# Crater Lake

National Park Service
U.S. Department of the Interior

***Reflections* Visitor Guide**
**Summer/Fall 2015**

## Park News

- **Road work: 30-Minute Delays are Possible**
  Road construction might delay your trip through the park this summer. The Federal Highway Administration is undertaking a 3-year, $18 million rehabilitation of 10.7 miles (17.2 km) of the park's historic Rim Drive. Built in the 1930s, the road is badly in need of repair. Decades of harsh weather and the erosion of underlying soils have destabilized the road's shoulders and retaining walls. Be prepared for delays of up to 30 minutes from Rim Village clockwise to Cleetwood Cove. Thank you for your patience!

- **Record Low Snowfall at Park Headquarters**
  Since 1931, when rangers began keeping track, the park's average annual snowfall at Park Headquarters has been 43 feet (13 meters). Last winter, however, the park received only 16 feet (5 meters) of snow—an all-time record low. For four years running, the weather in southern Oregon has been warmer and drier than normal. In response to the drought, the park has installed low-flow toilets and faucets in all public restrooms, as well as low-flow showers in employee housing. Please help us by conserving water during your visit.

- **East Rim Drive will be Vehicle-Free on Sept. 19 & 26**
  On two Saturdays this September, motor vehicles will not be allowed on the park's East Rim Drive. Bicyclists and pedestrians will have an opportunity to enjoy 24 miles (39 km) of scenic roadway without vehicle noise and traffic. Check the park's website (www.nps.gov/crla) for more information.

## Superintendent's 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.

In his 1810 guide to England's Lake District, William Wordsworth wrote that the lakes were such a spectacular and unique expanse of relatively wild natural beauty that they should be protected by the government as "a sort of national property, in which every man has a right and interest who has an eye to perceive and a heart to enjoy." Other conservationists and like thinkers soon followed. In 1864 President Abraham Lincoln signed a bill providing for the initial protection of Yosemite Valley. In 1872 President Ulysses S. Grant approved the bill making Yellowstone the world's first official national park.

*(continued on back page)*

# Escape to Wizard Island

## *Plus 10 Other Ways to Enjoy Your Park*

Have you ever set foot on a volcano inside a volcano? This summer, up to 148 people each day—twice as many as last year—will have that opportunity here at Crater Lake. Weather permitting, boats will ferry passengers to Wizard Island 4 times each day, for a 3-hour stay, to explore, swim, fish, and relax.

Wizard Island emerged from the lake about 7,300 years ago, in a shower of fiery cinders that piled into a symmetrical cone. Lava flows then pushed through the loose cinders, creating "tongues" of blocky lava that comprise the rest of the island. Today, hikers can cross a lava tongue on the Fumarole Bay Trail, or explore the volcano's vent (known as the Witches Cauldron) via the Summit Trail.

Two of the daily departures to Wizard Island are simple shuttles, out and back. The other two include a ranger-narrated tour of the entire lake. There are also six "standard" boat tours each day that do not stop at the island. See page 3 for departure times, ticket info, and a description of the steep hiking trail required to reach the boat docks.

Escaping to Wizard Island is a special experience, but there are many other ways to make your visit to Crater Lake memorable, meaningful, and fun. Here are 10 suggestions:

### 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)*.

### Watch the Park Film
Explore the park's violent past and its present tranquility in this 22-minute film, shown on the hour and half-hour at the Steel Visitor Center at Park Headquarters.

### 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.

### 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)*.

### 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 and West Rim Drive tend to open in early June. The East Rim Drive typically opens in early July. This year, roads will likely open earlier than normal. Highway 62 and the road to Rim Village are open year-round.

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## 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 feet (13 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.**

Hiker on Garfield Peak

Rim Visitor Center

Bicyclist on East Rim Drive

Exhibits at the Sinnott Memorial Overlook


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

**Crater Lake Visitor Guide**
**Summer/Fall 2015**

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:**
PO Box 7, Crater Lake, OR 97604

**Phone:** 541-594-3000
**Website:** www.nps.gov/crla
**Email:** craterlake@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, Sun Notch, and Plaikni Falls trails 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 $15 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**
Unleaded gas is available at the Mazama Village Store during business hours *(see above)*.

**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 US Post Office is open Monday through Saturday in the Steel Visitor Center. Summer hours are 9:00 am–noon and 1:00–3:00 pm.

**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 in the Steel Visitor Center (9:00 am–5:00 pm). 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 south of the lake. Holders of a Senior Pass or Access Pass are entitled to a 50% discount. Overnight parking outside the campgrounds is not allowed, except by backcountry permit *(see page 2)*. For a list of campgrounds beyond the park, ask at a visitor center.

**Mazama Campground** (214 sites) is located 7 miles south of Rim Village near Highway 62. In 2015, it will be open May 8–October 4, weather permitting. 75% of the campsites through September 27 are reservable in advance by calling 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 ($22 per night) and RV sites ($31). 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 vehicle. The campground has drinking water, flush toilets, showers, and laundry facilities. A general store sells groceries, firewood, and gasoline. You can call Mazama Campground directly during the summer at 541-594-2255 ext. 3610. It is operated by the park's concessioner, Xanterra Parks & Resorts.

**Lost Creek Campground** (16 sites) is a small campground for tents only on the road to Pinnacles Overlook ($10 per night). It usually opens in early July and closes in mid-October. Registration is self-service, and reservations are not taken. The campground typically fills up, so arrive early to secure a site. It has running water, sinks, and flush toilets. Each site has a picnic table, fire ring, and food locker. Payment can be made by check or exact cash. This campground is operated by the National Park Service.

## Food & Dining

The **Annie Creek Restaurant** in Mazama Village features hearty breakfasts, a variety of entrees, burgers, pizza, and a soup & salad bar.
- April 24–May 22 7:00 am–7:00 pm
- May 23–June 18 7:00 am–8:00 pm
- June 19–Sept. 7 7:00 am–9:00 pm
- Sept. 8–Oct. 4 8:00 am–8:00 pm

The **Rim Village Café** serves lighter fare including grab-and-go sandwiches, salads, soup, and snacks.
- Jan. 1–March 8 10:00 am–4:30 pm
- March 9–May 20 10:00 am–5:00 pm
- May 21–June 11 10:00 am–6:00 pm
- June 12–Sept. 7 9:00 am–8:00 pm
- Sept. 8–Oct. 4 10:00 am–6:00 pm
- Oct. 5–Dec. 31 10:00 am–4:00 pm

**Crater Lake Lodge** offers fine dining in a casual atmosphere, with gourmet cuisine made from local ingredients. Reservations are recommended for dinner (541-594-2255 ext. 3217) but are not taken for breakfast or lunch. Appetizers, drinks, and desserts are also available from 2:30 pm until closing in the Great Hall and on the back patio.
- May 15–Oct. 11
  - Breakfast 7:00 am–10:30 am
  - Lunch 11:30 am–2:30 pm
  - Dinner 5:00 pm–9:00 pm*
  - *10:00 pm June 12–Sept. 29

The **Mazama Village Store** sells groceries, camping supplies, firewood, and gasoline.
- May 8–June 4 10:00 am–5:00 pm
- June 5–Sept. 7 7:00 am–9:00 pm
- Sept. 8–Sept. 28 8:00 am–8:00 pm
- Sept. 29–Oct. 5 10:00 am–5:00 pm

## Gifts & Books

At the park's two visitor centers, the Crater Lake Natural History Association sells books, maps, postcards, and souvenirs *(see page 8)*. Two other gift shops are operated by Xanterra Parks & Resorts:

The **Rim Village Gift Shop** has the same hours as the Rim Village Café *(see above)*.

