Welcome to Central Oregon!

This year’s Volcanic Vistas celebrates Scenic Byways and Community Connections. Scenic Byways provide connections between natural resources, communities, people and places. Scenic Byways create a bridge to the natural environment for recreational opportunities and provide interpretation of the geological and historical events that have drawn people to central Oregon for years. Central Oregon and the Forest Service have a great deal of pride in the Scenic Byways found here. Journeys on the Cascade Lakes, Outback, and McKenzie-Santiam National Scenic Byways all begin on the Deschutes National Forest. Central Oregon communities benefit from the tourism and recreation opportunities promoted by the National Scenic Byways Program. Other less traveled tour routes are to be found on BLM’s Back Country Byways. These are hidden gems full of surprises as well.

We hope your discoveries and adventures this summer will be filled with beautiful scenery and fun activities. We also hope you will enjoy these Volcanic Vistas stories about community connections and partnerships that work together to protect valuable resources and to provide both visitors and residents with the unique recreational experiences that are a vital part of all central Oregon communities.

Be sure to have fun and be safe!

Leslie Weldon  
Forest Supervisor  
Deschutes National Forest

Jeff Walter  
Forest Supervisor  
Ochoco National Forest & Crooked River National Grassland

What’s Your Interest?

The Deschutes and Ochoco National Forests are a recreation haven. There are 2.5 million acres of forest including seven wilderness areas comprising 200,000 acres, six rivers, 157 lakes and reservoirs, approximately 1,600 miles of trails, Lava Lands Visitor Center and the unique landscape of Newberry National Volcanic Monument. Explore snow-capped mountains or splash through whitewater rapids; there is something for everyone. It’s easy to see that Mother Nature worked overtime here.

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Be Safe!

Outdoor Safety

When venturing out for the day, know your limitations. Always carry food and plenty of water... and drink it! Wear sturdy footwear, the terrain here can be rugged and unforgiving. A hat and sun-screen are advisable to protect against heat and sunburn. Do not hike alone. Tell someone your trip plans (destination and estimated return). Use maps. If your vehicle breaks down, stay with it. It is much easier to find a vehicle than a wandering person. Should you find yourself in trouble, don’t panic. If you have your ten essentials and have followed basic precautions, help will be on the way.

Cell phones should not be relied upon as a top priority safety item. Many areas within and adjacent to the Wilderness areas do not have full coverage so service is not always available and batteries wear out without warning.

Ticks and Mosquitoes - Ticks can be found wherever there is vegetation and mosquitoes wherever there is moisture. Prevention is best. Wear light colored clothing, a long-sleeved shirt and pants (tucked into your socks in tick country). Insect repellent containing DEET can be sprayed wherever there is vegetation and mosquitoes -10 Essentials” with you?

Be safe:

- Take cover indoors.
- Swimming, boating, fishing, get out of the water. If your hair stands on end, take immediate action.
- Avoid trees. Go to a low area.
- A car provides the best cover - roll up all windows, do not touch any metal parts.
- While hiking, carry a 4 foot square piece of polyethylene as an insulator, crouch down on it, knees and feet together. Crouching lessens your chances of becoming a lightning rod.
- Groups attract lightning - separate.
- Get away from rocks. Rocks don’t hold much water and your body does.
- Get off your horse. It may have metal shoes, bit and rigging in the saddle. If time, unsaddle your animal and put it in the brush.
- Turn off and move away from electronic windows, do not touch any metal parts.

Weather Averages

Warmest Month .......... Mid-June, July and August
Warmest Day ............... August 1990, 103° F (39.4° C)
Coolest Months .......... December, January and February
Coolest Day ................ January 1980-25° F (-30.6° C)
Average Yearly Rainfall ....... 11-19 inches
Average Yearly Snowfall .... 15-77 inches
Average Days with Sunshine .......... 271 days

Lightning, One Strike, You’re Out

Thunder and lightning storms occur frequently. If you are caught in a storm, follow basic safety procedures. Start counting when you see the lightning and stop when you hear the thunder. A ten second count means that lightning is two miles away (4-5 seconds per mile).

- Take cover indoors.
- Swimming, boating, fishing, get out of the water. If your hair stands on end, take immediate action.
- Avoid trees. Go to a low area.
- A car provides the best cover - roll up all windows, do not touch any metal parts.
- While hiking, carry a 4 foot square piece of polyethylene as an insulator, crouch down on it, knees and feet together. Crouching lessens your chances of becoming a lightning rod.
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- Turn off and move away from electronic

Production of this publication is through a partnership between the Northwest Interpretive Association (NWIA) and Deschutes National Forest.

Recreating With Pets

Many people recreate with their pets both summer and winter on National Forest lands and trails. You are responsible for the safety of your pet as well as for the safety of others.

- Dogs are required to be on leash in developed recreation sites on Forest Service lands which includes campgrounds, day-use areas, and trailheads. Leashes are also required on all day-use areas along the Deschutes River corridor between Benham East and Meadow Camp from May 1 thru October 1.
- Only a portion of the Three Sisters Wilderness requires dogs to be leashed and under physically restrictive control from July 1 to September 30. Dogs are required to be on leash at Moraine Lake, Green Lakes, Todd Lake, Broken Top and associated trails.
- On most trails, dogs are not required to be on leash but must be within 15 feet and under reliable physical or voice control at all times.
- Keep pets under control to prevent fights with other dogs, harassment to wildlife, or injury of other people.
- Provide your pet with water at these higher altitudes.
- Avoid taking your pet on jagged rocks and sharp surfaces found on the volcanic terrain.
- If you lose your pet, call the Humane Society of Central Oregon at 382-3537.
- If you find a pet, call the Bend Bulletin at 385-5809 to run a “Found Pet” ad for free.

Car Clouting-15 Seconds or Less

Trailheads, parks and monuments have become increasingly popular sites for car clouting, vandalism and thefts from vehicles. Car thieves prefer to prowl parking lots and campgrounds. If you are hiking or tent camping, take all of your valuables with you or keep them hidden in your trunk. Notify authorities immediately if you see suspicious characters or if you are a victim of car clouting or any other crime.

Weather Safety

Central Oregon’s weather can change drastically in a short period of time. Be aware whether you’re hiking, boating, backpacking or just sightseeing. The summer temperatures can reach 100 in the daytime and may dip into the 30s at night. It can snow in July! Be prepared!

Carrying plenty of water is a must on any outing. Mountain streams look refreshing but could contain the parasite giardia. Before drinking water from these sources, boil it 3 to 5 minutes, or use a 1-micron portable water filter. A hat and sun-screen are advisable to protect against heat and sunburn. Carry a little food, a windbreaker and have a safe visit.

Volcanic Vistas

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Robin Gyorgyfalvy

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Margot Bucholtz

A Special Thank You to all the contributing writers, poets, artists and photographers.

Helpful Web Sites

Deschutes & Ochoco National Forests     www.fs.fed.us/r6/centraloregon
Northwest Forest Pass (to purchase)     www.naturenw.org
U.S. Forest Service                   www.fs.fed.us
Bureau of Land Management           www.blm.gov
National Park Service                www.nps.gov
Oregon State Parks                   www.prd.state.or.us
Central Oregon Visitors Association  www.covisitors.com
High Desert Museum                   www.highdesert.org
Wildlife Viewing Site                www.fs.fed.us/r6/centraloregon/wildlife
The Museum at Warm Springs          www.warmsprings.biz/museum
Sunriver Nature Center & Observatory www.sunrivernaturecenter.org

Need More Information?

Deschutes National Forest       383-5300
Bend/Fort Rock Ranger District  383-4000
Sisters Ranger District         549-7700
Crescent River Ranger District  433-3200
Bend Seed Extractory (tours by appt.) 383-5481
Redmond Air Center (tours by appt.) 504-7200
Ochoco National Forest          416-6500
Paulina Ranger District         477-6900
Lookout Mountain Ranger District 416-6500
Lava Lands Visitor Center       593-2421
Historic Paulina Lake Guard Station 536-8802

Celebrating Scenic Byways & Community Connections
Discovering the Deschutes River and Black Rock Trail

The fresh smell of ponderosa pine and the soothing sounds of the nearby Deschutes River will greet you as you begin to explore the Deschutes River Trail starting just outside of Circle Seven in Sunriver and intersecting with the Black Rock Trail at the Benham Falls East parking lot while ending at Lava Lands Visitor Center. During the fall of 2003 a seven and a half mile trail was completed by the U.S. Forest Service giving bikers, hikers, and sightseers recreational opportunities to experience and see a part of Central Oregon’s unique landscape. When exploring the first three miles of the trail you will wind through a gentle sloping forest overlooking the Deschutes River. You may be fortunate to see different types of wildlife associated with the forest and riparian areas along the river. Animals that inhabit the area include deer, elk, coyote, raccoon, and a variety of birds including eagles and osprey.

