



REFLECTIONS

Welcome!

To the delight of nearly everyone, 1992-93 marked the return of the well documented, old fashion Crater Lake winter. On May 3rd, the total annual snowfall at park headquarters surpassed 600" for the first time in 10 years. The drought breaking snows are most welcome. On the downside, last year's early road and trail openings were not repeated in 1993.

Another notable event this past year has been the establishment of a support group called the Friends of Crater Lake. Over 100 park friends groups have been established across the country and each plays a vital role in providing support for the national park system. The Friends of Crater Lake N.P. took form following a series of meetings over the past 9 months. An interim Board of Directors is in place and a membership drive will be underway through the spring and summer of 1993. The first full membership meeting is scheduled for September 25. Those of us involved in this effort have been encouraged by the widespread interest shown in establishing a friends group for Crater Lake. If you are interested in joining, ask for a membership application at a park visitor center.

Our staff is here to assist you in any way possible during your visit. If you have any questions, please feel free to stop in at the Steel Information Center in Munson Valley or the Rim Village Visitor Center. We hope your visit to the park is safe and enjoyable.

David K. Morris
Park Superintendent



Crater Lake National Park: It's Yours to Preserve

On May 22, 1993, Crater Lake National Park began its 91st year. Crater Lake was established in 1902 and is the sixth oldest of the United States' national parks. Crater Lake National Park owes its existence to Will G. Steel. His foresight and 17 year long fight resulted in the preservation of the beautiful park that we enjoy today.

Crater Lake itself resides in a dormant volcano known today as Mount Mazama. The spectacular eruption and subsequent collapse of this mountain 7,700 years ago left a depression nearly 4,000 feet deep. Half filled with the rain and melted snow of thousands of years, the huge caldera now contains a lake nearly 2000 feet deep, the deepest lake in the nation.

Since the National Park Service was established in 1916, it has been charged with the care and preservation of Crater Lake and the park land surrounding it. The National Park Service mandate states that while these lands are meant for public enjoyment, they are also to be maintained and preserved for the future. The park service's constant challenge is how to promote park use without promoting abuse.

Crater Lake National Park's 183,224 acres are still beautiful today, from the deep blue waters of the lake, to the rocky peaks of Mazama's caldera rim, to the ancient forests and meadows. Most of the park remains in an undeveloped and untamed condition. For 90 years of Parkhood, and 76 years under National Park Service jurisdiction, cooperation with those who come to enjoy the park's beauty has helped to keep the park just that way: Beautiful!

You are invited to take the time to experience this beauty, but please treat this spectacular place gently. It belongs to you!

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DANGER: Stay back from edge when viewing the lake.
In case of Emergency
Dial
911

NATURALIST PROGRAMS - SEE PAGE 9

PUBLISHED BY THE CRATER LAKE NATURAL HISTORY ASSOCIATION

Fun For All Ages

Environmental Detective

Be on the lookout to see how many of the Park's natural resources listed below that you can spot during your visit. Keep track by checking the boxes.

A Living Museum

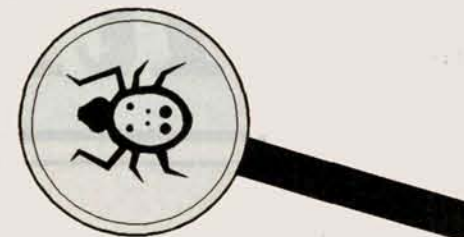
Just as you go to a museum to see all the displays, you come to a National Park to see and explore "outdoor exhibits". Spectacular park resources are all around, just waiting for **YOU** to discover them! Let's look at some of the park resources and find out what's here that makes Crater Lake National Park such a special place!

But remember.....Just like a museum, we don't disturb anything we see and we leave everything where we found it for others to enjoy. By taking care of your National Park, you are helping make sure this area will stay just as beautiful in the future as it is today!

Can you list two ways you can help take care of the park during your visit:

Geologic Formations

- Mt. Scott
- Union Peak
- The Pinnacles
- Phantom Ship
- Sun Notch
- Devil's Backbone
- Llao Rock
- Wizard Island
- The Watchman



Trees

- Ponderosa Pine
- Lodgepole Pine
- Whitebark Pine
- Mountain Hemlock



Animals and Birds

- Mule Deer
- Elk
- Golden-mantled ground squirrel
- Chipmunk
- Gray Jay
- Clark's Nutcracker
- Raven
- Bald Eagle
- Coyote
- Chickaree
- Black Bear



Fish

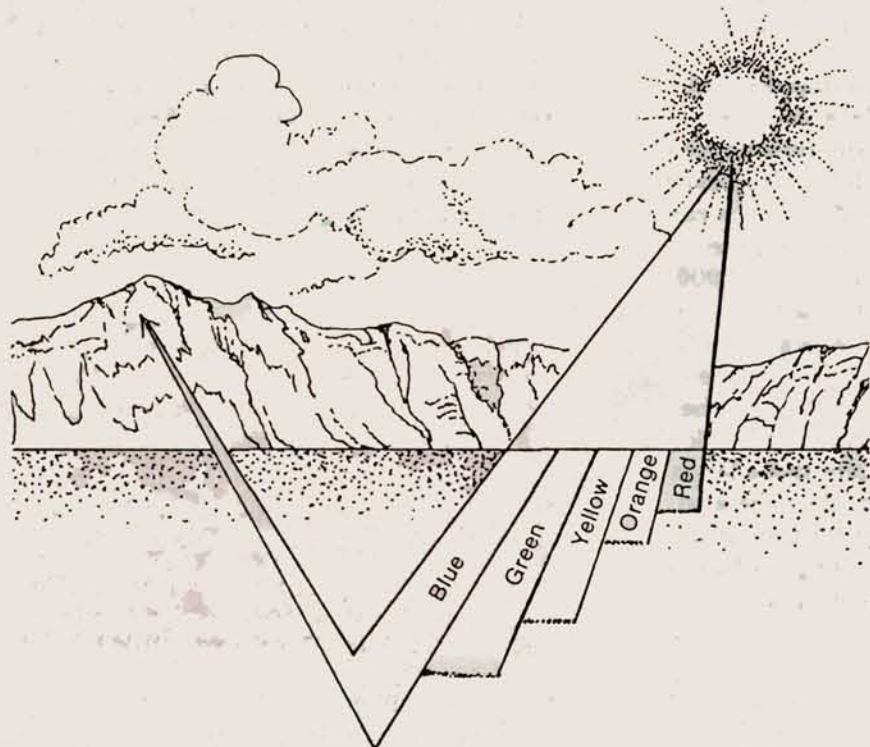
- Kokanee Salmon
- Rainbow Trout



Why Is Crater Lake So Blue?

Crater Lake is one of the deepest and clearest lakes in the world. This allows sunlight to go deep into the water. The sunlight coming down from the sky is made up of a rainbow of colors; reds, oranges, yellows, greens, and blues. The colors with the least amount of light energy are absorbed at shallow depths. Blue is the color that can penetrate the deepest. Most of it is scattered back to the surface, giving the lake its beautiful blue color.

Color Crater Lake and its rainbow of light.



Meet Some Feet!

Sometimes it's hard to see the animals of Crater Lake National Park. Many come out only at night-while you're in bed. Look for their tracks in the morning to see if they've been around. Areas with loose soil, sand or mud will show tracks the best.

Match the tracks in the left column with the animal that made the tracks in the right column.



1. _____



Coyote



2. _____



Chickaree



3. _____



Black Bear



4. _____



Elk

Answers: 1. Black Bear 2. Coyote 3. Elk 4. Chickaree

Future Changes

Rehabilitation of Crater Lake Lodge

By Kent Taylor, Chief Interpreter

The National Park Service is rehabilitating historic Crater Lake Lodge. The exterior of the building is being renovated, but is to remain much as it has appeared since the 1920's. The structural system is being reinforced or replaced as necessary. The interior is being brought up to modern building codes and current hotel standards.

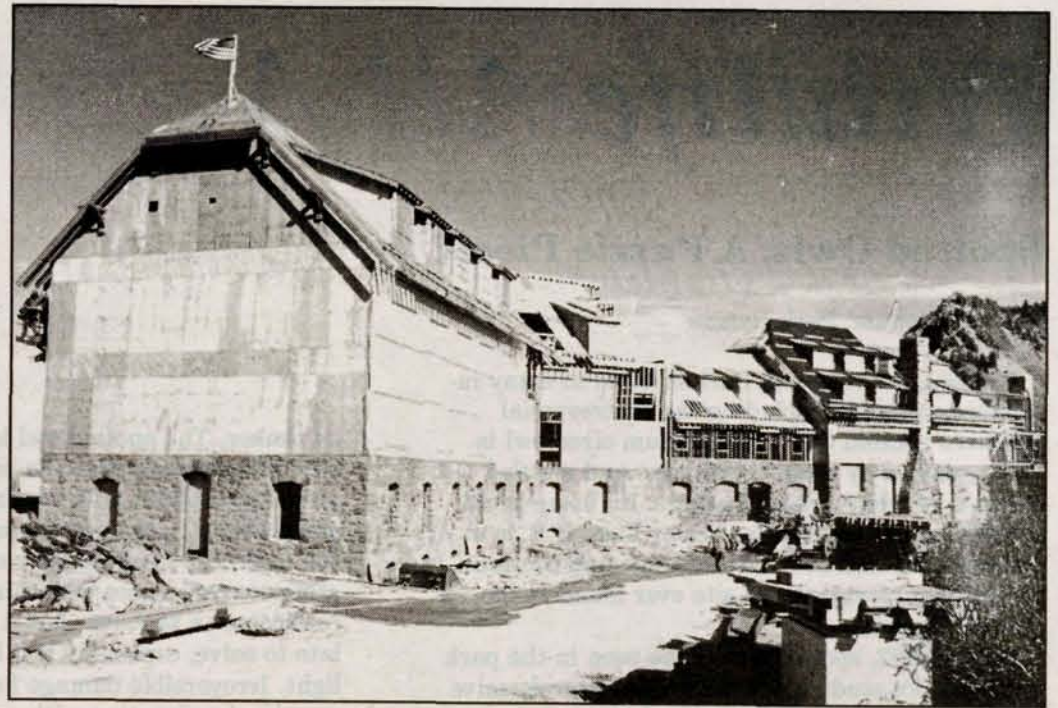
An undercapitalized contractor built the old lodge between 1909 and 1924. The structural design was more suitable for climate conditions in nearby valleys than for the long winters Crater Lake's rim. Over the years, annual snow depths of 15 feet or more, severely stressed and weakened the building.

In the spring of 1989, structural engineers were unable to confirm the safety of the lodge. The Great Hall had deteriorated badly, and there were fears that it might collapse of its own weight. The National Park Service began planning and design work to rehabilitate the building almost immediately.