The **Annie Creek Gift Shop** in Mazama Village has similar hours to the Annie Creek Restaurant *(see above)*. You can also shop online at www.craterlakelodges.com/shop.

## Lodging

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

**Crater Lake Lodge** (71 rooms) overlooks the lake at Rim Village. In 2015, it will be open May 15–October 11. Rooms range from $170 to $295 per night. Advance reservations are highly recommended.

**The Cabins at Mazama Village** (40 rooms, $144 per night) are located 7 miles south of Rim Village. Operating dates for 2015 are April 24–October 4.

## Visitor Centers

At the park's two visitor centers, rangers can answer questions and help plan your trip.

The **Steel Visitor Center** at Park Headquarters is open daily 9:00 am–5:00 pm. A 22-minute film is shown on the hour and half-hour. It explores the park's significance and the lake's violent, volcanic past.

The **Rim Visitor Center** at Rim Village is open 9:30 am–5:00 pm late May to late September.

## Exhibits

The **Sinnott Memorial Overlook**, perched on a rock ledge behind the Rim Visitor Center, features an indoor exhibit room and an open parapet with spectacular lake views. The overlook has a relief model and exhibits on the park's geology and lake research. Ranger talks are presented daily June 26 to September 7 *(see page 3)*. The overlook is open daily (weather permitting) mid-June through October. Hours are 9:30 am–6:30 pm in July and August, 9:30 am–5:00 pm in June and September, and 10:00 am–4:00 pm 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 tourism and the history and renovation of the lodge. The exhibits are open daily, around-the-clock, May 15–October 11. They are on the ground floor, west of the lobby.

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.

**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.

**Marijuana**
Possession or use of marijuana is prohibited. Oregon state laws allowing marijuana use do not apply in the park, an area of federal jurisdiction.

**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 are welcome in some areas. Pets on leash are allowed on the Godfrey Glen Trail, Lady of the Woods Trail, Grayback Drive, and Pacific Crest Trail. Leashes must not exceed 6 feet (1.8 meters), and only one pet per hiker is allowed. Pets are not permitted on other trails, or off-trail. Pets on leash (or otherwise physically restrained) are also allowed in developed areas, provided they stay within 50 feet (15 meters) of parking lots, roads, picnic areas, and campgrounds. Popular places to walk a dog include Rim Village and Mazama Campground. Pets are not allowed inside buildings, including Crater Lake Lodge and the Mazama Cabins. The above rules do not apply to service animals here to assist people with disabilities. Solid excrement must be picked up immediately by the person in control of the pet and disposed of in a trash or solid-waste receptacle.

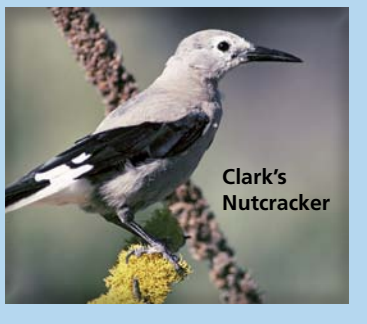
**Viewpoints**
Stay back from the edge of the caldera. Do not go beyond established fences and rock walls. Falling may cause injury or death.

**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 am and 5:00 pm.

## 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. In 2012, 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 mountain 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 pm (June 26–Sept. 7) and participate in a free, 20-minute activity. Complete one activity to earn a Junior Ranger PATCH.

## Boat Tours

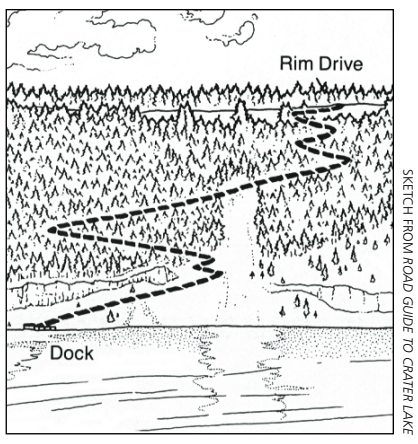
Join a park ranger for a 2-hour cruise around Crater Lake. See the box below for departure times and ticket prices. Boat tours on Crater Lake are operated by Xanterra Parks & Resorts in partnership with the National Park Service.

**Tickets**
Each boat holds 37 passengers. 18 tickets for each tour (July 3–Sept. 13 only) are available for advance purchase by calling 888-774-2728. The remaining 19 tickets for each tour (and all tickets from June 26–July 2 and Sept. 14–18) are available from automated kiosks inside Crater Lake Lodge and the Annie Creek Gift Shop. These tickets go on sale exactly 24 hours in advance of each tour. 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 7:45 am) 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.

**Types of Tours**
Standard tours are 2 hours long. They are ranger-narrated and circle the entire lake (but do not stop at Wizard Island). Wizard Island Tours are 5 hours long. They consist of a standard tour plus a 3-hour stay on the island, where passengers disembark to hike, swim, fish, and relax on their own. Wizard Island Shuttles are 4 hours long. They include a 1-hour (round-trip) ride to the island plus a 3-hour stay there. They do not circle the entire lake and do not include a narrated tour. (Note: For people wishing to spend 6 hours on the island, up to 6 tickets on the 8:30 am shuttle and up to 4 tickets on the 9:45 am tour are available for that purpose.) See page 4 for details on the island's two 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 is usually open from mid-June to late October.




