

# Volcanic Vistas

Discover National Forests in Central Oregon Summer 2005



Camping at Suttle Lake

*U.S. Forest Service Celebrates 100 Years!  
"Caring for the land and serving people"*



Fishing at Elk Lake



First Rangers, 1906



Brother and Sister Fishing on the Deschutes, 1926



Pine Mountain Ranger and Forest Service employee

## Welcome to Central Oregon!

This year's **Volcanic Vistas** celebrates two centennials: The Forest Service and the City of Bend.

It's the one hundredth birthday of the U.S. Department of Agriculture agency that manages the country's 155 national forests and 20 national grasslands of the National Forest System for you, the citizen-owners of those very special 192 million acres of public land. The first 100 years of the Forest Service in many ways defines the natural resource conservation legacy of the United States. The Forest Service also carries out its mission of "Caring for the Land and Serving People" through its research, state and private forestry, and international programs. We hope you share our pride and our enthusiasm for its second century of service.

Bend, Oregon, also celebrating its centennial, has been the "home town" for the Deschutes National Forest since 1910. We wish the community of Bend all the best in its second century and look forward to continuing the fantastic partnership between the Forest Service and the citizens of Central Oregon.

Once again, this year's issue of **Volcanic Vistas** is packed with information to help you enjoy your Central Oregon national forests and national grassland. While you do, have fun and be safe!

**Leslie Weldon**  
Forest Supervisor  
Deschutes National Forest

**Larry Timchak**  
Forest Supervisor  
Ochoco National Forest & Crooked River National Grassland



### What's Your Interest?

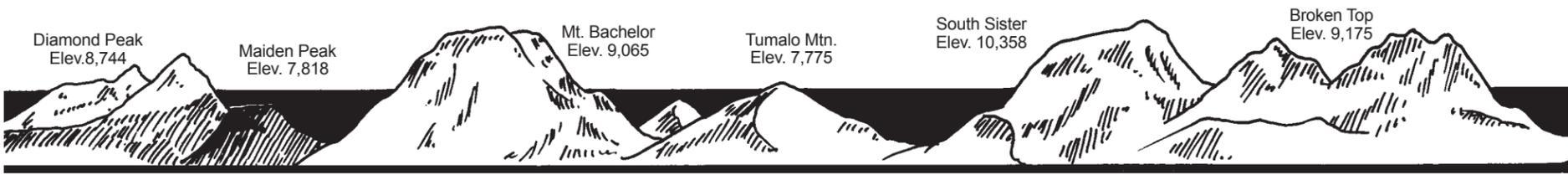
The Deschutes and Ochoco National Forests are a recreation haven. There are 2.5 million acres of forest including seven wilderness areas comprising 200,000 acres, six rivers, 157 lakes and reservoirs, approximately 1,600 miles of trails and the unique landscape of Newberry National Volcanic Monument. 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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# Safety First! In an emergency dial 911



## 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 sunscreen 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 on your clothing to help repel the little critters. Should you find a tick, remove it immediately. Place tweezers as close to the tick's head as possible. GENTLY pull the tick off.

Do you have the "10 Essentials" with you?

- Compass
- Extra clothing
- Extra food/water
- First aid
- Headlamp/flashlight
- Knife
- Map
- Sunglasses
- Waterproof matches and/or lighter
- Fire starter

### Volcanic Vistas

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

**Production of this publication supported by Recreation Pass fees.**

Helpful Web Sites	
Deschutes & Ochoco National Forests	<a href="http://www.fs.fed.us/r6/centraloregon">www.fs.fed.us/r6/centraloregon</a>
Northwest Forest Pass (to purchase)	<a href="http://www.naturenw.org">www.naturenw.org</a>
U.S. Forest Service	<a href="http://www.fs.fed.us">www.fs.fed.us</a>
Bureau of Land Management	<a href="http://www.blm.gov">www.blm.gov</a>
National Park Service	<a href="http://www.nps.gov">www.nps.gov</a>
Oregon State Parks	<a href="http://www.prd.state.or.us">www.prd.state.or.us</a>
Central Oregon Visitors Association	<a href="http://www.covisitors.com">www.covisitors.com</a>
High Desert Museum	<a href="http://www.highdesert.org">www.highdesert.org</a>
Wildlife Viewing Site	<a href="http://www.fs.fed.us/r6/centraloregon/wildlife">www.fs.fed.us/r6/centraloregon/wildlife</a>

## 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 30's 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 sunscreen are advisable to protect against heat and sunburn. Carry a little food, a windbreaker and have a safe visit.

Weather Averages

Warmest Months..... Mid-June, July and August

Warmest Day..... August 1990, 103° F (39.4° C)

Coollest Months..... December, January and February

Coldest Day..... January 1980 -23° 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).

