

Crater Lake

National Park
Oregon

National Park Service
U.S. Department of the Interior



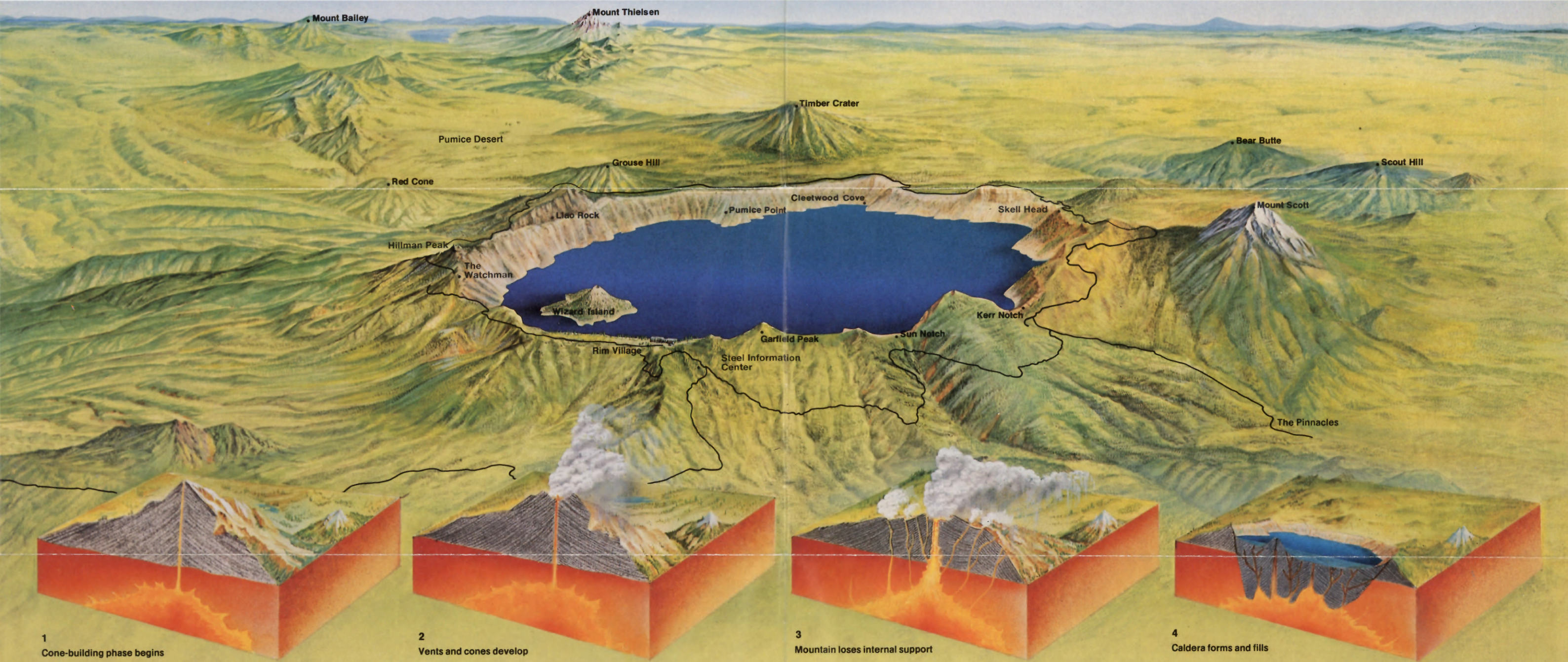
Crater Lake, photograph by Ray Atkeson

Rolling mountains, volcanic peaks, and evergreen forests surround this enormous, high Cascade Range lake, recognized worldwide as a scenic wonder. Crater Lake was established as a national park in 1902 after 17 years of lobbying by William Gladstone Steel. He had learned of Crater Lake as a Kansas schoolboy reading a newspaper used to wrap his lunch. On sunny summer days, neither words nor photographs can capture Crater Lake's remarkable blueness. For much of the year—usually October to July at higher elevations—a thick blanket of

