larger in all directions, as is indicated by the broken edges exposed around its rim today. 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 amounts to more than 10 cubic miles of material, thought to have been blown from the mountain in a catastrophic event and carried northeastward by the prevailing winds. Analysis shows that this is material derived from the heart of the volcano and not finely

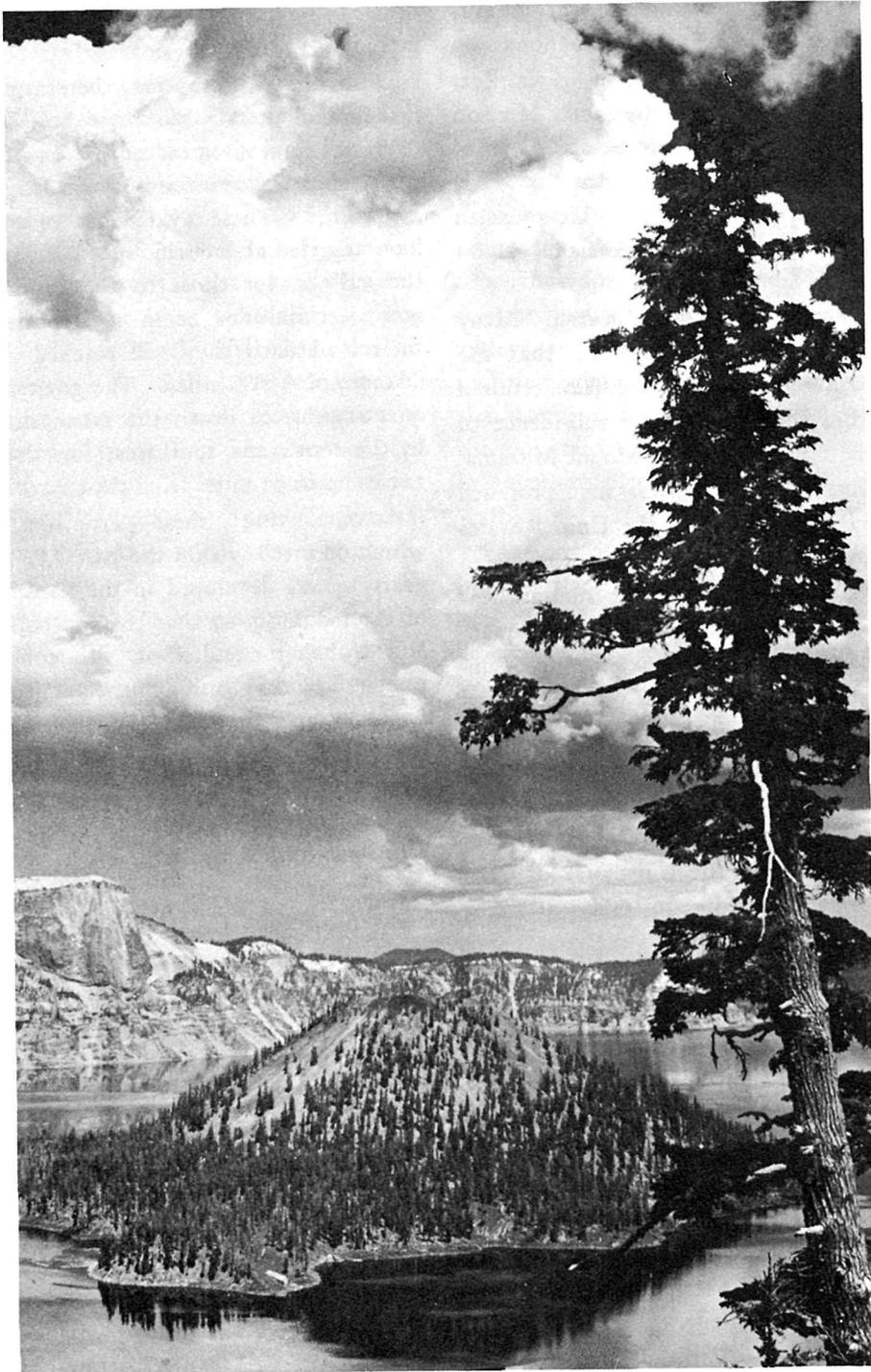
divided fragments of the original mountain walls.