- Be safe:**
- ★ Take cover indoors.
  - ★ Swimming, boating, fishing, get out of the water. If your hair stands on end, take immediate action.
  - ★ Stay out of windows and doors.
  - ★ 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 devices.

## 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.

### Leashing Regulations:

★ 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 trails associated with these areas.

### Safety Precautions:

- ★ 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

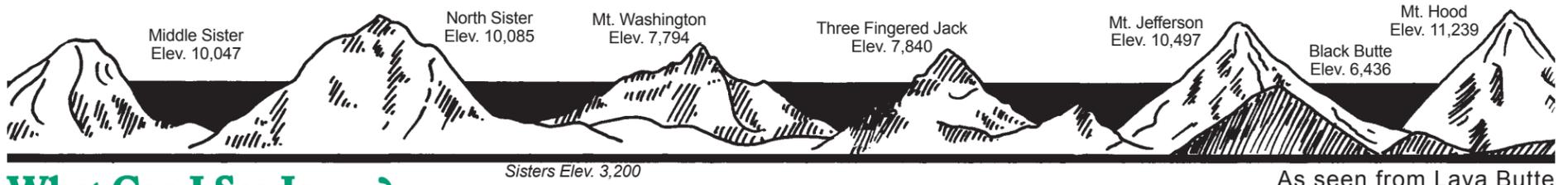
Trailheads, parks and monuments have become increasingly popular sites for car clouting, vandalism and thefts from vehicles. An experienced car clouter can break into a vehicle in less than 15 seconds and take everything of value in sight. Car clouters prefer to prowl parking lots and campgrounds.

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.

Need More Information?

Deschutes National Forest	383-5300
Bend/Fort Rock Ranger District	383-4000
Sisters Ranger District	549-7700
Crescent 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
Paulina Guard Station Visitor Center	536-8802

# Special Places To Go



## What Can I See In ....?

*If you are new to Central Oregon, or just looking for something new to do, here are a few suggestions tailored to fit just about any schedule. Find the location where you want to start and you're on your way to new discoveries.*

### Lava Lands Visitor Center

**One Hour** – See Visitor Center, hike Trail of Molten Land or drive Lava Butte.

**Two Hours** – Explore Lava River Cave or drive to Benham Falls Day Use Area to hike the falls trail.

**Half Day** – Add a visit to Lava Cast Forest.

**All Day** – Add a trip to Newberry Caldera or a visit to the High Desert Museum.

### Newberry Volcano

**One Hour** – Stop at the Paulina Creek Day Use Site or see the Big Obsidian Flow.

**Two Hours** – Hike the Big Obsidian Flow Trail or drive to the top of Paulina Peak.

**Half Day** – Hike Paulina Lake Trail or Paulina Peak Trail.

**All Day** – Combine any of the above or stop at the Visitor Center and Lava River Cave.

### Cascade Lakes Area

**One Hour** – Visit Historic Elk Lake Guard Station on Cascade Lakes Scenic Byway.

**Two Hours** – Hike the Ray Atkeson Trail at Sparks Lake or ride Mt. Bachelor chairlift to Pine Marten Lodge for spectacular Cascade view.

