

## LAVA LANDS

Exploring Central Oregon's geological past | By Kim Cooper Findling

**"There's a bat!"** My 8-year-old daughter, Libby, points to an animal flying out of the cave entrance, and I'm hopeful that she's right—but no; it's just a bird. We are descending a staircase into Lava River Cave in Central Oregon, the longest known uncollapsed lava tube in Oregon, and a part of Newberry National Volcanic Monument. A ranger at Lava Lands Visitor Center told

us just moments ago that 12 species of bats live in Lava River Cave, which explains our exuberance. In the winter, this area is closed to the public to protect the bats' hibernation, but on this sunny and warm summer day, the bats must just be sleeping, or perhaps watching us warily from a darkened perch overhead. After all, we are the intruders here in their underground home.



MINDEN PICTURES / SUPERSTOCK



Lava tubes are formed when flowing lava begins to cool and harden, leaving a natural conduit that eventually empties of molten lava, becoming an elongated cave. There are many lava tubes in the Deschutes National Forest, but Lava River Cave is the only one in the Newberry National Volcanic Monument and the only one open to the public. (Most caves are closed to protect the delicate structure of these geologic treasures and the animals using them, as well as for safety reasons.)

As we descend into the dark, it's as if the climate has pulled a quick change on us. Lava River Cave holds a near-constant temperature of around 42 degrees all year long; soon enough, we've left behind the hot, dry air of Central Oregon in exchange for a damp, cool atmosphere. The cave extends for a mile, but we explore in the dusky chill for only a short distance, examining stalactites and stalagmites with the help of a rented lantern before returning to the light, and heat, of day.

Newberry Monument was established in 1990 to protect the area around Newberry Crater, the biggest volcano by area in the state of Oregon (the monument covers 55,000 acres that stretch in a

wide swath north from Newberry Crater nearly to Bend). The Newberry area is the result of lava flows 400,000 to 1,300 years old, and represents one of the largest collections of cinder cones, domes, hardened lava flows, fissures and spectacular geologic features in the world. I've brought Libby and her 6-year-old sister, Maris, here today to enjoy the sunshine, experience the landscape and maybe learn a thing or two.

While all volcanic in origin, Newberry's landscape is also very diverse. Just a few minutes before descending into the cave, we were atop Lava Butte, one of more than 400 cinder buttes, or cones, in the monument. Cinder cones are formed when molten lava—flung skyward during volcanic activity—hardens in the air, trapping air bubbles, and falls to the earth to form a giant pile of rubble. We reached the 500-foot summit of Lava Butte easily by car, to marvel at an outstanding 360-degree view of hundreds of rocky peaks and ridges as far as the eye could see. From

»» Opposite, top: The Painted Hills, part of the 14,000-acre John Day Fossil Beds National Monument.

»» Opposite, bottom: A western pipistrelle bat chases a moth near Pine Creek in the John Day Fossil Beds National Monument.

»» Below: Visitors see the Big Obsidian Flow at Newberry Crater.



DAVID YOUNG-WOLFF / ALAMY



# BEND AND REDMOND RECREATION

**Bend and Redmond** have become world-famous recreation destinations, and with good reason. The sunny skies of Central Oregon provide a perfect backdrop for year-round play, including cycling, rock climbing, boating, skiing, golfing and a number of other outdoor activities.

Central Oregon is considered part of the high desert of the Great Basin. While the eastern-most parts of the region are indeed quite desertlike, the western edge of Central Oregon, as it trends uphill into the Cascade Range, is thickly forested and peppered with dozens of lakes. The entire area benefits from the mountains' rain-shadow effect, making it drier than western parts of Oregon and a great place to play outdoors.