Following this eruption, the crater is believed literally to have boiled over, pouring out great quantities of frothy material as 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 up to 35 miles from the source.

Accompanying these eruptions, which occurred within the past 7,000 years, cracks developed in the flanks of the mountain so that the top collapsed, being engulfed in the void produced by the ejection of the pumice and lava and the withdrawal of 10 cubic miles of molten rock into swarms of cracks that opened parallel to the axis of the Cascade Range. Thus was formed the great pit as we see it today.

By projecting the slopes of the mountain remnant upward, conforming to the slopes of similar volcanoes, it has been estimated that approximately 17 cubic miles of the upper part of ancient Mount Mazama was destroyed by the collapse.

THE GROWTH OF WIZARD ISLAND. After the destruction of the peak, volcanic activity within the crater produced Wizard Island and perhaps other cones. These cones rise above a relatively flat floor, the lowest part of which is almost 2,000 feet below the surface of the present lake.



Wizard Island. Llao Rock in the background.

ORIGIN OF THE LAKE. The water of Crater Lake comes from rainfall and snowfall. The average annual precipitation is 72 inches. The record snowfall of 1932-33 was measured as 73 feet, exceeding the average fall by 20 feet. The lake has no inlet and no outlet, except by seepage. Evaporation, seepage, and precipitation are in a state of balance which maintain an approximately constant water level. In 1952, the lake level was 6,173 feet above sea level. There is an annual variation of from 1 to 3 feet, the level being highest in spring and lowest in fall. If the lake basin were at a different altitude, or in a different location, the lake might not have been formed.

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 reflected from the water, rays of other colors being absorbed.

Wildlife

MAMMALS. There are about 60 kinds, of which the golden-mantled ground squirrels are among the most conspicuous. They resemble large chipmunks but have stockier bodies, shorter tails and no stripes on their heads. On each side there is a broad, white stripe sandwiched between two dark stripes. Two species of true chipmunks with striped heads also are numerous. The small, tree-inhabiting chickaree, dark brown above and whitish below, is common; and the porcupine is frequently seen. It is advisable to enjoy these and all

other small mammals without actual contact because occasionally they carry diseases which can become serious if transmitted to human beings.

The large fat-bodied marmot (a mountain woodchuck) lives in high rocky places and on roadsides. The plaintive bleating "yenk, yenk" of the tiny "rock rabbit" (cony) issues from crevices in the talus. Snowshoe rabbits, brown in summer and white in winter, are sparingly present around forest clearings, such as at the south and east entrances.

Martens are rather common; they are slim brown animals somewhat like a slender fox, but they can climb trees like a squirrel. Less often seen are weasels, badgers, mink, red foxes, gray foxes, and coyotes. The bobcat and mountain lion (cougar) are rare.

Bears are fairly common and may be encountered in many parts of the park. Usually they are black, but brown individuals occur, just as there are blondes and brunets among people. Do not let bears approach closely. Many people have been painfully clawed when 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 a violation of this regulation by encouraging the bears to beg, seriously endangers other park visitors.

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

BIRDS. More than 120 kinds of birds have been recorded. On the rim, the harsh-voiced Clark's nutcracker is the most conspicuous. It is a little larger and more heavily built than a jay and has a long sharp bill. The bird's overall color is light gray, the wings are black with a large white patch, the tail is conspicuously white with black central tail feathers. Two jays are also numerous at times on the rim, the dark-blue Steller jay which has a long, blackish crest, and the uncrested gray jay ("camp robber") which has a short bill, a dark patch on the back of the head, a white crown, and whitish underparts.

Eagle Crags have furnished nesting places for both the golden and American eagles which sometimes may be seen flying over the lake. Llao Rock is the home of falcons. Double-crested cormorants perch on the "masts" of the Phantom Ship, and California gulls are seen regularly on the lake. The sooty grouse inhabits the fir forests from which its ventriloquial booming call issues in the spring. Several species of ducks and geese occur on the lake in migration, and the Barrow's golden-eye and merganser nest there occasionally.

