

CRATER

LAKE *Oregon*

NATIONAL PARK

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U. S. DEPARTMENT OF THE INTERIOR

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NATIONAL PARK SERVICE

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# CRATER LAKE

## NATIONAL PARK + OREGON

Crater Lake National Park, on the crest of the Cascade Range in southern Oregon, has a high place among the Nation's most scenic wonderlands. At Crater Lake visitors observe outstanding natural beauty and experience a profound inspirational appeal. The park is a unit of the National Park System administered by the National Park Service of the United States Department of the Interior. It contains 160,290 acres of federally owned land.

The lake rests in the heart of a mighty mountain whose destruction resulted in the formation of a vast crater. In this crater the waters accumulated to a depth of 1,983 feet, making it the deepest lake on the North American continent and fifth deepest in the world. It is 6 miles wide, covers an area of 20 square miles, and has a shore line of 20 miles, with multicolored cliffs rising 500 to 2,000 feet above it. Because of its great depth and the moderate winter temperatures, the lake rarely freezes.

### *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 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 and 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, showing 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 forming Llaó 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

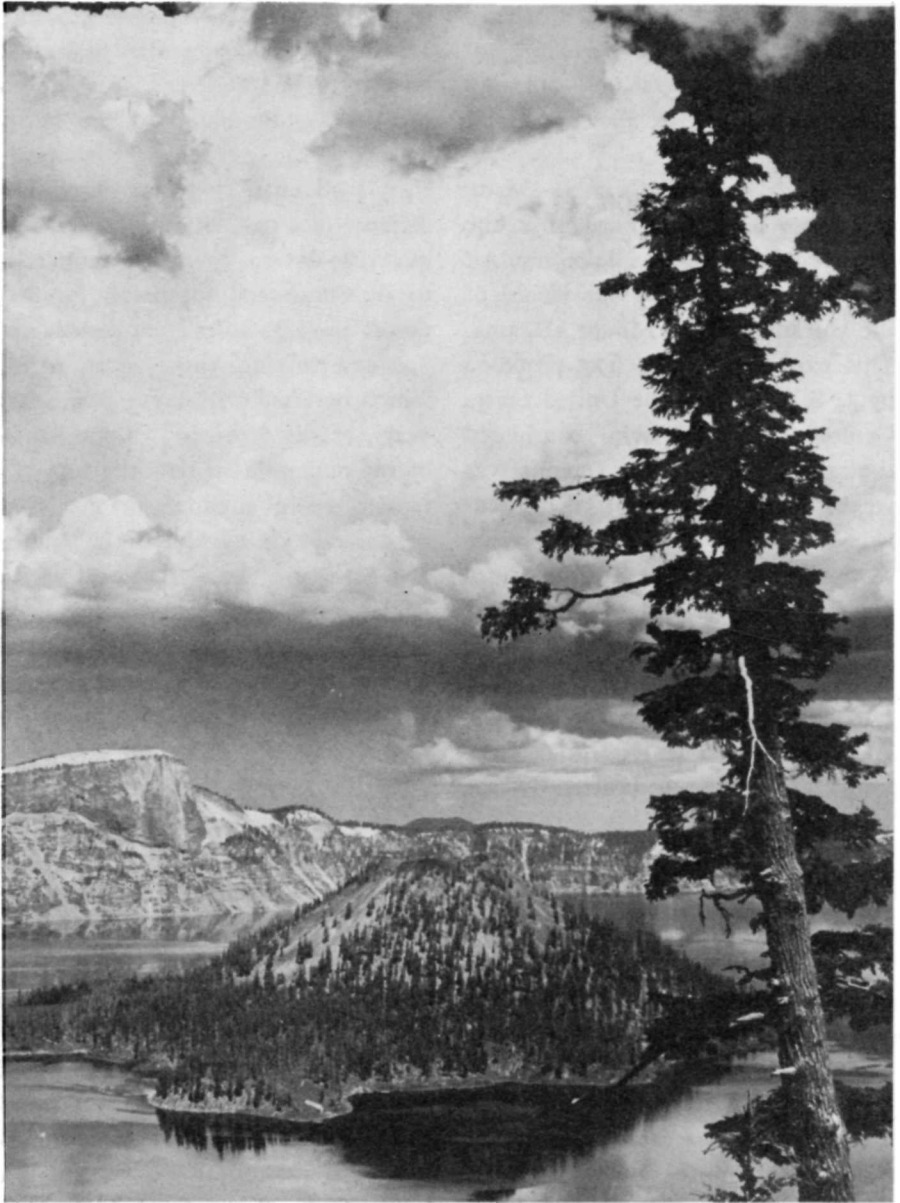
frothy material as a series of glowing avalanches. These avalanches must have traveled at a terrific speed down the valleys, for those to the south and west did not begin to deposit their load until they had reached a distance of 4 to 5 miles. The greater quantity flowed down the mountain to the south and southwest for distances up to 35 miles from the source.