The Benham Falls East parking area located at mile marker three provides an excellent setting for taking a break and learning about the history of the area through several interpretive signs. There are restrooms and picnic tables scattered throughout a giant stand of ponderosa pine hundreds of years old. These majestic orange and yellow trees were left by the Shelvin-Hixon Timber Company so their families could enjoy picnic outings near the river in a park-like setting. The ponderosa pines tell a story of the historical significance of the area associated with the Deschutes River. This is explained at the half mile interpretive trail to Benham Falls and the quarter mile interpretive loop to the old mill site. Forest Service Road 9702 at Lava Butte will take you to the Benham Falls parking area.

The last section of trail to Lava Lands Visitor Center skirts the flanks of a seven thousand year old lava flow from Lava Butte. Lava from this flow backed up the Deschutes River creating many of the cascading waterfalls on the river as you head towards Bend. Lava Lands offers an excellent place to fill your drinking water, take a break, and enjoy displays and exhibits that speak to the past and present features that continue to shape Central Oregon. The best times to use the Deschutes River and Black Rock Trail are May through September. You can start on either end of the trail and parking is available at a pullout northeast of Circle Seven off Forest Road 600 in Sunriver and at the south parking lot at Lava Lands.

— Jason Merwin, Interpretive Specialist
Pringle Falls Experimental Forest - 60 Years of Forest Research in Central Oregon

Many visitors traveling through Central Oregon might think that little research has been conducted in these natural-appearing forests straddling the Deschutes River. Others may not realize that, during the time when most viewed these forests mostly as vast sources of timber wealth for building the local economies, a forest research community was quietly at work, eventually locating a dedicated research center in Bend in 1946.

Yet a fascinating story can be told of the many decades of research that has taken place in these forests of Central Oregon, and notably within the Pringle Falls Experimental Forest. As this story dates back to the early days of the Forest Service, a familiar name or two shows up from time to time.

The Early Years (1914 - 1930s)

In 1914, Thornton Munger, a colleague of the founding Forest Service Chief, Gifford Pinchot, selected the Pringle Falls site in Central Oregon for development of an "eastside" ponderosa pine research facility. The purpose of such an establishment was to gain a better understanding of the many forest resources, the unique ecology of these forests east of the Cascade Mountains, and how the forest would respond to environmental changes, including timber harvests, reforestation and even wildfires.

Pringle Falls, the oldest experimental forest in the Pacific Northwest, was developed as part of a national network of "outdoor laboratories" for the national forests. By 1936, two Research Natural Areas had been established to provide for non-manipulative studies and research applications. The larger parcel of the experimental forest, Pringle Butte (7,520 acres) is located approximately 7 miles west of Wickiup Junction, in southern Deschutes County. The smaller parcel, Lookout Mountain (3,535 acres) is located about 12 miles due west of the community of Sunriver. Both parcels together provide the backdrop to those many years of diligent scientific studies.

Experimental Forest in Full Swing (1930s – 1970s)

The "salad days" for the experimental forest began in the mid-1930s, lasting through the 1970s. Early on, forest researcher Paul Keen published a rating system for evaluating the health and vigor of ponderosa pine trees in 1936. This landmark research application, which became known as the "Keen" classification system, is still used by foresters today to quickly assess the condition of stands and determine treatments needed.

Pringle Falls was established to provide for non-manipulative studies and research applications. The larger parcel of the experimental forest, Pringle Butte (7,520 acres) is located approximately 7 miles west of Wickiup Junction, in southern Deschutes County. The smaller parcel, Lookout Mountain (3,535 acres) is located about 12 miles due west of the community of Sunriver. Both parcels together provide the backdrop to those many years of diligent scientific studies.

Four years later I was with a group conducting one of the first surveys for rare plants on this ground. To our great surprise, we found one of Oregon's rarest—and goofiest—plants, called the pumice grape-fenn.

This perennial plant is only found in Central and South-central Oregon, and before our discovery, was only known to occur on exposed mountain tops. It is only about 1½ inches tall and belongs to a primitive group of plants that behaves more like mushrooms than "regular" plants, because it doesn't appear above-ground every year.

The Bend Silviculture Lab was shuttered in 1996, and much of the research passed on to more distant research facilities. While certainly not operating at the same pace as in previous decades, research continues on the Pringle Falls Experimental Forest. Current work is ongoing at the experimental forest, with scientists from the Pacific Northwest, Pacific Southwest, and university research communities participating. After all, the Pringle Falls Experimental Forest still provides a host of valuable information on the pine forests that we all enjoy in Central Oregon.

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Recommended reading for additional information:


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Outback Scenic Byway - Highway 31

Twenty years ago the lodgepole forests along Highway 31, Oregon's Outback Scenic Byway, were attacked by beetles and subsequently fell down. With the trees falling every which way across themselves, it looked like a game of pick-up sticks for the giants. I used to drive through this scene in 1986, and would've been, ahem, challenging to agree that this had potential for Scenic Byway status.

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One year you might find 100 plants, the next year 30, with the other 70 deciding to take the year off! We found that two things the grape-fenn needs—pumice soils and cold air—were there at this site. Perfect habitat.

So I learned this area was home to more than just a brown horizontal forest. And the grape-fenn being there was no fluke: if you stepped up out of the lodgepole depression into the surrounding forest of big ponderosa pines—what most people would probably call beautiful—the grape-fenns went away. Step down into the cross-mess—there they were.

Sixteen years after our discovery, the dead trees have mostly been removed and a new forest of young lodgepole pines is growing. And at its feet, the little grape-fenns continue on their own unique journey. It is still not your classic garden spot. But in this section of Oregon's Outback, an appreciation of things great and small is all that you need.

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Charmane Powers, Ecologist/Botanist

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Old Forest Service Stations Become Recreation Rentals

Historic Cold Springs Guard Station, nestled among aspens and pines west of Big Summit Prairie on the Ochoco National Forest some 45 road miles west of Prineville, Oregon, is for rent. That’s right, for just $50 a night you can rent this historic U.S. Forest Service station in Oregon’s beautiful Ochoco Mountains where, in addition to solitude, watching wildlife, viewing wildflowers, hiking, mountain biking, and fishing are enjoyed.

In the 1930s Cold Springs Guard Station cabin served an important role as a guard station and as a switchboard station connecting calls between fire lookouts, guard stations, and the local communities. No longer needed for these purposes, this piece of Forest Service history continues to serve the citizen-owners of the National Forest System as a recreation resource. Equipped with a propane stove and solar refrigerator, it has solar and propane lights, propane heat and hot water. Furnished with a couch and six beds, it sleeps eight comfortably. A large outside deck gets visitors close to fresh air and sunshine in comfort.

Visitors bring their own food, trash bags, personal gear, and sleeping bags. For reservations, go to the National Recreation Reservation System at http://www.reserveusa.com. While the Cold Spring Guard Station is the only recreation rental currently available on the Deschutes and Ochoco national forests, others are planned. It takes time and money to turn surplus historic administrative sites into recreation rentals. Projects to do so are carried out with the help of Passport in Time (PIT) volunteers. Historic Fall River Guard Station, for example, was renovated by a June 2005 PIT project that completely restored and painted its exterior and interior. Plans call for this two bedroom cabin, just 15 miles from La Pine by paved road at the headwaters of the famous fishing stream for which it is named, to be ready to rent in 2007.

Another PIT project this year is scheduled to renovate the ranger residence at historic Cabin Lake Ranger Station at the southern end of the Deschutes National Forest about 40 miles south of Bend. Used until recently as a seasonal fire and project crew station, the Cabin Lake station was headquarters for the five district rangers who ran the old Fort Rock Ranger District between 1921 and 1945. Adaptive reuse of old ranger stations, guard stations, and fire lookouts develops recreation resources as it preserves heritage resources. Complete information about National Forest System recreation rentals is the Pacific Northwest is available at ranger stations. - Les Joslin, Wilderness Associates

The Paulina Lake Guard Station Story

“Early in the afternoon of June 15, 1942, John P. Robins, with his wife Helen and their sons Dick and Dave – aged seven and four, respectively, packed in tightly with gear and groceries – drove his 1939 Packard coupe over a rise in the road from which his family got its first look at Paulina Lake. The lake was ahead and slightly to their left. To their right…was the newly completed Paulina Lake Guard Station.”