snow encircles the lake. Snowfall provides most of the park's annual 66 inches of precipitation. Crater Lake rarely freezes over completely; it last did in 1949. Heat from the summer sun stored in the immense body of water retards ice formation throughout the winter. On the earth clock, natural forces only recently constructed this landscape. Lava flows first formed a high plateau base on which explosive eruptions then built the Cascade volcanoes. Humans probably witnessed the cataclysmic eruption of Mount Mazama about 7,700 years ago. Shamans

in historic time forbade most Indians to view the lake, and Indians said nothing about it to trappers and pioneers, who for 50 years did not find it. Then, in 1853, while searching for the Lost Cabin Gold Mine, some prospectors, including John Wesley Hillman, happened onto Crater Lake. Soundings with piano wire by a U.S. Geological Survey party in 1886 set the lake's depth at 1,996 feet, close to sonar findings of 1,932 feet officially recorded in 1959. The clean, clear, cold lakewater contained no fish until they were introduced by humans from 1888 to 1941.

Today, rainbow trout and kokanee salmon still survive in Crater Lake. Wildflowers bloom late and disappear early here, thriving in wet, open areas. Birds and other animals often seen are ravens, jays, nutcrackers, deer, ground squirrels, and chipmunks. Present but seldom seen are elk, black bears, foxes, porcupines, pine martens, chickaree squirrels, and pikas.



1
Cone-building phase begins

2
Vents and cones develop

3
Mountain loses internal support

4
Caldera forms and fills

Artist Jaime Quintero's painting creates for you a non-existent overlook on a perfectly clear, pollution-free, mid-summer day when the atmosphere is perfectly oxygen balanced at 4 p.m. The painting is not selective, as your eye is, but shows a wide-angle view. The vertical and horizontal scales are identical, with no exaggeration. The cross section of the rim and lake (below) cuts through Wizard Island to take in the lake's deepest part.

Block Diagrams The four insets show volcanism stages (above, left to right) leading to Mount Mazama's collapse:

1 Cone-building began a half million years ago. Magma from Earth's interior spewed out.

2 Lesser magma vents and cones developed on the mass, weakening it.

3 About 7,700 years ago so much mass blew out of the cone that the mountain had no support and collapsed.

4 It created the caldera that Crater Lake now occupies.

A Vast Volcanic Region The plateau base of the Cascade Range was built as Earth's crust folded and uplifted, pushing seas westward. Molten rock pushed toward the surface, creating both violent eruptions and the welling up of lava through enormous cracks. In recent geologic time—the past 750,000 years—explosive eruptions built a string of volcanoes on this plateau base. This Cascade Range of volcanoes extends from Canada's Mount Garibaldi to Lassen Peak in northern California. One of these great volcanoes, Mount Mazama, now holds Crater Lake.

Mount Mazama For half a million years this mighty volcano produced massive eruptions interrupting long periods of quiet. Ash, cinders, and pumice exploded upward, building the mountain to a height of about 12,000 feet. Parasitic cones on Mazama's flanks created Mount Scott and Hillman Peak. Glaciers periodically covered Mount Mazama's flanks and carved out the U-shaped valleys such as Munson Valley and Kerr Notch. About 7,700 years ago the climactic eruptions of Mount Mazama occurred. Ash from these eruptions lies scattered over 8 states and 3 Canadian

provinces; some 5,000 square miles were covered with 6 inches of Mazama's ash. In the park's Pumice Desert (see map) ash lies 50 feet deep. The eruptions were 42 times greater than those of Mount St. Helens in 1980. The Mazama magma chamber was emptied and the volcano collapsed, leaving a huge bowl-shaped caldera. The high mountain was gone. At first the caldera's floor was too hot to hold water. Renewed volcanism sealed the caldera and built the Wizard Island and Merriam cones, volcanoes within a volcano.

The Lake Forms As volcanic activity subsided, water began to collect. For the past 4,000 years the volcano has not stirred. Springs, snow, and rain began to fill the caldera. As the lake deepened and widened, evaporation and seepage balanced the incoming flow. The depth now varies less than 3 feet annually in this, the Nation's deepest lake.