**Half Day** – Float on Hosmer Lake, fish any of the Cascade Lakes, or hike Todd Lake for wildflowers in July & August.

**All Day** – Hike 10-miles round trip to Green Lakes.

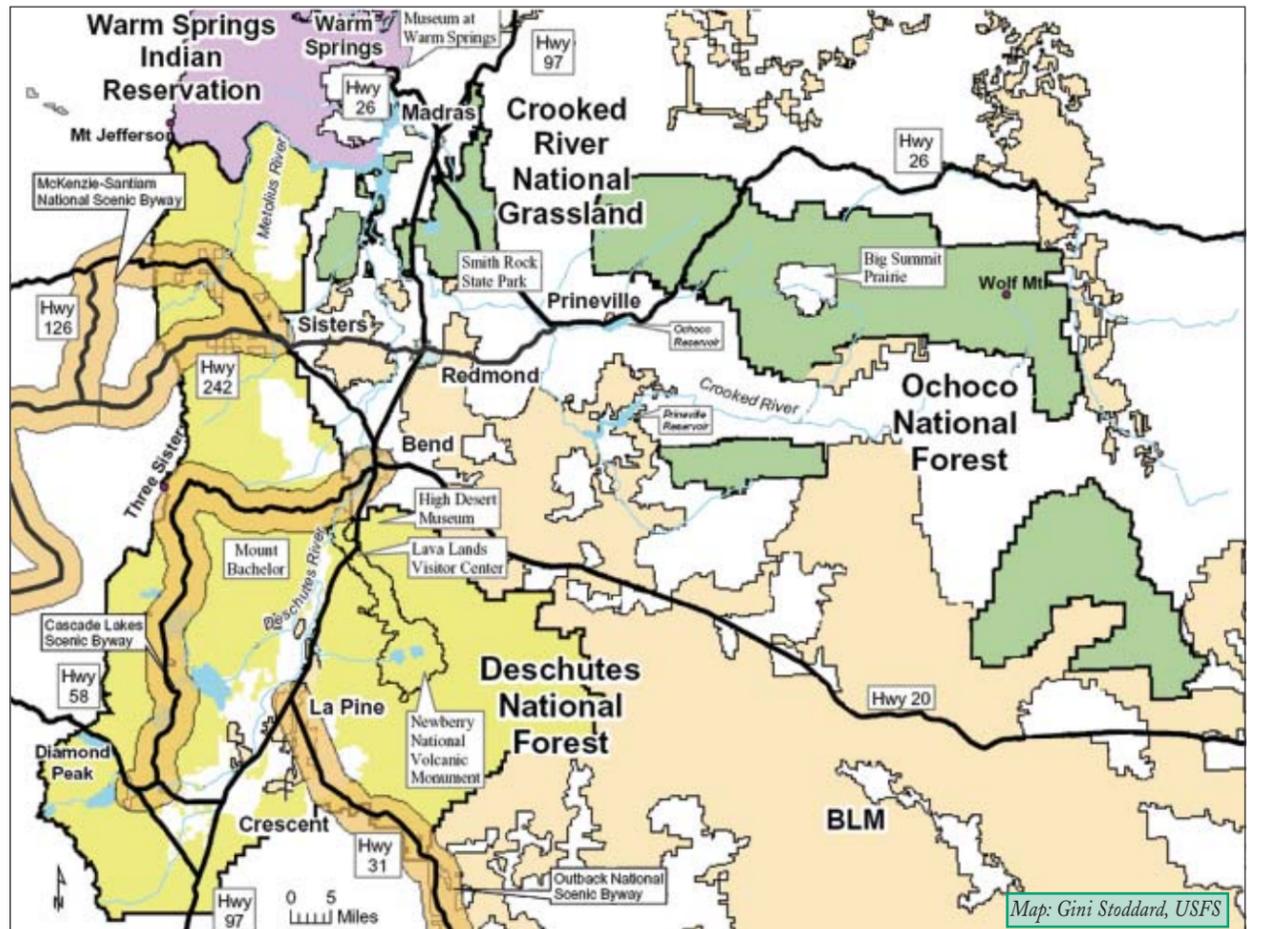
### Crescent Area

**One Hour** – Visit Crescent Lake or Odell Lake.

**Two Hours** – Drive to Walker Mountain Lookout.

**Half Day** – Drive to Big Marsh near Davis Lake and hike two-mile Nature Trail.

**All Day** – Drive Cascade Lakes Scenic Byway to see eagles, osprey and other wildlife at Davis Lake, Wickiup Reservoir and Crane Prairie Reservoir.



### Sisters Area

**One Hour** – Drive to head of the Metolius River, see Mt. Jefferson and hike the river trail.

**Two Hours** – Visit Wizard Falls Fish Hatchery on Metolius River.

**Half Day** – Hike Metolius River Trail or to top of Black Butte.

**All Day** – Drive McKenzie Pass to Dee Wright Observatory then to Proxy Falls, return via Santiam Pass.

### Prineville Area

**One Hour** – Drive along Crooked River to Bowman Dam and Prineville Reservoir. Watch for spectacular spring wildflowers!

**Two Hours** – Drive to Big Summit Prairie in summer for the wildflowers or up Crooked River to hike Chimney Rock Trail or tour Rimrock Springs for birds and wildlife.