SKETCH FROM *ROAD GUIDE TO CRATER LAKE*

**The Cleetwood Cove Trail drops 700 feet (213 meters) to the lake shore.**

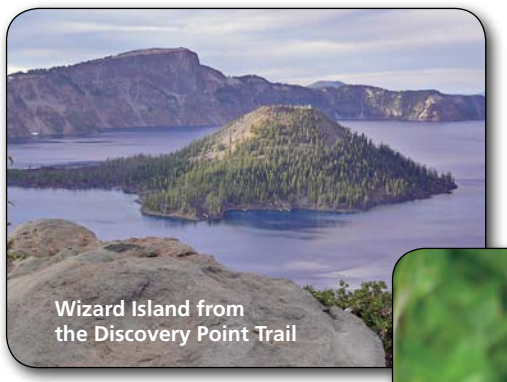
## Ranger-Led Activities

| Ranger-Led Activities | June 26–Sept. 7 | May 15–June 25 & Sept. 8–Oct. 12 |
|---|---|---|
| **Ranger Talks at Rim Village**<br>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 am**<br>**1:00 pm**<br>**2:30 pm**<br>**4:00 pm** ♿ | Check posted schedules |
| **Junior Ranger Activity** ♿<br>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 pm**<br>**3:00 pm**<br>**4:30 pm** | Check posted schedules |
| **Afternoon Hike**<br>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.<br>Sunday, Wednesday: **Sun Notch** (1 hour, easy, great views of the Phantom Ship)<br>Mon., Thurs., Sat.: **Plaikni Falls** (1.5 hours, easy, hike to a hidden waterfall)<br>Tuesday, Friday: **Garfield Peak** (2.5 hours, 1000' elevation gain, spectacular views) | **2:00 pm** | Check posted schedules |
| **Watchman Peak Sunset Hike**<br>Ascend to a breathtaking viewpoint and watch the sun go down over the Cascade Mountain Range. Meet at 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 1–26 **7:30 pm**<br>July 27–Aug. 7 **7:15 pm**<br>August 8–18 **7:00 pm**<br>August 19–27 **6:45 pm** | (Hike is offered July 1–Sept. 13)<br>Aug. 28–Sept. 4 **6:30 pm**<br>Sept. 5–13 **6:15 pm** |
| **Evening Program** ♿<br>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 26–July 31 **9:00 pm**<br>August 1–20 **8:30 pm**<br>Aug. 21–Sept. 7 **8:00 pm** | Check posted schedules |
| **Rim Drive Trolley Tour** ♿<br>Circle the lake on a ranger-narrated tour of Rim Drive. See the top of this page for more information. Tickets are sold from a trolley parked by the Community House in the middle of Rim Village. Tickets may be purchased the day of the tour, or the day before, from 9:00 am to 3:00 pm. To reserve tickets further in advance, call 541-882-1896 or visit www.craterlaketrolley.com. Tours cover a variety of topics. (2 hours)<br>**Ticket Prices**: $27 Adult (age 14 to 59); $24 Senior (age 60 and up); $17 Child (age 5 to 13); Free Young Child (under 5 years); Ask about family and group discounts | **10:00 am**<br>**11:00 am**<br>**12:00 pm**<br>**1:00 pm**<br>**2:00 pm**<br>**3:00 pm** | (Tours run June 12–Oct. 12)<br>June 12–25 & Sept. 8–Oct. 12:<br>**10:30 am**<br>**12:00 pm**<br>**1:30 pm**<br>**3:00 pm** |
| **Crater Lake Boat Tour**<br>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)<br>**Ticket Prices**: Standard Tour $40 Adult (age 13 and up), $27 Child (age 3* to 12); Wizard Island Tour $57 Adult, $36 Child; Wizard Island Shuttle $32 Adult, $20 Child<br>*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<br>**9:30 am**<br>**10:00 am**<br>**12:00 pm**<br>**1:15 pm**<br>**3:30 pm**<br>**3:45 pm**<br>Wizard Island Tours<br>**9:45 am, 12:45 pm**<br>Wizard Island Shuttles<br>**8:30 am, 11:30 am** | (Tours run June 26–Sept. 18)<br>Sept. 8–13: full schedule<br>Sept. 14–18:<br>Standard Tours<br>**10:00 am, 11:30 am**<br>**2:00 pm, 3:30 pm**<br>Wizard Island Tour<br>**9:45 am**<br>Wizard Island Shuttle<br>**1:00 pm** |

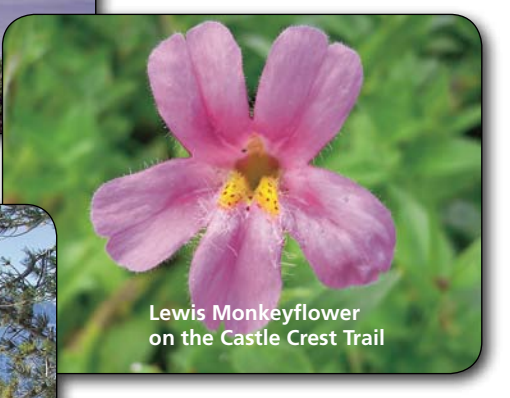
*Activities are free of charge except for trolley & boat tours. Programs are subject to cancellation due to weather or unforeseen circumstances.*

# Let's Go Hiking!

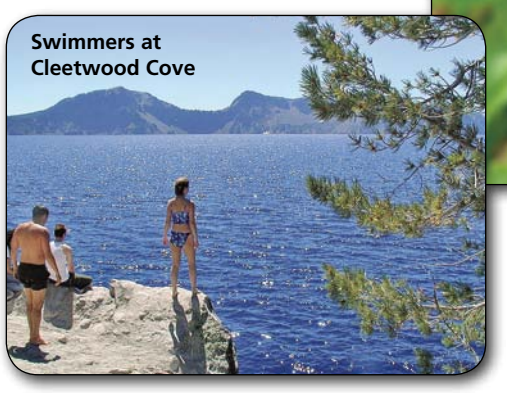
Hi, I'm Ranger Emily. We have 90 miles (145 km) of hiking trails here at Crater Lake. Our most popular day hikes are listed on this page. If you are visiting in June, be aware that some trails might still be closed by snow. Please help us protect this special place by following a few important rules:



Wizard Island from the Discovery Point Trail



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 am and 5:00 pm. Some areas are not open to backcountry camping.
- Pets are allowed on the Godfrey Glen Trail, Lady of the Woods Trail, and Pacific Crest Trail. Pets must be leashed; only one pet per hiker *(see page 2)*.
- To protect vegetation and prevent erosion, please stay on the trails.