The first of two construction phases was completed during the summer of 1991. The Great Hall, or middle section of the structure, was dismantled. A new cellar was excavated and a foundation built before reconstruction of the section began.

Phase two of the construction project began in May 1992. This phase will complete the rehabilitation of the lodge during mid-summer of 1994. The short summertime construction season at the edge of

The historic Crater Lake Lodge is undergoing renovation. It will once again be open to the public in summer 1995.



the Crater Lake caldera forces us to stretch out this phase of the project over three years.

During phase two, the structural system is being replaced, and the stone walls of the annex wings reinforced. A modern facility will replace the old kitchen. The guest room areas have been completely gutted and will be replaced with new rooms styled to complement the lodge's rustic heritage.

The interiors of the Great Hall and dining room will be rehabilitated to look much as they did originally. New furnishings and fixtures in a rustic style reminiscent of the pre-World War II era will be introduced to maintain the lodge's original charm.

Much of the work requires using new materials. However, some of the original materials in the Great

Hall have been salvaged for reuse. The stones of the hearth in the Great Hall were disassembled, numbered, and stored, then reassembled to the original appearance. In addition, some old wooden beams, a good portion of the bark finish on the interior walls, stones from the first floor wall, and other original elements have been salvaged for reuse.

After the rehabilitation is completed, you can again visit the lodge from May to October. Guest rooms will vary in size and shape, and be available in a full range of prices. Even if you don't plan to spend the night, the lodge will offer other services and amenities. You can dine, visit a new historical exhibit area off the lobby, or just sit and relax in the Great Hall as visitors have done since 1915.

Rim Redevelopment Program

By Kent Taylor

The National Park Service is in the process of upgrading visitor facilities at Rim Village to improve services and ensure the protection of the park's primary resource. This has been the most heavily used area in the park since the early 20th century. Current facilities are old and substandard. Most have not been significantly upgraded since before World War II. All new or rehabilitated facilities will meet modern codes and standards for safety, efficiency, and handicapped accessibility.

The National Park Service has identified six major objectives in planning the redevelopment: 1) reduce environmental impacts on the Crater Lake ecosystem, visitor congestion, and safety problems associated with Rim Village; 2) rehabilitate Crater Lake Lodge; 3) provide accessible year-round viewing of Crater Lake; 4) improve the year-round visitor information and interpretive program; 5) improve year-round visitor services; and 6) restore the historic landscape of the Rim Village area. These objectives support the goals outlined in all planning documents and public involvement that culminated with the 1988 Rim Village Development Concept Plan.

Funds have been appropriated for the rehabilitation of historic Crater Lake Lodge. Work began in 1991 and will be completed during the summer of 1994. When completed, the exterior will look much as it has since the 1920s. The interior will include

an improved dining room and 71 guest rooms available from May to October.

A new sewer line has been completed connecting Rim Village with the park's waste treatment facilities south of Park Headquarters. It carries away all sewage generated at the edge of the caldera, protecting the lake from potential sewage contamination. Although substantial planning has been done, funds are not yet available for the remaining components of this program. The parking lot at Rim Village will be removed to eliminate traffic congestion from Rim Village, and provide a safer pedestrian environment. The noise, fumes and traffic that today's visitors experience will no longer be a problem. A new parking facility will be built about 1/4 mile down the road toward park headquarters. Shuttle busses will provide transportation for visitors between Rim Village and the parking lot.

Moving the parking lot will also reduce environmental impacts on the Crater Lake ecosystem. Currently, vehicles drip oil and other effluents onto the parking lot. When it rains, these pollutants wash into the caldera. Snow blowers clearing the parking lot during winter must work with the prevailing winds. This means they often blow snow contaminated with vehicle drippings into Crater Lake.

A new activity center will replace the outdated and inefficient cafeteria and gift shop. This building will be open year round, and will contain a new visitor center, expanded food service facilities, and shops. The visitor center will include an information desk, small bookstore, a large interpretive exhibit

room, and a theater. During the winter when the snow outside is 15 feet deep, temperatures are low, and the wind is blustery, visitors will view Crater Lake from an upper level indoor viewing area.

Concession administrative offices, warehousing, employee housing, shuttle bus maintenance, and waste recycling facilities will be located at Mazama Village, further reducing congestion at Rim Village. And, if year round lodging in the park is deemed appropriate, it will be located at Mazama Village.

The redevelopment project would not be complete without rehabilitating the landscape that was established by the National Park Service and the Civilian Conservation Corps from 1927 to 1941. This landscape unites the various components of Rim Village and provides pleasant pedestrian pathways that wind along the edge of the caldera. Native park plant species will be used to blend the buildings and walkways into the rim's natural environment.

Redevelopment is expected to take several years. Construction will be done in phases. Crater Lake Lodge will be the first major facility reopened in the spring of 1995. Work at Rim Village may not be completed until 2000. The phasing of construction will allow visitors to use portions of Rim Village throughout the redevelopment.

When finished, Rim Village will be a more pleasant place to visit and view Crater Lake year-round. The new interpretive, information, food service, and lodging facilities will better serve visitors well into the 21st century. And most importantly, Crater Lake will be better protected.

Wildlife

Spotted Owls; A Puzzle Piece?

By Lori Stonum, Park Ranger

Crater Lake National Park is home to many interesting animals, including the controversial northern spotted owl. This medium-sized owl is distinguished by large brown eyes and mottled brown and white breast feathers. Its home is old growth coniferous forests. Crater Lake N.P. is at the southern end of the owl's range and contains the highest elevation owl site ever found in the state of Oregon.

Before 1992, spotted owls were seen in the park but were not studied effectively. A comprehensive survey of spotted owls at Crater Lake N.P. began in May 1992. The relatively high number of owls found was unexpected. At the end of the field season, a total of 29 owls had been documented. Of the 50,000 acres of spotted owl habitat in the park, less than 30% was surveyed. We learned that the park holds great significance for spotted owl recovery. This year our goal is to survey 100% of the spotted owl habitat in the park.

The controversy involving the spotted owl is centered on its habitat; old growth coniferous forests. The trees in these forests are very valuable

as timber. The spotted owl is an "indicator species". This means that if a certain animal (or plant) population is in trouble there may be a bigger problem in the ecosystem as a whole. Think of the indicator lights in your car. When the light comes on you know something is wrong. The light "indicates" a problem, but it may already be too late to solve, especially if it is the oil pressure light. Irreversible damage has been done and this may be the situation with spotted owls.

Old growth forests need to be preserved for more than just the spotted owl. Fortunately, the forests of Crater Lake N.P. are preserved for all time. There are a large variety of specialized plants and animals living in this habitat that should be allowed to continue living. Less than 10% of the original old growth in the U.S. still stands, telling us that time is running out. The spotted owl is only one piece of the puzzle, but can you enjoy a beautiful puzzle with a piece missing?

The northern spotted owl has become a scapegoat in a struggle over ancient forests.



Park Wildlife

By Michele Cardinaux, Park Ranger

National Parks offer excellent opportunities for watching wildlife. Crater Lake National Park's critters can be seen just about anywhere. The visitor that stays on the road will likely see several animals, but the best opportunities await those who walk one of the park trails.

Seeing wildlife is exciting because it is never a sure thing; we all like surprises. Some common animals in the park are rarely seen due to their habits. Nocturnal animals are only active at night, making them difficult to spot. Other species of wildlife are just plain secretive or shy.

When looking for wildlife, be alert and expect the unexpected. There may be a herd of elk in the forest just off the road. It pays to watch for animals everywhere you go. Look and listen for signs as well, such as tracks, piles of stashed food, scrapings in the ground, nest cavities in trees, and sounds.

Forested areas are home to squirrels, chipmunks, woodpeckers, and other forest birds. Walk quietly to blend in and you will be rewarded.

Peak trails and Rim Drive offer animals such as marmots, pikas, songbirds, and raptors. Bald

eagles, hawks, cormorants, and gulls use the caldera and are often seen flying near the surface of the lake.

Deer and elk are found in forest and meadow areas. You may even see one next to a road. Remember speed limits are set to protect the people and wildlife in the park. The many young animals present in the summer are especially vulnerable to vehicles. Please drive carefully!

Where there are people, there are golden-mantled ground squirrels, Clark's nutcrackers, and gray jays. These animals have learned to beg food and congregate in busy areas. Allow them the right to live free from handouts. Park regulations prohibit feeding wildlife. This rule is to protect **you**, the **animals**, and the **park**.

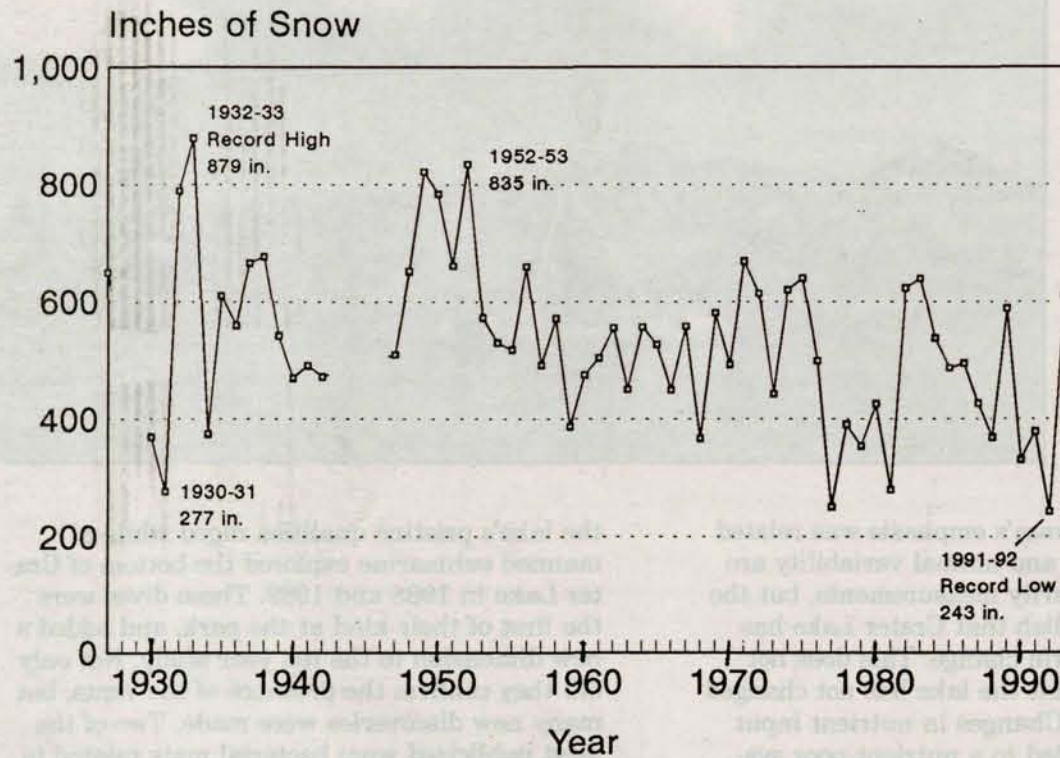
Animals carry contagious diseases such as Bubonic Plague, Lyme's Disease and Rabies. They may even bite if you get too close. The animals are **wild** and should be viewed from a distance. When animals learn they can get food from humans, they often stop gathering their natural foods, and adversely affect localized habitats. At that point, they have lost their wildness. Animals that become a problem have to be destroyed.