**Half Day** – Drive to Mill Creek Rd to see Stein's Pillar and Brennan Palisades, return to Prineville via Harvey Gap.

**All Day** – Visit Prineville Reservoir State Park for boating, fish Crooked River and hike Chimney Rock Trail.

## Discovering the Deschutes River and Black Rock Trail

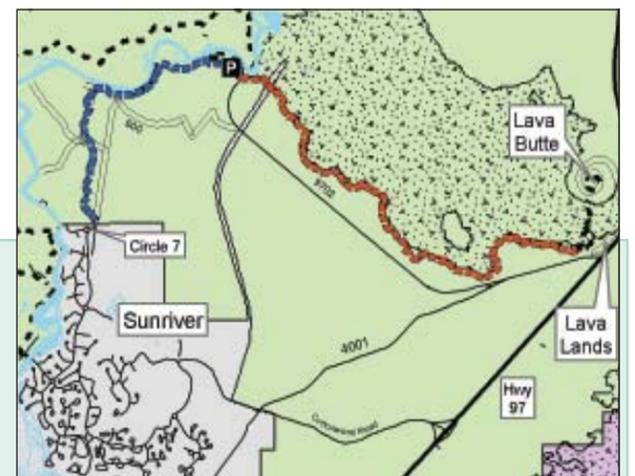
The fresh smell of ponderosa pine and the soothing sounds of the nearby Deschutes River will greet you as you begin to explore the Deschutes River Trail starting just outside of Circle Seven in Sunriver and intersecting with the Black Rock Trail at the Benham Falls East parking lot while ending at Lava 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 magnificent 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 to 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 road in Sunriver and at the south parking lot at Lava Lands.

– Jason Merwin, Interpretive Specialist

*"Caring for the land and serving people"*



# Forest Service Centennial

## The Forest Service and Bend Share a History and a Destiny

John Riis, a young U.S. Forest Service ranger, rode into Bend in the fall of 1910. He'd come from the late summer Big Blowup, during which three million acres of Idaho and Montana forests burned and 78 firefighters perished, to a new assignment in Oregon east of the Cascade Range. He arrived in a Central Oregon on the cusp of change. This change would transform Bend, the sleepy new town of 536 souls in which he dismounted, into a small but thriving industrial city of ten times that number within as many years.

Both the Forest Service and Bend were five years old.

The coming change was based on timber and transportation, "the two interlocking ingredients of Central Oregon's developing economic base" that historian Philip Cogswell, Jr., wrote "brought wealth to some and jobs to thousands" during the early decades of the twentieth century.

The timber was ponderosa pine, called western yellow pine until the early 1930s, "an estimated 26 billion board feet of it, in open forests on flat or gently sloping ground, waiting, seemingly, for someone to come and cut it," as Cogswell so aptly put it. But, as that historian continued,

*Getting to the trees was only a relatively easy first step; getting the trees – or, more precisely, the lumber made from them – to market was the difficulty. Central Oregon [in 1910] was virtually isolated from the rest of the nation, including other parts of Oregon, as far as volume commercial transportation was concerned, and the exploitation of Pinus ponderosa would have to wait for a railroad.*

The Bend Bulletin had predicted in 1903 that,

as soon as Bend saw a railroad, it would see "the logs moving toward the mills at Bend, and thousands of men...working in the mills and in the woods."

Anticipation of access to timber markets and acquisition of timber resources, however, didn't wait. Fifteen years before the railroad arrived in Bend in 1911, timber magnates had begun acquiring timber holdings in the area. Although, in 1893, President Grover Cleveland had included large tracts of the public domain in the Cascade Range Forest Reserve, "by the mid-1890s," as Cogswell wrote, "chunks of what had been public domain timberland were passing into private hands."

Some of these public timberlands were obtained legally by individuals and private companies under many of the laws that encouraged settlement and development of the West. As time passed, and "Central Oregon's timber began to look commercially attractive, a timber rush broke out in 1902" that led to widespread corruption and perversion of these laws. With this rush, according to Cogswell,

*...droves of entrymen, interested not in selling and improving but in filing and selling, came to the region from around the country, many having their way paid by the timber interests. At times, with the collusion of federal authorities, they conveniently ignored provisions of the law preventing transfer of title, turning their acquisitions over to their sponsors or other speculators.*

This went on "until July 31, 1903, when President Theodore Roosevelt withdrew timberlands in the Deschutes area from entry..." and acquisitions virtually ended.

Then, in 1905, federal forest reserves were transferred from U.S. Department of the Interior administration to Gifford Pinchot's new Forest Service in the U.S. Department of Agriculture, and soon renamed and reorganized as *national forests*. The Deschutes National Forest was established in 1908.

Assigned to a district south of Bend soon to be transferred from the Cascades National Forest to the Deschutes National Forest, young Ranger Riis witnessed the change wrought by timber and transportation from the Big River Ranger Station on the Deschutes River. There he protected thousands of acres of that increasingly valuable timber.

Writing in 1937, former Ranger Riis noted that the Forest Service foresaw the day the vast private timber holdings would have to be supplemented by national forest timber.

*Before the opposing armies racing South [constructing parallel railroads for rival railroad magnates James J. Hill and Edward H. Harriman] through the tortuous [Deschutes River] canyon finally joined forces and a single span of shining steel rails linked Bend to the outside world, the great lumber interests had turned their eyes to the timber in my district....*

On July 1, 1911, his Big River Ranger District became part of the Deschutes national Forest when the headquarters of that forest was moved from Prineville to Bend.