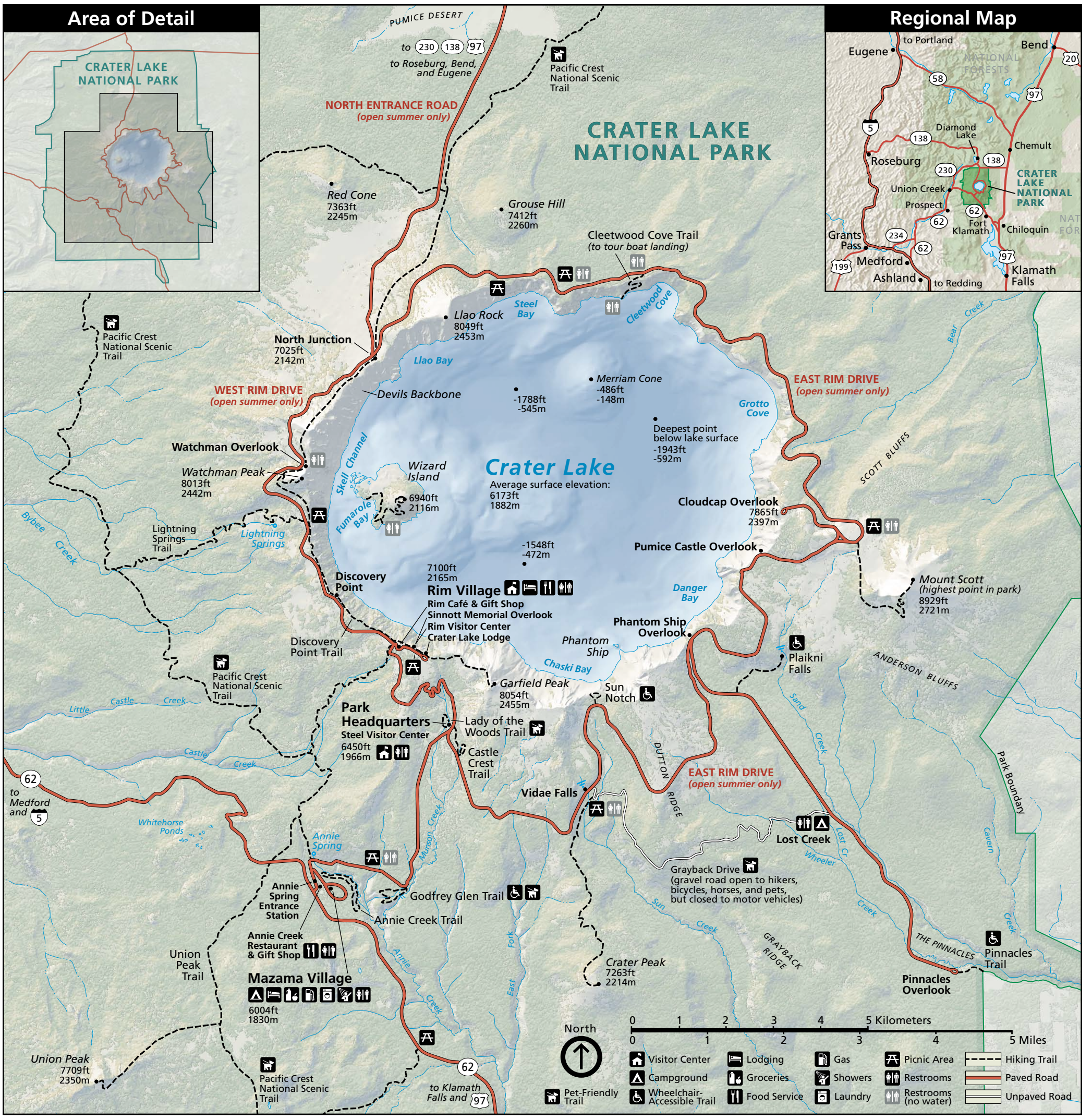
| Castle Crest | Lady of the Woods | Sun Notch | *Trail* | The Pinnacles | Godfrey Glen | Plaikni Falls |
|---|---|---|---|---|---|---|
| 0.5 miles (0.8 km) loop trail | 0.7 miles (1.1 km) loop trail | 0.8 miles (1.3 km) loop trail | *Roundtrip* | 0.8 mile (1.3 km) | 1.1 mile (1.8 km) loop trail | 2.0 miles (3.2 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) |
| **20 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 lush meadow. Abundant wildflowers in early summer. 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. Accessible to strong wheelchair users with assistance. | *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. | Easy walk through an old-growth forest to a waterfall. The first ¾ is accessible to wheelchair users with assistance, but the final, short climb 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 Road, 6 miles (9.7 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

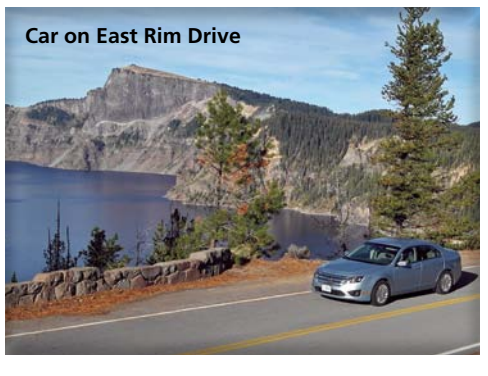
| Discovery Point | *Trail* | Fumarole Bay | Watchman Peak | Annie Creek |
|---|---|---|---|---|
| 2.0 miles (3.2 km) | *Roundtrip* | 1.7 miles (2.9 km) | 1.6 miles (2.6 km) | 1.7 miles (2.7 km) loop trail |
| 100 feet (30 meters) | *Elevation Gain* | 150 feet (46 meters) | 420 feet (128 meters) | 200 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 on Wizard Island to a shallow cove with clear water. Upon reaching Fumarole Bay, the maintained trail ends but a rough path continues to the far end of the cove. | Moderate ascent to a fire lookout above Wizard Island. Spectacular views in all directions. Great place to watch the sunset. Trail may be closed until July due to snow. | Moderately strenuous hike 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, reachable only by boat tour or shuttle 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 near 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 used 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 |
|---|---|---|---|---|---|---|
| 2.2 miles (3.5 km) | 2.2 miles (3.5 km) | 3.6 miles (5.8 km) | *Roundtrip* | 4.4 miles (7.1 km) | 6.5 miles (10.0 km) | 9.8 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 0.3-mile (0.5-km) 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 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 the morning, when the light is ideal for lake viewing. May be closed until July due to snow. | Moderate-to-strenuous hike 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 July due to snow. |
| Wizard Island dock, reachable only by boat tour or shuttle 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. Follow the paved promenade behind Crater Lake Lodge. | *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, $5.99) at either visitor center.


Car on 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

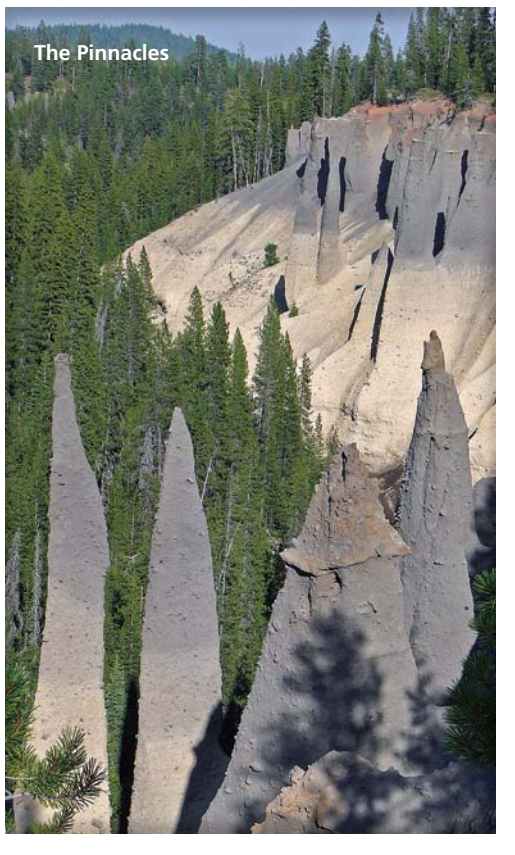
Nestled against the shore, Crater Lake's "other island" escapes detection by many park visitors. Though it resembles a small sailboat, the island is as tall as a 16-story building. It's made of erosion-resistant lava, 400,000 years old—the oldest exposed rock within the caldera.

## Pinnacles Overlook

This overlook is well worth the 6-mile (10-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

# Crayfish Threatens Native Newt

© WILLIAM FLAXINGTON

**The Mazama newt is a proposed subspecies of the rough-skinned newt, shown here. Through the 1980s, newts were seen regularly at Wizard Island and Cleetwood Cove. Today, crayfish have eliminated newts from these areas.**

**Researchers placed newts and crayfish together in tanks of water to study their interaction. The newts behaved uneasily, spending less time resting and more time swimming, while the crayfish took control of the tank's prime habitat, a large rock at one end. In 13% of the trials, the crayfish killed and ate the newts within an hour.**

© DREW RODGERS

**Crater Lake's native creatures are under attack by a species called the signal crayfish. (The white dots on its claws reminded 19th-century Americans of the white flags used by train signalers.) Signal crayfish are native to the Pacific Northwest, but not to the park. Most are less than 6 inches (15 cm) long, but they can live for up to 15 years.**

Beneath the placid surface of Crater Lake, a violent struggle is taking place. A type of salamander found nowhere else in the world—the Mazama newt—is under attack from an introduced species of crayfish, which is gaining control of the lake's shoreline and may be pushing the amphibian toward extinction. Recently, scientists have been studying the dynamics of this underwater conflict and contemplating how they might intervene. Can the crayfish be contained? Is there any hope for the rare Mazama newt?