Accompanying these eruptions, which occurred within the past 5,000 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.

**ORIGIN OF THE LAKE.**—The water of Crater Lake is derived from rainfall and snowfall. The average annual precipitation is 72 inches. The record snowfall of 1932-33 was meas-



*Wizard Island. Llao Rock in the background.*

ured 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 1946, the lake level was 6,164 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.—The park abounds in the smaller species that are of great interest to the visitor because of their friendly inquisitiveness. The large mammals, including black bears, are fairly common.

Most abundant among the members of the squirrel family are the golden-mantled ground squirrels. Two species of chipmunks are also numerous. The marmot stoddgily makes his way among the rocks or basks on them in the warm sunshine. Many of the small animals are tame. It is wisest to enjoy them without actual contact, however, for some rodents have been known to carry dangerous diseases.

The pine squirrel is common, and the porcupine is frequently observed. The shrill note of the cony, or pika, may often be heard on rocky slopes. Badgers, gray squirrels, and snowshoe rabbits are numerous, but mink, flying squirrels, martens, and several species of mice are seldom seen. The wormlike tunnels of gophers may

frequently be observed in the soft topsoil; a colony of beaver makes its home in the park.

Bears may be seen in many parts of the park. They are usually black individuals, but a few are of the brown color phase. Do not let bears approach too closely, as they are dangerous. Many people have been painfully clawed. In the interest of safety, it is unlawful to feed, tease, or molest the bears.

Of the deer species, the Columbian blacktail is most common. Rocky Mountain mule deer are seen in the grassy, watered meadows along the roads to the east and south entrances. Elk have been noted along the eastern side of the park. Other animals are the cougar, or mountain lion, the coyote, and the red fox. About 60 species of mammals are found in the park.

REPTILES AND AMPHIBIANS.—There are few reptiles. Salamanders are common on the lake shore and frogs and toads along the creeks.

BIRDS.—More than 120 species of birds have been seen in the park. Eagle Crags have furnished nesting places for the golden eagle and the southern bald eagle; Liao Rock is the home of falcons. Ospreys have been seen, and the dusky horned owl forages nightly. California gulls visit the park; Farallon cormorants perch on the "masts" of the Phantom Ship. There are ravens and half a dozen species of hawks. The Sierra grouse inhabits the timberlands; Clark's nutcrackers and crested and gray jays are among the most noticeable birds

to be found upon the rim.

Smaller birds frequently seen are the mountain bluebirds, solitaires, juncos, siskins, creepers, red-breasted nuthatches, chickadees, and the evening grosbeaks. There are golden and ruby-crowned kinglets, robins, wrens, western tanagers, spotted and green-tailed towhees, purple and rosy finches, chipping and other sparrows, two varieties of thrushes, and six varieties of warblers. Occasionally a hummingbird is seen.

## *Forests and Wild Flowers*

The virgin forests and wild flower 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 wild flowers.

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, may be found at the south entrance of the park. Asso-

ciated with it are sugar pines, white firs, and western white pines, the latter furnishing the largest individual tree in the park. Above the Transition is the Canadian Zone in which occur lodgepole pines, Shasta red firs, alpine firs, and mountain hemlocks.