Other species most likely to be observed are the horned owl, red-tailed hawk, sparrow hawk, night hawk, rufous hummingbird, olive-sided flycatcher, raven, mountain chickadee, red-breasted nuthatch, dipper (along the streams), robin, hermit thrush, russet-backed thrush, mountain bluebird, golden-crowned kinglet, Audubon warbler, western tanager, evening grosbeak, Cassin purple finch, rosy finch (vicinity of snow banks), pine siskin, Oregon junco, chipping sparrow, and fox sparrow.

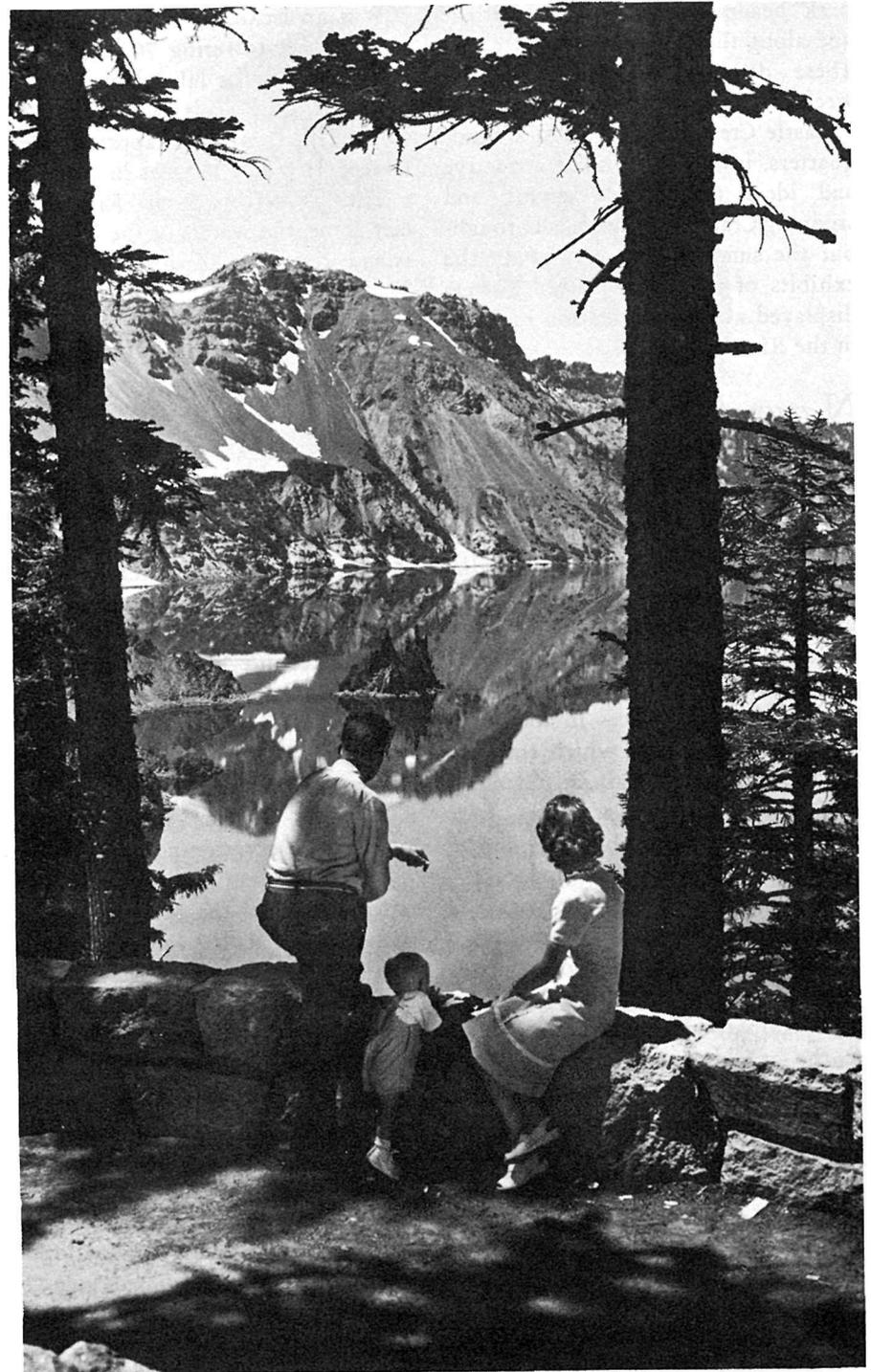
Forests and Wildflowers

The virgin forests and wildflower meadows mantling the slopes, which one ascends to view Crater Lake, are outstanding attractions enhancing the scenic value of the lake. Scattered through the forests of predominantly cone-bearing trees are a few broad-leaved species. Around numerous springs forming the sources of many creeks on the outer slope of the mountain, the forests give way to colorful meadows of alpine wildflowers.

Plants characteristic of four zones of vegetation are found within the park, yielding over 570 species of ferns and flowering plants. Patches of Douglas-firs, typical of the humid division of the upper Transition Zone, occur in the region of the park lying on the western slope of the Cascade Range. The semihumid division of the zone, characterized by the ponderosa pines, largest trees in the park, may be found at the south entrance of the park. Associated with it are sugar pines, white firs, and western white pines. Above the Transition is the Canadian Zone in which occur lodgepole pines, Shasta red firs, alpine firs, and mountain hemlocks.

In the rim area around Crater Lake, Hudsonian Zone species are found. These include mountain hemlocks (the most predominant trees in the park), alpine firs, Shasta red firs, and whitebark pines. Stunted whitebark pines predominate on the slopes of Mount Scott, the summit being in the Alpine-Arctic Zone.

During July and August, you will find Nature's colorful displays of alpine wildflowers on the road between



Phantom Ship. Applegate and Garfield Peaks are reflected in Crater Lake.

park headquarters and Rim Village and along the trails on the crater rim. These displays change with each week of the short flowering season.