Bend was "the Mecca of the Rangers on the Deschutes" where they went "every now and then to have horses shod, replenish the larder, or for a few days detail in the Supervisor's office," Riis wrote.

(Continued page 5)

### The Story of the Pine Tree Shield

When the U.S. Forest Service was established in 1905, founding Chief Forester Gifford Pinchot sought a unique symbol – a badge – for his new agency and its rangers.

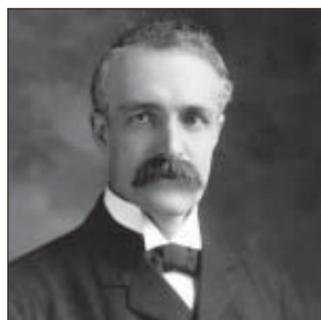
He held a badge design contest in the agency's Washington, D.C., office. Many designs were submitted. Edwin T. Allen and William C. Hodge, Jr., on assignment in Missoula, Montana, came up with the winner.

Allen, who liked the Union Pacific Railroad shield, traced its outline from a timetable onto a sheet of paper. He then put the letters *U* and *S* halfway from the top and bottom of the shield, and left a space between them. Hodge, looking on, sketched a pine tree on a sheet of "roll-your-own" cigarette paper, and laid it between the *U* and the *S*. The two foresters then quickly wrote *Forest Service* across the top and *Department of Agriculture* across the bottom.

Pinchot liked the design. The contest was over. The now-famous "Pine Tree Shield" proudly worn by Forest Service officers ever since was born.



## Gifford Pinchot Founded the Forest Service in 1905



As a friend of President Theodore Roosevelt and the first American forester, Gifford Pinchot was well placed to become founding chief of the U.S. Forest Service in 1905. And that he did.

Gifford Pinchot was born on August 11, 1865, in Simsbury, Connecticut, into a family of upper-class merchants, politicians, and landowners. As a boy, he attended the best eastern schools and traveled abroad. When he entered Yale in 1885, his father asked, "How would you like to be a forester?"

At the time, no American had made forestry a profession. "I had no more conception of what it meant to be a forester than the man in the moon," Pinchot admitted later. "But at least a forester worked in the woods and with the woods, and I loved the woods and everything about them. My Father's suggestion settled the question in favor of forestry."

Since no American university offered a degree or even a course in forestry, Pinchot graduated from Yale and studied at a forestry school in France. There he learned the value of selective rather than unrestrained harvesting of forests. After a year, he returned to the United States and entered private practice. In 1896, he traveled the West as a member of a National Academy of Sciences commission investigating forest lands for possible addition to the new forest reserve system. Two years later he was named chief of the Division of Forestry in the U.S. Department of Agriculture. He and Vice President Roosevelt thought it awkward that the forest reserves were administered by the General Land Office in the Department of the Interior.

The assassination of President William McKinley elevated Roosevelt to the Presidency in 1901, and reelection in 1904 strengthened his conservation hand. The management of the forest reserves was transferred from the Department of the Interior to the Department of Agriculture and its new Forest Service in 1905. Named to head the Forest Service, Pinchot – with Roosevelt's enthusiastic support – restructured and professionalized the management of forest reserves, renamed *national forests* in 1907. His philosophy of managing the national forests "for the greatest good of the greatest number in the long run" guided the effort.

During the five years Pinchot was chief, the Forest Service and the National Forest System grew spectacularly. In 1905, 60 forest reserves covered 56 million acres; by 1910, 150 national forests covered 172 million acres. He set a pattern of effective organization and management for the national forests, and popularized "conservation" of natural resources in the broad sense of wise use. President William H. Taft fired Pinchot in 1910 over a political controversy.

Gifford Pinchot is regarded by many as the "father" of American conservation because of his great and unrelenting concern for the protection of America's forests. He was the primary founder of the Society of American Foresters, which first met at his home in Washington, D.C., in 1900. After his Forest Service years, he remained the grand old man of "the outfit" even as he ran unsuccessfully for the Senate three times and served two terms as governor of Pennsylvania. His autobiography, *Breaking New Ground*, was published in 1947 after his death at 81 in 1946.

Pinchot's greatest achievement, the Forest Service, lives on.

This article is adapted from brief biographies of Gifford Pinchot prepared by the Forest History Society, Durham North Carolina, and the Pennsylvania Historical & Museum Commission, Harrisburg, Pennsylvania, and benefited from Gifford Pinchot, *Breaking New Ground* (New York, Harcourt Brace & Co., 1947) and Char Miller, Gifford Pinchot and the Making of Modern Environmentalism (Washington, D.C., Island Press, 2001).

# Forest Service Centennial

## The Forest Service and Bend Share a History and a Destiny (Cont.)

Ranger Riis was in Bend on October 4, 1911. It was the day before Railroad Day, the day James J. Hill would drive the golden spike marking completion of the Oregon Trunk Railroad route to Central Oregon and the day the first train would arrive in Bend.