The Robins family didn’t know it then, but that was the beginning of a 17-summer odyssey in that part of the Deschutes National Forest that in 1990 Congress designated the Newberry National Volcanic Monument. Their odyssey, which began that summer of 1942 and lasted through the summer of 1959, is the subject of a little book called Seventeen Summers at Paulina Lake Guard Station written half a century later by the two Robins boys and published this spring by Wilderness Associates of Bend.

“By the spring of 1942, with the United States engaged in World War II, the Forest Service faced a manpower shortage so severe it hired high school boys as fire lookouts,” the Robins’ book explains. “Ranger Henry Tonseth needed a good forest guard at the just-built Paulina Lake Guard Station. John Robins, a married father and schoolteacher in his early forties, was available. And he was able. He knew the country and he knew the Forest Service. He was intelligent and he was handy. He was just what the doctor – or, in this case, the ranger – ordered. On June 15, 1942, he became the first forest guard stationed at the new Paulina Lake Guard Station.”

With two popular fishing lakes, two resorts, and four campgrounds, Newberry Crater was the recreation center of Ranger Tonseth’s district. True to the later Forest Service motto, Forest Guard Robins carried out the charge of “caring for the land and serving people.” A forest guard was a seasonal assistant to a forest ranger, and a guard station was a satellite of a ranger station.

With many never-before-published historic photographs of the Newberry Caldera and the Robins family, the book is available at Lava Lands Visitor Center, the historic Paulina Lake Guard Station gift shop, Deschutes National Forest sales outlets, central Oregon bookstores, and from the publisher at www.wildernessheritage.com.

Historic Elk Lake Guard Station Welcomes Byway Visitors

Cascade Lakes National Scenic Byway visitors can drive into the past this summer at Historic Elk Lake Guard Station where Forest Service volunteers interpret the life and work of the old-time forest guard as they provide up-to-date information on Deschutes National Forest recreation opportunities. When recreation boomed at Elk Lake in the early 1920s, the ranger in Bend needed a guard there to assist visitors, care for campgrounds, and protect the forest. Elk Lake Guard Station, a log cabin, was built in 1929 as this guard’s headquarters.

After almost 70 years of service and three years of restoration, this historic station was officially dedicated on August 25, 2001, as a visitor information center and interpreted historic site for Deschutes National Forest visitors. Open for 12 weeks every summer since, it has served thousands of visitors. Just over 30 miles from Bend on the northwestern shore of popular Elk Lake, Historic Elk Lake Guard Station is open this summer 9 a.m. to 4:30 p.m. daily from June 20 through September 12. If the flag is flying, the station is staffed and maps and information are available. The volunteer interpretive specialist will be happy to see you.

To get to Historic Elk Lake Guard Station, follow the Cascade Lakes Scenic Byway a dozen miles past Mt. Bachelor. Look for the “Historic Site” sign at the northern junction with Elk Lake Loop Road (Forest Road 4625). Turn left onto Elk Lake Loop Road, then take the first right. The station is at the end of a short paved road. If approaching from the south, take the first right turn after Elk Lake Resort, then turn right again onto the access road. Sometimes this summer there will be major improvements to both the road and the site. These are funded by the Federal Highway Administration through the Oregon Forest Highway Enhancement Program.
Experience Today

Exciting Changes to Lava Lands Visitor Center

Lava Lands Visitor Center is being upgraded this summer with a building remodel, new 1500 square foot addition to house a lobby, reception area, and gift shop and new exhibits designed by Lehman Cameron Studio of Seattle, Washington. The building architect is StatsbylBrun of Portland, Oregon, also the designer for The Museum at Warm Springs.

In addition to sharing the same architect, we have an incredible partnership with the Confederated Tribes of Warm Springs through The Museum at Warm Springs. Through a special loan, the Tribal Youth Art Exhibit “Celebrating Imagination” was shown at Lava Lands during the 2004 season to rave reviews. In 2005, once again The Museum at Warm Springs loaned Lava Lands a special traveling exhibit “Yesterday, Today and Tomorrow” which commemorated the 150th anniversary of the Middle Oregon Treaty. Signing of this Treaty ceded 10 million acres to the U.S. government to make room for incoming settlers with only 644,000 acres retained as today’s Confederated Tribes of Warm Springs Reservation. This provided an important centerpiece for the “Celebrating the Future by Honoring the Past” exhibit which included a photographic exhibit of the Forest Service and City of Bend centennial celebrations. Lava Lands also celebrated its 30th anniversary last summer with a multi-cultural presentation of musicians, dancers, and actors.

The exciting changes coming to the visitor center will be the first in over 30 years. The interpretive theme of the new exhibits show the interconnections between the Geology, Ecology, Climate, and Culture of central Oregon. The Museum at Warm Springs shared an accurate portrayal of their heritage and history and once again, provided us with a special loan. Breathtaking pieces from their private collection will share with visitors the new exhibits on Culture as exciting and realistic as possible.

Carol Leone, Executive Director of The Museum at Warm Springs, agrees that our partnership greatly benefits central Oregon communities because their mission is to preserve, advance, and share the knowledge of the cultural, traditional, and artistic heritage of the Confederated Tribes of Warm Springs. During the summer of 2007, Lava Lands Visitor Center will have a grand opening and a conservation symposium when the new exhibits and remodel are completed.

--- Robin Gyorgyfalvy, Director

In the Rocks....Rockhounding in Central Oregon!!

The Prineville District BLM, Prineville-Crook County Chamber of Commerce, and Ochoco National Forest/Crooked River National Grassland joined forces to update the 1969 Rockhound Map. What were you doing in 1969? In 1969, family rockhounding outings were popular and still are today. Over the past 50 years, rockhounding in the Ochoco Mountains and central Oregon has been a popular activity for visitors from all over the western United States. Currently a third of visitor inquiries to the Chamber are about rockhounding, the fifth major attraction in the county. Crook County is known to many as the rockhound capital of the world because of a wide variety of rocks types found in a relatively small area.

A chain of volcanoes in eastern Oregon began erupting about 50 million years ago during a time of tropical climate conditions that supported lush woodlands. Volcanic and sedimentary rocks from these volcanic formations are known as the Clarno Formation. During this time period, ash on steep volcanic slopes frequently mixed with tropical rains and produced large-scale mudflows that swept across the landscape, entombing plants and animals preserving them as fossils. Entombed trees and wood debris became much of the petrified wood that rockhounds in central Oregon collect today. During past volcanic activity, superheated groundwater circulated through rocks filling cracks and voids with quartz, calcite, cinnabar, and other minerals. Today, the Clarno and John Day formations are highly eroded, exposing many different rock layers rich with semi-precious gems, creating a paradise for rockhounds. Many members of the quartz family of semi-precious gemstones found in these deposits include crystalline quartz, amethyst (rare), and various types of chalcedony such as agate and jasper. A particular favorite of rockhounds are agate-filled nodules called thunder eggs, the state rock of Oregon.

There are areas free to the public for access in search of agate, jasper, limb cast, petrified wood, obsidian, moss, dendrite and angel wing. These areas are managed by the Bureau of Land Management and the Ochoco National Forest. Rockhounding ventures encompass hunting thunder eggs at White Fir Springs to discovering agate limb casts near Paulina. Visitors wishing to collect obsidian may do so at Glass Butte. Rockhounding collection sites are for personal use only and not for commercial resale.

--- Carrie Gordon, Forest Geologist and Ryan Franklin, BLM Geologist

Fine Dining at the Lakeside Café: a Fishy Tale

Imagine a restaurant where while you are choosing your favorite item from the self-serve menu, someone else is hoping to make a feast of you. Welcome to the Lakeside Café where payment is typically in terms of energy expended, and where the energy gained often goes toward avoiding the being the chosen delicacy of someone else’s cuisine. Yes, this is a place where you are also on the menu, where your own actions either kill you or cause you to thrive. The dining is fine so long as someone else is hoping to make a feast of you. Welcome to the Lakeside Café where payment is

--- Prineville-Crook County Chamber of Commerce

Did You Know? Blue-green Algae (Cyanobacteria) Facts

Algae are small, often microscopic organisms, without stems, leaves or roots. Blue-green algae are the most primitive form of algae. Only certain species of blue-green algae are capable of producing toxins and even these species are harmless most of the time. Blue-green algae, or cyanobacteria, reproduce rapidly in fresh water when the amount of sunlight, temperature and nutrients are adequate. Within a few days a “clean” lake, pond, or ditch can become cloudy with algae growth. This is called a bloom. Blue-green blooms usually float to the surface and can be several inches thick near the shoreline.