Castle Crest Garden, at park headquarters, is one of the most attractive and ideal places for viewing and studying Crater Lake flora. Throughout the summer, you may study the exhibits of fresh and pressed flowers displayed at the information building in the Rim Village.

Naturalist Service

During the summer, free daily guide service on trails and boat trips is scheduled by the National Park Service. Daily informal talks are given at Sinnott Memorial, Crater Lake Lodge, and the community building—all in Rim Village.

The naturalist programs are posted at several public places in the park. Except the boat trip, which starts at the foot of the rim trail, all regularly scheduled naturalist activities start from the information building on the crater rim just west of the lodge.

The Sinnott Memorial, with its broad terrace overlooking the lake, serves as an orientation point. It is located close to the lodge and the Rim Campground. Pictorial displays in the exhibit room portray artists' conceptions of the varying moods of the lake. Field glasses and a large relief map of the region are located on the terrace.

What to See and Do

RIM DRIVE. Many spectacular views may be had from numerous observation points along this road which encircles the crater.

WIZARD ISLAND. This symmetrical cinder cone, towering 767 feet above the surface of the lake, is reached by boat. A trail leads from the shore to the crater, which is approximately 90 feet deep and 350 feet in diameter.

THE PHANTOM SHIP. Rising 169 feet above the waters of the lake, this island resembles a ship under sail. The best views of the Phantom Ship are obtained from the launches and from Kerr Notch along the Rim Drive.

GARFIELD PEAK. A 1.7-mile trail, east of the lodge, leads to Garfield Peak. From its summit, elevation 8,060 feet, there is a magnificent view of the lake and surrounding region.

THE WATCHMAN. This peak, on the west rim, may be reached by a half-mile trail from the rim road. A rare panorama of the park and surrounding country may be viewed from the fire lookout, 8,025 feet above sea level and 1,861 feet above the lake.

CLOUDCAP. On the east rim, and rising to an elevation of more than 8,000 feet, Cloudcap provides an excellent observation point.

MOUNT SCOTT. East of Cloudcap is Mount Scott, the highest point in the park, reaching an altitude of nearly 9,000 feet. Its summit, on which there is a fire-lookout station, is accessible by a 2.5-mile trail from Rim Drive.

