Crater Lake

National Park Service
U.S. Department of the Interior

Reflections

Visitor Guide
Summer/Fall 2013

Watch the New Park Film

A new, 22-minute film has just arrived at the Steel Visitor Center—the park's first new orientation film since the 1980s! Covering a variety of topics, the film explores the significance of Crater Lake and the wonder it has inspired for generations. The film is called "Crater Lake: Into the Deep" and includes dramatic underwater footage as well as state-of-the-art animation that depicts the park's violent geologic past.

The film is shown daily on the hour and half-hour from 9:00 a.m. to 4:30 p.m. The auditorium in the Steel Visitor Center is small, so watching the film in the early morning or late afternoon is recommended to avoid crowded conditions. Production of the film was funded entirely by entrance fees paid by park visitors like you. By visiting the park, you are contributing to future improvements. Thanks for your support!

Welcome!

Thank you for visiting your national park. Here at Crater Lake, you'll find opportunities to refresh your spirit, awaken your senses, and connect with the natural world. This year, you may notice that budget reductions are having some effects on available services and facilities. Please know that we are working hard to ensure that every dollar we do have is used in the most efficient manner to protect the park and provide you with the best experience possible.

The National Park Service protects more than 400 special places, saved by the American people so that everyone can experience our heritage. We at Crater Lake are proud to be stewards of this national treasure. Park rangers and maintenance staff are here to assist you in making your visit safe, rewarding, and fun. If there is anything we can do to help, please ask. Enjoy your park!

Craig Ackerman
Superintendent

Catch a Rising Star

Plus 10 Other Ways to Enjoy Your Park

Watching the sun rise (or set) over Crater Lake can be an unforgettable experience. With clean air, clear skies, and unobstructed views, the park is usually a fantastic place to observe the sun's daily rituals, as well as other celestial events. In fact, for many travelers, spending dawn or dusk on the rim of Crater Lake is a highlight of their visit. Opinions differ, though, as to the best vantage points. At dawn, some people head to Discovery Point or Watchman Overlook, both along the West Rim Drive. From these locations (and from the top of Watchman Peak, where the photo on the right was taken), the waters of the lake sometimes glow in shades of orange, pink, and purple.

As soon as the sun breaks the horizon, however, seeing the lake from these spots means staring into the light, and opportunities for photographs diminish. That's why many people prefer to station themselves at sunrise along the East Rim Drive (or hike to the summit of Mount Scott, where the photo at top was taken), so as to have the sun at their back when viewing the lake. That's also why, at sunset, most rangers recommend driving to Watchman Overlook or joining a ranger-led hike to the top of Watchman Peak *(see page 3)*, where you'll catch the last rays of light on the lake's surface then watch the sun descend over a dozen mountain ridges between the park and the Pacific Ocean. In the meantime, here are 10 other tips for making your visit to Crater Lake more meaningful, memorable, and fun:

Drive Around the Lake
Rim Drive is a 33-mile (53-km) road that encircles Crater Lake. More than 30 pullouts offer dramatic views of the park's volcanic scenery. Allow 2 to 3 hours *(see page 5)*.

Hike a Trail
From easy walks to challenging hikes, the park has something for everyone. Explore pristine forests, flower-filled meadows, and rocky peaks *(see page 4)*.

Attend a Ranger Program
Discover the wonders of Crater Lake with those who know the park best. Talks, walks, kids programs, boat tours, and trolley tours are offered daily *(see page 3)*.

Find the Phantom Ship
Anchored near the lake's south shore is an island that seems to be sailing away. To see it, hike to Sun Notch or drive to the viewpoint named in its honor *(see page 5)*.

Visit the Pinnacles
Formed during the same eruption that gave birth to the lake, these colorful volcanic spires are tucked away in the park's southeast corner *(see page 5)*.

Tour Crater Lake Lodge
For a glimpse into an earlier era, check out the history exhibits—and walk through the Great Hall—of Crater Lake Lodge, renovated in the 1990s but first opened in 1915 *(see page 2)*.

Visit the Sinnott Memorial Overlook
With panoramic views and fascinating exhibits, this is the place to learn about the park's geologic story and history of scientific investigation *(see page 2)*.

Have a Picnic
The viewpoints and picnic areas along Rim Drive are perfect for outdoor eating *(see page 5)*. Stop by the Rim Village Café for grab-and-go sandwiches, salads, and snacks.

Relax
Find a peaceful spot and attune yourself to the sounds and rhythms of the park. The Lodge veranda and the quiet pullouts on the lake's north side are favorite spots to unwind.

Touch the Water
The trail to the lake shore is steep, dusty, and often crowded, but the water at the bottom is some of the world's purest. Swim, fish, or simply dangle your toes *(see page 3)*.

Snow plow at Rim Village

When is the Park Open?

Crater Lake National Park is open year-round, 24 hours a day. Some roads, trails, and facilities, however, are closed seasonally due to snow. Much of the year, the park's North Entrance Road and Rim Drive are closed to cars. They close for the season on November 1 (or earlier if there is significant snowfall).

Crews begin plowing these roads in April, but opening dates vary. The North Entrance Road and West Rim Drive tend to open in early June. The East Rim Drive typically opens in early July. Highway 62 is open year-round. The road to Rim Village is also open year-round, except after heavy snowstorms.

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Look Inside! →

Park Profile

Crater Lake National Park protects the deepest lake in the United States. Fed by rain and snow (but no rivers or streams), the lake is considered to be the cleanest large body of water in the world. The water is exceptional for its clarity and intense blue color.

The lake rests inside a caldera formed approximately 7,700 years ago when a 12,000-foot-tall (3,600-meter) volcano collapsed following a major eruption. The eruption may have been the largest in North America in the past 640,000 years. Later eruptions formed Wizard Island, a cinder cone near the southwest shore.

Today, old-growth forests and open meadows blanket the volcano's outer slopes, harboring a variety of plants and animals, including several rare species. The area is central to the cultural traditions of local American Indian tribes, and the park provides unique opportunities for scientific study and public enjoyment.

- Park established: 1902
- Size: 183,000 acres (74,060 hectares)
- Visitors per year: About 500,000

- Lake depth: 1,943 feet (592 meters)
- Lake width: 4.5 to 6 miles (7 to 10 km)

- Annual snowfall: 43.5 feet (13.2 meters)
- Last time the lake froze over: 1949

Artist Paul Rockwood's conception of Mount Mazama, the volcano that collapsed to form Crater Lake. If you gathered up the ash from Mount Mazama's catastrophic eruption and spread it evenly across the state of Oregon, it would form a layer 8 inches (20 cm) thick.

Wizard Island

Rim Visitor Center

Bicyclist on East Rim Drive

Exhibits at the Sinnott Memorial Overlook

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Crater Lake Visitor Guide
Summer/Fall 2013

This is the official trip-planner and newspaper of Crater Lake National Park. It is published twice a year and funded by the Crater Lake Natural History Association through sales made in the visitor center bookstores.

Park Mailing Address:
P.O. Box 7, Crater Lake, OR 97604

Phone: 541-594-3000
Website: www.nps.gov/crla
E-Mail: crla_information_requests@nps.gov

Accessibility
Except for the Sinnott Memorial Overlook, developed areas in the park are generally accessible to individuals with mobility impairments. Wheelchair-accessible paths include the Rim Village promenade and the Pinnacles Trail. The Godfrey Glen Trail and Plaikni Falls Trail are accessible to wheelchair users with assistance *(see page 4)*. Multiple pullouts on Rim Drive have wheelchair-accessible wayside exhibits. Some ranger programs are accessible to people with limited mobility and other impairments *(see page 3)*. We are working hard to improve our level of accessibility for all park visitors. We welcome your comments.

ATMs
The Mazama Village Store and Rim Village Gift Shop have ATMs.

Drinking Water
Water faucets can be found at Rim Village, Mazama Village, and inside the Steel Visitor Center. Bottled water can be purchased at the Rim Village Café, the Mazama Village Store, and the bottom of the Cleetwood Cove Trail (when boat tours are operating).

Emergencies
Dial 911 to report any emergency, 24 hours a day. First aid is available at visitor centers and the ranger station at Park Headquarters.

Entrance Fee
The entrance fee for Crater Lake National Park is $10 per family car, good for 7 days. The rate is higher for commercial vehicles. Your fees are put to work improving visitor services and facilities. Thank you for supporting your national parks!

Gasoline
Self-serve gasoline is available at Mazama Village from May 24 through October 14.

Internet
Wireless internet is free for guests of Crater Lake Lodge and The Cabins at Mazama Village. Public Wi-Fi is available at Crater Lake Lodge and the Annie Creek Restaurant for $4 per hour or $10 for 24 hours.

Lost & Found
Contact a ranger at either visitor center or call 541-594-3060.

Phones
Cell phone coverage in the park is unreliable. Reception depends on your location and provider. Pay phones are located outside the Mazama Village Store and inside Crater Lake Lodge.

Picnic Areas
Picnic areas are found throughout the park *(see page 5)*. The Rim Village picnic area has fire grates. Most picnic areas have vault toilets but no running water.

Post Office
A U.S. Post Office is open Monday through Saturday in the Steel Visitor Center. Summer hours are 9:00 a.m.–noon and 1:00–3:00 p.m.

Recycling
Combination trash/recycling bins can be found around the park at more than 20 locations. Recycling is currently limited to aluminum cans and plastic bottles. All bins can accept both.

Restrooms
Restrooms with flush toilets and running water are located at Rim Village, Mazama Village, and the Steel Visitor Center (9:00 a.m.–5:00 p.m.). Vault toilets are located at most picnic areas, Watchman Overlook, and both ends of the Cleetwood Cove Trail *(see map on page 5)*.

Showers & Laundry
Coin-operated showers and laundry machines are available at Mazama Campground.

Services & Facilities

Camping

The park has two campgrounds. Both sit in forests south of the lake. Holders of an America the Beautiful Senior Pass or Access Pass are entitled to a 50% discount.