Several species known to sometimes produce toxins harmful to people and animals live in lakes on the Deschutes National Forest. Although blue-green blooms can create nuisance conditions and undesirable water quality, most blue-green blooms are not toxic.

An algae bloom is a rapid and massive buildup of algae cells that imparts a green color to the water. It is often concentrated along the shore by wind and waves. It often looks like pea soup or green cattail paint. Algae are usually suspended in the water column or aggregated into floating mats. They do not grow from the bottom like mosses or weeds.
The Deschutes, Metolius and Crooked Rivers

Deschutes River

Source: Cascade Range near Mt. Bachelor. The Deschutes begins as outflow from Little Lava Lake, flows into Crane Prairie and Wickiup reservoirs...tumbles through the high desert ending at the confluence with the Columbia about 15 miles east of The Dalles.

Wildlife: Deer, elk, eagles, osprey, hawks, heron, waterfowl, mink, otter, beaver, bear.

Fish: Coho and kokanee salmon, sculpin, mountain whitefish, rainbow, bull, and brown trout.

Flora: Wildflowers in Central Oregon bloom along rivers first. Like many riparian (near water) zones the banks of the Deschutes are beautiful and in danger of being trampled by love. Much effort is going into repairing damage caused by years of use. Someone you know may be volunteering their time to help. You can help by respecting restoration projects, staying on designated trails and leaving no trace of your visit.

Fun: Whitewater rafting - outfitter guides offer 1, 2 or 3 day trips. Canoeing - Wickiup Reservoir to Benham Falls, with a portage around Pringle Falls, is a favorite stretch AND kayaking, fishing, mountain biking, hiking, horseback riding, and boating are all favorite pastimes. Rentals are available for most of the activities listed - check the phone book.

Crooked River

Source: The North Fork starts at Sierra Springs and the South Fork heads from numerous springs between Snow Mountain, Hampton Buttes and the Glass Butte drainages. The river joins the Deschutes and Metolius rivers at Lake Billy Chinook. The river also passes through Smith Rock State Park.

Wildlife: Deer, elk, eagles, osprey, snakes and small mammals.

Fish: Red-band trout, bridge-tip sucker, dace, three types of sculpin, and northern pike minnow.

Flora: Like postcards from the last century, open, park-like stands of ponderosa pine shade the upper Metolius - remnants of quiet forests that once stretched from mountainside to desert fringe. Wildflowers and other plant life seem to grow along the banks as if they were fertilizer. Rare beauty requires strong stewardship. Stay on designated trails, leave no trace of your visit and take only photos and memories home.

Metolius River

Source: The Metolius "bursts" out of the ground along the base of Black Butte near Sisters. It picks up volume from a series of springs, runs north around "Metolius Horn" and quickly ends its cold, clear journey in Lake Billy Chinook about 30 miles from the source.

Wildlife: See Deschutes above.

Fish: The river is about 50 feet wide, 50 degrees Fahrenheit and drops about 35 feet per mile. The steady flow and constant chilly temperature makes it unique among Oregon rivers and prime habitat for the rare bull trout. Water quality is exceptional. Native species - chinook and sockeye salmon, rainbow and bull trout, mountain whitefish. Introduced species - brown and brook trout, kokanee salmon.

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Tumalo Creek, Restoration of a Watershed Damaged by Fire

On July 24, 1979, an abandoned campfire along Bridge Creek became a devastating wildfire as it quickly spread to old-growth stands of mountain hemlock, white fir, ponderosa pine and Engelmann spruce in Tumalo Creek watershed. When it was over, over 4,300 acres had been damaged and burned, including nearly 3 miles along Tumalo Creek.

Vegetation that once provided shade and wildlife habitat was gone. Exposed ground susceptible to erosion during rainstorms and snowmelt allowed sediment to wash into both Tumalo Creek and Bridge Creek. Turbidity and sedimentation increased within Bridge Creek, a source of drinking water for Bend. After the fire, much of the timber remaining adjacent to the stream was removed. Without streambank vegetation and large woody material instream and on floodplains, Tumalo Creek began to unravel and erode. The stream widened, becoming shallower and braided, pools and fish habitat decreased, and wetland and riparian habitat was lost.

Nearly a decade later, Tumalo Creek was in need of help. Early restoration efforts added trees to improve fish habitat but channel stabilization had not been addressed. Over time, new restoration techniques for channel stabilization were developed to fully restore Tumalo Creek.

In 2003, the Tumalo Creek Bridge to Bridge Restoration Project was initiated using stream restoration design based upon established principles using past and present aerial photography and data collected on reference reaches, which are undamaged areas of Tumalo Creek and other nearby streams. The channel was designed to decrease channel gradient, make the channel narrower and deeper, and increase the channel sinuosity (meandering) and length.

Restoration would now be accomplished by reshaping sections of the channel, placing boulder and log jam structures, forming gravel bars, and creating side channels and small ponds.

Trees placed within the channel increased from 19 to 200 pieces/mile in order to increase fish habitat, particularly for the sensitive species redband trout. Over 65,000 native riparian shrubs and trees will be planted to re-establish bank stability and provide future shade and large trees instream. Noxious weeds are also to be removed as part of the restoration.

The project is in its third and final phase to be completed this summer. When done, 2.8 miles of Tumalo Creek will once again be a properly functioning stream with abundant riparian and wetland habitats that meet fish and wildlife needs. As a follow-up to the restoration work, multi-year student monitoring programs of hydrological and biological parameters will take place through partnerships developed with Summit High School and Cascade Science School.

Because of the site’s history and proximity to Bend, there are many educational and awareness opportunities for wildfire prevention, sustainable forest practices, habitat restoration, riparian vegetation, and other elements of watershed function. The Upper Deschutes Watershed Council hosts a tour of the site in Riverfest, the region’s annual educational event. Interpretive signs relating to the site’s history, restoration, and watershed function will be installed throughout the Tumalo Creek watershed.

Numerous partner contributions making this project possible are the Upper Deschutes Watershed Council, National Forest Foundation, Oregon Watershed and Enhancement Board, and the Deschutes River Mitigation and Enhancement Board. Also contributing are the Oregon Department of Fish and Wildlife and contractor Hap Taylor and Sons.

- Tom Walker, Fisheries Biologist
**Explore Newberry Volcano**

**History**

Newberry National Volcanic Monument is just south of Bend, Oregon, off Hwy 97. Community concern for the preservation of the area led to the establishment of the Monument in 1990. The Deschutes National Forest currently manages the Monument to preserve and protect the area’s unique geologic and ecological resources. The exceptional scenic and recreational opportunities cover 50,000 acres.

**Geology**

Newberry Volcano is one of the largest shield-shaped volcanoes in the lower 48 states, covering over 600 square miles. The Monument is located along a group of faults known as the Northwest Rift zone. A complex geological history indicates that the volcano has erupted hundreds of times during the last half-million years. The most recent eruption was 1,300 years ago suggesting that the volcano is still active.

The caldera of Newberry is commonly referred to as Newberry Crater but it is truly a complex of multiple volcanoes including Big Obsidian Flow, Lava River Cave, and the area within the caldera floor has gradually been filled in with ash, pumice and lava.

**Recreation**

**Boating:** Frequent steady winds make the lakes ideal spots for sailing and windsurfing. Motor boats are permitted on both lakes throughout the summer. There is a 10 mph speed limit in force, and Oregon fishing licenses are required.

**Trails:** Speed of hiking trails explore the Monument; most are open late spring through fall for hiking, horseback riding and mountain biking. The trails are also popular in winter with cross-country skiers and snowmobilers.

- **Crater Rim Trail (21 miles)**
- **Paulina Lake Trail (7 miles)**
- **Peter Skene Ogden Trail, (8.6 miles)**

**Wildlife Observation:**

The caldera is a designated wildlife refuge. Mammals include deer, elk, badger, pine marten, and black bear. The lakes are home to osprey, ducks, geese, and tundra swans. A pair of bald eagles nest along the shore of East Lake. The 4,000-foot elevation change within the Monument spans several vegetation zones, including ponderosa pine, lodgepole pine, mountain hemlock and white pine. All old growth stands are protected.

**Archaeology**

The Newberry area has been inhabited by Native Americans intermittently for the last 10,000 years. Archaeologists hypothesize that early inhabitants used this area in much the same way we do – for fishing, hunting and recreation. Obsidian from Newberry was traded up and down the Pacific Northwest and has been found as far away as British Columbia in Canada. It is unlawful to remove or damage any rock, plant or artifact found within the Monument.