Seeing wildlife can be very rewarding. Treat the animals and the park with respect and many more generations of people and animals will be able to experience Crater Lake National Park as you have today.

The golden-mantled ground squirrel is a common sight for park visitors. They are efficient beggars, but for their own good, please resist the temptation to feed them.

By Gregg Fauth, Park Ranger

Annual Snowfall



Crater Lake National Park's annual snowfall records show a gradual decrease to the current average of 529 inches. No records exist for the years 1928, '29, '43, '44, '45, and '46. As of late-May, 1993, 607" had fallen in the winter of 1992-93.

The weather at Crater Lake is interesting and impressive. Large snowbanks lasting into August definitely catch your attention. And everyone has their idea about what is "normal" when it comes to yearly rain and snow. Much of the literature about Crater Lake and its "averages" has become dated and inaccurate. Recalculating the records shows large changes in what we consider average.

Annual precipitation averages are recomputed yearly on Dec. 31, the end of the precipitation year. Using the 57 years we have weather records from since 1930 (all taken at park headquarters), the figures reveal that the park's average precipitation is 66". This average is three inches below the 69" reported in most literature.

Yearly snowfall averages are recomputed at the end of the snow year, July 1. Beginning with the winter of 1930-31, and ending with 1991-92, the yearly average for accumulated snowfall is 528 inches, taken from 58 years of records. This average divides out to 44 feet. These new figures for snowfall are significantly below the 600 inch and 50 foot figures that have been tossed about so often. At this writing (Mid-May 1992) the averages are set to change again. The winter of 1992-93 has seen some 600+ inches fall, which will raise the average back up to 529 inches.

We need to keep reminding ourselves that weather, like other natural phenomena, is constantly changing and does not fit into neat, everlasting pigeonholes. These dynamic systems make today's "facts" become tomorrow's "stories".

The Lake Inside the Volcano

by Ted Haeger, Park Ranger

The Earth's crust is dynamic, being composed of slowly moving masses called tectonic plates. The contact zones between these crustal plates are often the scene of dramatic geologic activity. The Cascade volcanoes result from the collision of two of these plates, the Juan de Fuca and the North American. Pushing against each other, these two plates create a subduction zone, where one plate is forced beneath the other. The light crustal material of the Juan de Fuca Plate melts as it is forced into the hot depths of the earth's mantle. The resulting molten material rises back through the North American Plate, eventually emerging as lava and forming the volcanoes of the Cascade Range.

About 420,000 years ago, the volcano we call Mt. Mazama began to form in the Cascade Range. Periodic eruptions built the mountain layer by layer, lava flow by lava flow. The mountain had several different vents, so it was probably never a symmetrical cone. Instead, it was a mass of overlapping small volcanoes forming one giant composite volcano. Geologists believe that Mt. Mazama possibly reached as high as 12,000 ft. above sea level.

Mt. Mazama's most violent eruption occurred around 7,700 years ago. This "cataclysmic" eruption began by ejecting a column of hot gas and magma high into the air. This ejected material fell back to the surface blanketing the local landscape with frothy pale pumice lava and volcanic ash.

Mt. Mazama erupted, collapsed and then partially filled with water, forming Crater Lake.

As this eruption continued it also increased in magnitude, producing massive, fast moving flows of hot ash. The magma chamber deep below the mountain was losing more and more of its contents. This weakened the mountain's underlying support and allowed the top of the peak to collapse into the magma chamber in a very short time. The mountain which had taken hundreds of thousands of years to create metamorphosed in a just a few days.

The eruption's aftermath left a 4,000 ft deep caldera, a term adopted from Spanish which literally means "devil's bowl". Subsequent smaller flows helped to seal the caldera's bottom. Heavy snowfalls each year filled the caldera, eventually creating a lake with a depth of nearly 2000 ft. Today, the lake is in a state of equilibrium, neither significantly increasing or decreasing in depth. Its stability results from a balance between the incoming precipitation, and an outflow of seepage and evaporation.

The peace and serenity of Crater Lake National Park today belies Mt. Mazama's active and violent past. However, beneath the calm beauty is a living volcano that may erupt again someday. We have no way of knowing when the next eruption may occur, nor what magnitude it may have. The persistence of geologic processes will allow this dynamic region to continue evolving.



The Lake

Ten Years of Lake Research

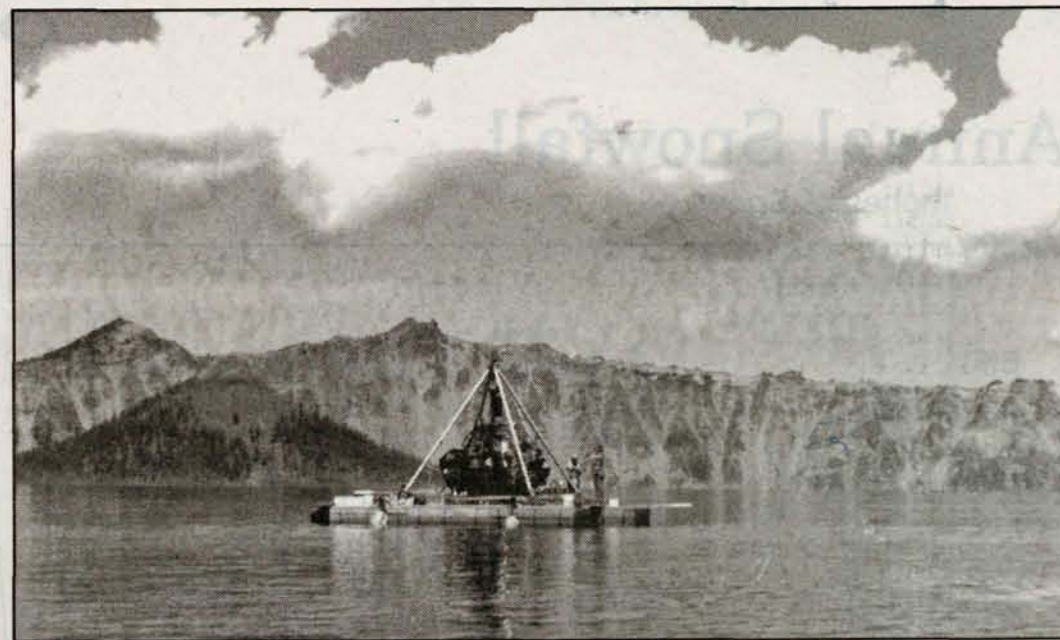
by Steve Mark, Park Historian

As one of the world's oldest national parks, Crater Lake continues to draw a half a million visitors per year. As renowned as the park is, much remains to be learned about its central feature. Little was known about the lake's ecology in 1982, when Congress funded an extensive ten year research program to determine if Crater Lake is losing its famous clarity.

Ten years later, it is safe to say that no limnological resource in the National Park System has a better data chain to support monitoring efforts. A panel of scientists recently met to review the program's research methods and findings. They concluded that the program has met and exceeded the goals and objectives set in 1982. Additional research is needed, however, to further evaluate truly long-term change in Crater Lake. This is because no comparable historical measurements exist to compare with the data assembled since 1982.

Crater Lake is a complex and dynamic oligotrophic (nutrient-poor) system. Since it is so unusual, a number of studies have been undertaken to better comprehend its physical, chemical, and biological components. These investigations include the quantity and chemistry of precipitation, lake level fluctuations, solar radiation, chemistry of intra-caldera springs, clarity, color, chemistry, phytoplankton, zooplankton, benthic (bottom of the lake) flora and fauna, as well as fish. A common thread linking all of the studies was the attempt to determine if the lake had experienced recent changes. In many cases all the investigators could do was provide a baseline to compare against future conditions, but particular attention was paid to whether changes in the lake's ecosystem have been caused by humans.

A highlight of the ten year research program were the dives of the one-person sub "Deep Rover".



Much of the program's emphasis was related to clarity. Seasonal and annual variability are apparent in lake clarity measurements, but the data does not establish that Crater Lake has experienced long-term change. This does not necessarily mean that the lake has not changed through the years. Changes in nutrient input (more nutrients added to a nutrient-poor system would tend to make the lake less clear) from atmospheric and local sources (such as nitrates) may be significant to long-term trends in lake clarity.

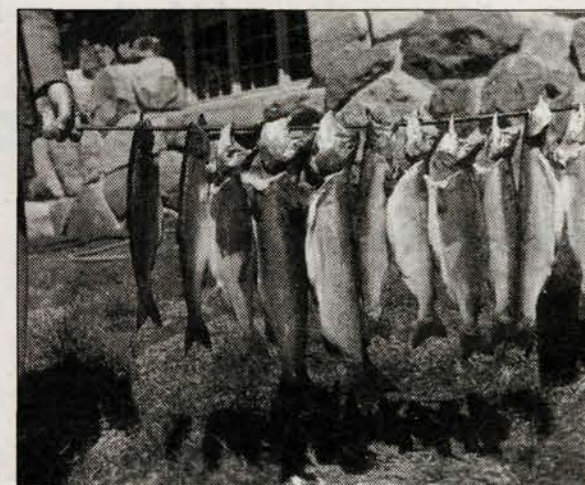
Three springs on the caldera wall possess relatively high nitrate concentrations which may or may not be related to human activity. Nitrates from these springs, however, contribute less than three percent of the total annual nitrate input to the lake. As a result, the greatest human-related threats to Crater Lake are considered to be global climate change, air pollution, on-site auto and boat use, and the non-native fish.

In general, the Crater Lake ecosystem is judged to be pristine except for the consequences of fish introduction. Fish exhibit the clear potential to alter the open-water and near-shore food webs, and to affect in-lake nutrient flow. Although stocking of both species (kokanee salmon and rainbow trout) stopped in 1941, their continued reproduction presents long-term implications for the lake's ecology. Measurements of Crater Lake's food web are needed so that park managers might eventually deal with how fish affect the lake.

Confirmation of the long-suspected hydrothermal inputs to the lake is probably the most publicized finding of the ten year program. They were found to be at least partly responsible for the lake's stable water quality through time. Hydrothermal inputs were also determined to be highly significant in maintaining Crater Lake's ecosystem and its processes.