Mazama Campground (212 sites) is located 7 miles south of Rim Village near Highway 62. In 2013, it will be open from May 31 through October 6, weather permitting. 75% of the campsites for July, August, and September are reservable in advance by calling 1-888-774-2728 or online at www.craterlakelodges.com. The rest are available on a first-come, first-served basis. Typically, there are sites available until late afternoon or early evening. The campground offers tent sites ($21 per night) as well as RV sites ($29). Some of the RV sites have electric hookups ($35). There are many pull-through sites; some can accommodate RVs as long as 50 feet (15 meters). Each site has a picnic table, fire ring, and food locker. Black bears are rarely seen, but campers are advised to store all food in their locker or their vehicle. The campground has drinking water, flush toilets, public showers, and laundry facilities. A nearby general store sells groceries, firewood, and gasoline. You can contact the campground directly during the summer at 541-594-2255 ext. 3610. Mazama Campground is operated by the park's concessioner, Xanterra Parks & Resorts.

Unfortunately, **Lost Creek Campground** (16 tent sites) will be closed in 2013 due to budget cuts. Most years, it opens in early July and closes in mid-October. It is located on the spur road to the Pinnacles Overlook. Registration ($10 per night) is self-service, and reservations are not taken. It has drinking water and flush toilets. Each site has a picnic table, fire ring, and food locker. Lost Creek Campground is operated by the National Park Service. We hope to reopen it in 2014.

For a list of camping options outside the park, ask at either visitor center.

Food & Dining

The park has three restaurants and one store.

The **Crater Lake Lodge** dining room offers fine dining in a casual lodge atmosphere. The menu features gourmet Northwest cuisine made with local ingredients. Reservations are recommended for dinner (5:00-9:00 p.m.) but are not taken for breakfast (7:00-10:30 a.m.) or lunch (11:30 a.m.-2:30 p.m.). Appetizers, drinks, and desserts are also available, without reservations, from 2:30-9:00 p.m. in the Great Hall and on the veranda. Dinner reservations can be made by calling 541-594-2255 ext. 3217. In 2013, the dining room will be open from May 17 through October 13.

The **Annie Creek Restaurant**, located in Mazama Village, is also open for breakfast, lunch, and dinner (7:00 a.m.-9:00 p.m. during the peak season, June 21-September 2). Options include gourmet burgers, vegetarian lasagna, a soup & salad bar, and pizza, including take-out. Wireless internet is available at $4 per hour. In 2013, the restaurant will be open from May 24 through at least September 16, and possibly through October 6.

The **Rim Village Café** serves lighter fare including salads, soup, snacks, breakfast pastries, and grab-and-go sandwiches. The café is open year-round. Peak season hours are 9:00 a.m.-8:00 p.m. (June 14-September 2).

The **Mazama Village Store** sells groceries, camping supplies, firewood, and gasoline. Peak season hours are 7:00 a.m.-9:00 p.m. (June 17-September 3).

Lodging

The park has two motels, both operated by Xanterra Parks & Resorts. For information and reservations, call 1-888-774-2728 or visit www.craterlakelodges.com. For lodging options outside the park, ask at a visitor center.

Crater Lake Lodge (71 rooms) is located in Rim Village, overlooking the lake. In 2013, it will be open from May 17 through October 13. Reservations are highly recommended well in advance. **The Cabins at Mazama Village** (40 rooms) are located 7 miles south of Rim Village. Operating dates for 2013 are May 24 through September 29.

Visitor Centers

There are two visitor centers in the park. Rangers are available to answer your questions and assist with trip-planning. The Crater Lake Natural History Association sells books, maps, postcards, and other items *(see page 8)*.

The **Steel Visitor Center**, located at Park Headquarters, is open daily from 9:00 a.m. to 5:00 p.m. A new, 22-minute orientation film is shown on the hour and half-hour *(see page 1)*. The **Rim Visitor Center**, located in Rim Village, is open daily from 9:30 a.m. to 5:00 p.m. from June through late September.

Exhibits

The **Sinnott Memorial Overlook**, perched on a rock ledge behind the Rim Visitor Center, features an enclosed exhibit room and an open parapet with spectacular views of the lake. The overlook contains a relief model and exhibits on the park's geologic story and lake research. Ranger talks are presented daily from June 28 through September 2 *(see page 3)*. The overlook is open daily (weather permitting) from late June through October. Hours are 9:30 a.m.-6:30 p.m. in July and August, 9:30 a.m.-5:00 p.m. in June and September, and 10:00 a.m.-4:00 p.m. in October. The overlook is located down a steep, historic walkway with stairs and, unfortunately, is not accessible to people with limited mobility.

Crater Lake Lodge features exhibits on the history of tourism in the park and the history and renovation of the lodge. The exhibits are open daily, around-the-clock, from May 17 through October 13. They are located on the ground floor, west of the lobby.

Gifts & Books

The **Rim Village Gift Shop** is open all year. Peak season hours are 9:00 a.m.-8:00 p.m. (June 14-September 2). The **Annie Creek Gift Shop** in Mazama Village opens May 24 and will close sometime between September 16 and October 6. Peak season hours are 8:00 a.m.-9:00 p.m. (June 21-September 2). Both gifts shops are operated by Xanterra Parks & Resorts. You can also shop online at www.craterlakelodges.com/shop. A different selection of books and gifts is also available at the park's two visitor centers *(see page 8)*.

Crater Lake National Park belongs to everyone. We all share responsibility in protecting it. Please take a moment to become familiar with these important regulations. For a full list of the park's rules, visit www.nps.gov/crla/parkmgmt/lawsandpolicies.htm.

Camping
Camping is limited to developed campgrounds and some backcountry areas. Permits are required for backcountry camping *(see page 3)*.

Driving
Use pullouts to enjoy the views. Do not stop in the road. Observe posted speed limits, and watch for wildlife, bicyclists, and pedestrians. Off-road travel is prohibited.

Fires
Fires are allowed only in designated rings in the Rim Village Picnic Area and campgrounds. Fires may be restricted at certain times; ask a ranger.

Food
Store food properly. Generally, this means sealed in your vehicle or a campground food locker. Backcountry campers should use bearproof canisters or hang food from a tree. Exposing wild animals to our food alters their behavior, is bad for their health, and can be dangerous for us.

Hiking and Climbing
Stay on trails. This prevents erosion, protects vegetation, and protects other hikers. Shortcutting trails is prohibited. Hiking and climbing inside the caldera are strictly prohibited. The only exception is the Cleetwood Cove Trail, the only safe and legal access to the lake shore. Serious injuries and deaths have occurred from falls inside the caldera. The walls consist of steep, unstable rocks and soils.

Park Features
Leave rocks, plants, animals, and artifacts undisturbed for others to enjoy. Collecting, defacing, destroying, or disturbing natural, cultural, or historical features is prohibited.

Pets
Pets on a leash—or otherwise physically restrained—are welcome in the park, but only in developed areas. They are allowed within 50 feet (15 meters) of roads, established parking areas, developed campgrounds, and designated picnic areas. Pets are not allowed inside buildings, including Crater Lake Lodge and The Cabins at Mazama Village. Pets are not allowed on park trails or in the backcountry. The presence of pets can confuse and frighten wild animals, affecting their behavior. The above rules do not apply to service dogs here to assist people with disabilities.

Good places to walk a dog include Rim Village, Mazama Campground, and Grayback Drive. Solid pet excrement must be picked up immediately by the owner or person in control of the pet and disposed of in a trash or solid-waste receptacle.

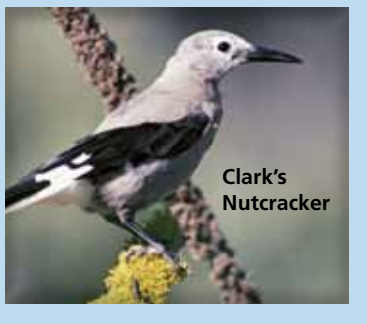
Viewpoints
Stay back from the rim of the caldera. Do not go beyond established fences and rock walls. Falling may cause injury or death.

Weapons
Firearms are prohibited in all posted park buildings.

Wildlife
Never feed wildlife. This includes birds and squirrels. Feeding animals is dangerous for you, bad for them, and harmful to the ecosystem. Feeding, touching, disturbing, or approaching wildlife is prohibited.

Golden-Mantled Ground Squirrel

Help Keep Wildlife Wild. Please DO NOT FEED!


Clark's Nutcracker

Boat Tour on Crater Lake

Sunset over Crater Lake

Trolley Tour on Rim Drive

Trolley Tours

Rim Drive is one of America's most scenic byways, but it's hard to appreciate the views with your eyes on the road. Fortunately, you can leave the driving to someone else. Ranger-guided trolley tours circle Crater Lake daily. Tours begin and end at Rim Village, spend 2 hours traveling clockwise around the lake, and stop at a minimum of 4 scenic overlooks. See below for departure times and ticket prices. The buses are enclosed, climate-controlled, wheelchair accessible, and seat 25 passengers. They resemble old streetcars, but they run on modern technology: powered by compressed natural gas, they emit 30-40% less pollution than gasoline-powered vehicles. The trolleys are owned and operated by The Shuttle Inc. of Klamath Falls.

Activities

Backcountry Camping

Over 95% of the park is managed as wilderness. Although some areas are closed to backcountry camping (for example, there is no summer camping with a view of the lake), exploring the park's old-growth forests and volcanic landscapes can be a rewarding experience.

All campers not staying in the park's developed campgrounds must obtain a backcountry permit. The only exception is through-hikers on the Pacific Crest Trail, who may instead sign the trail register as they enter the park. Permits are free and are available at Park Headquarters, from the visitor center or ranger station, between 9:00 a.m. and 5:00 p.m.

Bicycling

Bicycling at Crater Lake is allowed on paved roads and on the unpaved Grayback Drive. Bicycles are not allowed on park trails, with one exception: the Pinnacles Trail. Park roads are narrow with few shoulders and considerable automobile traffic. Helmets are required for persons under 16 years of age and are strongly recommended for all cyclists.

Bicycling on park roads is physically demanding yet can be exceptionally rewarding. The most popular route is the 33-mile (53-km) Rim Drive, featuring spectacular views but also long, steep grades and climbs totaling 3,800 feet (1,158 meters). For details, pick up a bicycling handout at either visitor center.

Fishing

Originally, Crater Lake contained no fish. Between 1888 and 1941, however, 6 species were introduced. Today, only rainbow trout and kokanee salmon remain. Fishing is allowed at the bottom of the Cleetwood Cove Trail, where you'll find .25 miles (.4 km) of rocky shoreline. Wizard Island, reachable by tour boat, is also open to fishing.