Forest Supervisor J. Roy Harvey had been urging Riis and his fellow district rangers to get on with their timber cruising, and Riis had been rounding up a crew. Not wishing to leave town on the eve of the big event, Riis had countered that the private timber owners “have enough timberland to keep them busy a long time; better timber than there is in any [national forest] district.”

“Sure, but the railroad’s here and this country is in for some tall timber cutting,” the forest supervisor insisted. “The Fall River timber [on Riis’ district] is easier to get out and closer to the railroad than the private holdings. Get your crew in the field as soon as you can.”

Bend’s first train was expected to arrive at noon on October 5, but Riis recalled that it was about midnight before that “first train into Central Oregon rolled slowly down the track and came to a stop.” Most of the townsfolk, a brass band, and Riis met the train. And the young ranger met a young lady named Ruth from North Carolina who arrived on that first train and would someday become his wife. They enjoyed the celebration together. Then, “all too soon the train pulled out for Portland carrying her away.”

Ranger Riis returned to the Big River Ranger Station, where he and his crew set about cruising the Deschutes National Forest timber that would mean so much to Bend’s future.

Time passed. In 1916, two Minnesota-based timber giants, the Shevlin-Hixon Company and the Brooks-Scanlon Company, opened the huge pine mills that gave birth to the timber-based economy of Central Oregon that arrival of the railroad had made possible. Before long, each mill employed 600 men and probably twice that number of loggers. Bend boomed, even as the private timber resource on which the boom was based dwindled.

Within a decade, both these giant companies and many smaller ones had cut over most of their own Central Oregon timberlands and were starting to buy Deschutes National Forest timber. This timber, managed by the Forest Service, sustained Bend’s timber economy into the 1990s.

Today, its sawmills long closed, Bend is no longer a timber town. At the age of 100, Bend is a city with a population more than a hundred times that of the town in which Ranger John Riis dismounted in 1910. It is the attractive, prosperous, and rapidly growing core city of and attractive, prosperous, and growing Central Oregon.

Major keys to that attractiveness, prosperity, and growth are the natural beauty and recreation resource base of the Bend-based Deschutes National Forest managed by a Forest Service, also 100 years old this year, entering its second century of “caring for the land and serving people.”

– *Les Joslin, Community Relations Team Leader*  
The writer quotes at length from Philip Cogswell, Jr., “Deschutes Country Pine Logging” in Thomas Vaughan, ed. *High & Mighty: Select Sketches About the Deschutes Country* (Portland, Oregon Historical Society, 1981), and John Riis, *Ranger Trails* (Richmond, The Dietz Press, 1937).

## The Hoffman Island Trail

The Hoffman Island Trail accesses a timbered butte or “island” surrounded by a lava flow. It was named after Bruce Hoffman, a regional logging engineer who worked for the Forest Service’s Regional Office located in Portland, Oregon during the 1920s. The trail is within the Monument and located on an old railroad track grade built across the lava flow in the late 1920s to harvest timber from Hoffman Island. Access is from Forest Road 9720.

Adjacent to the Hoffman Island Trail at Lava Cast Forest is an example of a thinning project where the objective was to recreate open park-like stands of ponderosa pine to a historical condition within Newberry National Volcanic Monument. The comprehensive management plan for the Monument prescribed a combination of fire and mechanical treatments to reestablish ponderosa pine old growth stands. Most of the land within the National Monument was clearcut harvested in the 1920s and 1930s by private timber companies. Subsequently, the land was purchased by the Federal government in the 1950s for inclusion into the Deschutes National Forest.

A major goal within the Monument is to restore ponderosa pine ecosystems with an emphasis on the use of natural ecological succession of vegetation. Due to a close proximity to urban areas and high levels of recreation use, it may not always be feasible to allow wildfires to burn at random within the Monument. In addition, due to many years of fire suppression any wildfire started could become a large stand replacement crown fire instead of the open stands of large old growth ponderosa pine that were historically prevalent in central Oregon.

– *Jim Schlaich, Forester*

## A Century in the Life of Central Oregon’s Pine Forests

Settlers arriving in central Oregon one hundred years ago found vast park-like ponderosa pine forests characterized by large trees and very little undergrowth. Most saw these forests as abundant sources of timber that would forever support the new communities growing on the edge of the High Desert.

While the commercial value of these grand forests was obvious, little did most early settlers know about how these pine forests came to be or how they would respond to logging, fire protection, and other new practices. Most didn’t recognize these native forests as the product of periodic, light ground fires – ignited both by lightning and Native Americans – that cleared undergrowth and prevented accumulation of fuels for larger fires that could threaten the great trees.