**What To Do**

- **One Hour:** Lava Lands Visitor Center
- **Lava Butte**
- **Paulina Falls**
- **Big Obsidian Flow**
- **Half Day:** Benham Falls Trail
- **Lava River Cave**
- **Lava Cast Forest**
- **Full Day:** Newberry Caldera
- **Paulina Peak**
- **Paulina Lake Trail**
- **East Lake Trail**

**Schedules**

- Lava Lands Visitor Center: May 3 - September 30 Wed-Sun 9:00 - 5:00
- Lava River Cave: May 24 - September 4 Wed-Sun 9:00 - 5:00
- Newberry Welcome Station: May 30 - September 30 Wed-Sun 9:00 - 5:00

**Check for Road Conditions**

**Did you Know...**

- The flanks of Newberry are dotted with over 400 cinder or “parasite” cones. Many such cones are found along the Northwest Rift Zone, a line of fissures running from Newberry Caldera to Lava Butte.
- Based on geophysical and geologic evidence, a magma chamber (molten rock) probably lies 2 to 3 miles below the caldera floor.
- The Big Obsidian flow, found within the Caldera, formed 1,300 years ago. It is the youngest lava flow in Oregon.
- The last major caldera forming eruption probably occurred about 200,000 years ago. Since then, the caldera floor has gradually been filled in with ash, pumice and lava.
- Newberry is not part of the Cascades Mountain Range. It lies at the juncture of three major fault zones in Central Oregon.

- If Newberry Caldera is also a wildlife refuge, why would black bears and other animals ever face destruction from animal control officers? The answer is that visitors thinking they are being kind to the wildlife, feed animals or carelessly leave food where animals can raid it.

- American black bears are occasional foragers at Newberry’s campgrounds and day use sites. Bears can be very creative at food pilfering and can do extensive property damage trying to find your food. This can range from cooler clouting to breaking vehicle windows or destroying a tent.

- Black bears are very dangerous and overcome their fear of people easily. Keep your pets and children away from bears. Bears that lose their fear of humans are often destroyed because of the risk they pose for injury to people. It is your responsibility to store your food, leftovers and garbage out of bear’s and other wildlife’s sight and smell.

- Chipmunks, ground squirrels and birds may seem harmless, but these animals can be aggressive towards humans, too, biting or scratching to get food. Some may have diseases that humans can catch. Feeding these animals can encourage them to stop foraging on your own, which can lead to starvation and death during winter.

- Help keep wildlife in the Newberry Refuge wild. Do not contribute to the destruction of a bear or other animal by feeding it or improperly storing human and pet food. - Larry Pratt, Interpretive Services Operations Manager

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**Explore Newberry Volcano**

Paulina Lake from Paulina Peak, photo courtesy of Sherri Lee
Points of Interest

1. **Paulina Peak**, located four miles by road or trail from Historic Paulina Lake Guard Station, is the highest point within the Monument, 7,985 feet. The 360 degree view includes the Cascade Range from California to Washington; the Basin and Range region of eastern Oregon; and a clear view of the caldera lakes and surrounding landscape. This road is not suited to trailers or motor homes.

2. **Big Obsidian Flow** is the result of the most recent lava flow of Newberry Volcano, 1,300 years and is the youngest lava flow in Oregon. Over 170 million cubic yards of obsidian and pumice erupted from a vent about a mile south of the trailhead. Native Americans used the glass for trade and tools. A one-mile loop trail and seven interpretive signs guide visitors across a corner of the flow.

3. **Paulina and East Lakes** - The caldera may originally have held one large lake, much like Crater Lake, but deposits of pumice and lava divided the crater into two separate bodies of water. Paulina Lake is one of the deepest lakes in Oregon, 250 feet; East Lake is somewhat shallower, 180 feet. Clear and nutrient rich, both lakes support a large population of trout and salmon, stocked by the Oregon Department of Fish and Wildlife. The lakes offer excellent fishing from late spring through fall.

4. **Paulina Falls** is located just a quarter of a mile west of Paulina Lake Lodge. This dramatic 80 foot waterfall spills over volcanic cliffs into a canyon and is a short walk from the parking lot. Paulina Creek is the only surface outlet for Paulina Lake and has qualified for federal designation as a Wild and Scenic River.

5. **Lava Cast Forest** is approximately 7,000 years old. Lava from vents on Newberry Volcano flowed through a mature ponderosa pine forest. The molten lava enveloped the trees and quickly cooled around them forming a mold. The pines eventually burned to charcoal or ash. A one-mile self-guided interpretive trail winds across the lava flow, which is slowly being claimed again by young ponderosa pines.

6. **Lava River Cave** is located one mile south of Lava Lands Visitor Center on Hwy. 97. The one-mile cave is the longest lava tube in Oregon. Lava tubes form when a river of molten lava creates a channel and the sides eventually crust over to create the roof. The tube kept the flowing lava hot enough to drain out of the channel. The cave temperature is a constant 42½ degrees Fahrenheit (5 degrees Centigrade), so wear warm clothing and carry at least two light sources (only propane lanterns or flashlights please). There is an entrance fee from early May to mid-October and lanterns are available to rent.

7. **Lava Lands Visitor Center and Lava Butte** is 12 miles south of Bend on Hwy. 97. A key hub for travelers and Monument visitors, there are exhibits, a bookstore, water, trails, and picnic tables; a wide array of information services, and an energetic staff of interpreters.

8. **The Deschutes River and Benham Falls** are located on the northwest border of the Monument. The Deschutes offers some of the best flyfishing, whitewater rafting and kayaking in Oregon. A river trail from Sunriver to Bend has beautiful views for the hiker, biker or equestrian. Wildlife watching opportunities include beaver, otter, deer, elk, mink, martins, eagles, osprey and other birds.

**Newberry Caldera: One Lake Or Two?**

A question commonly asked about Newberry Caldera’s Paulina and East Lake is “Were they ever a single lake like Crater Lake?” Core samples collected by the United States Geological Survey from a geothermal test well drilled northeast of the Big Obsidian Flow in 1981 do indicate that a large lake existed here in the past. By about 12,000 years ago the separation of the two lakes was essentially accomplished. A small stream may have continued to connect the lakes for a few thousand years after the original lake was divided. This channel would now be buried under younger lava flows south of Little Crater.

Numerous volcanic features now occupy the area separating Paulina Lake and East Lake. The Interlake Obsidian Flows, which are accessible from the Paulina Lake Trail at the north end of Little Crater Campground, formed about 7,300 years ago. The Central Pumice Cone, which is visible on the west shore of East Lake, formed about the same time. - Larry Chitwood, Forest Geologist
Discover the Natural World

Crooked River National Grassland Rangeland Restoration

Native Basin Wildrye Restoration Planting

March 2006, Forest Service contractors planted 50,000 native basin wildrye grass plugs on approximately 130 acres of the Crooked River National Grassland near Madras. Plant survival monitoring will occur early summer of 2007. This project is part of the habitat restoration activities that include restoration of Grassland areas that no longer support healthy sagebrush steppe habitat.

Basin wildrye is the largest perennial bunchgrass native to the western United States. Bunches are two to four feet in diameter and up to eight feet tall with an extensive, soil-binding fibrous root system. Dense stands of basin wildrye are resistant to many aggressive, non-native weeds that can invade native plant communities. In Oregon, basin wildrye is found from the Deschutes River drainage to the Idaho border. An early to late-succession species suited to deep bottomland soils in dry (5-20” precipitation) zones, it is regarded as a primary restoration species on altered range sites that once supported stands of this grass. It provides habitat for a variety of wildlife species with deer, birds, and small mammals using dense wildrye stands for hiding, nesting, and feeding.

Native Americans used basin wildrye for medicinal purposes, fiber for mats and bedding, food preparation and storage, and winter forage for horses. On bottomland areas, basin wildrye was historically a dominant plant community that thrived under natural fire regimes. Many of these sites had thick stands of this grass when settlement began. Overgrowing and conversion of bottomlands to crop production led to the decline of basin wildrye communities.

Crooked River National Grassland Sagebrush Habitat Restoration

The basin wildrye planting is part of a larger ten year project to maintain and enhance sagebrush steppe plant communities on the Grassland. Approximately 8,000 acres of abandoned farmland will be seeded with native grasses and forbs. Bitterbrush seed has also been collected on the Grassland, and plants will be grown for restoration plantings. The intent of the project is to improve vegetative diversity and wildlife habitat by establishing deep-rooted perennial grasses, forbs, and shrubs in areas that are currently dominated by non-native grasses such as cheatgrass and crested wheatgrass.

For more information, please contact Steve Gibson, Range Conservationist, Crooked River National Grassland in Madras, 541-416-6440, or Mark Lesko, Lookout Mt. RD. and Crooked River National Grassland Botanist, at the Ochoco NF office in Prineville, 541-416-6416.