Fishing licenses are not required. There are no restrictions on the size, number, or species taken. Cleaning fish in the lake is prohibited; pack out your catch. To prevent the introduction of non-native organisms, *no organic bait of any kind may be used*. This includes fish eggs, PowerBait, and live or dead fish. Fishing is limited to artificial lures and flies only.

Swimming

Swimming is allowed in Crater Lake, but the water is cold! Most people swim for just a few minutes. Swimming is permitted only at Cleetwood Cove and at Wizard Island, which requires a boat tour to reach. The shoreline at both locations is rocky; there are no beaches.

Snorkeling, scuba diving, and long-distance swimming are not allowed. Last year, after assessing the threats posed by aquatic invasive species, the park placed a ban on the use of snorkels, wet suits, diving gear, and other equipment that could serve as vectors for the introduction of non-native organisms. We hope you will understand our caution on this issue and the importance of protecting the lake from a threat to its ecology that could be irreversible.

Wildlife Viewing

The park is home to many animals, but they can be difficult to spot. The most visible animals are deer and squirrels. Herds of elk are sometimes seen in the meadows along Rim Drive. Bobcats and mountains lions are present but rarely seen. Lucky observers might spot a fox, black bear, marmot, porcupine, grouse, or bald eagle. Dawn and dusk are the best times to look.

Kids: You Can Become a Junior Park Ranger!

Are you between 6 and 12 years old? Do you want to learn while having fun at Crater Lake National Park? Here are 2 different ways:

- Pick up a free activity book at either visitor center. Explore the park, complete the activities, then return the book to a ranger to earn a Junior Ranger BADGE.
- Meet behind the Rim Visitor Center at 1:30, 3:00, or 4:30 p.m. (June 28-Sept. 2) and participate in a free, 20-minute activity. Complete one activity to earn a Junior Ranger PATCH.

Boat Tours

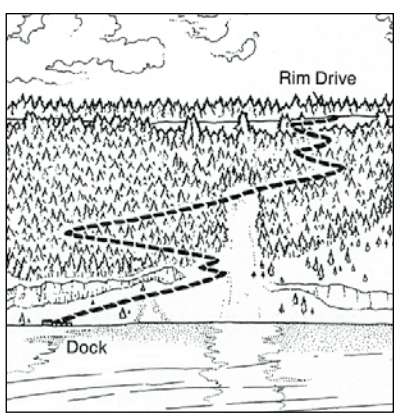
Join a park ranger for a 2-hour cruise around Crater Lake. See the box below for departure times and ticket prices. Boat tours on Crater Lake are operated by Xanterra Parks & Resorts in partnership with the National Park Service.

Tickets
Each boat holds 37 passengers. 20 tickets for each tour (July 6-Sept. 2 only) are available for advance purchase by calling 1-888-774-2728 or online at www.craterlakelodges.com. The remaining 17 tickets for each tour (and all tickets from June 28-July 5 and Sept. 3-Sept. 15) are available only in the park from automated kiosks inside Crater Lake Lodge and the Annie Creek Gift Shop. For each tour, these tickets go on sale exactly 24 hours in advance. Sales continue until the tour is sold out or until 2 hours remain before departure. At that time, if a tour is not sold out, remaining tickets can be purchased from a ticket booth (open daily at 8:30 a.m.) at the top of the Cleetwood Cove Trail, until 45 minutes before departure. Ticket holders should arrive at the trailhead at least 45 minutes before their tour to allow time to hike down the 1.1-mile (1.7-km) trail to the lake.

Visiting Wizard Island
Up to 74 tickets each day are available for visitors wishing to disembark at Wizard Island, halfway through the tour, to hike, fish, swim, and explore. Only 2 tours dock at Wizard Island: the 9:30 a.m. and 12:30 p.m. departures. The 6 standard tours do not stop. Most passengers are dropped off for a 3-hour stay, then picked up by a later boat to complete their tour of the lake. A limited number of tickets (6 per day) are available for people wishing to spend 6 hours on the island. See page 4 for details on the island's 2 hiking trails.

What to Bring
- ☑ Bring plenty of drinking water. Bottled water is available for purchase at the bottom of the Cleetwood Cove Trail.
- ☑ Bring a lunch or snack, especially if visiting Wizard Island. Light snacks are available for purchase at the top of the Cleetwood Cove Trail.
- ☑ Sunscreen, sunglasses, and a hat are recommended for sun protection. The boats are not covered.
- ☑ Bring a jacket. Weather on the lake can be windy and chilly.
- ☑ Wear sturdy footwear, especially if visiting Wizard Island.

Hiking to Cleetwood Cove
The Cleetwood Cove Trail is the only legal access to the shore of Crater Lake *(see map on page 5)*. The hike is steep and strenuous: in 1.1 miles (1.7 km) it drops 700 feet (213 meters) in elevation. Walking back up is equivalent to climbing 65 flights of stairs! The trail is recommended only for those in good physical condition. It should not be attempted by anyone with heart, breathing, or walking problems. It is not accessible for people with mobility impairments. Hikers should wear sturdy shoes and carry water. Vault toilets are located at the top and bottom of the trail. Depending on snow conditions, the trail usually opens in late June and closes in late October.



The Cleetwood Cove Trail drops 700 feet (213 meters) to the lake shore. Sketch from *Road Guide to Crater Lake*.

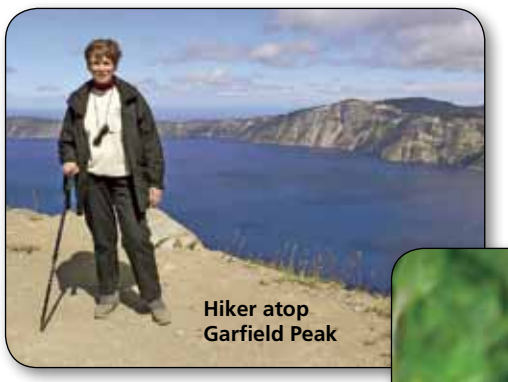
Ranger-Led Activities

Ranger-Led Activities	June 28–Sept. 2	May 17–June 27 & Sept. 3–Oct. 13
Ranger Talks at Rim Village Join a ranger to deepen your understanding of Crater Lake. Topics vary; check posted schedules. Meet at the Sinnott Memorial Overlook for the talks at 11:30, 1:00, and 2:30. Meet on the back porch of Crater Lake Lodge (accessible to wheelchairs) for the 4:00 talk. (20 minutes)	**11:30 a.m.** **1:00 p.m.** **2:30 p.m.** **4:00 p.m.** ♿	Check posted schedules
Junior Ranger Activity ♿ Kids participate in a ranger-led activity to learn about Crater Lake and earn a Junior Ranger patch. Meet behind the Rim Visitor Center. Geared for ages 6 to 12. (20 minutes)	**1:30 p.m.** **3:00 p.m.** **4:30 p.m.**	Check posted schedules
Afternoon Hike Hike with a ranger to discover Crater Lake. Trails vary by day of the week. See page 4 for trail details. For Garfield Peak, meet on the back porch of Crater Lake Lodge. For Sun Notch and Plaikni Falls, meet at the trailhead. Be sure to carry drinking water. Sunday, Wednesday: **Sun Notch** (1 hour, easy, great views of the Phantom Ship) Mon., Thurs., Sat.: **Plaikni Falls** (1.5 hours, easy, hike to a hidden waterfall) Tuesday, Friday: **Garfield Peak** (2.5 hours, strenuous, spectacular lake views)	**2:00 p.m.**	Check posted schedules
Watchman Peak Sunset Hike Ascend to a breathtaking viewpoint and watch the sun go down over the Cascade Mountain Range. Meet at the Watchman Overlook, a parking area with wooden fences 3.8 miles (6.1 km) northwest of Rim Village. Flashlights are not needed. See page 4 for trail details. (1.5 hours)	July 5-31 **7:30 p.m.** August 1-10 **7:15 p.m.** August 11-20 **7:00 p.m.** August 21-31 **6:45 p.m.**	(Hike is offered from July 5-Sept. 10) Sept. 1-10 **6:30 p.m.**
Evening Program ♿ Relax under the stars as you learn about the park. Check posted schedules for topics. Meet at the Mazama Campground Amphitheater, between loops D and E. (45 minutes)	June 28-July 31 **9:00 p.m.** August 1-20 **8:30 p.m.** Aug.21-Sept.2 **8:00 p.m.**	Check posted schedules
Rim Drive Trolley Tour ♿ Circle the lake on a ranger-narrated tour of Rim Drive. See the top of this page for more information. Tours leave from, and tickets are sold at, the Community House in the middle of Rim Village. Tickets may be purchased the day of the tour, or the day before, from 9:30 a.m. to 3:00 p.m. To reserve tickets further in advance, call 541-882-1896 or visit www.craterlaketrolley.com. Tours cover a variety of topics. (2 hours) **Ticket Prices**: $25 Adult (age 14 through 59); $22 Senior (age 60 and up); $15 Child (age 5 through 13); Free Young Child (under 5 years); $70 Family Rate (2 adults plus kids)	**10:00 a.m.** **11:00 a.m.** **12:00 p.m.** **1:00 p.m.** **2:00 p.m.** **3:00 p.m.**	Check posted schedules
Crater Lake Boat Tour For a different perspective on Crater Lake, take a ranger-narrated boat tour. See the right-hand column of this page for detailed information. Note: Taking a boat tour requires hiking down—and back up—one of the steepest trails in the park. Tours cover a variety of topics. (2 hours) **Ticket Prices**: $35 Adult (age 13 and up); $45 Adult with Wizard Island Drop-Off; $21 Child (age 3* through 12); $27 Child with Wizard Island Drop-Off *Kids must be at least 3 years old to take a boat tour. Engine noise, sun exposure, wind, and occasional rough water make tours extremely unpleasant for infants and toddlers.	Standard Tours: **9:35 a.m.** **10:30 a.m.** **11:30 a.m.** **1:30 p.m.** **2:30 p.m.** **3:30 p.m.** Tours with Wizard Island Drop-Offs: **9:30 a.m.** **12:30 p.m.**	Weather permitting, boat tours will operate from June 28 through September 15

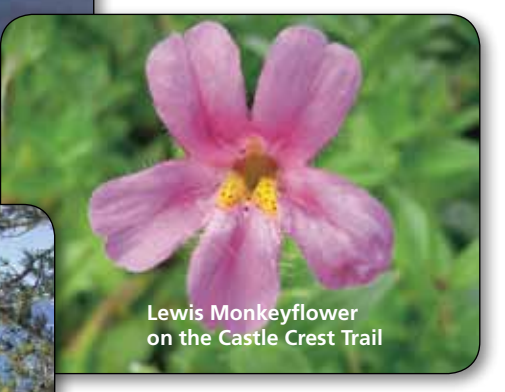
Activities are free of charge except for trolley & boat tours. Programs are subject to cancellation due to weather or unforeseen circumstances.