This part of the state is home to more than 25 golf courses, many of which are playable all year. The Fazio Course at Pronghorn is one of the most lauded, carved into a high-desert landscape north and east of Bend with views of the Cascade Range; the par-3 eighth hole is notable for the green that sits between two cavernous lava tubes. Crosswater at Sunriver Resort is lauded as one of the best courses in the country, covering 600 acres of woodland and preserved wetland, and threaded by the Deschutes and Little Deschutes rivers. The Glaze Meadow course at Black Butte Ranch (west of Sisters) reopened last summer after a complete renovation; made more open, with wider fairways and renewed mountain views, the course sits in the lap of the Cascades with up-close views of the North Sister and Mount Washington.

You can see Smith Rock State Park from the road, but skipping a visit would be a missed



LARRY LAMBRECHT

opportunity. This tuff rock formation north of Redmond is dramatic with its spiky orange-rock beauty. Smith is a world-class rock climbing destination, but even those who prefer to keep their feet on the ground enjoy hiking, sightseeing and wildlife watching at this

for people of all ages and abilities, and offers rewarding opportunities to see wildlife and the river.

Itching to test your fly rod? Central Oregon was host in 2012 to the U.S. Fly Fishing National Championships and offers great fishing year-round. The Metolius River springs from a hillside near

country. The High Desert Museum is part natural and cultural history museum, part zoo; exhibits cover everything from the history of the West to contemporary Native American culture, and animals on site include porcupines, raptors, lizards and sturgeon.

Central Oregon is nationally known for its microbrews, and a stop at one or more of the region's 20 craft breweries is a great idea. Visitors can sign up for a tour on the Bend Brew Bus or take a self-styled tour with the Bend Ale Trail map.

There are plenty of options for comfortable lodgings. Black Butte Ranch is a working ranch near Sisters with a 40-year reputation for family-friendly resort lodging; 18 miles of paved hiking and biking paths wander through meadows and forests with peekaboo views of the Cascades. In downtown Bend, the Oxford Hotel offers upscale urban style with an eco-friendly twist. It's a taste of the city in a small town. Sunriver Resort covers 3,300 acres at the base of the Cascades and features running and biking paths, the Sage Springs Club & Spa, and the 1-year-old SHARC—a massive aquatic center with a lazy river, waterslide and multiple pools, both indoors and out. —K.C.F.



TROY PILLOW

» Above: The 5th hole at the Glaze Meadow course at Black Butte Ranch. » Left: Kayaks form flower petals in this sculpture near the Deschutes River in Riverbend Community Park in Bend, part of the city's Roundabout Art Route.

gorgeous volcanic feature on the Crooked River.

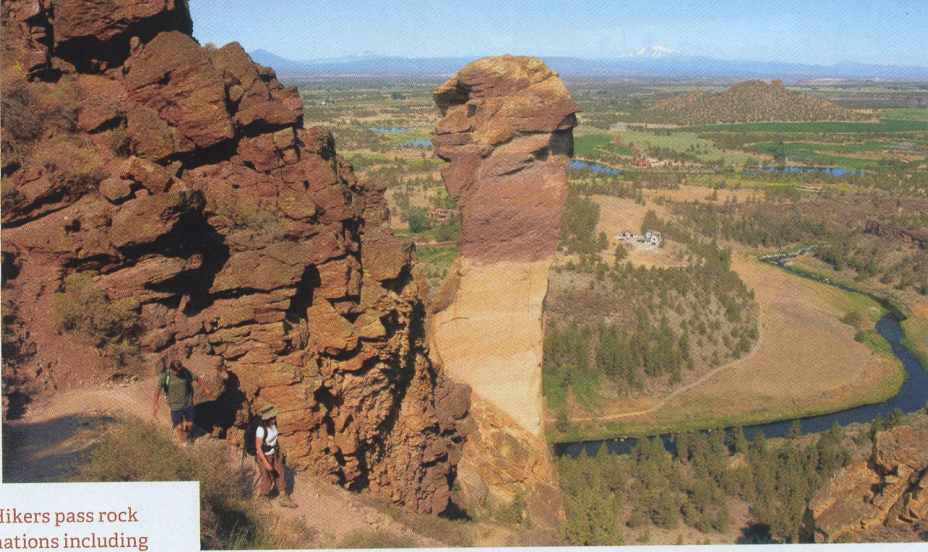
During summer, the Cascade Lakes Highway is open to car traffic, offering everything from a simple scenic Sunday drive to access to mountain hiking and climbing, alpine lakes, forested campgrounds and reservoirs full of trout, all with the Three Sisters, Broken Top and Mount Bachelor within reach.