Prior to European settlement, wildfires swept through the pine forests every few years, keeping the repeating undergrowth of small trees, shrubs and grasses in check. By the 1920s, motorized transport allowed faster fire control, and by the 1930s most fires were quickly suppressed, a highly-effective practice that continued for more than 50 years.

Fire suppression allowed greater community protection of lives, property and the increasingly valuable timber resource. However, subtle changes to the ecology of Central Oregon’s pine forests were taking place. Few noticed these changes and understood their ecological significance. Some logging practices changed the species composition of the forest, and fire exclusion increased fuel accumulation. Slowly but surely, a forest of less robust, fire-prone trees and shrubs were becoming established.

By the late 1930s, the Deschutes National Forest was growing. Acquisition of cutover private timberlands in exchange for regulated cutting rights on public timberlands eventually added over 350,000 acres to the national forest.

Today, these “second growth” pine forests, readily observed from Bend to La Pine, are the result of those acquisitions and a testament to the resiliency of temperate forest ecosystems. As the young forests mature, Deschutes National Forest managers, now armed with knowledge from 60 years of research at the local Pringle Falls Experimental Forest, thin and underburn these ponderosa pine stands to promote growth of vigorous trees into healthy forests, as well as protect them from wildfire.

And now, as Bend and the Forest Service celebrate their centennials, large wildfires remain a major threat to these forests as well as to the communities they surround. This will continue until there is a sufficient re-balancing of the forest ecology to more native states that can withstand future wildfire disturbance. Until then, forest managers will continue to quickly suppress wildfires, as they actively build that more resilient forest once abundant throughout Central Oregon.

– *Bill Peterson, Natural Resources Team Leader*



*Highwheelers behind big wheels and horses hauling logs in Pine County in the 1920's.*

*“Caring for the land and serving people”*

# Experience Today

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

The Prineville District BLM, Prineville-Crook County Chamber of Commerce and the Ochoco National Forest/Crooked River National Grassland joined forces to update the 1969 Rockhound Map. What were you doing in 1969?



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 1/3 of the visitor inquiries to the Chamber are about rockhounding. It is the 5th major attraction in the county.

In 1969, family rockhounding outings were popular. They still are today.

When the Earth formed, the geology of the central Oregon area resulted in a wide variety of rock types in a relatively small area. Crook County is known to many as the rockhound capital of the world.

Central Oregon has been shaped by numerous and varied volcanic events that began millions of years ago and continue to the present. 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. The volcanic and sedimentary rocks from these volcanoes are known as the Clarno Formation. During this time period, ash on steep slopes of volcanoes 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 the rocks, filling the 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 semiprecious gemstones are represented in these deposits including crystalline quartz, amethyst (rare), and various types of chalcedony such as agate and jasper. A particular favorite of rockhounds are the agate-filled nodules known as thunder eggs, the Oregon state rock.

There are areas that are free for the public to 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 Buttes. Rockhound collections sites are for personal use only, not for commercial resale. - *Carrie Gordon, Forest Geologist and Ryan Franklin, BLM Geologist*

**For more information on Rockhounding, visit our website at:**

[www.fs.fed.us/r6/centraloregon/recreation/rockhounding/index.shtml](http://www.fs.fed.us/r6/centraloregon/recreation/rockhounding/index.shtml)

**To purchase the new rockhound map contact the following offices:**

Prineville-Crook County Chamber of Commerce - (541) 447-6304

[www.prineville-crookcounty.org](http://www.prineville-crookcounty.org)

Bureau of Land Management - (541) 416-6700

[www.or.blm.gov/Prineville](http://www.or.blm.gov/Prineville)

Ochoco National Forest - (541) 416-6500

[www.fs.fed.us/r6/centraloregon](http://www.fs.fed.us/r6/centraloregon)



## New Look for Lava Lands Visitor Center

The Lava Lands Visitor Center is about to resurface with a new look. Taking shape are a new lobby, reception area, gift shop, and office space adding 1,500 square feet to the soon to be remodeled existing building complying with ADA standards designed by StastnyBrun Architects of Portland whose work also includes The Museum at Warm Springs.

At the heart of all these exciting changes is the new exhibits design. Superbly crafted and interpreted for the visitor by exhibit designers Lehrman Cameron Studio from Seattle are the knowledge, teachings, and passions of geologists, archaeologists, ecologists, botanists, wildlife biologists, and interpretive specialists of the Deschutes National Forest. This collaboration has created a memorable legacy for students of natural and cultural history coming to explore and discover central Oregon.