Let's Go Hiking!

Hi, I'm Ranger Emily. We have 90 miles (145 km) of hiking trails here at Crater Lake. Our most popular day hikes are listed on this page. If you are visiting in June or July, be aware that some trails might still be closed by snow. Please help us protect this special place by following a few important rules:



Hiker atop Garfield Peak



Lewis Monkeyflower on the Castle Crest Trail

Swimmers at Cleetwood Cove

- No hiking or climbing inside the caldera! The walls are dangerously steep and unstable. The one exception is the Cleetwood Cove Trail, the only legal access to the lake shore.
- Leave all rocks, plants, animals, and artifacts undisturbed for the enjoyment of future hikers.
- Overnight backpacking requires a permit, available at Park Headquarters between 9:00 a.m. and 5:00 p.m. Some areas are not open to backcountry camping.
- To protect vegetation and prevent erosion, please stay on the trails.
- Pets are not allowed on park trails *(see page 2)*.

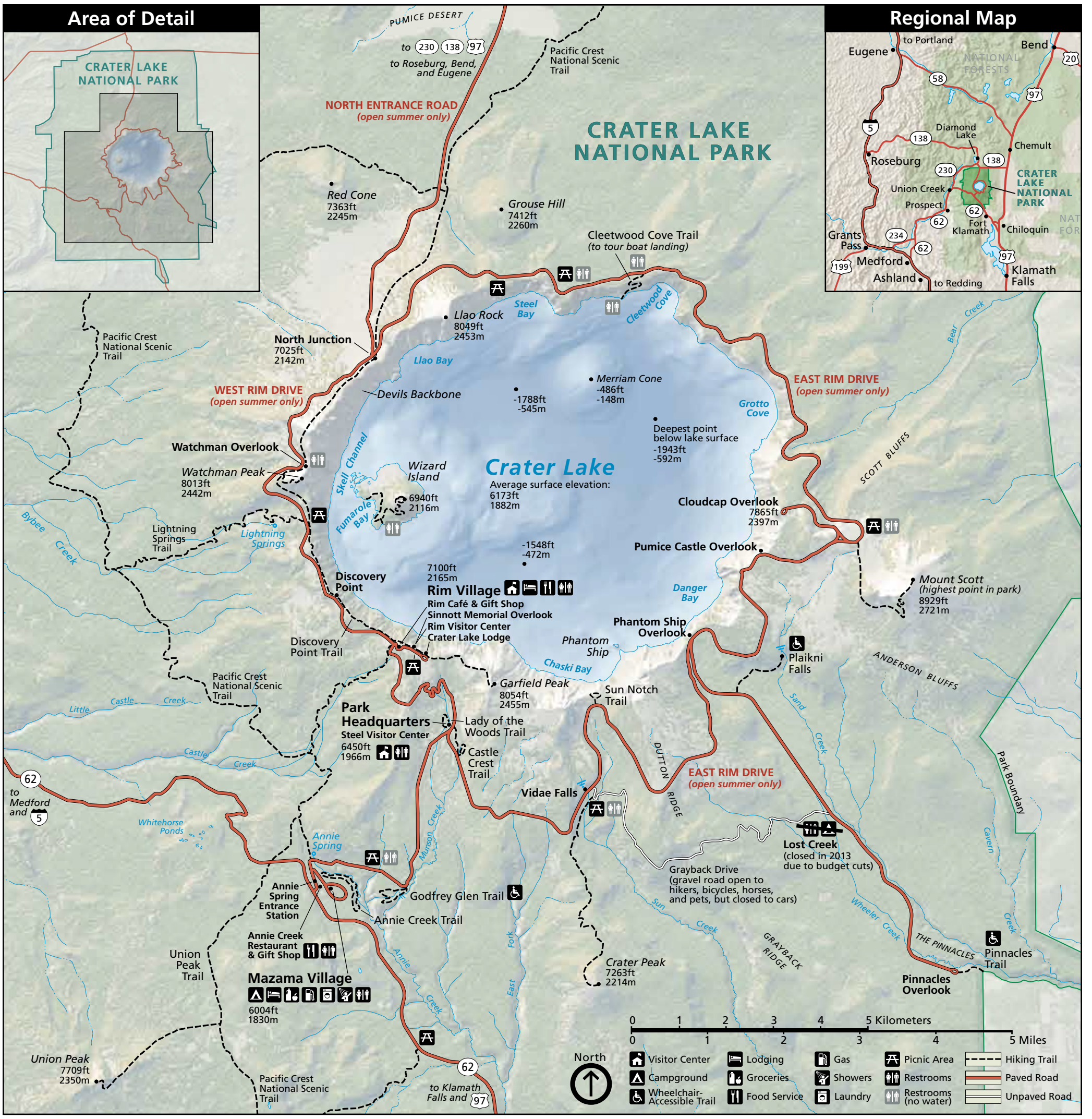
Castle Crest	Lady of the Woods	Sun Notch	*Trail*	The Pinnacles ♿	Godfrey Glen ♿	Plaikni Falls ♿
0.5 miles (0.8 km) loop trail	0.5 miles (0.8 km) loop trail	0.9 miles (1.4 km) loop trail	*Total Distance*	1 mile (1.6 km)	1 mile (1.6 km) loop trail	2.2 miles (3.5 km)
100 feet (30 meters)	120 feet (37 meters)	150 feet (46 meters)	*Elevation Gain*	10 feet (3 meters)	50 feet (15 meters)	100 feet (30 meters)
30 minutes	**30 minutes**	**30 minutes**	*Time*	**30 minutes**	**30 minutes**	**1 hour**
Flowers, Meadow, Creek	**Historic Architecture**	**Views of Phantom Ship**	*Highlight*	**Volcanic Spires**	**Peaceful Forest**	**Waterfall, Flowers**
Loop trail through a beautiful meadow. Abundant wildflowers in July. The trail is rocky and slippery in places. Self-guiding brochures are available at the trailhead.	Loop trail around Park Headquarters. Self-guiding brochures, available at the trailhead, describe how early park architects integrated their designs with the natural landscape.	Short uphill walk through a meadow to the rim of Crater Lake. Great views of the Phantom Ship. Use caution near cliff edges. Trail improvements are underway. If you see our trail crew, say hello!	*Description*	Easy walk along the rim of Pinnacle Valley. Great views of volcanic spires. Use caution near cliffs. Trail ends at park boundary. Accessible to wheelchair users with assistance. Open to bicycles.	Easy stroll through an old-growth forest, with some canyon views. Dirt path; accessible to wheelchair users with assistance. Self-guiding brochures are available at the trailhead.	New trail (opened in 2011) through a quiet old-growth forest to a waterfall. The first ¾ of the way is accessible to wheelchair users with assistance, but the final ascent to the falls might be too steep.
East Rim Drive, 0.5 miles (0.8 km) east of Park Headquarters. Can also access from the Steel Visitor Center.	Behind the Steel Visitor Center, on the south side of the building.	East Rim Drive, 4.4 miles (7.1 km) east of Park Headquarters.	*Trailhead Location*	End of the Pinnacles Spur Road, 7 miles (11.3 km) southeast of the Phantom Ship Overlook.	2.4 miles (3.9 km) south of Park Headquarters.	Pinnacles Road, 1.2 miles (1.9 km) southeast of the Phantom Ship Overlook.
The flowers here are nourished by springs emerging from the hillside.	The trail's name refers to a sculpture of a woman carved into a boulder along the trail.	This U-shaped valley was carved by glaciers that once flowed down Mt. Mazama.	*Nature Note*	The Pinnacles are chimneys formed when hot ash cooled after the big eruption.	Trail is named after William Godfrey, a ranger who died in a blizzard here in 1930.	Snowmelt, not Crater Lake, is the source of Plaikni Falls' water.
Easy				***Easy***		

The Phantom Ship from Sun Notch

Hikers at Plaikni Falls

Discovery Point	*Trail*	Fumarole Bay	Watchman Peak	Annie Creek
2.2 miles (3.5 km)	*Total Distance*	1.8 miles (2.9 km)	1.6 miles (2.6 km)	1.7 miles (2.7 km) loop trail
100 feet (30 meters)	*Elevation Gain*	150 feet (46 meters)	420 feet (128 meters)	200 feet (61 meters)
1 hour	*Time*	**1 hour**	**1 hour**	**1½ hours**
Lake Views	*Highlight*	**Swimming, Fishing**	**Panoramic Views**	**Creek, Canyon, Flowers**
Trail along the rim of Crater Lake through a pretty forest of whitebark pines and mountain hemlocks. Fine views of the lake and Wizard Island. Use caution near cliff edges.	*Description*	Rocky trail along the shore of Wizard Island. Becomes hard to follow after reaching Fumarole Bay. The shallow, clear water is good for fishing and swimming.	Moderate ascent to a lookout above Wizard Island. Spectacular views in all directions. Great place to watch the sunset. Trail may be closed until mid-July due to snow.	Moderately strenuous trail through a deep, stream-cut canyon. Lots of water, wildflowers, and sometimes wildlife. Self-guiding brochures are available at the trailhead.
West end of Rim Village, where the paved walk becomes a dirt path. Can also start from Discovery Point.	*Trailhead Location*	Wizard Island dock, accessible only via a boat tour from Cleetwood Cove. See page 3 for information.	3.8 miles (6.1 km) northwest of Rim Village. Park at the viewpoint surrounded by wooden fences.	Mazama Campground, behind the amphitheater, located between loops D and E. Limited parking in E Loop.
Gold prospector John Wesley Hillman first spotted Crater Lake from this point in 1853.	*Nature Note*	Abundant lichen on the tree trunks is an indication of excellent air quality.	Built in 1932, the peak's historic fire lookout is still staffed by rangers today.	The creek provides the park's drinking water, named the best tasting in Oregon in 2004.
		Moderate		