The hydrothermal findings continue to spark controversy. For several years a geothermal energy company wanted to utilize its leases for drilling just outside the park's boundaries, hoping to tap a heat source in the mountain which holds Crater Lake. Disagreement over whether geothermal development might affect

the lake's pristine qualities raged while a manned submarine explored the bottom of Crater Lake in 1988 and 1989. These dives were the first of their kind at the park, and added a new dimension to the ten year study. Not only did they confirm the presence of the vents, but many new discoveries were made. Two of the most publicized were bacterial mats related to hydrothermal inputs and a new species of mite.

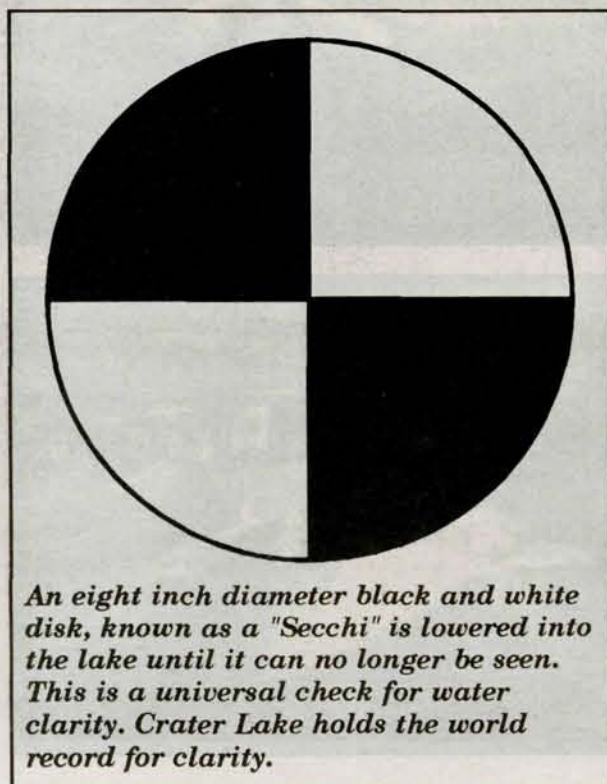


These non-native fish are descendants of ones planted in Crater Lake from 1888 to 1941. They may prove to be the single largest contributor to loss of lake clarity.

Impetus for the dives was a Congressional mandate to identify significant thermal features in national parks. As a result, additional funding was made available to the National Park Service and Oregon State University to conduct the hydrothermal studies. Other co-operators who sponsored dives were the National Geographic Society and the U.S. Geological Survey (USGS).

Scientists from the USGS were present throughout the ten year program, continuing their studies of Crater Lake that go as far back as 1886. Most of their work, however, was

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An eight inch diameter black and white disk, known as a "Secchi" is lowered into the lake until it can no longer be seen. This is a universal check for water clarity. Crater Lake holds the world record for clarity.

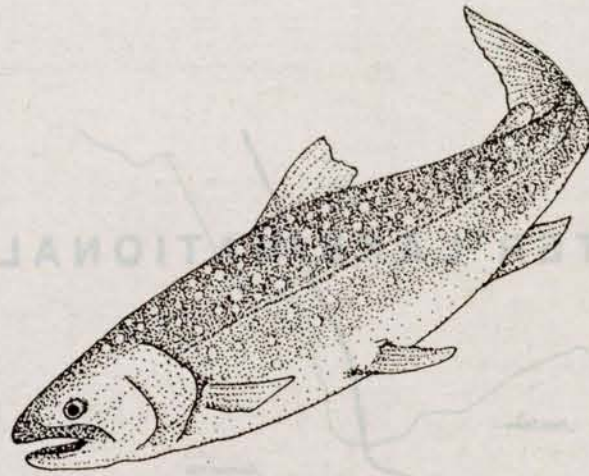
The Lake

Fishing at Crater Lake

It is legal to fish in Crater Lake. Kokanee salmon and rainbow trout were both stocked in the early part of the century and have successfully reproduced year after year.

The only access to Crater Lake's shore is at Cleetwood Cove. The Cleetwood Cove trail is a steep, mile long climb that deters many anglers. Cleetwood Cove has about a quarter mile of shore access. There is also the option to go to Wizard Island when the boat tours are running.

The fishing in the lake is usually fair, being best in the earliest part of summer. Although there is no catch limit nor size restrictions, few anglers take home large creels. No license is required for lake fishing. Use artificial lures only. Bait is prohibited to keep the water pure, and to avoid introducing exotic species into the lake. Otherwise, Oregon State fishing regulations apply. Ask for the fishing handout at park visitor centers.



Nature Notes Now Available

The 1993 edition of Nature Notes from Crater Lake is now available. This volume was produced by park staff to provide visitors with additional information about the natural values of Crater Lake National Park. Nature Notes can be purchased at park visitor centers for \$1.00.

LAKE FACTS

Maximum depth.....	1932 ft.
Average depth.....	1500 ft.
Maximum width.....	6 mi.
Minimum width.....	4.5 mi.
Surface elevation.....	6176 ft.
Surface area.....	21 sq. mi. or 13,440 acres
Highest pt. on Rim.....	8,056 ft. (Hillman Peak)
Avg. height of Rim above lake... ..	1000 ft.

DEEPEST LAKES

1. Baikal	CIS	5,710'
2. Tanganyika	Africa	4,708'
3. Caspian Sea	Iran	3,104'
4. Nyasa	Africa	2,316'
5. Issyk Kul	CIS	2,297'
6. Great Slave	Canada	2,015'
7. CRATER LAKE	Ore.	1,932'
8. Tahoe	Cal.	1,685'
9. Chelan	Wash.	1,419'
10. Great Bear	Canada	1,356'

The Organizations of Crater Lake National Park

The **National Park Service (NPS)**, is a bureau under the U.S. Department of the Interior. The NPS is responsible for the overall operation of national parks and related areas. Specific responsibilities include protecting park resources, managing visitation, developing and maintaining public facilities, and conducting necessary park-related research.

The park concession is the **Crater Lake Lodge Inc.** It is a private, profit-making corporation and a subsidiary of a larger corporation, headquartered in Portland. They provide commercial services within Crater Lake National Park, and at Oregon Caves National Monument. These services include lodging, food service, cave tours, and gasoline. Crater Lake Lodge Inc. is regulated by the NPS, under a contract with the Federal Government.

The **Crater Lake Natural History Association** is a non-profit organization dedicated to advancing educational and scientific activities within Crater Lake National Park. Natural History Association sales at park Visitor Centers are invested back into the park, providing services such as publishing park related books and maps, printing this newspaper, and purchasing equipment and materials for park staff.

RESEARCH, from page 6

supported by sources other than dedicated lake research funds. USGS investigations have had a synergistic effect on the lake program, serving to broaden the scope of what is known about Crater Lake and its volcanic origins.

Seen in perspective, this past decade of research was a period that reinforced the tradition of interdisciplinary cooperation at Crater Lake to bloom. Not since the 1930s has so much new information been generated for interpreting the lake to visitors. In terms of cost effectiveness, the taxpayer will receive dividends for years to come. The educational and inspirational values that the park embodies will be articulated even further if Congress continues the lake research program.



Lake researchers collected samples of a large variety of lake components.



Park Map



Reflections

Crater Lake Reflections is published for park visitors by the Crater Lake Natural History Association (CLNHA) in cooperation with the National Park Service. The CLNHA is a non-profit organization working with the National Park Service to provide programs for interpretation, education and research in Crater Lake National Park.

To help Crater Lake visitors better understand, appreciate, and protect the park, CLNHA sales outlets at park visitor centers offer selected publications and maps. To become a member, write to Crater Lake Natural History Association, P.O. Box 157, Crater Lake, OR 97604.

Ranger Led Programs

(All programs are offered from June 26 through Sept. 6 unless otherwise noted)

Visitor Centers:

Steel Information Center (at Park

Headquarters - Open year-round)
Open 9:00 a.m. to 5:00 p.m. daily
Park movie (see below)
Books and Maps
Backcountry permits

Rim Village Visitor Center

June 4 through June 25, 9:30 a.m. to 5:00 p.m.
June 26 through Sept. 6, 10:00 a.m. to 6:00 p.m.
Sept. 7 through Sept. 30, 9:30 a.m. to 5:00 p.m.
Books and Maps
Backcountry permits

Sinnott Memorial Overlook Museum

June 26 through Sept. 6, approximately 10:15 a.m. to 5:00 p.m.
Hourly talks (see schedule below)
Exhibits

Campfire Programs

Join a ranger for a park tradition: the campfire talk. The program lasts about 1 hour. A new topic is covered each night. Topics are posted at visitor centers and at the camper store. Handicapped accessible.

Where: Mazama Campground Amphitheater (between loops D and E).

When: 9:00 p.m. daily (June 26 through July 31).

8:30 p.m. daily (Aug.1 through Sept.6).

Children's Programs

Aspiring rangers from 6 to 12 years old can participate in the **Junior Ranger** program. Spend 45 minutes with one of Crater Lake's Ranger Naturalists and learn about this special park. Each participant receives a Jr. Ranger booklet at the end of the program. Attendance at one other of the park's ranger-led programs and successful completion of four of the book's six exercises finishes the Jr. Ranger course. All participants who complete the requirements receive a Jr. Ranger badge.

Where: Mazama Campground Amphitheater (between loops D and E).

When: 6:00 p.m. daily

Crater Lake: Past, Present, & Future

Learn about the formation of Crater Lake from scientific and historical points of view. These 15 minute talks give in depth insight into the intriguing story of Crater Lake.

Where: The Sinnott Memorial Overlook, near Rim Village Visitor Center.

When: Half past the hour from 10:30 to 4:30 daily.



Movie on Crater Lake

Experience the mighty eruption of Mt. Mazama through the eyes of the Maklaks, the local Native American people in this inspiring 18 minute movie. Free. Handicapped accessible.

Where: The Steel Information Center When: Every hour and half hour from 9:00 a.m. to 4:30 p.m.

Please Note: Additional Ranger-Led Programs may be presented throughout the summer. Check at Visitor Centers and on bulletin boards for times and places.

Boat Tours

Please Note: Due to the large amount of snowfall this past winter, the schedule of boat tours below is tentative. It will vary based on when roads can be opened. To assure that tours are running, especially early in the season, **inquire at park visitor centers.**

Explore the inside of a volcano by boat on a two-hour, ranger narrated tour of Crater Lake. Purchase tickets at the dock, **no reservations** are taken.

Where: Cleetwood Cove boat dock. Allow **at least 1 hour** to drive from Rim Village to the Cleetwood Cove parking area and hike down the **steep**, one mile trail.