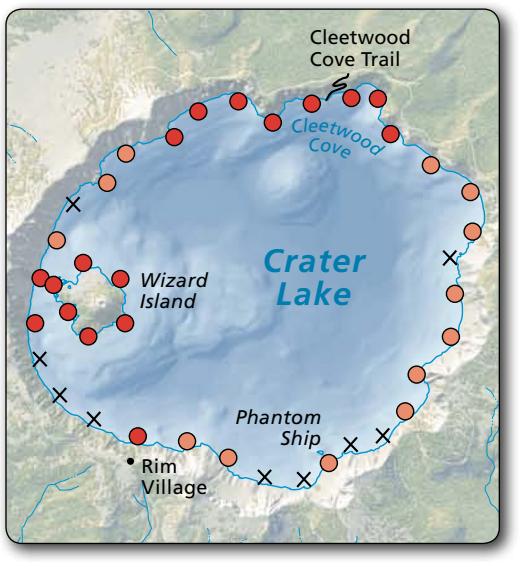
Crayfish are native residents of Oregon, but they were not originally present in the park. In 1915, to provide food for the trout that were planted in Crater Lake, state officials—at the behest of the park's superintendent—carried an estimated 15,000 crayfish into the caldera, reportedly from Odell Lake and the Sprague River. The crayfish didn't do much to prop up the lake's fish population: of the six species of fish stocked here between 1888 and 1941, only two survive today, and crayfish aren't a significant part of their diet. But the crayfish have had an impact—a negative one—on the abundance and diversity of the lake's native fauna.

In 2009, scuba-diving researchers used a battery-powered vacuum to scoop up sediments at depths of 3, 10, and 33 feet (1, 3, and 10 meters) along the lakeshore, both in places where crayfish were absent as well as abundant. They painstakingly sorted through the sediments in search of snails, worms, insects, and other bottom-dwelling creatures. While they counted an average of 51 organisms per square foot (545 per square meter) in the sediments collected from crayfish-free sites, that number dropped by 80% in places patrolled by crayfish. Like humans, crayfish are omnivores; they will eat almost anything in their path, from algae to small fish. More worrisome, researchers also noticed a reduced diversity of species in crayfish-controlled waters. Snails, for example, are almost entirely absent from these areas, along with the lake's endemic salamander, the Mazama newt.

The newts in Crater Lake are a genetically distinct population (and proposed subspecies) of the rough-skinned newt, a common amphibian of the Pacific Northwest. Isolated within the steep-walled caldera, they have adapted to their local environment and have developed differences from their relatives elsewhere in the park. Whereas other rough-skinned newts display a bright orange belly, Mazama newts have a darker underside. This may be a protective coloration from the high levels of ultraviolet radiation that penetrate into Crater Lake's clear waters. And while their cousins secrete a deadly neurotoxin from their skin as a defense against predation, Mazama newts produce almost no poison at all. Did they lose this ability because they didn't need it, safe in the waters of a predator-free lake? Or do they perhaps lack the energy to generate much neurotoxin because, at Crater Lake, they live in a nutrient-poor environment? Scientists aren't sure.

What scientists do know is that newts are disappearing from the lake as the crayfish population is expanding. To study the interaction of the two species, they conducted a series of experiments in 2012–13. They placed a single newt in a tank of water, gave it an hour to acclimate, then added either 0, 2, 4, or 8 crayfish to the tank. For the next hour, they observed the newt's behavior. The newts that remained alone spent most of their time resting peacefully on the tank's gravel bottom or under a rock. The newts joined by eight crayfish, in contrast, spent most of their time swimming around, avoiding the crayfish. And in 10 of the 76 tanks with crayfish present, the newts were captured, killed, and eaten by their rivals. Thus, it seems that crayfish harm newts in a number of ways, which include: preying on them directly, evicting them from their preferred habitats, forcing them to expend extra energy, and causing them to flee into open water, which subjects them to predation by fish and increased exposure to UV radiation.

The National Park Service is tasked with preserving our natural heritage—and protecting our most rare and sensitive species—but can the Mazama newt be saved? Unfortunately, Crater Lake's crayfish population has boomed in recent years. Crayfish now control about 80% of the shoreline, and they've been found living at depths of up to 820 feet (250 meters) below the surface. In 2012, after crayfish were discovered for the first time around the Phantom Ship, the park conducted a crayfish control experiment, trapping them continuously there for three summers. Despite removing a total of 5,556 individuals, researchers found that the number of crayfish actually increased around the island over the course of the experiment. This August, the park will host a workshop—bringing together crayfish experts and newt researchers from around the world—to brainstorm possible courses of action. Hopefully, they can figure out a way to control the invaders, conserve the newts, and mitigate the damage brought about by park managers a century ago.




**Crayfish present in 2008**
**Crayfish absent in 2008**
**Crayfish absent in 2008 but present in 2013**

**To assess the distribution of crayfish, researchers have been conducting "snorkel surveys" at 39 sites along the shore. At each location, two snorkelers swim in opposite directions for 10 minutes, performing a visual check. In 2008, they spotted crayfish at 44% of their sites. By 2013, 77% of the shoreline had become crayfish territory.**

# Rare Flowers Rescued from Road Construction

National parks are often the sites of dramatic rescues. People find themselves trapped—by blizzards, rockfalls, flash floods, or injury—and need emergency help from park rangers and search parties. Sometimes, however, it's the plants and animals living in a park that find themselves in jeopardy. That's what happened here at Crater Lake last summer, when an impending road construction project threatened several communities of rare plants. The plants' rescue was not particularly dramatic, but it proved to be an interesting example of how park staff are working hard to minimize the impacts that our infrastructure has on the landscape.

This June, the Federal Highway Administration (FHWA) will begin a 3-year, $18 million rehabilitation of 10.7 miles (17.2 km) of the park's historic Rim Drive. Decades of harsh weather and the erosion of underlying soils have taken their toll on the road's shoulders and retaining walls. More than a simple repaving, the project is a major reconstruction that will require disturbing roadside plant communities—about 5 acres (2 hectares) of land all together. In 2013, with funding provided by the FHWA, the park hired a team of seasonal botany employees to walk along the road and look for rare plants within 13 feet (4 meters) of the pavement. They found four rare and/or sensitive species: the pumice grapefern, Mt. Shasta arnica, whitebark pine, and Crater Lake rockcress. Amazingly, the world's largest known population of Crater Lake rockcress was found to be growing right beside the busy West Rim Drive! Unfortunately, the entire population—1,927 individual plants—was in the demolition zone of the construction project. Could it somehow be saved?