Wizard Summit	Cleetwood Cove	Garfield Peak	*Trail*	Mount Scott	Crater Peak	Union Peak
2 miles (3.2 km)	2.2 miles (3.5 km)	3.4 miles (5.5 km)	*Total Distance*	5 miles (8.1 km)	6.4 miles (10.3 km)	11 miles (17.7 km)
760 feet (232 meters)	700 feet (213 meters)	1,010 feet (308 meters)	*Elevation Gain*	1,250 feet (381 meters)	765 feet (233 meters)	1,600 feet (448 meters)
1½ hours	**1½ hours**	**2 to 3 hours**	*Time*	**3 hours**	**3½ hours**	**5 to 6 hours**
Views, Summit Crater	**Swim, Fish, Boat Tours**	**Panoramic Views**	*Highlight*	**Panoramic Views**	**Forest, Views, Solitude**	**Panoramic Views**
Rocky climb to the top of Wizard Island. Spectacular lake views, interesting geology. A path leads around the 90-foot-deep (27-meter) crater at the summit.	The only legal access to the shore of Crater Lake. Strenuous trail with a steep grade. The trail descends to a rocky shoreline at Cleetwood Cove. See page 3 for detailed information.	Rocky climb to a high peak. Spectacular views along the way and at the top. Diverse plant life, many wildflowers. Top section may be closed until mid-July due to snow. Use caution near cliff edges.	*Description*	Gradual ascent of the park's highest peak. Great views in all directions. Best in morning, when the light is ideal for lake viewing. May be closed until mid-July due to snow.	Moderately strenuous walk to the summit of a small volcano. No lake views, but fine views of the Klamath Basin to the southeast. A peaceful walk through forests and meadows.	Long forest walk followed by a very steep climb. Great views from the top and interesting geology, but no view of Crater Lake. Top section may be impassable until mid-July due to snow.
Wizard Island dock, accessible only via a boat tour from Cleetwood Cove. See page 3 for information.	North side of the lake, 11 miles (17.6 km) from Rim Village if traveling clockwise on Rim Drive.	East end of Rim Village. Walk behind Crater Lake Lodge along the paved promenade.	*Trailhead Location*	East Rim Drive, 14 miles (22.5 km) east of Park Headquarters.	East Rim Drive, 3 miles (4.8 km) east of Park Headquarters at the Vidae Falls Picnic Area.	Highway 62 at the Pacific Crest Trailhead, 1 mile (1.6 km) west of the Crater Lake road junction.
The dead trees at the summit have been killed by dwarf mistletoe, a parasitic plant.	Below 200 feet (61 meters), the water in Crater Lake stays 38°F (3°C) year-round.	Rocky slopes along the trail are home to American pikas and yellow-bellied marmots.	*Nature Note*	Mt. Scott is the park's highest peak—8,929 feet (2,721 meters) in elevation.	Upper Klamath Lake is the largest in Oregon, but its average depth is only 14 feet.	Union Peak is the core of an old volcano eroded by glaciers during the last Ice Age.
Strenuous				***Strenuous***		



Highlights of the Rim Drive

Rim Drive is a 33-mile (53-km) road that encircles Crater Lake. It is one of America's most scenic byways, with spectacular views in all directions. The loop is typically open from early July to late October. It can be driven, without stopping, in about an hour, but at least 2 to 3 hours are necessary to enjoy the varied sights. The road is narrow, so buses and motorhomes should use caution. There are more than 30 scenic pullouts along the route, many of which have roadside exhibits. Be sure not to miss these 7 "must-see" stops. For more information, pick up the excellent *Road Guide to Crater Lake National Park* (48 pages, $5.95) at either visitor center.

View from the East Rim Drive

Discovery Point

Imagine seeing Crater Lake by accident. It was near this spot, on the back of a mule in 1853, that gold prospector John Hillman became the first European-American to stumble across what he called "Deep Blue Lake."

Watchman Overlook

This pullout offers an unmatched view of Wizard Island, a cinder cone that erupted out of Crater Lake approximately 7,300 years ago. To find this unmarked pullout, drive 3.8 miles (6.1 km) west of Rim Village and look for a viewpoint lined with wooden fences.

Cloudcap Overlook

This overlook sits at the end of a 1-mile (1.6-km) spur road, the highest paved road in Oregon. Whitebark pines cling for survival here, dwarfed and contorted by the harsh winds.

Pumice Castle Overlook

Stop here to see one of the park's most colorful features: a layer of orange pumice rock that has been eroded into the shape of a medieval castle. Watch carefully for this unmarked viewpoint, located 1.1 miles (1.8 km) west of the Cloudcap Overlook junction and 2.4 miles (3.9 km) east of the Phantom Ship Overlook.

Phantom Ship Overlook

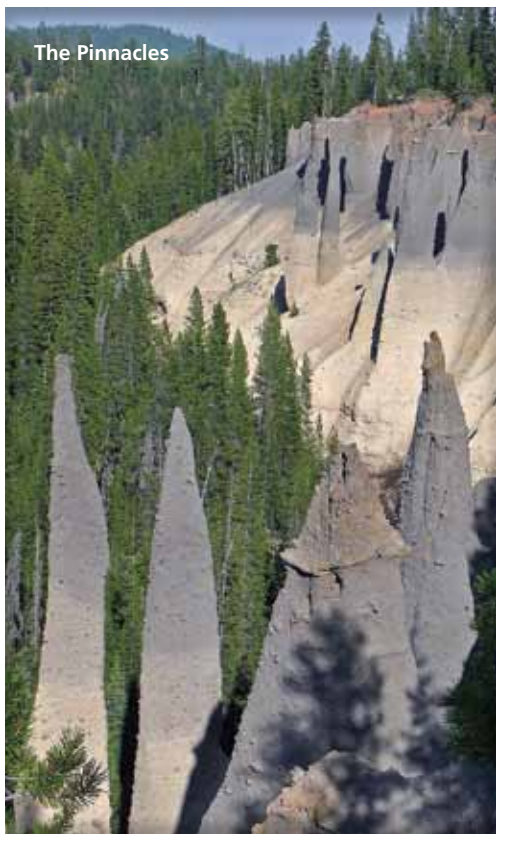
Nestled against the shore, Crater Lake's "other island" escapes detection by many park visitors. Though it resembles a small sailboat, the island is as tall as a 16-story building. It's made of erosion-resistant lava, 400,000 years old—the oldest exposed rock within the caldera.

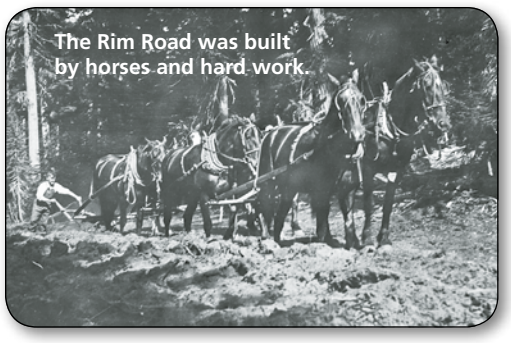
Pinnacles Overlook

This overlook is well worth the 7-mile (11-km) detour from Rim Drive. Colorful spires, 100 feet (30 meters) tall, are being eroded from the canyon wall. The Pinnacles are "fossil fumaroles" where volcanic gases rose up through a layer of volcanic ash, cementing the ash into solid rock.

Vidae Falls

Look for this cascading waterfall between Phantom Ship Overlook and Park Headquarters. A spring-fed creek tumbles over a glacier-carved cliff and drops 100 feet (30 meters) over a series of ledges. In summer, wildflowers flourish in the cascade's spray.


The Pinnacles



The Rim Road was built by horses and hard work.

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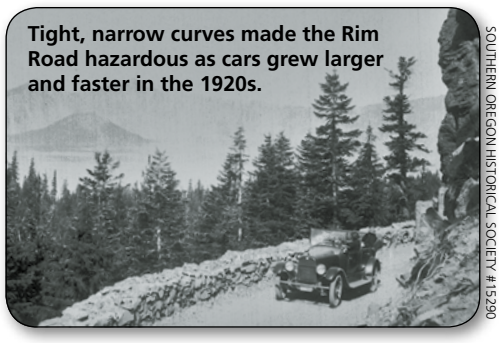


Tight, narrow curves made the Rim Road hazardous as cars grew larger and faster in the 1920s.

SOUTHERN OREGON HISTORICAL SOCIETY #15290

Rim Road Celebrates 100 Years

Construction of the "Skyline Boulevard" Began in 1913

The 33-mile road around the rim of Crater Lake is one of America's most scenic drives. Built from 1931 to 1940 using heavy machinery, it provides motorists with a stunning sequence of views of the lake and its surroundings. Few people realize, however, that the existing Rim Drive is not the only road to have circled Crater Lake. It follows the path of an earlier loop, known as the Rim Road, which was forged between 1913 and 1919 using mostly manual labor. This summer marks the 100th anniversary of the construction of that original, remarkable road—dubbed the "Skyline Boulevard" by newspapers of the era—and thus seems a fitting time to recall the interesting, yet largely forgotten, story of its conception, construction, premature fate, and enduring legacy.

It is no exaggeration to say that in 1902, when Crater Lake National Park was established, visiting the park meant mounting an expedition. Most visitors reached the park only after a three-day wagon trip. There were no services or facilities, and no roads reached the rim; seeing the lake required adventurers to abandon their wagons and climb a steep trail on foot or horseback. Finally, in 1905, the park's first superintendent, William Arant, oversaw the construction of a rough road from Park Headquarters to what's now Rim Village. Even so, the first automobile to reach the rim, in 1906, did so only with the help of horses, which pulled the sputtering two-cylinder car up the steepest grades. "Very disagreeable" is how Superintendent Arant described the park's road system in 1912, in his annual report to the Secretary of the Interior. "There are three wagon roads in the park.... They are simply tracks...cut out through the trees and bushes. By constant use these narrow roads have become veritable gutters the width of a wagon and in many places 1 or 2 feet deep.... being cut deeper and deeper by the wheels of vehicles passing over them."