When: It is expected that boat tours will begin on July 1 (see note above).
July 1; 10:00, 11:00, 12:00, 1:00, 2:00, 3:00, 4:00
July 2 through Sept. 6; 10:00, 11:00, 12:00, 12:45, 1:30, 2:15, 3:00, 3:45, 4:30
Sept. 7 through 13; 10:30, 1:00, 3:00

Cost: \$10 for adults.

\$5.50 for children (11 and under).

FREE for infants (24 months and under).

Bring: **Jackets, water**, snacks, sunglasses, sun screen, cameras, binoculars, sturdy hiking shoes. No pets!

WARNING: Cleetwood Trail is steep and strenuous. It climbs 700 ft in one mile. It is recommended only for those in good physical condition, not recommended for those with heart, breathing, or leg problems. It is the **only** access to the lake shore and boat docks. Temperatures on the lake may be much colder than those at the trailhead, so bring extra clothing. There is no water available at Cleetwood Cove. Composting toilets are available at the boat docks.

Note: Boats stop at Wizard Island. It is possible to stay on the island and take a later boat back. However, your return journey is dependent upon available space on returning boats. You are not guaranteed a ride back until the final tour of the day, possibly arriving at the Cleetwood Dock as late as 6:30 p.m.

Park Resources

Crater Lake's backcountry is a place of beauty and solitude.

Untrammelled by Man: Crater Lake's Wilderness

By Steve Mark, Park Historian

Legally-designated wilderness areas cover about three percent of the United States. This is roughly equal to the amount of the nation's land covered by paved roads. Most of the acreage in America's national parks, however, is managed under the wilderness classification—one that prohibits the use of motor vehicles and places a premium on a visitor's sense of solitude and the opportunity to enjoy primitive, unconfined recreation.

Just over 90 percent of the 183,000 acre Crater Lake National Park is managed as wilderness. Nevertheless, only one percent of park visitors venture into the five areas within the park identified as potential additions to the National Wilderness Preservation System. People who are content with viewing the park from its road system are missing a variety of unique topographical features and unusual sights that can only be found in the park's wilderness areas.

Since the shape of Crater Lake National Park is that of a jagged rectangle, it is easy to visualize where four of its wilderness areas are located when one traces the park's road system on a map. The fifth wilderness area lies between Rim Village and

Sun Notch, north of the East Rim Drive and south of the caldera rim. Although it is the smallest unit, this area is free from the sound of vehicles and imparts a sense of what the Crater Lake caldera would be like without roads.

The large wilderness areas away from the rim also have much to offer. Using a map and compass allows visitors to obtain sweeping views of the surrounding country from a number of high points. Exploration of the drainages will serve to alter the impressions of Crater Lake's backcountry held by those who know only the park's roads. Needless to say, the stereotypical view of the park's wilderness as being only pumice fields broken by clumps of subalpine tree species is a false one.

Even though some destinations in the wilderness areas require cross country travel, most can be reached on a day hike. There are some primitive camp sites for backpackers in several areas, however, and a few visitors use the wilderness area south of Highway 62 as access to the Sky Lakes Wilderness (part of the Rogue River and Winema National Forests) which adjoins the park. The Pacific Crest Trail goes north from Sky Lakes and bisects the park, eventually connecting it with the Mount Thielsen Wilderness north of Highway 138.

While the educational and inspirational values of wilderness may seem very obvious to its supporters, the relatively light use of the areas at Crater Lake National Park has resulted in a recognition problem. Lawmakers have had the National Park Service's wilderness recommendations before them since 1974.



Although other national parks have long had formal recognition of their wilderness areas by Congress, Crater Lake National Park's proposal has received no action. Our current "de facto" wilderness will have to suffice until complete legal designation is obtained.



Ancient Forests

By Steve Mark, Park Historian

Understanding and caring for the ancient forests at Crater Lake National Park has always been an important part of park management. Although its tree species are at relatively high elevations (4400 to 8900 feet), the park's forests were of enough interest to men like John Muir, Gifford Pinchot, and John

Wesley Powell that they assisted William Gladstone Steel with his efforts to establish a national park in 1902. Subsequent extensions to the park in 1932 and 1980 were made with the intention of protecting representative samples of the region's ancient forests.

As is the case throughout the Pacific Northwest, the park's forests are dominated by conifers (evergreen trees which bear cones). Although broadleaf (deciduous) trees dominate most of the world's temperate forests, conifers have a competitive advantage in the Northwest. This is largely due to the region's

Crater Lake has many prime examples of ancient forests.

climate, which provides a combination of ample annual precipitation, dry soils in summer (the result of a three month drought each summer), and sub-freezing temperatures during the winter.

Exact ecological definitions for ancient forests remain elusive. There is agreement, however, that road building, logging, and conversion to agricultural use have severely impacted ancient forest ecosystems. Studies have been initiated to determine what can be done to check the reduction in biological diversity which has occurred with the loss of this habitat type.

Subalpine forest systems are the most common in Crater Lake National Park. The term is used here to refer to those forests located along the crest of the Cascade Range at 5000 feet or higher. More than 80 percent of the park is Subalpine zone with trees such as; Mountain hemlock, Noble fir, Subalpine fir, Whitebark pine, and Englemann spruce.

Management of Crater Lake's ancient forests ranges from proper fire control to ecological studies, such as surveys for ancient forest dependent species like the northern spotted owl. A critical difference between the National Park Service and the Forest Service is the "use" of these forests. The Forest Service, under the Department of Agriculture, manages its lands as "multiple-use" lands. The USFS strives to maintain a balance between commercial harvesting, stock grazing, mineral extraction, and recreation. The National Park Service has a different mandate. The NPS seeks to preserve the systems that have shaped the land. National Park lands are preserved for human enjoyment, enrichment, and understanding. These ancient forests are an integral part of Crater Lake National Park.

Southern Oregon

Oregon Caves National Monument

Elijah Davidson stumbled upon Oregon Caves in 1874 while hunting. In 1909, President Taft established Oregon Caves as a national monument, encompassing 480 acres of surface land around the caves. Today it is a popular attraction in Southern Oregon.

Oregon Caves is a *karst* feature. The rock in this area was originally limestone, composed of sea-floor lava, mud, and shells. Through time, heat and pressure metamorphosed the limestone into marble. For centuries, surface water percolating through the water-soluble marble dissolved and enlarged fractures in the stone, eventually forming the many interconnected rooms and passages of Oregon Caves.

The slightly acidic, carbonated water continues to dissolve calcite from the marble. As the calcite precipitates out, it creates beautiful formations, decorating the cave with columns, stalactites, stalagmites, draperies, and soda straws.

In the surface world there are many scenic trails to walk. There are fine examples of ancient forests along the Big Tree Trail.

Before visiting Oregon Caves National Monument, be sure to stop in at the Illinois Valley Visitor

CAVE TOURS

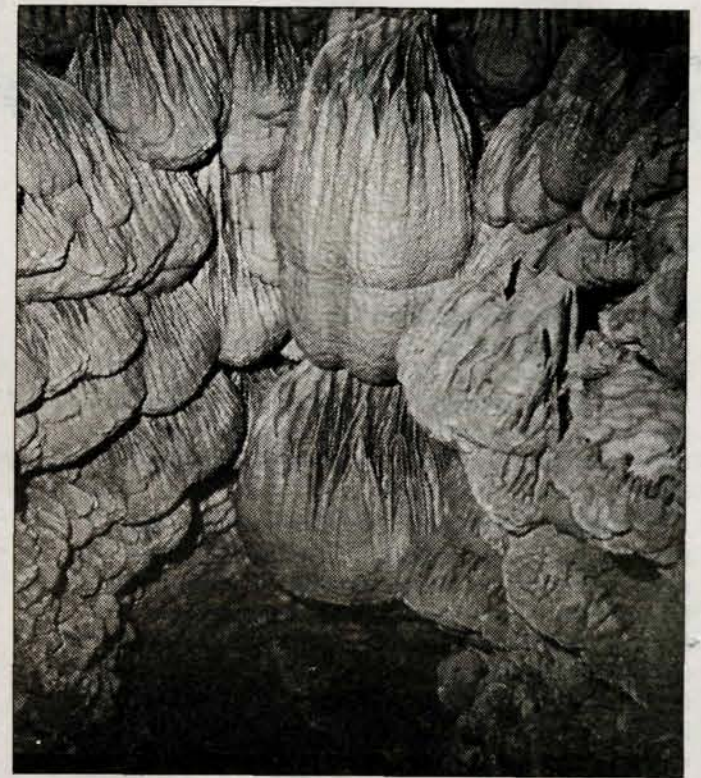
Tours are given every hour, or when 16 people have purchased tickets, whichever comes first. Waits of up to 1 1/2 hours may occur on busy summer days. Tours last about 1 1/4 hrs. and cost \$6.75 for adults, \$3.75 for children (ages 6-11), and \$3.00 for children under 6. **PLEASE NOTE:** Small children must pass an agility test before being allowed on the tours. Child care is available for those children unable to go on the tour. Day-care is available for \$3 for each child that is unable to go on the tour. Tours are scheduled:

Between 8 a.m. to 7 p.m. through Sept. 6.

Between 9 a.m. to 4 p.m. Sept. 7 on.

Tours given year round, check at visitor centers.

Center in Cave Junction for information and a short orientation. Phone (503) 592-2631. At the monument, you can take a guided tour of the cave, and have breakfast, lunch, dinner, or stay overnight in the historic Oregon Caves Chateau. There are campgrounds outside the park along Highway 46.



The Caves are located 19 miles east of Cave Junction at the end of Oregon Highway 46. Cave Junction is 30 miles south of Grants Pass, or 76 miles north of Crescent City, CA, on Highway 199. Trailers are not recommended on Highway 46. They can be left at the Illinois Valley Visitor Center.

In the Crater Lake Area...

By Kent J. Taylor, Chief Interpreter

Hwy 62 south of the park runs through Fort Klamath where you can relive the Modoc Indian War and see Captain Jack's grave at the Fort Klamath Museum. Kimball State Park has camping with limited facilities. Collier Memorial State Park, located a few miles north of Chiloquin on Hwy 97, offers camping, fishing, and a logging museum. The Winema National Forest Headquarters, off Hwy 97 just north of Klamath Falls, has all the information you need about the many areas for hiking, camping, swimming, fishing, and other activities available in the surrounding forests between Crater Lake and Klamath Falls. The Klamath County Museum in Klamath Falls has exhibits and displays on the

history of the area. Two national wildlife refuges, havens for serious and amateur bird watchers, are located on Upper Klamath Lake and Lower Klamath Lake near Klamath Falls. They are important breeding, nesting, and migration stops for birds on the Pacific Flyway.