Related links:
http://www.usask.ca/agriculture/plantsci/classes/range/elymuschin.html
http://www.fs.fed.us/database/feis/plants/graminoid/ley/in/LIFE%20FORM

Magical Springs

Have you ever observed water gushing up out of the earth and wondered where it came from? Well, you are not alone. Until the 17th century, western world scientists speculated that spring water must originate from water condensing below the earth’s surface or from the ocean that somehow flows uphill. Researchers would later discover that precipitation is the answer to where the water came from.

The Upper Deschutes River Basin is unique because stream flow is mostly from groundwater sources rather than surface run-off. Browns Creek, Cultus River, Snow Creek, Fall River, Spring River are some of the springs that join together to form the Upper Deschutes River. These spring-dominated tributaries create one of the most stable flow regimes in the United States, varying little monthly or annually. The most unique characteristic of these springs is that their flow increases instead of decreases during the summer, despite the minimal amount of rainfall.

Where does the water that supplies these spring-fed streams come from? The answer lies to the west in the Cascade Mountains where springs pierce the earth’s surface. Abundant precipitation, up to 200 inches annually primarily in the form of snowfall, provides this source of spring water. A relatively young and highly permeable volcanic landscape acts as a giant sponge, easily absorbing snowmelt and rainfall through fissures and fractures. After descending and then flowing in an easterly direction, the groundwater will eventually emerge through a crack in the ground to form a spring. Depending upon the spring, it can take 9 months to several years for this entire process to occur.

Filtered through the volcanic sub-surface, the clear, cool water supplied by the springs provides excellent trout habitat and is a major contributor to Bend’s drinking water supply. This spring-fed system is among the highest quality surface water in the United States. Next time you drink water in Bend, think of the journey the water took through mountains and volcanic landscape to reach you. – Tom Walker, Fisheries Biologist

NatureScaping

Collecting wild plants is allowed on some public lands, with a permit. Call your local Forest Service office to find out which plants can be collected and where.

Everyone Pays for Vandalism

Each year thousands and thousands of your tax dollars, that could be spent on improving your recreational opportunities, are instead spent repairing damage caused by vandalism. Last year, employees of the Deschutes National Forest spent time and money removing graffiti from cave walls; removing illegally dumped garbage, abandoned vehicles and appliances; and repairing damage to cultural resources. If you see vandalism occurring – please report it!
The Hordes Have Arrived and They are Green!

They come at us like Genghis Khan and his hordes, haranguing us on our highways, whipping at our waterways, traipsing along our trails. They do millions of dollars of damage and devour 4,600 acres of country-side each year in the western public lands.

This “army” metaphor describes the march of unwanted, non-native plants into our public (and private) lands; and they have in quieted their way into Central Oregon’s natural beauty, into the ponderosa pine forests, along our most popular lakes and rivers, and into our grasslands.

These plants are called exotics for good reason: they hail from such far-flung places as the Mediterranean, Europe, and the steppes of Asia. They have names like spotted knapweed, dalmation toadflax, and houndstongue, and collectively, carry an array of weapons that can dramatically alter the way our native ecosystems work. Their arsenal includes chemicals that prevent the soil for many years. In these ways, they germinate; and can remain viable as seeds in the soil for many years. They produce a higher number of seeds per plant and a higher number of seeds that will germinate; and can remain viable as seeds in the soil for many years. In these ways, they make it harder for our native plants to compete with them.

There are other ways invasive plants wreak havoc upon our lands. Besides displacing native plants, they also reduce the diversity and quality of forage for wildlife and livestock, threaten rare plant habitats, and can increase the frequency of wildfires.

To view a map of the majority of the weed outbreaks in Central Oregon is to view a map of the major road system. Essentially anywhere a vehicle (including passenger vehicles, off-road vehicles, and heavy machinery) can go, it is possible to have a weed population present. These weeds trespass into our forests using the road system as a major pathway, with vehicles as their main vector; their seeds hitch rides on tires or their stems with seeds are caught on undercarriages and taken along to colonize new sites.

Despite the gloomy picture just painted, there is much to cheer about in the wild- land weed war. With the help of many volunteers, public land managers organize weed pulls, clip seed heads, put “biocontrol” agents (natural insect enemies) onto weed populations, arrange for herbicide spraying on certain sites, and support and participate in local weed boards and other partnerships.

For more information on weeds, and what you can do to help keep areas weed-free, local Forest Service and Bureau of Land Management offices should have brochures and information. There are also many weed sites on the world wide web. - Charmane Powers, Ecologist/Botanist

Want more information?
Many of the public agencies mentioned should have brochures and information in their offices. There are also many weed sites on the world wide web.

Local weed info in Deschutes County, Oregon – www.co.deschutes.or.us
Center for Invasive Plant Management – www.weedcenter.org
Plant Conservation Alliance – www.nps.gov/plants/alien

Ochoco Road
Leading away from urban places,
Away from confusion and stressing faces.

Past a lake to the east and then a stream,
Seeking in sunlight uncertain dreams.

The winds are cooler amongst towering pines,
Higher you’ll come and higher you’ll climb.

Once at the top seems no farther to go,
Look out and up and one foot shall you grow.

The road twists and turns back on itself,
Fooling the dreamer whose maps on a shelf.

Released through the years a scent from the trees,
Sap from the scars like tears from the bees.

The crunching of gravel and the grass’s do sway,
Wind in the needles announcing this day.

Feathered songsters chasing insect wing,
Dew of the morning to flowers clings.

It’s your special time in quiet mode,
Out there somewhere on an Ochoco road.

- Randy Hinson, Range Technician-BLM, 2006
The Cascade Lakes National Scenic Byway is our “String of Pearls.” This 66 mile drive takes you closer to the sky as you drive through Cascade peaks and alpine lakes. The air has an entirely different feel up here. You follow the journey of water from its icy origins to springs, streams, rivers, and lakes that have transformed the volcanic landscape into meadows, wildflower carpets, and mixed conifer forests.

Selected by Scenic America as one of the nation’s 10 most important byways, this route offers many opportunities for experiencing the outdoors in a wilderness setting, places to watch wildlife, open spaces for hiking and biking, a variety of lakes for fishing and boating, and special interpretive sites and trails designed for learning more about this incredible environment.

The Ray Atkeson Wayside tells you about Oregon’s photographer laureate who used photography as a way to create awareness for the preservation of Oregon’s scenic beauty. The Soda Creek Interpretive Site will teach you about how a creek was restored from a ditch to straight channel to its natural meanderings. You can catch this rush of a ride by heading west on Oregon Route 242 after slowly making your way through the town of Sisters. The loop drive will take you up to McKenzie Pass for some challenging driving, along the McKenzie River on Oregon 126, over the Santiam Pass, past Suttle Lake and Black Butte Resort, and then back to Sisters. The best time to take this drive is between July and October as McKenzie Pass is closed during winter. Minimum driving time is 3 to 5 hours.

The Outback National Scenic Byway, with its “Sounds and Colors of Silence,” is a 171 mile drive that takes you through remote small towns with tall tales as reminders of the not too distant past. This is a place where silence is transformed into pearls of wisdom and living history through the stories told by volunteers at Fort Rock Homestead Village Museum. There are several homestead-era structures which were moved from their original locations to be preserved and protected at the museum site. Visiting the cabins, school house, and church will help you appreciate the lifestyle of these homesteaders who settled the area in the early 1900s. The geology and history of this remote expanse of rimrock and sage await discovery on one mile away at Fort Rock State Park. The fortress-like rock formation that rises above the sagebrush plains is an unfordable geyser. Summer Lake is a wildlife area that is part of the Pacific Flyway where waterfowl can be viewed. Silver Lake is a lake now than a dry basin. Scattered throughout the desert are hot springs. There is an attractive rest area at Summer Lake halfway between Highway 97 and Highway 395. Lakeview is the “tallest town” in the state at 4,800 feet with Oregon’s only geyser Old Perpetual shooting 60 feet in the air every minute or so.

To find the Outback Scenic Byway, drive 33 miles south of Bend on Highway 97 to the junction 2 miles south of LaPine and then turn southeast on Oregon 31. Fort Rock Homestead Village Museum and Fort Rock State Park are 30 miles south on Oregon 31 and 7 miles east to the town of Fort Rock. The best time to enjoy this drive is spring and fall. Minimum driving time is 3 to 4 hours.