The need for better roads was imperative, since more and more visitors were arriving by automobile. Ford Model Ts had begun rolling off assembly lines in Detroit, Michigan, in 1908; cars were becoming increasingly affordable to a wide swath of the American public. The park, for its part, issued regulations that tried to accommodate motorized traffic, but wagons were still awarded right of way. Cars were required to stop in the presence of horses, limit speeds generally to six miles per hour, sound their horns at every bend in the road to warn oncoming travelers, and operate only between 6:30-10:30 a.m. and 3:30-6:30 p.m. so that horse-powered vehicles could move in peace and safety the rest of the day. Modes of travel may have been changing, but one thing was not: a full decade after its establishment, Crater Lake National Park was still remote and rugged, too rugged for most Oregonians to contemplate visiting. Reaching the rim was more hardship than adventure, and only one vantage point could be gained by wheeled vehicle. In 1912, only 5,235 people made the difficult journey to the park.

The first clamor for a road around the lake came from William Steel. The park's founder and greatest promoter, Steel was determined to popularize Crater Lake as a summer resort. He initiated construction of the park's first hotel (Crater Lake Lodge, which would open in 1915); stocked the lake with row boats, tour boats, and rainbow trout; and organized trips to the park for members of the political, scientific, and economic elite, whom he hoped to enlist as proponents of his agenda. The lobbying worked. Secretary of the Interior Richard Ballinger, for example, proclaimed upon visiting the park that "Crater Lake is a magnificent sight.... It should be thrown open to the tourist traffic of the world...." Steel also gained the support of Oregon's congressional delegation. In 1909 he traveled to Washington, DC, and pushed them to secure funding for a comprehensive road survey. When Congress appropriated $10,000 for this purpose in June of 1910, the editors of the *Medford Mail Tribune* cheered, noting wryly that "Senators Bourne and Chamberlain are to be congratulated.... For the first time in history, Southern Oregon has...actually secured something worthwhile by means of its delegation."

That summer, the Army Corps of Engineers sent a party of 26 men to Crater Lake to prepare plans, specifications, and cost estimates for an overhaul of the park's road system, including new entrance roads from the south, east, and west. Upon arriving at the rim, the engineer in charge quickly became convinced that a "boulevard" around the lake was feasible. He expressed his intent to locate the road as "near to the edge of the crater as can be done at as many points as possible." In the meantime, Will Steel was back in Washington, DC, seeking funding for construction. In August of 1912, Congress allocated $50,000, which was followed, in subsequent years, by appropriations that totaled over $400,000 (roughly $8,300,000 in today's dollars). With money thus secured, optimism ran high. Newspapers across Oregon trumpeted the nascent project. "The intention is to make Crater Lake Park one of the greatest pleasure grounds in the United States," wrote *The Oregonian*, "equaling in attractiveness the famous Yellowstone Park." The *Medford Mail Tribune* proclaimed: "This boulevard will be unlike any other in the world. Not only does it look down upon America's deepest lake, lying like a blue amethyst in mystic beauty...but it affords a marvelous panorama of mountain scenery, of bleak hills and snowy peaks...." Even Superintendent Arant couldn't contain his enthusiasm. In his 1912 annual report, he boasted that the circuit "will be beyond question one of the grandest scenic roads in the world."

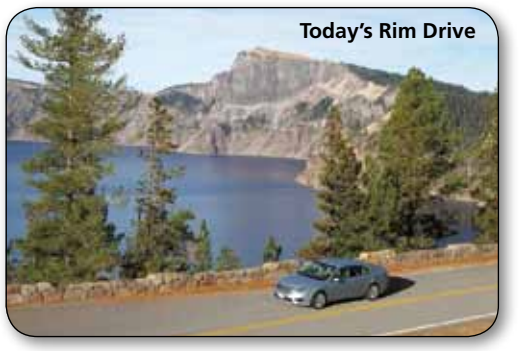
CRLA MUSEUM & ARCHIVE COLLECTIONS 1596

Until the 1930s, when park roads were paved, deep sand and choking dust frustrated motorists.

Today, hikers can walk parts of the old Rim Road, such as this segment near Hillman Peak.

Building the Rim Road, however, would prove to be easier said than done. Challenges included a short working season, deep snow that lasted well into summer, and a lack of mechanized equipment. Much of the work was done manually: by men and boys with picks and shovels. No accounts survive from those who performed the work, but the labor must have been backbreaking. Will Steel, who replaced William Arant as park superintendent in 1913, the year construction began, complained in his first annual report that "there is no provision for the comfort of the men, who, by the common laws of humanity, are entitled to shelter and...sanitary conditions." He asked for $1,200 in order to erect, "without delay, a building containing a kitchen, dining room, bathroom, and sleeping quarters...." The Army Corps of Engineers supervised the road building, but it was men from local communities, hired as laborers, who did the heavy lifting. As a result, progress slowed each July and August, when competition from ranching operations in the Klamath Basin caused some men to leave to harvest hay. In 1918, American involvement in World War I exacerbated the labor shortage. In truth, as much work was probably accomplished by horses as by humans. Teams of horses dragged plows, scrapers, and graders to smooth the roadbed. Several wood-fueled steam shovels also were employed to excavate rock. In 1914, the most productive year of the project, 250 men, 50 teams of horses, and three steam shovels managed to grade 14 miles of new road, with one crew moving clockwise around the rim and another counterclockwise.

Work was completed in 1919, after seven summers of construction. All told, 57 miles of new road were now ready for the coming influx of automobiles, which were no longer limited to operating at only certain times of the day. Visitation skyrocketed. The number of tourists arriving at Crater Lake climbed from 16,000 in 1919 to more than 170,000 in 1931. The Rim Road, noted one observer, "is proving a wonderful attraction, second only to the beauty of the lake itself." Upon circling the lake for the first time, Stephen Mather, the director of the National Park Service, gushed: "This road is one of the finest scenic highways in the world. Not only are the views of the marvelous lake superb and unique, but the glimpses of the surrounding region...are only slightly less sensational."



Today's Rim Drive

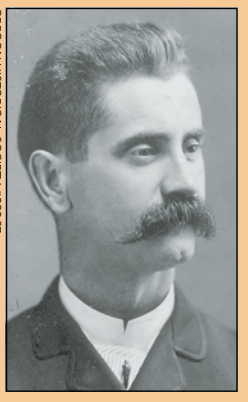
Yet all was not well. Despite its idyllic setting, the new "Skyline Boulevard" was in fact a narrow, rough, dusty road with sharp curves and steep grades. As passenger cars became larger and faster during the 1920s, the road's narrow width—only 12 feet—made passage of vehicles in opposite directions hazardous. The road's tight curves frustrated motorists who were becoming accustomed to higher speeds, and even new cars struggled to climb its steepest hills, with grades of 10 percent. Further, the unsurfaced road was comprised, in places, of volcanic sand, in which some cars got stuck. And all vehicles kicked up clouds of finely pulverized ash. "This dust," complained Mather, "is puffed into the air by the wheels of the automobile, where it remains in suspension for a long time, filling the eyes and nostrils of the occupants...often obscuring the view." Park staff lamented that "the continuous showers of fine, powdery dust" were "stunting and killing" the vegetation. By 1930, new NPS director Horace Albright was declaring the Rim Road not only to be "the most beautiful highway in the world" but also "unfit for travel." It needed to be paved, widened, and rerouted. After only a dozen years of use, the Rim Road had become obsolete, a victim of the era's rapidly changing technology and expectations.

Thus, in 1931, the park began construction of the present-day Rim Drive. While still quite narrow—and badly in need of repair, which is scheduled to occur in the next few years—its graceful curves, gentle inclines, and well-planned vistas continue to serve the park well. For long stretches, the Rim Drive overlaps the old Rim Road, and therefore obscures it, but vestiges of the old route remain. The so-called Grayback Drive, south of the lake *(see page 5)*, is the best-preserved section. It's not particularly scenic, and it's no longer open to cars, but it's a pleasant trail for running, mountain biking, and horseback riding. A much prettier segment of the Rim Road now serves as a spectacular (and little-used) hiking trail between the West Rim Drive and the edge of the caldera. It can be followed for 2.5 miles (4 km) from the Lightning Springs Picnic Area, north past Watchman Overlook, over the shoulder of Hillman Peak, until meeting up with the Rim Drive a half-mile south of North Junction.

Although Crater Lake's "Skyline Boulevard" was abandoned soon after completion and is now largely forgotten, its legacy lives on. The first major construction project in the park's history, it opened the park to mass tourism and spread excitement about the lake around the globe. And it paved the way (figuratively, at least) for the equally impressive Rim Drive that we enjoy today. It also inspired the following piece of advice, as sound now as it was in the 1920s when park superintendent C. G. Thomson offered it to motorists setting out to drive along "the jagged crest of the world's noblest crater." Wrote Thomson: "Approach the experience in a leisurely and appreciative mood, and great will be your reward. For you will fix a gorgeous memory that neither time nor the fret of living shall efface.... And pay a tribute to the engineering genius that, while overcoming technical difficulties, contrived to alternate boundless panoramas with exquisite closeups of the tremendous caldera and its Olympian sapphire."

To Build or Not To Build?

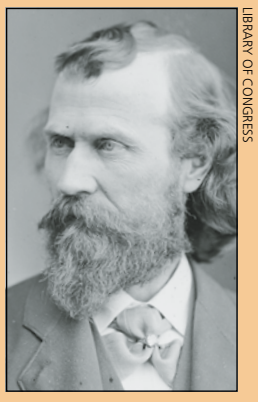
That was the question at Crater Lake in the early 20th century. Most Oregonians favored increased access to the park and its sights, but opinions ranged as to the scope of development, as illustrated by the quotes below. Joaquin Miller was a poet who spent five days at Crater Lake in 1903 at the invitation of William Steel and came away deeply impressed by the lake's tranquility. Steel was the park's founder, first concessioner, and second superintendent. He longed for a day when tourists could visit the park with ease and promoted plans that went far beyond what was actually built. What do you think? Did development at Crater Lake proceed too far, not far enough, or have we achieved a balance between public enjoyment and preservation?