THE PINNACLES. In Wheeler Creek, near the east entrance to the park, are slender spires of pumice. Some of the needles are 200 feet high. In Sand Creek Canyon and Godfrey's Glen, in Annie Creek Canyon, there are other spires and fluted columns carved out of the soft volcanic material by water erosion.

OTHER PLACES OF INTEREST IN THE PARK AND VICINITY. Hillman Peak,



Natural ski run cut by old rock slide.

8,156 feet, is the highest point on the crater rim, rising 1,983 feet above the lake. Palisade Point, Kerr Notch, and the Wineglass are low points on the rim, being slightly more than 500 feet above the lake.

HIKING. Besides the longer hikes mentioned in preceding paragraphs, there are delightful short walks, such as through Castle Crest Gardens and along Sunset Trail on the rim.

Those who desire information about other interesting places in the park and vicinity are invited to inquire at park headquarters and the information building.

FISHING. Angling amid the scenic beauty of Crater Lake is an experience long to be remembered. No fish were native to Crater Lake, the first

planting of rainbow trout having been made in 1888. In recent years only rainbow trout and silverside salmon have been planted. Trolling has proved to be the most successful method of catching the daily limit of 10 fish per person. From July 1 to September 5, rowboats are available. Shore fishing usually may be enjoyed from the latter part of June until late September, depending on weather conditions. No license is needed to fish in Crater Lake. Possession or use of fish as bait is not allowed.

WINTER VISITS. Since the park is open the year round, you may enjoy Crater Lake's fantasy of snowy splendor and participate in winter sports. Steep and gradual slopes, according to speeds desired, are numerous in the

park and are ideal for skiing. Professional ski meets are discouraged, but special attention is given to amateur sports.

There are no overnight accommodations in the park from September 15 to June 15, but warming-room facilities are provided at Rim Village.

The west and south entrance roads to the Rim Village area are open to motor travel. You should be well supplied with gasoline and oil, as they are not available in the park in winter. Tire chains, tow rope, and shovel are necessary accessories.

Rangers are on duty to render service all year.

How to Get to the Park

BY COMMON CARRIER. The Southern Pacific Railroad, several air lines, and motorcoach lines serve Medford, Klamath Falls, and Grants Pass, Oreg., to connect with stages of the Crater Lake National Park Co. daily from about June 15 to September 15.

BY AUTOMOBILE. Paved State highways connect with the highway system of the park at all entrances. State Route 62 to the west entrance of the park connects, through Medford, with U. S. 101, 199, and 99. It also connects U. S. 97 with the park highway system at the south entrance. Connections with U. S. 97 are also made by State Route 232 to the east entrance or by 230 and 209 to the north entrance. The roads through the west and south entrances to the rim are maintained as all-year roads. The north and east entrance roads and **Rim Drive** are closed approximately September 25 to July 1 depending on snow conditions.

Camping and Accommodations

Rim Village, which is 7,100 feet above sea level and 950 feet above the lake, includes the lodge, sleeping cabins, cafeteria, store, campground, picnic ground, community house, information building, and Sinnott Memorial. The lake is accessible by trail from Rim Village.

CAMPGROUNDS. There are four free campgrounds within the park which are open from about July 1 to September 30. Rim Campground, in Rim Village, is equipped with stoves and water and sanitary conveniences, including hot and cold showers and laundry trays. This campground is close to all Rim Village facilities and services. One section is set aside for picnickers. Naturalists conduct evening campfire programs in the community house on the edge of the campground.

Three campgrounds are located along entrance roads: Lost Creek, 3½ miles inside the east entrance; Cold Springs, 7 miles inside the south entrance; and Annie Spring at the junction of the south and west entrance roads.

Camping is limited to 30 days.