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

During July and August, visitors find Nature's colorful displays of alpine wild flowers on the road between the park headquarters and the Rim Village and along the trails on the crater rim. These displays change with each week of the short flowering season.

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

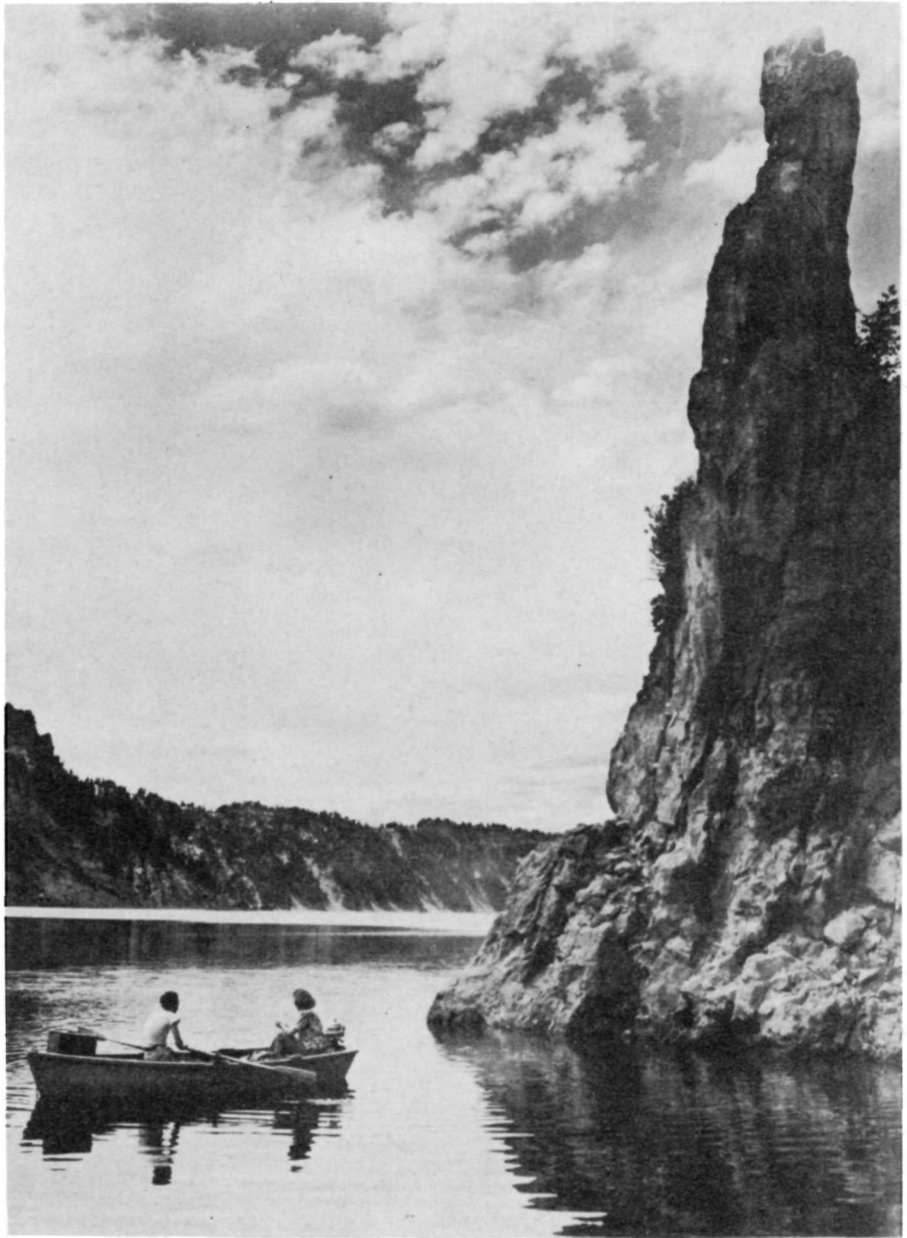
## *Naturalist Service*

During the summer months free daily guide service on trails, boat trips, and auto caravans is scheduled by the National Park Service. Daily informal talks are given at Sinnott





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



*Fishing in Crater Lake.*

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.