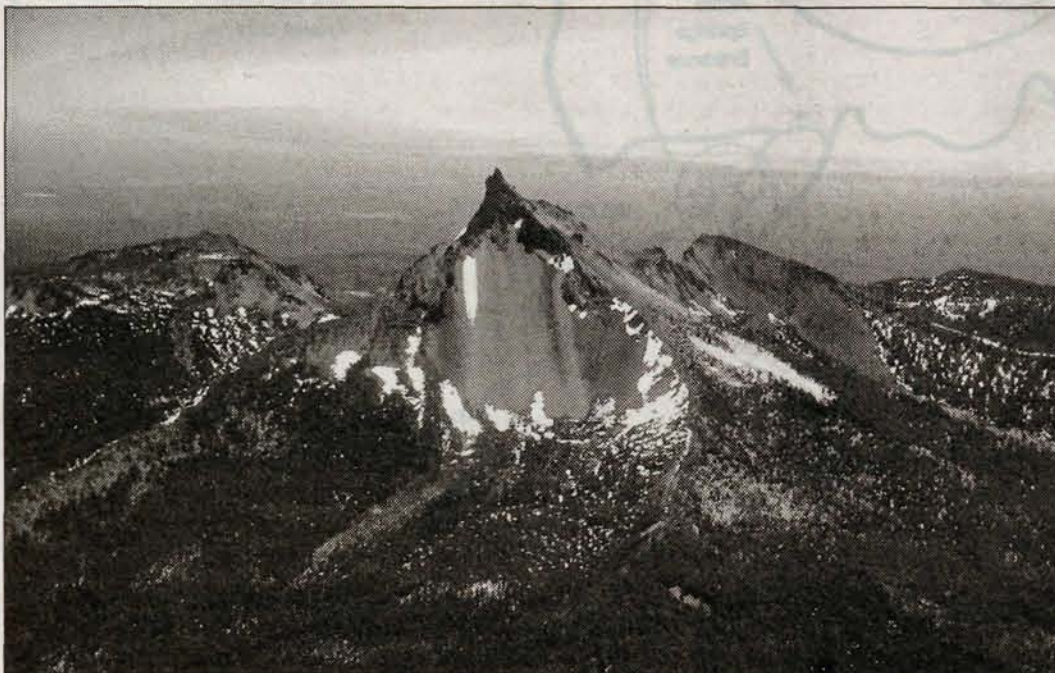
Hwy 62 west of the park winds through the upper Rogue River valley and Rogue River National Forest. At Union Creek you will find the Rogue Gorge where the river flows through a collapsed lava tube. Just south of Union Creek is Natural Bridge, a lava tube where the Rogue River disappears for about 150 feet. Information on camping, hiking, and other recreational activities in the Rogue River National Forest is available at the Prospect Ranger District headquarters along Hwy 62 near Prospect. The National Forest includes the Sky Lakes Wilderness. The historic Prospect Hotel and scenic Mill Creek Falls are

located in Prospect. Farther down Hwy 62 is Stewart State Park on Lost Creek Reservoir. Camping, fishing and boating are the popular recreational activities. The Cole Rivers Fish Hatchery is located off Hwy 62 below Lost Creek Reservoir.

Hwy 138 to Roseburg is known as the North Umpqua Scenic Highway. It goes through the Umpqua National Forest along the North Umpqua River. Information on recreational activities in the Umpqua National Forest is available at the Diamond Lake Ranger District visitor center. There are three wilderness areas in the Umpqua National Forest: Boulder Creek, Rogue Umpqua Divide, and Mt. Thielsen. Mt. Thielsen, the "lightning rod of the Cascades," has a trail to its peak. The North Umpqua River is a mecca for fly fishermen.

Hwy 97 towards Bend runs through the Deschutes National Forest. Along Hwy 97 you will find Lava Lands Visitor Center, Lava Caves, and Lava Cast Forest where you can hike in a lava tube. West of Hwy 97 is the Cascade Lakes Highway, a scenic drive that passes by several mountain lakes and tall peaks. Just east of LaPine is Newberry National Volcanic Monument. The monument is the site of Newberry Volcano which collapsed to form a caldera similar to Crater Lake's. There are two small lakes within the caldera, as well as the world's largest obsidian flow. The monument also offers fishing, camping, and hiking. Just south of Bend on Hwy 97 is the High Desert Museum with trails and many excellent exhibits.

For further information about things to do in the areas around Crater Lake National Park, contact: the Klamath County Department of Tourism at (503) 884-0666 or (800) 445-6728, the Southwestern Oregon Visitors Association at (503) 779-4691 or (800) 448-4856, the Roseburg Visitors Information Center at (503) 672-9731 or (800) 444-9584, and the Central Oregon Recreation Association at (503) 382-8334 or (800) 800-8334.



**Mt. Thielsen
in Umpqua
National
Forest.**

Camping & Backcountry



Campgrounds

There are two developed campgrounds at Crater Lake. Mazama Campground has 198 sites and is near the Annie Springs Entrance Station. Lost Creek Campground is accessed by taking East Rim Drive to the Pinnacles road. Campsites are all on a first come, first served basis. **No reservations** are taken. Camping opportunities are also available and quite numerous outside the park.

Mazama Campground is operated by the Crater Lake Lodge Company. Sites are \$11.00 per night. There are no utility hookups, but fresh water, flush toilets, a dump station, pay showers, and laundry facilities are available. Fires are permitted in designated fireplaces only. Firewood is available for purchase at the Mazama Store. Campers are allowed to collect dead and down wood. Mazama will remain open through Oct. 31, weather permitting.

Lost Creek Campground is a 16 site, tents-only campground operated by the National Park Service. It opens in mid-July. Sites are \$5.00 per night. The sites fill in early afternoon, so campers should select sites upon arriving in the park. Lost Creek closes for the season in mid-September.

Please Remember...

- Quiet hours are 10:00 p.m. to 6:00 a.m.
- Generators may only be operated between 8:00 a.m. and 7:00 p.m.
- Pets must be kept on leashes at all times when outside of vehicles. Pets are not allowed on trails, in the backcountry, or at ranger-led activities.
- Waste water must be collected in closed containers and disposed of at the comfort stations or sanitary dump in Loop C of Mazama Campground.
- Trenching is not allowed for any purpose.
- There is a maximum 14 day limit on camping stays. Sites are limited to 7 people or one family unit; and no more than 2 vehicles in one site.
- Store all food in a vehicle trunk; or, if a trunk is unavailable, keep food and food containers covered and out of sight inside a vehicle.
- Clean dishes and utensils immediately after use.
- Deposit all garbage in the nearest refuse container as soon as possible.
- Roadside camping in the park is not permitted.

Backcountry

More than 90 miles of maintained trails provide access to Crater Lake National Park's backcountry. Topographic maps are available for purchase at the Steel Information Center or the Rim Village Visitor Center. A free permit is required for all overnight backcountry stays. These backcountry permits are available at both entrance stations as well as the Steel Information Center and Rim Village Visitor Center. **Bicycles are not allowed** on any trail.

Firearms are not allowed in any part of the park. Hikers passing through the park on the Pacific Crest Trail (PCT) are not required to obtain a permit.

Horses, mules, and llamas are allowed on the Pacific Crest Trail, Bybee Creek Trail, and the Bald Crater Loop. Stock use is only for through PCT users. All stock users must carry sufficient pelletized feed for their entire stay in the park. Grazing as well as hay or seed type feeds are **not** permitted.

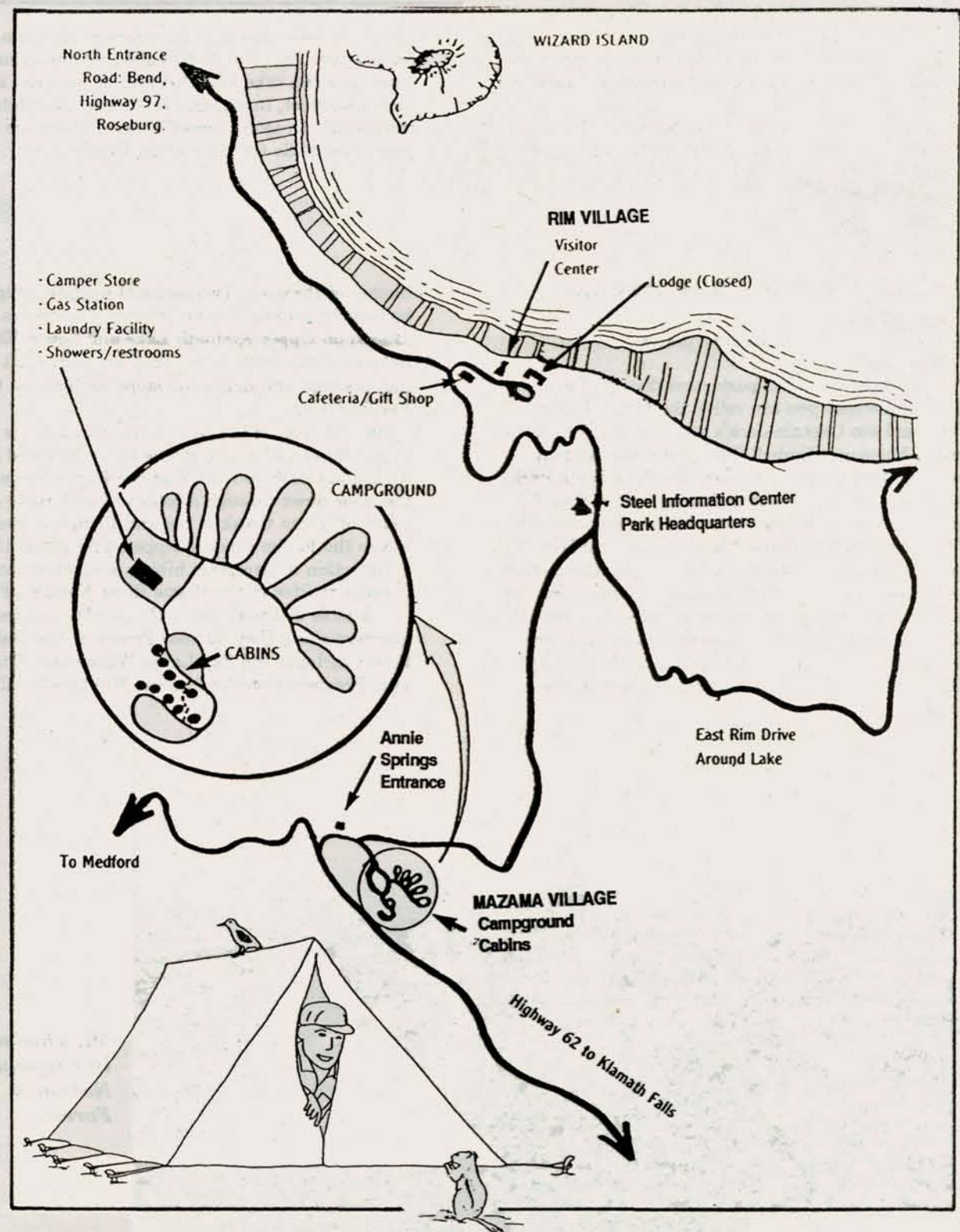
Ask a park ranger for detailed information and suggestions to help you enjoy your experience here at Crater Lake. Please remember that the preservation of Crater Lake's backcountry depends on your careful and considerate use.