LODGE AND CABIN FACILITIES. The Crater Lake National Park Co. offers accommodations from about June 15 to September 15. Information regarding rates may be secured from that company by writing them at P. O. Box 968, Spokane Wash., in the winter and at Crater Lake, Oreg., in the summer. The sleeping facilities include single and double rooms at the lodge and sleeping cabins. It

is imperative that reservations be made well in advance and be accompanied by a deposit and a request for confirmation of availability. There are dining-room facilities in the lodge, and a cafeteria is near the campground and cabins. The cafeteria is open from 7 a. m. to 8:30 p. m.

Miscellaneous Services

MOTOR TRANSPORTATION. Daily automobile service from Medford, Grants Pass, and Klamath Falls to Crater Lake Lodge is maintained by the Crater Lake National Park Co. from about June 15 to September 15. You can enter by way of one gateway city and leave by way of another. The trip requires 2½ hours from Medford and Klamath Falls and 3½ hours from Grants Pass.

LAUNCHES AND ROWBOATS. Scheduled trips are made daily, during the summer, by launch from the boat landing at the foot of the lake trail to Wizard Island and the Phantom Ship. Private boats are not permitted on the lake, but rowboats may be hired at the boat landing.

One of the popular attractions is the launch trip around the lake, leaving the boat landing at 9 o'clock each morning during the travel season.

OTHER SERVICES. The post office and long-distance telephone and telegraph services are located in the administration building at park headquarters. The post office address is Crater Lake, Oreg. Guests of Crater Lake National Park Co. should have mail addressed in care of Crater Lake Lodge to insure prompt delivery.

A gasoline station is maintained during summer on the highway 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.

Time and place of church services are posted in the lodge, information building, and cafeteria.

Administration

Crater Lake National Park is administered by the National Park Service of the United States Department of the Interior. A superintendent is in immediate charge of the park, with offices in the administrative center, 3 miles from 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 to June.

Park rangers are here to help you as well as to enforce regulations. If you need information, or are in any difficulty, see a park ranger.

Help Us Protect This Park

Park regulations are designed for the protection of the natural features and for your comfort and convenience. The following synopsis is for your guidance:

FIRES. Light carefully and only in designated campgrounds. Extinguish completely before leaving camp, even for temporary absence. Do not guess your fire is out—**KNOW IT.** One spark may start a forest fire, destroy the beauty of the park, and endanger many lives. Throwing burning materials from car windows constitutes a fire threat and is unlawful in most western States.

CAMPS. Use designated campgrounds and keep them clean. Burn combustible rubbish on campfires, and place other refuse of all kinds in garbage cans or pits provided for the purpose. Only down material may be used as firewood.

TRASH. Do not throw paper, lunch refuse, or other trash over the rim, on walks, trails, roads, or elsewhere. Carry until you can burn in camp or place in receptacle.

TREES, FLOWERS, AND ANIMALS. The destruction, injury, disturbance, or removal in any way of trees, flowers, birds, or animals is prohibited in

order that everyone may enjoy the beauties of nature.

NOISES. Please do not be noisy in camp before 6 a. m. and after 10 p. m. Many people come to the park for rest.

AUTOMOBILES. Drive carefully. Speed limits, which vary for different sections of the park, are posted.

DOGS. Dogs are not permitted between the rim road and the parapet wall at any time. When not in an automobile, dogs must be on leash or otherwise under physical restrictive control at all times. Camping facilities for parties with dogs are provided only at Annie Spring Campground.

WARNING ABOUT BEARS AND DEER. Do not feed, touch, tease, or molest the bears and deer. Bears will enter or break into automobiles if food that they can smell is left inside. They will also rob your camp of unprotected food supplies.

FISHING. The limit is 10 fish per day for each person fishing. No fishing license is necessary. Possession of bait fish, or the use thereof as bait, is not allowed.

ACCIDENTS. Report all accidents and injuries as soon as possible to the ranger office at park headquarters.

Complete rules and regulations are available at park headquarters.

Visitor Use Fees. There is a 15-day permit fee of \$1, and an annual fee of \$2, for each automobile, housetrailer, and motorcycle. During the period of all 15-day permits, the cost thereof may be applied toward the purchase of a similar annual permit. You must show permit to leave and reenter the park. All fees are deposited as revenue in the United States Treasury and offset, in part, appropriations made for operating the park.