A Closed System No stream runs into or out of the lake, so it is considered a closed ecological system. From its beginning Crater Lake contained no fish. Six species were introduced in historic time. Of these, 2 remain: rainbow trout and kokanee salmon. Fish are no longer stocked, to protect the natural system. Obtain fishing regulations from park rangers.

Why So Blue? Light gets absorbed color by color as it passes through clear water. First the reds go, then orange, yellow, and green. Last to be absorbed are the blues. Only the deepest blue gets scattered back to the surface where you see it as the color of the water. The water is of course no more blue than the sky is blue.

The Name Crater Lake got its name in 1869 from James Sutton, editor of the *Oregon Sentinel* of Jacksonville, Oregon. He named it after the small crater at the top of Wizard Island, the cinder cone in the lake that rises some 760 feet above the water.

Facts and Figures Crater Lake is the deepest lake in the United States, the second deepest in the Western Hemisphere, and the seventh deepest in the world. Here are some statistics to take home with you:

Maximum lake depth	1,932 ft
Average lake depth	1,500 ft
Maximum lake width	6 mi
Lake surface elevation	6,176 ft
Wizard Island elevation	6,940 ft
Wizard Island height above water	764 ft
Hillman Peak, highest point on rim	8,151 ft
Mount Scott, highest point in park	8,929 ft
Union Peak	7,709 ft
Rim Village elevation	7,100 ft
Precipitation, yearly average	66 in
Snowfall, yearly average	44 ft
Maximum snow depth at Park Headquarters	21 ft
Park size	183,224 acres



The volcanic cone called Wizard Island was built up after Mount Mazama collapsed to form the caldera in which Crater Lake and the island rest.

This cross-section of the lake and rim obscures the Phantom Ship, pictured below. This view was necessary to show the lake's deepest point.

Discovering Crater Lake and its Nature



Fawn



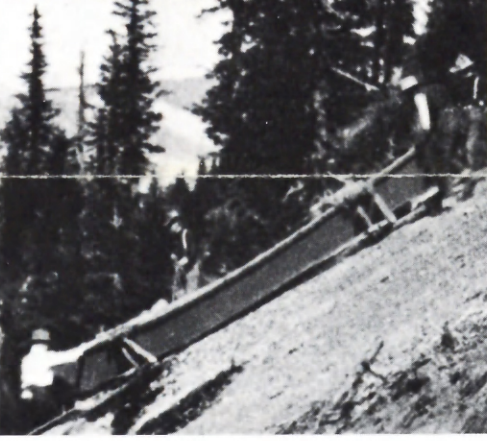
Klamath Indian



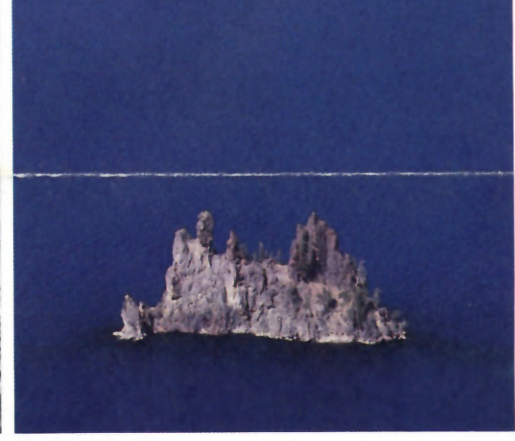
Crater Lake Lodge



Common monkeyflower



Launching the *Start*, 1903



Phantom Ship



Crosscountry skiing

Facilities and Services

Visitor Centers The Steel Information Center is open all year. It offers information, backcountry permits, exhibits, map and publication sales, and first aid. Rim Village Visitor Center, open June through September, provides information and map and publication sales.

Sinnott Memorial A paved pathway near the Rim Visitor Center leads to the memorial overlook; open daily in summer. Here you find an unobstructed view of the lake. Park rangers present short geology talks.

Ranger-led Activities Summer campfire programs are presented at the Mazama Campground amphitheater. Topics change nightly. Ranger-led hikes and special activities for children are offered.