Campground Critters

Crater Lake National Park is home to a variety of wildlife, large and small. Many of these animals live in and around campgrounds. This is their home.

American black bears (*Ursus americanus*) are occasional visitors to the campgrounds. It is the responsibility of campers to keep food away from the bears. Bears that become habituated to humans eventually pose a hazard and can do significant property damage. This damage can range from smashing ice chests to breaking vehicle windows. These bears lose their fear of humans and can be dangerous. They often must be removed or destroyed. Please do not contribute to the delinquency of a bear. Follow the food storage and cleanup instructions listed to the left on this page. Bears are a natural part of Crater Lake National Park. Let us all do our part to keep them wild and free.

Other animals encountered in the campground range from birds to squirrels to deer. All park wildlife should be left alone to earn an "honest living". Please contribute to keeping them wild by not feeding them. Human food may lead to population explosions and subsequent die offs. At times, large rodent populations may even lead to human health problems due to excessive fleas. Please let the animals find their own natural foods, it is in their best interest.



Hiking & Biking

Hiking

Crater Lake National Park is a special place and a federally protected area. To help preserve park resources and to protect yourself, please follow these rules on all trails:

- **Dogs and other pets are not allowed on park trails.** Pets often threaten small wildlife. The park has had many incidents of lost or severely injured pets who escape from their owner's control. Also, even well-behaved domestic pets leave scents that will disturb the local ecology.

- Smoking is **not** allowed on any trail.

- **No Bicycles** on any park trails. Bicycling is allowed only on paved roads, the Grayback nature road, and the dirt road entering the park on the east side at the Pinnacles.

- Please stay on trails to protect vegetation and fragile hillsides. Shortcutting trails, particularly on switchbacks can badly damage a slope, making it more susceptible to erosion and visual damage.

- Please leave all rocks, plants, and artifacts undisturbed for the enjoyment of future hikers.

- Do not drink water from park streams or the lake without properly treating it.

- Equip yourself with water, food, warm clothing, rain gear, and anything else that is appropriate for the trail you decide to take. It is better to be over-prepared than under-prepared.

- Hiking or climbing inside the caldera is extremely dangerous. The only safe and legal access to the lake's shore is the Cleetwood Trail.

We wish you enjoyable hiking at Crater Lake National Park.

For a more complete listing of park trails, Crater Lake National Park Trails by Connie Toops, and a U.S.G.S. waterproof, 24x36" topo map are available at park visitor centers.

Day Hikes

Here are some suggested day hikes in Crater Lake National Park. They are organized according to estimated time length for completing the hike. Please note that the steep terrain of the park means time, length and difficulty are not directly related. Times given are estimates of how long it will take to complete the trail and return to the trailhead. Difficulty listings are broken into four categories: easy, moderate, difficult, and strenuous. Trails listed as strenuous should be taken only by people in good physical condition.

SHORT HIKES (15 to 45 minutes)

Sun Notch Viewpoint

Time: 20 min.

Length: 0.25 mile one way.

Elevation: 7000 to 7115 ft.

Difficulty: moderate.

Trailhead: 4 miles east of Park HQ on East Rim Drive, marked by a sign.

Features: Overlook of Crater Lake and Phantom Ship, scattered wildflowers, dry meadow. Use caution near steep edges.

Castle Crest Wildflower Garden

Time: 30 to 45 min.

Length: 0.4 mile loop from Rim Drive. 1 mile loop from Park HQ.

Elevation: 6400 to 6500 ft.

Difficulty: Easy, but some uneven ground and rocks.

Trailhead: 1) East Rim Drive, 0.5 miles from park HQ, or 2) Across road from Park HQ parking lot.

Features: Small brook, lush vegetation, and spectacular blooms of wildflowers in summer months.

Godfrey Glen

Time: 30 min.

Length: 1 mile.

Elevation: 6000 to 6050 ft.

Difficulty: easy.

Trailhead: 2.4 miles south of Park HQ.

Features: Old growth forests, views of Annie Creek Canyon, and occasional wildflowers or animals.

MEDIUM HIKES (1 to 2 hours)

The Watchman

Time: 1 hour.

Length: 0.7 miles, one way.

Elevation: 7400 to 8056 ft.

Difficulty: difficult, steep.

Trailhead: "The Corrals", 3.7 miles northwest of Rim Village on West Rim Drive.

Features: Panorama of surrounding area, overlook of Wizard Island, a historic fire lookout and an interpretive map of local peaks and landforms.

Discovery Point

Time: 1 hour.

Length: 1.3 miles, one way.

Elevation: 7050 to 7150 ft.

Difficulty: easy.

Trailhead: West end of Rim Village parking area.

Features: Views of lake and a plaque commemorating John Wesley Hillman's 1853 "discovery" of Crater Lake.

Annie Creek Canyon

Time: 1 hour and 15 min.

Length: 1.7 mile loop.

Elevation: 5800 to 6000 ft.

Difficulty: moderate.

Trailhead: Amphitheatre at Mazama Campground.

Features: Deep stream cut canyon, creek habitats, wildflowers and occasional animals.

Bicycles and Cars

Since cars and bikes are very different vehicles, their operators need to know what to expect from each other.

Bikes go slow up hills (4-5 miles per hour), but fairly fast going downhill (up to 35 m.p.h.). Bikers need plenty of maneuvering space to avoid rocks and other road hazards. They also need to make themselves visible and predictable for automobiles. Drivers often don't expect bicycles on the road. Tight curves can be especially dangerous.

Car drivers don't want to travel consistently at only 5 m.p.h. They want to be able to pass slower vehicles safely. Bikers should ride single file to allow cars to pass. When with a large group, leaving a gap every six bikes allows cars to merge when passing. Cyclists should always ride close to the shoulder, but not so far that they disappear from the motorist's field of vision.

Drivers need to pass with caution, carefully assessing the speed of bicyclists and the oncoming traffic. Leave well over three feet when passing a cyclist. Honking the horn is inconsiderate and very dangerous: it can greatly startle a cyclist.

Mountain Bikes are welcome on all paved roads and on the unpaved Grayback Motor Nature Trail. All other trails are closed to bicycles to spare the natural landscape from harmful erosion.

For more on biking, pick up the free handout **Bicycling: Crater Lake National Park** at park visitor centers.



Cleetwood Cove (lake shore trail)

Time: 1 hour.

Length: 1.1 miles, one way.

Elevation: 6850 to 6176 ft.

Difficulty: strenuous, 11% grade.

Trailhead: Parking area 4.5 mi. east of North Junction.

Features: Access to lake shore and boat landing.

LONGER HIKES (2 hours or more)

Garfield Peak

Time: 2 to 3 hours.

Length: 1.7 miles, one way.

Elevation: 7050 to 8060 ft.

Difficulty: difficult.

Features: Panorama of surrounding area, excellent views of Crater Lake, occasional small animals, wildflowers, and an overhead view of Phantom Ship.

Mt. Scott

Time: 3 hours.

Length: 2.5 miles, one way.

Elevation: 7450 to 8929 ft.

Difficulty: strenuous.

Trailhead: 14 miles east of Park HQ, across East Rim Drive from road to Cloudcap junction.

Features: Highest point in park, lake view, and a panorama of eastern park and Klamath Basin.

Visitor Services



Camping

Mazama Village Campground. A 198-site campground is located at Mazama Village. The campground has wooded sites, flush toilets, and potable water; firewood is available from the camper store. Sites are \$11 per night, and are allotted on a first-come, first-served basis.

Lost Creek Campground. Off the East Rim Drive on the Pinnacles Road is a small, 16 site, Park Service run campground. Sites are for tent camping only. Potable water and flush toilets are available. Fees are \$5 per night. The campground is open mid-July to mid-Sept.



Accessibility

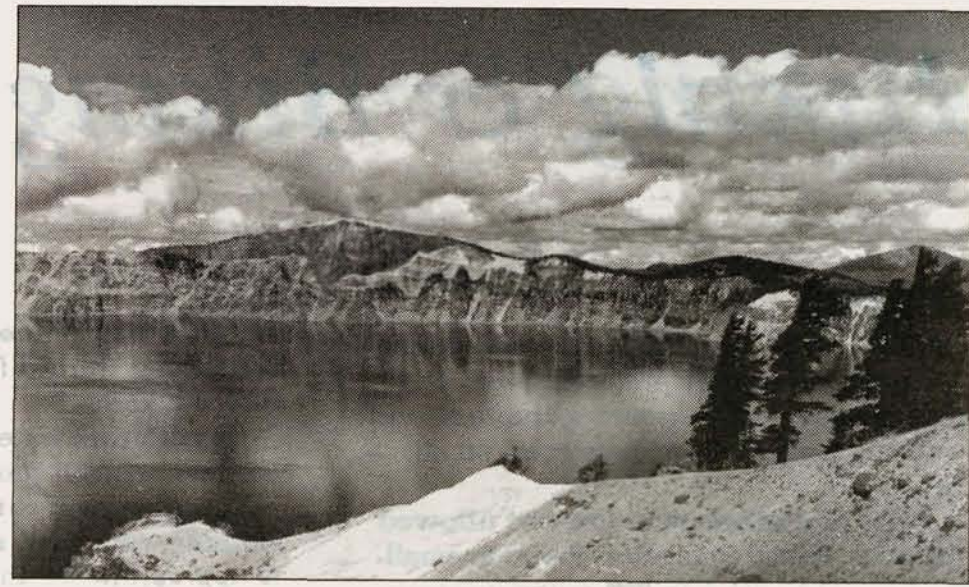
Most viewpoints are accessible for wheelchairs. There are ramps at the Rim Village Visitor Center and Rim Village Cafeteria/Gift Store. Mazama Village campground amphitheater has paved walks. Restrooms at Mazama Village, the Steel Information Center, and Rim Village are also accessible.

Store. Mazama Village campground amphitheater has paved walks. Restrooms at Mazama Village, the Steel Information Center, and Rim Village are also accessible.



Lost & Found

Contact a park ranger at the Rim Visitor Center or Steel Information Center.