OREGON HISTORICAL SOCIETY #23267

Will Steel

"It is only a matter of time when a road will be built.... A tunnel... bored from the water to the Rim Road...and debris used to fill in along the shore line, for parking, turning, boat houses, and other conveniences.... However, the crowning glory of the park will consist of an automobile road to the top of Mount Scott, 9,000 feet high, from which one beholds Central Oregon, from the Columbia River region far down into California and from the Blue Mountains to the Pacific Ocean. Walls will encircle the summit, where 200 cars or more can park with perfect safety and the occupants enjoy the entrancing thrills of mountain climbers without their hardships and dangers. Then will come a road inside the rim, near the water, crossing to Wizard Island and up to its crater and circling it. There inspired thoughts of reverence for the God of Abraham will sing His praises and...the praises of this wonderful lake and its environs."



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Joaquin Miller

"Much credit...is due to William Gladstone Steel for persistent hard work in establishing this noblest natural park in the Republic, and the most unique park under the path of the sun.... It took such hold of my heart... that I love it almost like one of my own family. The thousand and one 'best points of view' from the rim of the crater keep you busy from morning to night. The plan is now to build...a drive around the lake, so that all these points may be considered in a single day from a carriage. And a great hotel is planned! ...Well, so be it, if you must so mock nature and break this hush and silence of a thousand centuries, but I shall not be here. No hotel or house or road of any sort should ever be built near this Sea of Silence. All our other parks have been surrendered to hotels and railroads. Let us keep this last and best sacred to silence and nature. That which is not worth climbing to see is not worth seeing."

Crater Lake Hit by Lasers

Resulting Images are Proving Valuable

In the summer of 2010, the presence of three small airplanes over Crater Lake National Park caused visitors to scratch their heads. For a week, the planes flew long, parallel paths across the sky, a few thousand feet above the ground. The entire time, lasers aboard each aircraft bombarded the park's plants, rocks, and visitors with more than five billion pulses of light—at the rate of 83,000 hits per second. Fortunately, the infrared light was harmless and invisible, which is why the curiosity of onlookers never turned to concern. Little did everyone realize, though, that important scientific work was being conducted above them. Today, three years later, the results of this "lidar" survey are beginning to yield big benefits to park researchers and staff.

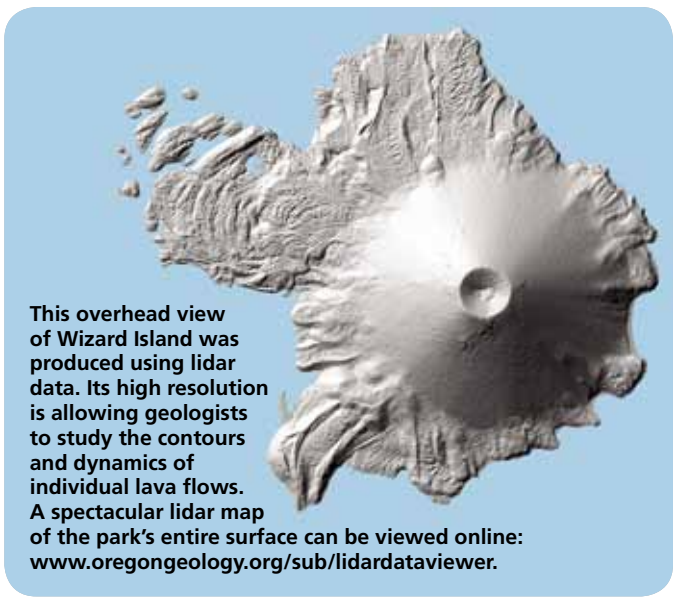
Lidar is a technology that, among other things, can provide high-resolution images of the Earth's surface. It's similar in concept to radar, but uses light waves rather than radio waves. At its essence, it's just a way of making a whole lot of very accurate distance measurements. Distance is calculated by measuring the time it takes each pulse of light to return from the ground (or whatever object it encounters first). The intensity of the returning light can also be used to derive information about the object's physical characteristics. For the data to be meaningful, the position of the aircraft performing the survey must be precisely known, which is why an onboard GPS unit pinpoints the plane's coordinates twice every second.

In 2010, each square meter of the park was struck, on average, by eight pulses of light from above. Some of these pulses reflected off the forest canopy, but many found gaps in the foliage and hit the ground, enough to produce a richly detailed map of the surface. For geologists, this map contains a treasure trove of information. It shows subtle topographic details that had not been recognized before, such as flow patterns and cooling features in the ash deposits from the eruption that formed Crater Lake. It also reveals where faulting has occurred, which can be helpful in evaluating future earthquake hazards. The U.S. Geological Survey has published a poster that explains some of the discoveries in detail. It's for sale at both visitor centers for $4.99 or can viewed online at: http://pubs.usgs.gov/sim/3223.

Other scientists are using the 2010 survey to study the park's forests. By plotting all of the returned beams of light (and not just the ones that reached the ground), they can generate three-dimensional maps of the forest and discern attributes such as canopy height, density of foliage, biomass, and even the species of individual trees. Amazingly, they can also distinguish living trees from dead ones: live foliage returns a more intense signal to the lidar instrument, while dead leaves, trunks, and branches show weaker reflections. With these maps, park managers plan to investigate patterns of tree mortality at Crater Lake (which has been increasing in recent years) to gain a better understanding of the factors involved and to help them assess different strategies for restoration. Another project, currently underway, is looking at burned areas to learn how variables such as elevation, fire severity, and the passage of time affect different aspects of forest regeneration.

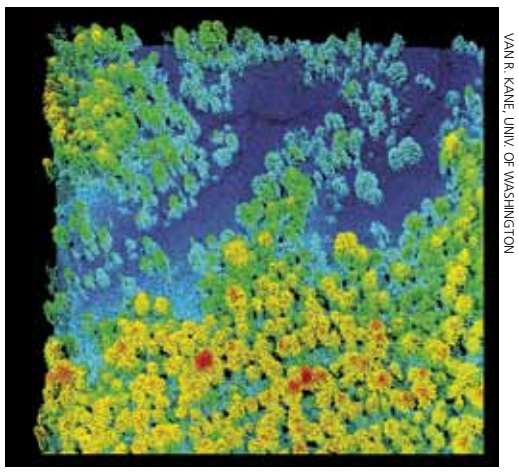
Crater Lake's "laser attack" was funded primarily by the U.S. Geological Survey, which received stimulus money through the American Recovery and Reinvestment Act of 2009 to pay for lidar surveys at several Cascade Range volcanoes. The Federal Highway Administration also contributed funds; they will use the elevation data in repairing the park's Rim Drive over the next few years. Other partners included the Crater Lake Natural History Association, which donated money derived from purchases made by the public in the park's visitor centers.

Around the world, lidar technology is now being used in a myriad of ways, from detecting snowflakes falling through the atmosphere of Mars, to discovering the temples of ancient civilizations in Central America, to predicting how storm surges and sea level rise will affect coastal cities. Wherever it's employed, its ability to provide detailed information about diverse landscapes is proving to be a boon to scientists, planners, and managers.



This overhead view of Wizard Island was produced using lidar data. Its high resolution is allowing geologists to study the contours and dynamics of individual lava flows. A spectacular lidar map of the park's entire surface can be viewed online: www.oregongeology.org/sub/lidardataviewer.

VAN R. KANE, UNIV. OF WASHINGTON



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With special software, lidar data can be used to create detailed images of the forest canopy. Each colored dot represents a spot where a beam of laser-generated light encountered an object (evergreen needle, tree branch, blade of grass, etc.) and was reflected back to the aircraft overhead. The colors represent different elevations above sea level. Clusters of red dots indicate the crowns of the tallest trees. With these maps, the park will be able to locate and assess the condition of its largest trees, such as the Douglas fir pictured right, which provide important habitat for threatened species, including the northern spotted owl.

Rare Fox Found in Park

DNA Resembles That of Imperiled California Population

If you happen to spot a fox this summer trotting along the rim of Crater Lake, you will likely be seeing one of the rarest mammals in North America. Scientists have recently determined that the park's red foxes are most likely members of the Sierra Nevada subspecies, a type that may soon be listed as threatened or endangered by the federal government. This discovery is good news for an animal whose entire population, just a few years ago, was thought to consist of perhaps just 20 individuals near Lassen Peak in California.

© TOM KOGUT

Red foxes are not always red—most at Crater Lake have fur ranging from silver to black. No matter the color of their coat, all red foxes have a long tail with a white tip.

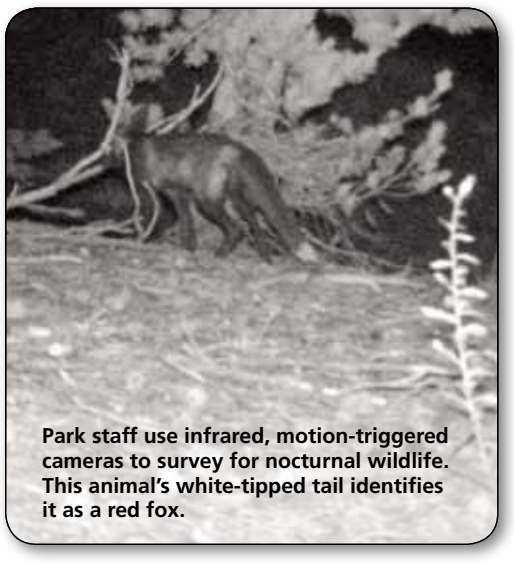
The red fox *(Vulpes vulpes)* is the most widely distributed terrestrial carnivore in the world, found across North America, Europe, Asia, and northern Africa. While thriving as a species, however, several of its subspecies are in peril. Of the 10 subspecies that occur in North America, three are found only at high elevations in the Rocky Mountains, Cascade Range, and Sierra Nevada. These "mountain foxes" were derived, it's believed, from a single source population that was widespread in the western United States during the last Ice Age. Warming temperatures after the Ice Age pushed the foxes uphill, where they evolved into genetically distinct subspecies. Until recently, Oregon's mountain foxes were assumed to be part of the Cascade subspecies, found in Washington State.