## *Where To Go and What To Do*

**RIM DRIVE.**—This highway encircles the crater, affording many spectacular views from numerous observation points. Auto caravans are conducted by the naturalist staff along this road, stops being made at important scenic, scientific, and historic points. All caravan trips start from the information building.

**WIZARD ISLAND.**—This symmetrical cinder cone, towering 780 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 one 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 this point, 8,025 feet above sea level and 1,861 feet above the lake.

**CLOUDCAP.**—Located 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 the rim road.

**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, 8,156 feet, is the highest point on the crater rim, rising 1,996 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



*Natural ski run cut by old rock slide.*

along Sunset Trail on the rim.

Park visitors desiring 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 12 fish per person. From July 1 to September 5, rowboats are available. Shore fishing may usually 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.**—The park is open the year around. Visitors may now enjoy Crater Lake's fantasy of snowy splendor and participate in winter sports there. 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.

A rope ski tow is in operation, and lunch counter service is available on week ends and holidays only. There are no overnight accommodations in the park from September 15 to June 15, but warming-room facilities for winter visitors are provided at the Rim Village.

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

Rangers are on duty to render service to winter visitors.

## *How To Reach the Park*

BY COMMON CARRIER.—The Southern Pacific Railroad and several motor-coach 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.

Overnight, as well as scenic daylight, airplane service from practically all parts of the United States to Crater Lake is now possible, and those interested in air travel to Crater Lake should get in touch with the park operator, travel agent, or the airline serving their city.

BY AUTOMOBILE.—Paved State highways connect with the highway system of the park at all entrances. Highway 62 to the west entrance of the park connects, through Medford, with United States Highways Nos. 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 Highway 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 others being closed to traffic during the winter months.

## *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, campground, picnic ground, community house, information building, and Sinnott Memorial. The lake is accessible by trail from the Rim Village.

CAMPGROUNDS.—There are four free public campgrounds within the park. The Rim Campground, located in the Rim Village, is equipped with stoves and water and sanitary conveniences, including hot and cold showers and laundry trays. This campground is in close proximity 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,  $3\frac{1}{2}$  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 for park visitors from about June 15 to September

15. As prices may change from season to season, rates are not included in this booklet. Information regarding rates may be secured from that company by writing them at 603 Wilcox Building, Portland, Oreg., 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 9 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. A visitor may 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. Fishing tackle may also be rented or purchased there.

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 on the highway near park headquarters. This is open during summer months only. 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.

A limited line of groceries is available at the cafeteria-store in Rim Village.

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

### *Administration*

The superintendent is in immediate charge of the park, with offices in the administrative center, 3 miles from the Rim Village. All communications regarding the park should be addressed to the Superintendent, Crater Lake National Park, Crater Lake, Oreg., during the summer months, and to Box 672, Medford, Oreg., from October to June.

# Help Us Protect This Park

The park regulations are designed for the protection of the natural features and for the comfort and convenience of visitors. For your own welfare, as well as a valued aid in park administration, we solicit your indulgent, careful observance. The following synopsis is for the guidance of visitors.

**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. Keep the campgrounds clean. Combustible rubbish shall be burned on campfires, and other refuse of all kinds shall be placed 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 the trees, flowers, birds, or animals is prohibited in order that every visitor may enjoy

the beauties of nature.

**NOISES.**—Be quiet in camp after 10 p. m. Many people come to the park for rest.

**AUTOMOBILES.**—Careful driving is required at all times. The maximum speed allowed in the park is 35 miles per hour. Slower speeds are indicated where road and traffic conditions justify. The fee for automobile permits is \$1; trailers, \$1 additional.

**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.**—Do not feed, touch, tease, or molest the bears. 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 12 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.

**PARK STAFF.**—The staff is here to help and advise you. Men in uniform at the information building, park headquarters, and the several stations will be glad to help you plan your activity while in Crater Lake National Park and to explain the regulations. Report all accidents and injuries to the ranger office at park headquarters.

Complete rules and regulations are available at park headquarters.