The 19-mile Deschutes River Trail winds through Bend and through urban and forested landscapes. It's easily accessible

Camp Sherman; its pristine and lovely waters deliver challenging casting and prized trout. The Lower Deschutes River and Fall River are also great fishing waters. To work on your skills without even leaving Bend, try the newly renovated Fly Casting Course in the Old Mill District, the only permanent fly course of its kind in North America.

Bend has no shortage of cultural attractions to complement its recreation. While you're in the Old Mill District, check the music listings for the Les Schwab Amphitheater. This outstanding venue offers big-name acts under summer skies on the Deschutes River, with views of the Cascades. As you drive through Bend, be sure to note Bend's Roundabout Art Route, all publicly funded and nationally recognized as one of the most innovative approaches to public art in the





>> Hikers pass rock formations including Monkey Face—popular among rock climbers—in Smith Rock State Park.

Mount Adams and Mount Hood to the far north, to the Three Sisters and Mount Bachelor to the west, to the north rim of Crater Lake and Mount Thielsen to the south, Oregon's volcanic history literally surrounds us. (Another outstanding viewpoint for seeing the basaltic lava fields and volcanoes of Central Oregon is the Dee Wright Observatory, located on Highway 242 between Belnap and Sisters. The road is only open seasonally but allows access to lava fields and panoramic views of the Cascade Range, as far north as Mount Hood. A bronze peak-finder in

the lava rock-built observatory points to these geologic features.)

It's easy to forget, gazing at this state's rich forests and snowy peaks, that the entire landscape has a volcanic past—and potential future, for that matter. The Cascades are part of the Pacific Ring of Fire, a wide-ranging archipelago of volcanoes that circles the Pacific Ocean. All known volcanic eruptions in the contiguous United States have occurred in the Cascade Range, the most recent and memorable being the eruption of

Mount St. Helens in 1980. But many other smaller eruptions over thousands of years formed features throughout the region, including those found here.

Cinder cones often appear red in color from a distance, but as we walked the short trail around the shallow, saucer-shaped crater at the top of Lava Butte, we saw rocks of a variety of colors. "Look, Mom, a purple rock!" exclaimed Maris, holding it out for me to examine. Purple, indeed, and pumice-like in appearance, the lightweight rock fit perfectly in the palm of her small hand.

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# IN ONE LUXURIOUS DESTINATION

♦ **GOLF** Salish Cliffs Golf Club is an award-winning, 18 hole championship golf course. The par 72 course offers 360-degree views of Kamilche Valley, rock facings, wetland preserves, elevation changes of 600 feet with smooth transitions, outstanding directional changes, challenging bunker placement and shapes, a GPS-enabled cart fleet, driving range and a native-inspired cedar clubhouse. We are the world's only "Salmon-Safe" certified golf course.

♦ **SPA** Step inside and begin a journey that will soothe the mind and awaken the spirit. Seven Inlets Spa, a full-service spa and salon, is our newest amenity at Little Creek Casino Resort that will cleanse away your stress and renew your spirit. Our exceptional menu of professional services allow you to select treatments that will rejuvenate the mind, body and soul. Spend an hour or spend the day!

♦ **RV PARK** Experience all the amenities without leaving the comforts of home. Enjoy full RV hookups, 50 amp AC power, drinking water connections and individual sewer connections. Travelers will find generous shower spaces, laundry facilities, tv connection, Wi-Fi, pet areas and access to our exercise room, heated indoor swimming pool and hot tub.

♦ **LODGING** Our resort offers a variety of room accommodations; ranging from our well-appointed standard rooms to our luxurious Super Suites. We have an indoor heated pool, oversized hot tub, state-of-the-art workout facility, free Wi-Fi and a complimentary business center.