**Built in the 1930s, Rim Drive is long overdue for repair. In 2014, part of the East Rim Drive began eroding into the caldera.**

In June of 2014, the seasonal botany team began "rescue operations." They gently excavated nearly 600 of the imperiled plants (mostly Crater Lake rockcress, but also members of the other three species) and transferred them to plastic pots, along with as much of the plants' root system and surrounding soil as possible. The plants were driven to Park Headquarters, where the refugees are currently being watered and safeguarded until the roadwork is complete. At that time, each plant will be returned to its former home, the coordinates of which were recorded, prior to evacuation, using a GPS unit accurate to within 3 feet (1 meter). The second element of the rescue plan was seed collection. Team members carefully coaxed tiny seeds from the fruiting pods of two Crater Lake rockcress populations, one along the West Rim Drive and one along the East Rim Drive. Some of the seeds will be planted at their respective sites following road construction. The rest are being germinated and nurtured at the Corvallis Plant Materials Center, a facility operated by the US Department of Agriculture's Natural Resources Conservation Service. They, too, will eventually be returned to their place of origin in the park. Using a combination of seeds, propagated plants, and rescued plants, it's hoped that we can quickly reestablish our populations of Crater Lake rockcress along the Rim Drive.

But it's not just rare plants that will be given a jumpstart. Over the past two summers, the park has collected seeds from 23 additional species. Some of the seeds are being germinated at the Corvallis Plant Materials Center—they're growing 25,000 individual plants for eventual reintroduction—but most are being held in reserve. When construction ends, they will be scattered and raked into the topsoil at the largest disturbed sites along the road. They'll be spread at a density of 60 to 80 seeds per square foot (750 per square meter), in the vicinity of where they were collected, with each species sewn in numbers proportionate to its former extent in that area. In places where the ground disturbance is confined to a relatively narrow roadside strip, the park will let revegetation occur naturally. Seeds that are already present in the soil, along with seeds drifting in from adjacent plant communities, should be enough to repopulate the road shoulders. The construction contractor will facilitate this recovery by treating the roadside topsoil with care: construction crews will remove the top 4 inches (10 cm) of soil prior to any roadwork, store it in a nearby pile, refrain from compacting it with construction equipment, and replace it in its original location.

The biggest challenge will be preventing non-native plants from invading the disturbed sites. These species tend to thrive in places where the native plant community is weakened or absent. Some non-native species—such as St. John's wort, sheep sorrel, and Canada thistle—already have a toehold in the park. In 2013 and 2014, the seasonal botany crew found 13 different exotic species at Rim Village and along the Rim Drive. They removed 33,000 individual plants, and they will continue to pull all weeds in the construction corridor through 2019. And to help prevent the introduction of new exotic species, the FHWA will conduct inspections of construction equipment and paving materials before they enter the park. Much like the roadwork itself, the restoration of our roadside plant communities will be a complex and labor-intensive process. But it's one worth pursuing, to ensure that future generations of park visitors will be able to enjoy the splendor of native plants that we see today.

© LINDA VOROBIK

**A member of the mustard family, Crater Lake rockcress *(Boechera horizontalis)* is a rare, naturally occurring hybrid of 3 other rockcress species. Almost all of its known populations live here in Crater Lake National Park. It produces purple flowers on a stalk that rises from a rosette of basal leaves.**

**The world's largest known population of Crater Lake rockcress grows along the West Rim Drive. Road construction will displace it temporarily. In 2014, prior to rescuing some of the plants, employees conducted a census by marking each one with a pink flag. They counted 1,927!**

**This group of Crater Lake rockcress (not in flower) is awaiting transport to Park Headquarters. The number on the aluminum tag corresponds to a set of GPS coordinates—accurate to within 3 feet (1 meter)—which will allow the botany team to return the plants to their original location after roadwork is finished.**

**Kari Bertram of Coeur d'Alene, Idaho, spotted this red fox in Mazama Village on May 20, 2015. Red foxes are not always red—most at Crater Lake have fur ranging from silver to black. No matter their color, they all have a long tail with a white tip.**

## Wanted: Your Wildlife Observations

Scientists need your help! If you spot any interesting animals during your Crater Lake visit, or if you observe any unusual behavior, please let us know! Your observations will help us learn which animals live in the park and how they use it. In 2014, park visitors and employees submitted 132 observations of 47 different species, including the black-backed woodpecker, yellow-bellied marmot, long-tailed weasel, gray-crowned rosy finch, and northern pygmy owl.

To report your sighting, send an email to craterlake@nps.gov or find a ranger at a visitor center. Let us know the date and precise location of your encounter, a detailed description of what you saw, as well as your name and contact info, in case we have follow-up questions. And if you captured any photos, send them along (ideally with permission for us to use them in reports and publications). Photographic evidence can be very important in confirming the identity of some species. Just remember that approaching, feeding, or disturbing wildlife is strictly prohibited—so please keep your distance. Thanks for your participation!

# Caught on Hidden Camera

## *Researchers Collect 8,600 Images of Animals Across the Park*

Say cheese! That's essentially what scientists said to the park's wildlife last summer, when they set up motion-triggered cameras at 112 locations across the park. The goal of the project—made possible by donations from Subaru and Disneynature, through a grant from the National Park Foundation—was to gain a better understanding of the park's large and medium-size mammal species.

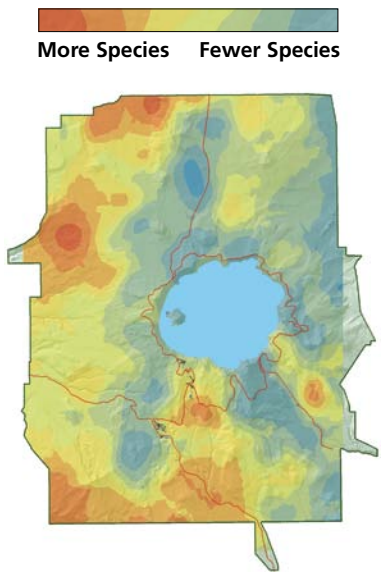
A team of three seasonal wildlife technicians hiked off-trail to the sites, which were randomly selected in advance. At each location, they strapped a camera to a tree trunk. On a nearby tree, facing the camera, they hung vials containing a strong scent. As an additional lure, they attached a locked box filled with chicken parts. Finally, to collect hair samples (useful for verifying the identity and sex of certain species through genetic testing), they secured wire brushes to a corrugated plastic strip fastened to the tree below the box. The brushes gathered fur from animals that sniffed the bait. Once they'd prepared each site, the technicians left, returning four weeks later to retrieve the equipment and move it to another location. In the meantime, the cameras operated 24 hours a day. Each one projected an invisible, infrared beam toward the bait tree. Every time an animal tripped the beam, the cameras were programmed to take two photographs, one second apart.

Over the course of the five-month survey, the cameras detected wildlife on nearly 1,250 occasions. They captured more than 8,600 images of 30 different species. Black-tailed deer were the most frequently photographed subjects, seen at 70% of the sites. Black bears (at 64% of the sites), elk (44%), and martens (29%) were also found to be widespread. The abundant marten sightings were good news, since this member of the weasel family is struggling to survive in some parts of Oregon. The other medium-to-large mammals caught on camera were coyotes (11% of sites), badgers (6%), bobcats (6%), mule deer (6%), mountain lions (4%), porcupines (3%), striped skunks (2%), a fisher (1%), and, at five locations, human beings who had wandered into the survey area. There were no sightings of red foxes, long-tailed weasels, raccoons, white-tailed deer, or gray wolves—species that, nevertheless, are all known to use the park. Scientists had hoped to find evidence of mink, spotted skunks, and gray foxes, species seen here in the past but not observed in recent history.