Boat Tours From late June to mid-September, narrated boat tours are offered by a concessioner and the National Park Service. The 1½-hour tour circles the inside of the caldera with a stop at Wizard Island and a close-up look at Phantom Ship.

Camping Camp at Mazama and Lost Creek Campgrounds, or in backcountry by permit. Campgrounds open when snow melts in early summer and are closed by snow in September/October. No hook-ups. Use only dead and down wood for campfires. Mazama Campground, in Mazama Village, has 198 sites, restrooms, showers, laundry, store, and a dump station. Lost Creek Campground, located 3 miles from Rim Drive on the Pinnacles road, has 16 sites (tents only), water, and flush toilets.

The Park in Winter

Rim Drive is closed by snow from mid-October to early July. Vehicle access is available only from Oregon Route 62 to Rim Village. Cross-country skiing and snow play are encouraged only on unplowed roadways. When skiing along the rim, watch for icy spots, snow cornices, and avalanche areas. Pets may not leave plowed roadways and must be on a leash.

Parking is allowed only at plowed parking lots; overnight parking by written permission only. Camping in parking lots is prohibited. Back-

country permits are required for overnight snow camping. There is no gasoline available from November through late May.

Snowmobiles are permitted only on the north entrance road; see map on this brochure.

Regulations

Hiking or climbing inside the caldera rim to reach the lake is permitted only on the Cleetwood Trail. Pets must be on leashes at all times in the park, and they are not permitted on the

trails. Wild birds and other animals are part of the natural system and are protected within the park. Do not feed them. Dependency on human food may ruin wild animals' ability to survive the long winter season.

Park regulations require that rocks, plants, wildlife, and artifacts be left undisturbed for their natural and scientific values and for others to enjoy.

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Vistas Highway 62 and the south access road lead to a year-round lake view, but the north entrance road and Rim Drive are closed from mid-October to late June. Rim Drive is a 33-mile roadway that circles the caldera rim. Pullouts provide scenic lake views. From Rim Drive a spur road leads to the Pinnacles area of volcanic spires. The north entrance road crosses the Pumice Desert. The south road winds above Annie Creek Canyon.

Lodging Crater Lake Lodge, with 71 guest rooms and dining, is open from late May to mid-October. Motel units are available at Mazama

Village from mid-May to mid-October. For reservations, write to Crater Lake Lodge Company, P.O. Box 128, Crater Lake, OR 97604, or call (541) 594-2511.

Meals and Gifts Snacks, meals, and gifts are sold daily at Rim Village. Winter hours are 9:30 a.m. to 4:30 p.m., snow conditions permitting, with extended hours in summer. A convenience store at Mazama Village sells groceries and limited supplies from mid-May to mid-October.

Park Headquarters National Park Service administrative offices, located 3 miles south of

Rim Village, are open daily all year. A U.S. post office, located in Steel Information Center, is open weekdays in summer. Visitor services include information, first aid, backcountry permits, and map and publication sales. For information, write: Superintendent, Crater Lake National Park, P.O. Box 7, Crater Lake, OR 97604, or call (541) 594-2211. While in the park, dial 911 for emergencies.

Trails Trails ascend Garfield Peak (1.7 mi), The Watchman (0.8 mi), and Mt. Scott (2.5 mi), and offer spectacular views. Cleetwood Trail (1 mi) provides the only access to the lake. The Pacific

Crest Trail traverses the park, and connecting trails crisscross the backcountry. Information folders are available on the Godfrey Glen (1 mi), Annie Creek Canyon (1.3 mi), and Castle Crest Wildflower (0.5 mi) trails.

Gasoline Sales Unleaded gasoline is available next to the camper store near Mazama Village from late May to mid-October. Gasoline is not available in the park during the rest of the year.

Safety Precautions Drive within posted speed limits and always wear seatbelts—they are required by regulation in all national parks. Do not



cross rock walls and barriers along the caldera rim; volcanic rock is unstable and could crumble beneath your feet. Automobile drivers and bicyclists should be cautious of one another on the narrow Rim Drive. Mountain bikes are allowed only on open, paved roads and the unpaved Grayback Nature Trail.

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