The lineage of a red fox can't be distinguished by looks alone; genetic testing is required. In 2012, researchers at Crater Lake set up a number of motion-sensitive cameras at locations throughout the park. Across from each camera, on a tree trunk, they hung a scented lure (typically an animal carcass found along the highway). They then attached wire brushes to the trunk, hoping to snag a few hairs from any animal that came by later to investigate. At one of these "hair snare" sites, a red fox left behind some fur. Last winter, DNA analysis performed at the University of California, Davis, revealed that the donor fox is related to California's mountain foxes and not those of Washington.

The discovery of Sierra Nevada red foxes at Crater Lake is welcome news to scientists. It increases the known range of this most at-risk subspecies, now thought to be found all the way north to the Columbia River. Even so, the number of foxes remaining is anyone's guess. They live in remote areas, at elevations of 5,000 feet (1,520 meters) and above. In the decades ahead, climate change is predicted to shrink their habitat even further, driving them up to isolated mountaintops and perhaps subjecting them to inbreeding. Other potential threats include disease transmission from domestic dogs, trapping by humans (illegal in California but still allowed in Oregon), and competition from coyotes, who might also move uphill in response to warmer weather.

Yet the biggest threat to the survival of these foxes might be our lack of understanding about their ecology. Few studies have been done on mountain foxes; the lack of data makes it difficult for scientists to assess the threats against them and assist in their recovery. That might change later this year, if the U.S. Fish and Wildlife Service determines that the subspecies warrants protection under the Endangered Species Act of 1973. If the fox is listed, funding for research will increase. In the meantime, Crater Lake staff are deploying additional "hair snares" this summer to gather more DNA evidence to provide definitive identification of the subspecies.

You can help! If you see a fox in the park, snap a photo, make a note of the exact location, and contact a park employee as soon as possible. A photo is essential, since many fox sightings turn out to be coyotes, weasels, or marmots. (Coyotes have short tails with a black tip; foxes have long, bushy tails with a white tip.) Do not approach the animal, and do not attempt to lure or feed it. Foxes are quickly acclimated to human handouts, which increases their risk of car collisions and contact with domestic dogs.



Park staff use infrared, motion-triggered cameras to survey for nocturnal wildlife. This animal's white-tipped tail identifies it as a red fox.

© BRYAN CHERNICK

Scientists need your photos! This red fox was spotted along the East Rim Drive by park visitor Bryan Chernick from Bothell, Washington.

Your best chance of seeing a red fox is to search at dawn or dusk, in open meadows and ridge tops along the rim of Crater Lake. They are nocturnal hunters, with a diet of pocket gophers, mice, voles, and ground squirrels. Female mountain foxes give birth to two or three pups at a time, in the spring, usually in natural cavities in rocky slopes. At about three months of age, the pups begin exploring their parents' home range, often in daylight. By October or November, they are fully grown and disperse to establish their own territories. Like humans, they are believed to be mostly monogamous.

The example of the red fox shows how little we know about the park's native wildlife. Few species in the park have ever been surveyed or intensively studied. If the Sierra Nevada subspecies is placed on the Endangered Species List, it will indicate that prospects for the animal are bleak. On the other hand, listing would bring much-needed funding for research and recovery. The park is home to several other species—such as the black-backed woodpecker and Oregon spotted frog—that are up for consideration in the next few years. Watch the news to find out if they, along with the mysterious, elusive Sierra Nevada red fox, are afforded federal protection.

Support Your Park–

Buy Crater Lake License Plates

If you live in Oregon, consider choosing Crater Lake license plates for your vehicle. For a one-time charge of $20, you can outfit your car with these beautiful plates while supporting park projects. You can purchase Crater Lake plates at any time, not just when buying a new vehicle or renewing your registration. Visit any Oregon DMV office or www.oregon.gov/ODOT/DMV for details.

Money from plate sales goes into an endowment that funds the operation of the park's Science and Learning Center. The center opened in 2006 and consists of two renovated historic structures near Park Headquarters: the original Superintendent's Residence and Chief Naturalist's Residence. These buildings now provide living and working space for visiting scientists, teachers, and artists. The Science and Learning Center draws researchers and educators to Crater Lake from around the world, encouraging them to use the park as an outdoor laboratory and classroom. For more information about the Science and Learning Center and its programs, visit www.nps.gov/crla/slc.htm.

Science and Learning Center

Volunteer Your Time

Looking for a hands-on way to help the park? Consider sharing your time and talents as a Crater Lake VIP (Volunteer-In-Parks). Full-time volunteers are needed throughout the year to help staff visitor centers, present interpretive programs, and assist with research and monitoring projects. Opportunities are advertised at www.volunteer.gov. Volunteers are provided free housing in exchange for 3 months or more of service.

To assist with special projects or volunteer periodically, join The Friends of Crater Lake, a non-profit organization founded in 1993. Members remove non-native plants, build and maintain trails, contact visitors, and much more. For more information, visit www.friendsofcraterlake.org.

The Crater Lake Ski Patrol has been assisting winter visitors and maintaining the park's cross-country ski trails since 1983. Members, identifiable by their bright red parkas, receive training in wilderness first aid, survival skills, search and rescue, map and compass use, and avalanche safety in exchange for at least 6 days of service each winter. For more information, visit www.craterlakeskipatrol.org.

Volunteer Ski Patrollers

Contribute to the Crater Lake Trust

The Crater Lake National Park Trust is a non-profit organization that raises private funds to support park projects and connect the park with surrounding communities. It helps support, for example, field trips to the park for more than 5,000 grade-school students each year. In a program called "Classroom at Crater Lake," kids engage in hands-on science and learn about wildlife, old-growth forests, and winter ecology. For more than half these kids, it's their first visit to Crater Lake. To learn more about the Trust and its activities, visit www.craterlaketrust.org or write to P.O. Box 62, Crater Lake, OR 97604. Share your love of the park by making a tax-deductible gift.

CRATER LAKE NATIONAL PARK TRUST

"Classroom at Crater Lake"

Shop in the Visitor Center Bookstores

When you shop in the Steel Visitor Center or Rim Visitor Center, all proceeds from your purchase are invested back into the park. The visitor center bookstores are operated by the Crater Lake Natural History Association, a non-profit organization established in 1942 to support the park's educational and scientific programs. Money generated from bookstore sales goes to fund a variety of important projects, including the printing of this newspaper! Some of the bookstores' offerings are described to the right. For a complete list of merchandise and to buy items online, visit www.craterlakeoregon.org. Items can also be purchased by phone by calling 541-594-3111.

CRATER LAKE NATURAL HISTORY ASSOCIATION

Share Your Comments

Whether you have a compliment, concern, or suggestion, we'd like to hear from you! This is your national park, and we value your input on how best to manage it. You can provide feedback in several ways. Ask for a comment form at a visitor center, send an e-mail to crla_information_requests@nps.gov, or write to: Superintendent, Crater Lake National Park, P.O. Box 7, Crater Lake, OR 97604.

–Thank You!

National Park Service
U.S. Dept. of the Interior

Crater Lake National Park
P.O. Box 7
Crater Lake, OR 97604

EXPERIENCE YOUR AMERICA™

Recommended Reading

Crater Lake: The Story Behind the Scenery
Large photos with detailed captions accompany the text of this popular book. 48 pages, $11.95.

Crater Lake: Gem of the Cascades
A comprehensive guide to the park's geologic story. 168 pages, $15.95.

Road Guide to Crater Lake National Park
Consult this handy guide as you drive the park's roads for a deeper understanding of the sights along the way. 48 pages, $5.95.

Trails of Crater Lake & Oregon Caves
A detailed guide to 24 hiking trails. 112 pages, $14.95.

Exploring Crater Lake National Park: A Family Activity Book
Fun, educational puzzles and activities for kids. 103 pages, $12.95.

Trees To Know in Oregon
Tree identification is easy and enjoyable with this photo-packed, fact-filled guide. 153 pages, $18.00.

Crater Lake National Park: A History
A thoughtful and thorough account of the park's rich human history. 280 pages, $22.95.

Other Useful Items

The Mountain That Became a Lake CD
Listen to this CD as you drive the park's roads. Park rangers and American Indians share facts, stories, and insight about Crater Lake. 60 minutes, $16.99.

Crater Lake Topo Map
Waterproof and tearproof. 1:55,000 scale. $11.95.

Plants & Animals of Crater Lake Nat'l Park
Folding, waterproof pocket guide to help you identify the park's most visible species. 11 pages, $6.95.

Volcanoes
Folding, waterproof guide to volcanoes, lava rocks, and plate tectonics. 11 pages, $6.95.

Star and Planet Guide
Rotating "planisphere" for locating stars, planets, and constellations. $11.99.

Crater Lake Water Bottle
100% recycled aluminum water bottle with Crater Lake logo. Choose from 3 designs. $19.99.

Crater Lake Cinch Sack
Carry your water, snacks, and sunscreen. Available in blue, red, or green. $16.99.

Clark's Nutcracker T-Shirt
100% cotton. Nutcracker on front and Crater Lake on back. $19.99.

Climate Chart

Summers at Crater Lake are short but warm and sunny. Even so, there are days when the lake is shrouded in clouds. July, August, and early September are your "best bets" for warm, dry weather. In May, early June, late September, and October, sunny days alternate with periods of rain and snow. Winters are long and snowy. Storms from the Pacific Ocean dump an average of 43.5 feet (13.2 meters) of snow at Park Headquarters. The tremendous snowfall is a result of our position at the crest of the Cascade Mountains.

FAHRENHEIT	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Average Daily High (°F)	34	35	37	42	50	58	69	69	63	52	40	34
Average Daily Low (°F)	18	18	19	23	28	34	41	41	37	31	23	19
Avg. Snowfall (inches)	102	83	85	46	20	4	0.2	0.1	3	21	63	94
Avg. Snow Depth (inches)	80	102	117	113	78	24	1	0	0	2	17	48
Avg. Lake Surface Temp. (°F)	39	38	38	38	40	45	54	59	56	51	45	41

CELSIUS	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Average Daily High (°C)	1	2	3	6	10	15	21	21	17	11	4	1
Average Daily Low (°C)	-8	-8	-7	-5	-2	1	5	5	3	-1	-5	-7
Avg. Snowfall (cm)	259	211	215	117	51	10	0.5	0.3	6	54	159	239
Avg. Snow Depth (cm)	203	260	297	286	198	62	3	0	0	6	43	121
Avg. Lake Surface Temp. (°C)	4	3	3	3	4	7	12	15	13	10	7	5