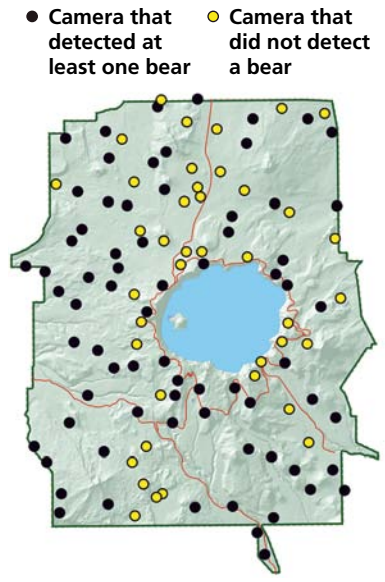
Last year's results were informative, but should still be seen as preliminary. This summer, the park has funding to deploy cameras at 50 to 60 additional locations. One priority is to reach the 28 locations that were not sampled last year due to time constraints (the project includes 140 sites all together). Wildlife techs will also set up cameras and "hair-snares" in places where fishers and red foxes have been recently sighted. The park is home to a rare type of red fox—the Sierra-Nevada subspecies—that is being considered for protection under the Endangered Species Act. Remote cameras are a great way for the park, with its limited staff, to survey for secretive animals and to assess the abundance and distribution of its mammal inhabitants.

**Motion-sensitive cameras excel at spotting nocturnal wildlife. This mountain lion was photographed just before midnight on July 4, 2014.**

**The animal hugging this tree is a fisher, a rarely seen type of weasel with a thick, warm coat. Fishers were once common in Oregon before trapping and logging reduced their numbers. To help the population rebound, the US Fish & Wildlife Service has proposed to list them as "threatened" under the Endangered Species Act within the next year.**




**Some sites were visited by a greater variety of wildlife than others, allowing researchers to create this model of the park's mammal diversity.**




**Black bears were photographed at 72 of the 112 sampled sites. Some individuals were seen at multiple locations. An estimated 30 to 80 black bears call the park home.**

# Lodge Celebrates 100 Years

Crater Lake Lodge opened for business on June 28, 1915, giving travelers an opportunity to dine, sleep, and relax on the brink of America's deepest lake. That it continues to provide accommodation today, a century later, is a minor miracle—and a fascinating tale of resurrection. For today's lodge is not the original lodge, but a reconstruction. Its history, in many ways, is as tumultuous as the geologic story of the lake it overlooks. Just as Crater Lake sits in the shell of a collapsed volcano, the lodge occupies the site of an earlier edifice that ultimately proved too unsteady to stand.

Congress, upon establishing Crater Lake National Park in 1902, was willing to fund the construction of a road to the lake's rim, but not a hotel there. So William Steel, the park's biggest booster and future superintendent, founded the "Crater Lake Improvement Association" in 1903, a public corporation whose purpose was to erect a lodge, operate steam boats on the lake, and turn the park into a popular summer resort. Eventually, in 1909, Steel convinced Portland developer Alfred Parkhurst to finance the project, which turned out to be formidable: construction of the 68-room hotel took six years. The park's isolation and long winters slowed down work and drove up costs, beyond what Parkhurst could afford. In 1915, with the lodge still unfinished, Parkhurst opened it anyway, hoping to generate money to pay for its completion.

Early guests were not impressed. Parkhurst's contractor had cut corners to save money. The rooms lacked heat, furnishings were spartan, the doors had no locks, the walls between rooms were paper-thin, few rooms had private toilets, and fire safety features were minimal. "I would not have my family stay in that hotel again," one guest wrote his Congressman in 1916. "It is illuminated above the first floor by kerosene lamps and candles . . . . There is only one stairway . . . and if a fire should start on the lower floor there is no means of escape." When Stephen Mather, director of the National Park Service, visited in 1919, he complained to the *Oregonian* that "the time has come to put accommodations at Crater Lake which will attract people rather than sending them away." Three years later, he forced Parkhurst to sell to new owners. They immediately made improvements, including, in 1922-23, the addition of two wings on the west side of the building, adding 61 rooms to the hotel's capacity.

Still, over the next 50 years, and as ownership changed hands several more times, the complaints continued—most stemming from the lodge's poor initial design and construction. In 1948, a government inspector reported that the rooms "occupied by the Chinese kitchen help over the kitchen were in a deplorable state and it is questionable whether a respectable pack rat would stay in such quarters. There are no sanitary facilities . . . in their sleeping quarters and as a result the old-fashioned slop pails are used, which, to be emptied, are carried down stairs through the kitchen to the basement. In order to wash, they must use the vegetable washing sink." Even more troubling, the hotel was showing signs of structural instability. Ceilings sagged, beams buckled, and the exterior walls bowed outward, requiring steel cables to be hung taut across the interior in the 1960s. The lodge had been built using techniques and materials common at lower elevations; like many homes of the period, it consisted of a light wood frame, rather than heavy timbers. Lacking roof trusses, it was designed to withstand Portland winters, not winters prone to 50 feet of snow.

The National Park Service purchased the lodge in 1967, in the midst of a decades-long debate as to whether the rickety structure should be reinforced, downsized, converted into a visitor center, or demolished and removed. In 1984, when it was determined that any continued use of the building would require an expensive, major rehabilitation, NPS Director Russell Dickenson called for demolition. Immediately, a wave of protest erupted in Oregon's newspapers, echoed by some of its residents. Many people had fond memories of the lodge—despite its flaws—and the grandeur of its setting. The state's historic preservation community also objected, noting that the lodge had been added to the National Register of Historic Places in 1981. Public opinion prevailed in 1988 when the NPS reversed its decision and agreed, pending funding from Congress, to the hotel's renovation. Meanwhile, the lodge—still in operation, under a new concessioner—continued to decay. In 1989, engineers advised the park that it was unsafe for habitation; the Great Hall was in danger of collapsing under its own weight and bringing the rest of the lodge down with it. "I won't risk lives!" said NPS Regional Director Charles Odegaard, as he ordered the hotel closed just before the start of the summer season.

Within a month, Oregon's congressional delegation was able to secure initial funding for what would become a $15 million reconstruction. Over the course of four summers, from 1991-94, the lodge was ripped apart and replaced with a modern twin: a hotel that looked almost identical from the outside, but redesigned within—except for the Great Hall, lobby, and dining room, which were rebuilt to appear as they had in the 1920s. In fact, the fireplace in the Great Hall was recreated exactly; its stones were numbered for later reassembly before it was dismantled. Even so, only 10% of the materials of the original lodge were reused. To meet current building codes and seismic requirements, the 14-inch wooden beams that supported the upper floors were replaced with 24-inch steel beams, and the ground floor's stone walls were replaced with stone-veneered, reinforced concrete walls. For the first time, the lodge was given central heating, elevators, a proper foundation, and private baths in every room. Its grand reopening took place on May 20, 1995.