Post Office

A small U.S. Post Office is located in the Steel Information Center. It is open through September. Hours: Monday-Friday, 10 AM to 4 PM; Saturdays 10 AM to 2 PM. Mail drop available 7 days a week from 9 AM to 5 PM.



Telephones

Public telephones are available at the Steel Information Center, Rim Village Cafeteria and restrooms, Mazama Village Campground and Store, and Mazama Village Cabins. Most phones are calling card/collect call telephones (not coin-operated).



First Aid

First aid stations are located at Steel Information Center and Rim Village Visitor Center, or contact any patrol ranger in a park service vehicle. To report emergencies or fires, please call **911** at any public phone or call **9-911** at any concession phone.



Worship Services

Interdenominational worship services are offered at the Mazama Village Campground amphitheater on Sundays by Christian Ministry in the National Parks. For times, inquire at the Mazama Village Store.



Food and Beverage

The **Cafeteria** is found adjacent to the Gift Store at Rim Village. It serves breakfast, lunch, and dinner. The Cafeteria is open daily from 8 AM to 8 PM through Sept. 12; 8 AM to 6 PM through Oct. 31.

The Watchman Eatery and Lounge is upstairs from the cafeteria and offers a full lunch and dinner menu. The Watchman is open from 12 noon to 10 PM through Sept. 5.

Wizard's Pizza is adjacent to the Gift Store. It is open from 11 AM to 7 PM through August 29; and from 11 AM to 5 PM through Sept. 6.



Lodging

The only accommodations in the park are located at Mazama Village, near the Annie Springs entrance station. Two units are designed for wheelchair accessibility. Available through Oct. 30, weather permitting. Check in at the Mazama Village Store. To reserve rooms in advance, call (503) 594-2511.



Gasoline

Unleaded gasoline, oil, and some automotive needs are available at the Mazama Village Store. **Regular and Diesel fuels are NOT available.**



Mazama Village Store

Located near the Annie Springs entrance station. Convenience store items, coin-operated laundry and shower facilities, and unleaded gasoline are available. Summer hours are from 7 AM to 10 PM through Sept. 12; 8 AM to 8 PM through Oct. 3; and 10 AM to 6 PM through Oct. 31.



Gifts and Souvenirs

A Gift Store is located in the Cafeteria/Gift Store Building adjacent to the main Rim Village parking lot. It is open year-round. Summer hours are from 8 AM to 8 PM daily through Sept. 12; and 8 AM to 6 PM through Oct. 31.

Local Services

Fort Klamath Lodge & RV Park

(503) 381-2234

unique • comfortable
convenient • reasonable

Cattle Crossing Cafe

Good Food - Home Made Pies
Friendly Service

381-9801

Open Daily 6am to 9pm
Fort Klamath, Oregon

Rogue River RV Park



(503) 878-2404
RESERVATIONS ONLY
(800) 775-0367

21800 Crater Lake Hwy 62
Shady Cove, Oregon 97539

"On the Rogue River"

Willow Lake Resort Open Year-Round

Cabins • Restaurant
Full & Partial Hookups
• Tent Sites •
Fishing • Swimming

(503) 865-3229

7800 Fish Lake Rd.,
Butte Falls, OR 97522



Visit an original Stagecoach Inn on your way to Crater Lake

Teddy Roosevelt loved the place. So did Zane Grey, Jack London, William Jennings Bryan and Herbert Hoover. A.H. Boothby first opened his home to guests in 1892. Today, following extensive restoration, the historic Prospect Hotel is again delighting visitors with wonderful dining and historic lodging.

1-800-944-6490
Prospect Historical Hotel and Motel
391 Mill Creek Dr., Prospect, OR 97536
Take Highway 62 to Prospect
Lodging and Dining / Spectacular Sunday Brunch

Oregon Caves Chateau



located in Oregon Caves National Monument

Historic Lodge • Elegant Dining
Miles of Trails • Waterfalls

(503) 592-3400

Cave Tours 7 days per week all year long
(Closed Thanksgiving and Christmas)

Oregon Caves Chateau, P.O. Box 128,
Cave Junction, OR 97523. Fax (503) 592-6654

... In The Park Mazama Village

Lodging • Convenience Store • Gas
Campground • Showers & Laundry

At The Annie Springs Junction

Open May thru October

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Sun Pass Ranch

Located on the beautiful Wood River
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Bed & Breakfast • Canoe Rentals
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"Catch the Spirit" of the West

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381-2259

30 minutes from Crater Lake

Crater Lake Campground R.V. Park



Trout Pond
U-Catch
No License
Required!

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Cabins
Tipis

Hot Showers!
Laundry
Store
Swimming

P.O. Box 485, Ft. Klamath, Oregon 97626 (503) 381-2275

When patronizing these businesses, please mention you saw their ad in Reflections.

Crater Lake Natural History Association

Books & Maps

Crater Lake; the Story Behind the Scenery
Lee Juillerat, et al. \$5.95

A quality book providing general geology and park history. Filled with excellent photographs.

Birds of Crater Lake
Dick Follet \$1.95

A field guide to the birds found in and around the park. Color and B&W plates.

Crater Lake National Park Trails
Connie Toops \$3.95

Both popular and seldom-used trails covered in depth by a former Crater Lake Park Ranger. Over a hundred miles discussed.

Fire Mountains of the West
Stephen Harris \$16.00

Study the Cascade Volcanoes one major peak at a time from Lassen to Garibaldi. This book tells the past, present and possible future for each volcano.

Northwest Trees
Stephen Arno \$10.95

An excellent source for tree identification with narratives about each tree's special ecological roles.

Wildflowers of the American West
Rose Houk \$16.95

Sixty color photographs make this book a must for wildflower enthusiasts.

Crater Lake Topo Map \$7.00

Children's Choices:

Discovering Crater Lake
Nancy Field & Sally Machlis \$3.95

Designed to encourage learning about the park, this book captures the magic of Crater Lake.

Discovering Northwest Volcanoes
Nancy Field & Sally Machlis \$3.95

A coloring book that teaches about volcanoes in the Pacific Northwest.

ORDER FORM

Item	Quantity	Price
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Make checks payable to:

Crater Lake Natural History Association
P.O. Box 157, Crater Lake, OR 97604

Please allow 4 to 5 weeks for delivery.
(Listing and prices are subject to change.)

General Information

In Case of Emergency
Dial

911

Safety

- **Stay away from the edge!** Please stay behind rock walls at all points on the caldera rim. Crater Lake has an enticing beauty, but it can be dangerous! The steep and unstable volcanic rock of the rim and inner caldera walls can easily claim lives.

- The only safe and legal access to Crater Lake's shore is the **Cleetwood Trail**, found on the north side of the caldera.

- **Pets must remain on a leash** for the protection of your pet and park wildlife. Pets are not allowed on trails.

- **Bicycles are not allowed** on park trails.

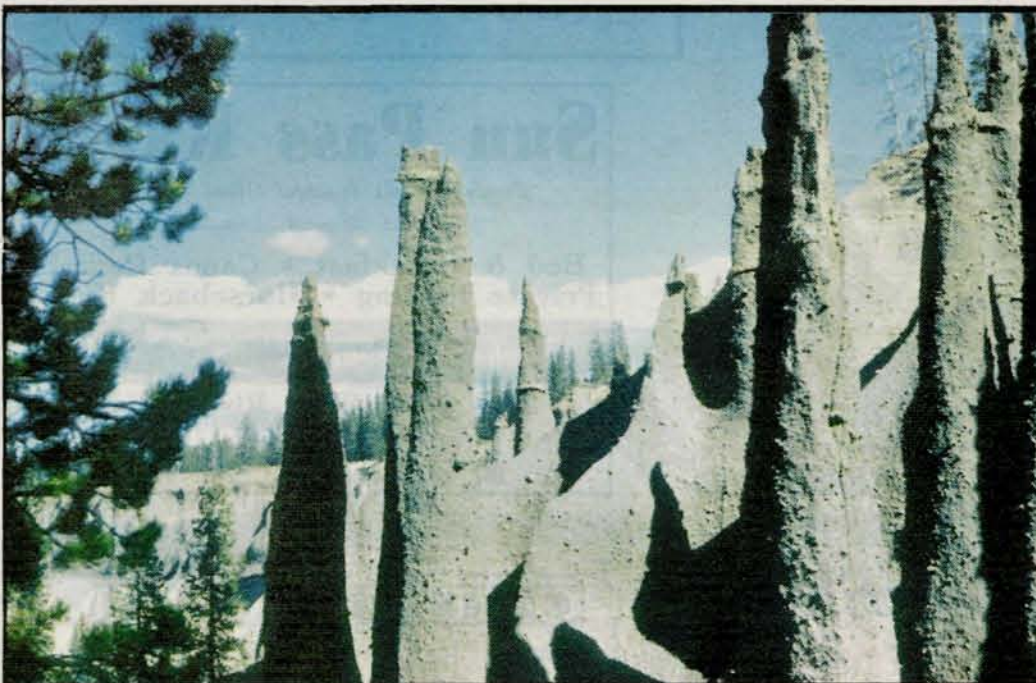
- **Roadside camping is prohibited.**

- All national parks, and the State of Oregon have mandatory seatbelt laws. For safety's sake, **buckle up!**

- **Please obey posted speed limits.** Automobiles are responsible for the majority of non-natural wildlife deaths in the park.



Brilliant wildflowers are a special feature of Crater Lake National Park.



The Pinnacles are yet another of Crater Lake National Park's special geological wonders.

It's Up to You...

The national parks have been described as the crown jewels of the United States. While enjoying the beauty of Crater Lake, please remember that few other nations have parks that can compare to those of the United States. They are something to be proud of. They are something to preserve.

Over half a million people come to experience Crater Lake's beauty every year. The protection of Crater Lake National Park is ultimately in the hands of the people who visit it. Your cooperation with park rules is one way to help ensure the park's survival. Please, treat **your** park with care.

Park Information

(503) 594-2211

From 8 AM to 4:30 PM

**For Lodging Reservations
& Concession information,
call (503) 594-2511**

Become A Friend of Crater Lake National Park!

This is an outstanding opportunity for people who have been touched by the magic of Crater Lake. After nearly a year of discussion and planning, the Friends of Crater Lake National Park has become a reality. It is a non-profit organization cooperating with the National Park Service in the stewardship of the natural and cultural resources of Crater Lake National Park. Cooperation may be provided through supporting appropriate visitor programs, working with park staff in completing special projects, and taking the lead in fund raising for special projects.

The Friends are looking for a broad cross section of membership. New and prospective members are invited to an activity day in the park on July 31st. The first official membership meeting will be on Sept. 25. Those who join before December 31, 1994 will be part of a one time group of charter members. Additional information is available by writing to: Friends of Crater Lake National Park, Box 88, Crater Lake, OR 97604. Membership applications are also available at park visitor centers.