The Cascades are among the most geologically diverse areas of the U.S., with the Cascade Volcanic Province containing some of the world’s most active volcanoes. The volcanoes have had a profound effect on the landscape, carving out valleys, creating lakes, and forming plateaus.

| City | Water | Recreation Site | Volcano
|------|-------|----------------|-------
| Bend | Pond | McKenzie Pass | Mount Bachelor
| Deschutes | Deschutes | Mount Shasta | McKenzie Pass
| Klamath Falls | Pool | Lava Flow | Mount Shasta

For more information, visit www.interpretive.org. Map courtesy of Scenic America.
The McKenzie Pass—Santiam Pass Scenic Byway is a triangular loop crossing the central Cascade Mountain range. It traverses through incredible scenery and numerous ecological and climatic zones. On the east end are drier ponderosa and lodgepole pine forests, on the west side are Douglas fir and hemlock. In between are higher elevation alpine forests within a barren moonscape-like volcanic landscape.

The best way to enjoy this central Oregon scenic byway trip is to start at the East Portal interpretive site in the town of Sisters. Head west on US 20/Oregon 126 towards Santiam Junction. Almost immediately you will experience a drive through old growth ponderosa, a view featured on many Oregon postcards. Initiated by the Deschutes National Forest, along with other Federal, State and local government agencies, a program thinning undergrowth and underburning minimizes catastrophic fire occurrences, provides safe sight distances for motorists, and enhances views to the magnificent forest and important landscape features such as Black Butte. Views to a recent wildfire can be seen from the Mt Washington Viewpoint.

At Santiam Junction, continue southwest on US 20/Oregon 126 through lava fields and lodgepole pine forests to McKenzie Bridge. This is the second leg of the triangle which follows the McKenzie River and gradually transcends to Douglas fir and hemlock forests. Lush vegetation, abundant waysides, and trailheads invite you for a short excursion into the forest or view of the river. Stop at Sahalie or Koosah Falls for a spectacular view. At Sahalle Falls, the McKenzie River tumbles 100 feet over a lava dam into luxuriant green moss and fern vegetation. A short 20-minute hike along a cool and refreshing riverside trail separates the two falls.

Further along the route is the West Portal at the Cascadian style McKenzie Bridge Ranger Station which uses large timbers, stone and the craft arts. More information and interpretation is available here for your return trip to Sisters. Turning on to Oregon 242 will begin the byway’s most unsurpassed driving experience on the McKenzie Pass Highway. This section dates back to the early McKenzie Salt Springs and Deschutes Wagon Road Company's construction in 1872 to provide access from the Willamette Valley over the Cascades to the gold fields of Idaho. As a private enterprise, tolls were levied for passage until 1900 when ownership passed to the county for public use. The modern highway's design at the time over the pass of seven foot travel lanes and one foot shoulders for a total of sixteen feet in width still exists. Since it opened in 1925, the road has had no major changes, realignments or reconstruction except for replacing two log stringer bridges in the 1940's and re-surfacing.

Early promoters of the highway conceived the name, "the New York to Florence Highway," offering it as a tie to and alternative route to the Pacific Coast via the famous Lincoln Highway. It was also presented as the "Central Oregon Highway, the only highway through Oregon, south of the Columbia Gorge" with great potential of "utility of four lanes of travel."

Today, the highway over McKenzie Pass appears surprisingly narrow and winding. With limited truck traffic and a ban on semis. Proxy Falls Trailhead and Alders Springs Campground offer impressive recreation opportunities on the lower section of the highway. You'll notice a series of gates through this area. The highway is only open to traffic 6 months of the year due to snowdrifts and snow accumulation.

After climbing a series of switchbacks aptly named "Deadhorse Grade," the road eventually enters the High Cascades lava fields, the Craig Monument, and Dee Wright Observatory. The Craig Monument honors the memory of John Templeton Craig (1821-1877), an early pioneer packer and CCC crew foreman. Although he died prior to its completion, his ashes were scattered along the Cascade Crest according to his wishes. Surrounded by immense lava fields and a panoramic view of the Cascades as far north as Mt Hood and south to the Three Sisters, the Dee Wright Observatory is a favorite stop for travelers with barrier-free interpretive trails through the lava fields.

East from the summit, the road gently drops down through lava fields, lodgepole pine, and large old growth ponderosa pine. Re-entering the town of Sisters, to the south is another celebrated vista of the Three Sisters. Your tour of this spectacular byway is complete but not over as it will always welcome you back again and may become your favorite scenic byway drive through Oregon's High Cascades and Volcanic Country. - David Sell

David Sell retired this spring after 35 years of government service with the US Forest Service and Federal Highway Administration (FHWA). At FHWA he was the Forest Highway Enhancement Coordinator for Oregon and Washington. We want to thank Dave for all his work as Federal Highways Project Manager coordinating numerous successful Scenic Byways projects in central Oregon during the past seven years.
**I Spy, You Spy: Scout It Out At Lava Lands**

Cross these off as you see them in or around the Lava Lands Visitor Center.

- Smokey
- Pine Cone
- Owl
- Chipmunk
- Deer Antler
- Bunch Grass
- Bird Bath
- Lava Butte

**Can You Track an Animal?**

Draw a line from the animal to the track it would leave.

1. Cottontail Rabbit
2. Skunk
3. Chipmunk
4. Mouse
5. Owl
6. Deer
7. Pika

**Putting the Fire Out...COLD!**

Driving the Cascade Lakes Scenic Byway, you think back on the past year and how much you've looked forward to this vacation. Two weeks in the Cascade Mountains of Central Oregon where you and your family plan to hike, swim, bike and gaze at the stars after the kids are tucked into their sleeping bags for the night. You plan on camping, though you're not sure where. There are so many great campsites along the lakes, streams and high elevation meadows. The family car is loaded with camping equipment, tons of food, and you haven’t forgotten the shovel and bucket for the campfire that everyone is looking forward to. After all, a campfire is one thing we all remember from family camping trips and to not have one is, well, no fun at all.

Every year campfires left unattended and abandoned have the potential of costing millions of dollars in suppression and lost resources. Here on the Deschutes National Forest, abandoned campfires are the number one cause of human caused fires. Most of these abandoned campfires stay small and very easy for firefighters to suppress but it only takes one escaping fire to jeopardize lives, destroy property and change a beautiful area forever.

Here are some simple steps to help you properly build and extinguish a campfire. (See Renee’s illustrations) Welcome to Central Oregon! Enjoy the beauty and wonder of our area and remember: “Put it Out, Dead Out!!”

- Cathy O’Brien, Fire Prevention Officer

**Check before you go.**

For campfire restrictions Call: 1-800-523-4737 or Visit: www.fs.fed.us/r6/centraloregon/fire

**Building a Fire...**

- Choose a level area with no overhanging branches
- Dig a 4" to 6" pit
- Clear away all vegetation, including pine needles
- Circle pit with rocks
- Pile firewood up wind and 10 feet from pit
- Keep fire small & manageable
- Keep fire contained inside fire pit
- NEVER leave a campfire unattended, no matter how small

**Putting the Fire Out...COLD**

- Slowly add water until the steaming stops
- Feel heat
- Feel for heat
- Scattered, scrape, and separate
- Add more water until the steaming stops
- COLD

Illustrations - Renee Lamoreaux, Fire Prevention Officer

**Thanks Our Visiting Schools**

We thank the more than 8,000 students, teachers and parents who choose Lava Lands as their outdoor classroom every year. Lava Lands Visitor Center offers Project SNOW winter ecology and snowshoe nature tours at Mt. Bachelor January – March and Time, Tracks & Trails fall archaeology and cultural heritage September – October.

If you have a school or group that would like to visit Lava Lands or our Mt. Bachelor winter program please call (541) 383-4771. School groups do not pay a fee for entry to Lava Lands Visitor Center but must register at least two weeks before their arrival.

**Putting the Fire Out...COLD!**

Driving the Cascade Lakes Scenic Byway, you think back on the past year and how much you’ve looked forward to this vacation. Two weeks in the Cascade Mountains of Central Oregon where you and your family plan to hike, swim, bike and gaze at the stars after the kids are tucked into their sleeping bags for the night. You plan on camping, though you’re not sure where. There are so many great campsites along the lakes, streams and high elevation meadows. The family car is loaded with camping equipment, tons of food, and you haven’t forgotten the shovel and bucket for the campfire that everyone is looking forward to. After all, a campfire is one thing we all remember from family camping trips and to not have one is, well, no fun at all.

Every year campfires left unattended and abandoned have the potential of costing millions of dollars in suppression and lost resources. Here on the Deschutes National Forest, abandoned campfires are the number one cause of human caused fires. Most of these abandoned campfires stay small and very easy for firefighters to suppress but it only takes one escaping fire to jeopardize lives, destroy property and change a beautiful area forever.