♦ **GAMING** Little Creek Casino Resort offers the maximum gaming experience: slot machines, blackjack, craps, roulette, pull tabs, poker, keno and bingo. We have the best mix of electronic games in the area. Enjoy the excitement and action of table games where we offer a variety of games and limits to suit all levels of play.

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♦ **ENTERTAINMENT** Known for showcasing the best live acts around, we've featured comedians such as Bill Cosby, Dennis Miller, Jay Leno, Steve Martin and Vince Vaughn - entertainers such as Kenny Rogers, George Thorogood, B.B. King, Paul Rodgers, Rick Springfield and Blake Shelton.

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At the Lava Lands Visitor Center, at the base of Lava Butte, we had the opportunity to float some of these pumice rocks in water, see a core soil sample layered with ash falls from the eruptions of Mount Mazama (which collapsed to form Crater Lake) and Mount St. Helens, watch video of a lava flow in action and peruse a 3-D map of the entire monument.

The Lava Cast Forest, our next destination, is another unique geological gem of Newberry. Lava flowed around living trees here about 7,000 years ago, ultimately incinerating the biomatter, but not before hardening into a cast, or mold, of the tree. During our traverse of a mile-long interpretive trail, the two girls peer into the dozens of rocky, circular holes that remain here, climbing inside the larger ones. "They are like tree ghosts," Libby says.

A little more than 100 miles east and north of Newberry is the John Day Fossil Beds National Monument, which protects one of the longest and most continuous records of evolutionary change and biotic relationships in North America. John Day NM consists of 14,000 acres found in three separate units, each in the John Day River Basin. The deep ravines carved by this river have revealed fossils of great variety and age. Fossils found in John Day include a wide variety of plants and more than 100 species of mammals, including ancient saber-toothed cats, horses and camels.

The Sheep Rock Unit is best known for its 30-million-year-old green claystone layers and vertebrate fossils; the Painted Hills Unit is renowned for hues of red, orange, black and tan found in exposed volcanic layers on rolling hillsides; and the Clarno Unit is home to the Palisades, a cliff formed by a series of ancient volcanic mudflows that now sits high above the surrounding landscape.

It's difficult to cover all three units in one day, but a visit to the Thomas Condon Paleontology Center, in the Sheep Rock Unit, allows glimpses into each, as well as the opportunity to study many fossils close up. The Cant Ranch Museum is another worthwhile destination, with exhibits that focus on the human history of the area.



**Two weeks after** our first adventure, we drive 30 miles south and east of Lava Butte to Newberry Crater itself. Though the primary interpretive center for Newberry is at Lava Lands, the heart of the Newberry Monument is this huge shield volcano. In its crater are many opportunities for exploration, including two lakes, East and Paulina; Upper and Lower Paulina Creek Falls; and the 7,985-foot Paulina Peak, all accessible by car in the summer. The Big Obsidian Flow, on Newberry's flanks, is the youngest volcanic formation in the monument, at just 1,300 years old.

We embark on the Big Obsidian Flow trail through a landscape of black, sharp and frequently glassy obsidian on a day much different from that of our first tour. The weather has shifted, and today the temperature won't top 60, and the skies are cloudy and windy. Central Oregon is in the high desert, and while the region gets much less rain than western Oregon, temperatures can vary widely, with cool weather even in the summer; conditions can suddenly turn, so it's wise to be prepared for a range of weather situations. Even under threat of a thunderstorm, however, the obsidian flow is dramatic and lovely, made even more so by the contrasting views of Paulina Lake close by and the Cascade Range in the far distance.

Remarkably, the Obsidian Flow still holds a lot of snow, reminding us that at an elevation of between 6,000 and 7,000 feet, Newberry is indeed a mountain. We pick our way through snowfields and the black, glassy sheen of seemingly endless obsidian before making our way back home with a new understanding of the volcanic legacy that lies underfoot. ■

*Kim Cooper Findling is the editor of Central Oregon Magazine and an ambassador for Travel Oregon.*

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