Twenty years on, the building that was once seen as a blot on the park's landscape and reputation is now viewed by many as integral to its beauty and allure. Like the lake itself, it's a symbol of the positive outcomes that can result from traumatic change and new beginnings. And like the park itself, it's an example of how public action is sometimes needed to accomplish what private parties cannot do on their own. Alfred Parkhurst would likely be very proud—and completely amazed—to see what became of his unfinished hotel. Crater Lake Lodge is now part of our collective heritage, and all, whether overnight guests or not, are welcome to enjoy its Great Hall, dining room, exhibits, veranda, and 1920s-style ambience.

© CLACKAMAS COUNTY HISTORICAL SOCIETY

**The original lodge was a wood frame atop a rock wall. Its stones were quarried from Garfield Peak and Watchman Peak. It achieved its present-day form in the 1920s, with the addition of two wings of rooms on the west side of the building. When it was rebuilt in the 1990s, architects preserved its external appearance but transformed the interior into a modern—and structurally sound—facility.**

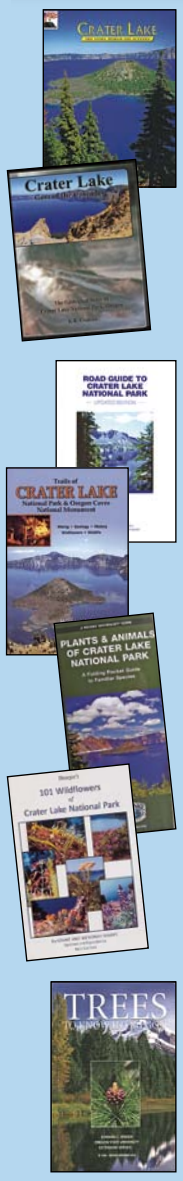
# Climate Chart

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 September are your best bets for warm, dry weather. In May, June, 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 feet (13 meters) of snow at Park Headquarters. The park's tremendous snowfall is a result of its 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 | 35 |
| Average Daily Low (°F) | 18 | 18 | 19 | 23 | 28 | 34 | 41 | 41 | 37 | 31 | 24 | 19 |
| Avg. Snowfall (inches) | 101 | 82 | 84 | 46 | 20 | 4 | 0.2 | 0.1 | 3 | 21 | 62 | 93 |
| Avg. Snow Depth (inches) | 79 | 101 | 116 | 111 | 76 | 24 | 1 | 0 | 0 | 2 | 17 | 47 |
| Avg. Lake Surface Temp. (°F) | 39 | 38 | 38 | 38 | 40 | 45 | 54 | 59 | 56 | 50 | 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) | 255 | 209 | 213 | 116 | 50 | 9 | 0.5 | 0.3 | 7 | 53 | 157 | 236 |
| Avg. Snow Depth (cm) | 201 | 257 | 294 | 283 | 194 | 60 | 3 | 0 | 0 | 6 | 42 | 119 |
| Avg. Lake Surface Temp. (°C) | 4 | 3 | 3 | 3 | 4 | 7 | 12 | 15 | 13 | 10 | 7 | 5 |

## 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, written by a former ranger. 168 pages, $15.95.

**Road Guide to Crater Lake National Park**
Consult this guide as you circle the lake for a deeper understanding of the park's features. 48 pages, $5.99.

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

**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.

**101 Wildflowers of Crater Lake Nat'l Park**
Detailed descriptions and vivid photos of the park's most common flowers. 74 pages, $14.95.

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

## 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, $16.95.

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

**Crater Lake: Into the Deep DVD**
Own the film shown at the visitor center. Discover the park's significance and explore the lake's violent past. 22 minutes, $14.99.

**Crater Lake Water Bottle**
This plastic bottle's flip-top lid makes it easy to quench your thirst. $2.99.

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

**Crater Lake Reusable Shopping Bag**
Earth-friendly and great for groceries. Made from recycled materials. $3.99.

**Crater Lake Cap**
Keep your head cool and shaded with this adjustable ball cap. 100% cotton. $21.99.

**Clark's Nutcracker T-Shirt**
100% cotton. Bird on front, lake on back. $19.99.


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

Crater Lake National Park
PO Box 7
Crater Lake, OR 97604


EXPERIENCE YOUR AMERICA™

# 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.

Proceeds go 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.

## 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 volunteer periodically, join The Friends of Crater Lake, a non-profit organization founded in 1993. Members remove non-native plants, build and maintain trails, assist with special events, and more. For details, visit www.friendsofcraterlake.org. Or join the Crater Lake Ski Patrol, which 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. To learn more, visit www.craterlakeskipatrol.weebly.com.

Volunteer Ski Patrollers

## 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 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. The association funds a variety of important projects, including the printing of this visitor guide. Some of the bookstores' offerings are described to the left. For a complete list of merchandise and to buy items online, visit www.craterlakeoregon.org. You can also order by calling 541-594-3111.

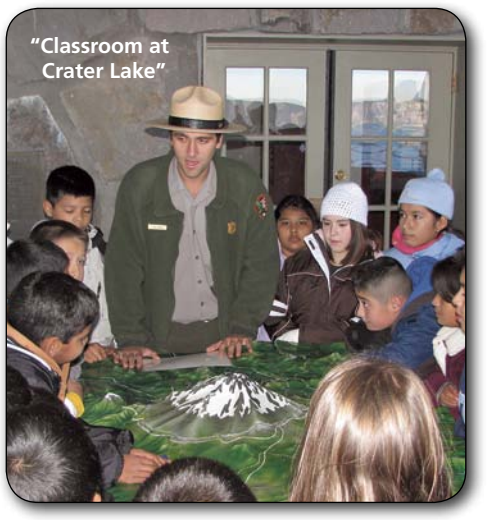
*The National Park Service turns 100 on August 25, 2016! From now through 8/25/16, say "**Happy Birthday**" at checkout to receive*

**5% OFF**

*your purchase of $50 or more at the Steel Visitor Center or Rim Visitor Center.*

## 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 the kids, it's their first visit to the park. To learn more about the Trust and its activities, visit www.TrueBlueForever.org. Share your love of the park by making a tax-deductible gift.



"Classroom at Crater Lake"

## 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 email to craterlake@nps.gov, or write to: Superintendent, Crater Lake National Park, PO Box 7, Crater Lake, OR 97604.

# Thank You!

## Welcome

*(continued from page 1)*

The National Park Service itself was established in 1916. Next year we will honor its centennial as the world's premier organization whose purpose is to protect, preserve, and make available for public enjoyment the incredible, awe-inspiring places that are part of our natural and cultural heritage. But we aren't waiting a year to start the celebration. This year we kicked off the "Find Your Park" campaign (www.findyourpark.com), which encourages every citizen, as well as lovers of parks around the world, to connect or re-connect with a park or outdoor place that has special meaning in their lives. It can be a magnificent wonder like Crater Lake or just a small greenspace set aside in your city or community. Nature and parks are an integral part of all of our lives. They deserve a special place in our hearts—worthy of preservation so that we and the many generations yet to come may create meaningful experiences just as millions of people have done for the past 100 years and more. So, in the words of England's poet laureate, "let your eyes perceive and your hearts enjoy."

Craig Ackerman, Superintendent