Here are some simple steps to help you properly build and extinguish a campfire. (See Renee’s illustrations) Welcome to Central Oregon! Enjoy the beauty and wonder of our area and remember: “Put it Out, Dead Out!!”

- Cathy O’Brien, Fire Prevention Officer
Celebrating the USDA Forest Service Centennial in the High Desert

In celebration of a “Century of Service” (1905-2005), the Forest Service held numerous events throughout the nation, with several exciting activities scheduled in Central Oregon. Two exhibits that portray the early beginnings of the Forest Service through modern times are available for public viewing at the Bowman Museum in Prineville and the High Desert Museum in Bend.

The Bowman Museum Exhibit focused on the Ochoco National Forest’s contribution to the Forest Service’s 100 year history. Originally part of the Blue Mountain Reserves, the Ochoco National Forest was created in 1911. A forest ranger’s earliest and biggest concerns centered around range and grazing issues. Soon, these concerns expanded to include wildland firefighting, expanding trail and road systems, constructing guard and ranger stations, and building miles of telephone wire through the forest. Indeed, the forest ranger ‘experience’ is a rich and interesting one.

The High Desert Museum Exhibit includes historic artifacts, images, interpretive text, maps and quotes that portray the story of Forest Service history in the High Desert region. Themes of the exhibit feature the early beginnings of the Forest Service, timber, fire, land use, recreation and community. A diorama of an early 20th century ranger’s tent camp is the visual centerpiece of the exhibit, representing the seasonal quarters used by Forest Service staff for over a century. The exhibit opened on June 3, 2005 and will be on display for two years before traveling for several years to various museums in the High Desert region.

“Time, Tracks and Trails” - Magic Moments in Cultural Preservation

The Deschutes National Forest abounds with cultural resources. Obsidian quarries, prehistoric sites, house pits, rock art, ground stone, logging camps and pioneer homesteads have been here for hundreds and sometimes thousands of years. Will they be here ten, twenty or thirty years from now? Conservation Education Programs attempt to answer that question with a resounding “yes”!

“Time, Tracks and Trails” or “T-3” is a Conservation Education Program of the Newberry National Volcanic Monument developed to help teach students how to respect and protect these resources. It is taught yearly at the Lava Lands Visitors Center through partnerships with amateur archaeologists from the Archaeological Society of Central Oregon, professional archaeologists from the Deschutes National Forest, the staff of the Lava Lands Visitors Center and volunteers from a wide variety of backgrounds. Often the student to teacher ratio is one on one!

“This is definitely not your usual field trip” commented one of the 5th grade teachers who brought her students to participate in the program. The science of archaeology is taught at the site of a mock excavation and the more subjective aspects of research are taught through the recreation of rock art. Behind the scenes, T-3 teachers are using inquiry based teaching methods to meet 5th grade benchmark goals for both science and language arts but up front the sun is shining, autumn leaves have just begun to fall, the students are huddled together at the edge of an excavation unit and the magic has just begun.

“Buckets are filled with soil as it is gathered by a team of students with trowels and dustpans. Measurements are taken and artifacts are sketched. The soil is emptied into a screen and sifted energetically by another team. The air is filled with dust that covers the smiling scientists. There are bugs in the screens as well as artifacts, grit covered smiles greet discovery and frustrations alike. “Why do we have to count all these little pieces of obsidian?” “What do we do with those stones before we remove them?” “But we’ve been working for an hour and the hole is only two inches deep!”

In the background, away from the excavation unit, the soft sounds from Native American flute music drift by as students from yet another team grind chunks of red ochre into powder fine pigment for their paint. Each one has a mortar and pestle made from rocks gathered from the river. Paint brushes are created by pounding the ends of soft willow twigs as students and teachers talk about symbols painted on stone long ago. Where were they created? What do they mean? Can we ever know? Symbols are created and the students begin to tell their stories. The stones become a canvas where the hopes and fears of their own culture take shape in pictures.

As the program draws to a close, the students talk about their experiences, the teachers talk about cultural resource protection but the words mean more now because they have all just finished “a day in the field”. – Jo Radeker, Site Stewardship Liaison, Central Oregon Heritage Group.

15th Anniversary of the Mt. Bachelor Winter Interpretive Program

In 1991, Forest Service interpretive naturalist Greg Lambert began what was known as the Winter Nature Program, an interpretive and educational partnership between the Deschutes National Forest and Mt. Bachelor Ski Area. The program has since taught thousands of students and other forest visitors about winter ecology, geology, climatology, history and how the four are connected. Both groups benefited through an activity that provided lessons in winter safety and observation skills.

This year, the Forest Service trained a group of volunteers led by an AmeriCorps Volunteer and hosted close to a thousand students and visitors between January and April. The Forest Service presentation was always noted and appreciated. This unique partnership continues to make possible both winter and summer interpretive programs at Mt. Bachelor. Northwest Interpretive Association also provides program support and public donations help maintain equipment.

For 15 years, this valuable and cost-effective program has continually given the community of Bend and its visitors an incredibly exciting, safe, and healthy outdoor educational experience. It has clearly helped the agency accomplish its goals of providing conservation education and winter recreation opportunities. Students who have taken tours have often returned as volunteers who supported the program. We hope this will continue for future generations. If you are interested in volunteering, please call the Bend/Fort Rock Ranger District at (541) 385-4000.

For additional information on the New Century of Service visit www.fs.fed.us/newcentury

Celebrating Scenic Byways & Community Connections
Get High on Nature!

2006 Visitor Center Hours & Interpretive Program Schedule

Lava Lands Visitor Center and Lava Butte
May 3 - September 30*, Wed-Sun, 9:00 to 5:00
Interpretive programs are offered July 1 to September 4. Check at the information desk for the weekly schedule.

Lava River Cave
May 24–September 4, Wed-Sun 9:00 to 5:00
Self-guided exploration of a mile-long lava tube cave.
Lantern available for rental - $3 each

Mt. Bachelor Interpretive Program at the Summit
July 3 through Sept 4
11:30 am, 1:00 pm, and 3:00 pm
Cascades Discovery Program - Join an interpretive naturalist and enjoy a magnificent view of the Three Sisters and High Cascades from full service day lodge on the slopes of Mt. Bachelor. Chairlift is used to access lodge.

Newberry Caldera Naturalist Programs
July 1 - September 4
Interpretive and educational programs at various locations in Newberry Caldera. Check Newberry Welcome Station, Paulina Lake Guard Station, campground bulletin boards, and Big Obsidian Flow for weekly schedule.

Passport in Time (PIT) Projects
Pack your bags and head out but don’t forget your Passport in Time (PIT). As part of a PIT crew, you work alongside archaeologists and historians on all sorts of projects. Archaeology digs, restoring historic structures and recording oral histories are a few possibilities. There is no fee to become a PIT partner. Is your local National Forest sponsoring a PIT project this summer? Call the Supervisor’s Office of any National Forest and ask for the PIT Traveler, the Passport in Time newsletter, or visit our web site at: wwwpassportintime.com

Newberry National Volcanic Monument - Lava Lands Visitor Map

Historic Elk Lake Guard Station
June 13 through Sept 12, 9:30 am - 4:30 pm
Visitor information and historic site interpretation. Tour the station log cabin and grounds to see how Forest Service guards lived in the 1930s and 1940s. Hiking Trail connects guard station to Elk Lake campground and resort.

Crescent Ranger District
July 1 through September 1
Interpretive programs featuring District resource specialists are being planned at campgrounds. Check campground and resort bulletin boards or call Crescent Ranger District at (541) 433-3200 for updated information.

Redmond Air Center
Redmond Air Center is a hub for wildfire suppression and fire-related aviation activities for the Pacific Northwest region. Located 2 miles east of Redmond at the north end of the Redmond Airport, the facilities are open for public tours Monday thru Friday from 9:00 to 10:30 a.m. and 1:00 to 3:00 p.m. Visitors may tour the Redmond Smokejumper Base, the National Interagency Incident Support Cache, and the Redmond Air Tanker Base during the operating season. Please schedule tours in advance by calling the Center at (541) 504-7200 especially during the busy May through September fire season.

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Sunriver Nature Center & Observatory
is a private, not-for-profit organization. The facility includes a Nature Center with exhibits and live birds of prey, interpretive trail, botanical garden and observatory.

Summer Hours, June 19–September 4:
Nature Center: Daily, 9:00 to 5:00. The Observatory is closed July 4th. For more information call (541) 593-4394 or visit our web site at: http://www.sunrivernaturecenter.org.

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