Based upon the Monument's Interpretive Plan and Visitor Center Master Plan, the exhibit stories and theme dramatically focus upon the interconnectedness of the area's Geology, Climate, Culture, and Ecology. The ingenuity of the exhibit designers is evident in their choice of colors such as warm and earthy tones reflecting heat of active volcanoes, grays and browns of lava rocks, and cooler tones for desert sky and vegetation.

The flow of the new exhibits is made exciting with interactive features to give probing minds intriguing concepts to grasp. All of this comes together to create a place for learning to encourage outdoor exploration of Newberry National Volcanic Monument and the national forests and grassland of central Oregon. Look for our opening date in the summer of 2006!

In addition to the Visitor Center changes, the road to Lava Butte will be closed this summer as the parking area at the top will be refurbished with new paving, guardrail replacement, and planting areas. Lava River Cave and Lava Cast Forest remain open.

- *Robin Gyorgyfalvy, Director*

## Fine Dining at the Lakeside Café: a Fishy Tale

Imagine a restaurant where while you are choosing your favorite item on the self-serve menu, someone else is hoping to make a feast of you. Welcome to the Lakeside Café where payment is typically made in terms of energy expended, and where the energy gained often goes toward avoiding being the chosen delicacy of someone else's cuisine. Yes, this is a place where you are also on the menu; where alien invasion could either kill you or cause you to thrive. The dining is fine so long as you are fast food. It's a fish-eat-fish-eat-zooplankton-eat-algae world out there, an ecosystem of both incredible complexity and surprising simplicity. Say your name is *Anabaena flos aquae*, and you are a member of the cyanobacteria family. You and your blue-green algae band of photosynthesizers are consumers of the sunshine and fixers of nitrogen. Yep! That's right you know how to spin (transform) those golden rays of sunlight into energy/ sugar. However, in the same place where light is known to dance across the waters, lurks your nemesis, the zooplankton, which happens to have a taste for cyanobacteria.

One day a tui chub escapes, accidentally introduced as live bait by someone trying to catch the BIG Fish. Some more escape and soon the tui chub are feasting on the zooplankton. This is great news for you! With your predators consumed, your family can bloom to sometimes toxic proportions, especially during those balmy summer months when nutrient levels are high. Scientists spend weeks testing water samples to see if you are toxic. Your family may be important food for other species, the equivalent of grass in the lakeside ecosystem. Yet, fisherman will mutter disparaging phrases about you, especially if the bloom you produce is toxic, perhaps affecting schools of fish. People and their pets will avoid swimming in the warm lake waters, now edged in buoyant masses of blue-green. For a while it seems that you have taken over the Lakeside Café, but the bloom ends. Twenty-pound Brown Trout will go back to eating smaller fish, which will eat zooplankton, which will eat phytoplankton, including your blue-green algae family. Osprey will swoop down and mock the fisherman by flying off with trout to eat. They and the fish and the zooplankton and yes, even *Anabaena* will die and decompose and this story will fade into memory as just another dining experience at the Lakeside Café, but what an experience.

For more information see <http://www.fs.fed.us/r6/centraloregon/water-fish/water/bluegreen/index.shtml> or contact the Deschutes National Forest Supervisor's Office at (541)383-530.

- *Pualani Helmbrecht, AmeriCorps Volunteer*

### 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 "clear" 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 know 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 latex 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.

# Experience Today

## 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 joy 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.

**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 joy were fertilizer. Rare beauty requires strong stewardship. Stay on designated trails, leave no trace of your visit and take only photos and memories home.



Great Blue Heron, Larry Pratt



## Fishing Changes in the Upper Deschutes River Basin

Anglers seeking kokanee from Wickiup Reservoir, brown trout in the Deschutes River, or lake trout in Cultus Lake may not realize that a century ago, these fish did not exist in the Upper Deschutes River basin. Due to fish management, habitat alteration, and illegal fish introduction, the fish community is now very different from what was previously encountered by anglers. Back then, only fish species native to the basin were present. Anglers sought redband trout (inland form of rainbow trout), bull trout, and mountain whitefish. Natural falls on the Deschutes River downstream of Bend near Terrebonne prevented anadromous species such as salmon and steelhead from continuing upriver spawning migrations.

Old "fishing stories" revealed that fishing the Deschutes River near Bend was quite phenomenal. A 1916 *Oregon Sportsman* article claimed the Deschutes River to be the best trout stream in Oregon, and maybe the best in the United States. A 1903 *Bend Bulletin* article reported on the success of trapping very large Dolly Varden (24 to 37 inches) near Pringle Falls, which we now know as bull trout. Another story reports 4 anglers catching 3,125 trout in the Deschutes River in a four day span to supply fish for a 4<sup>th</sup> of July celebration in Bend. Yet another story tells of 2 anglers catching 2 barrels of fish in 2 days in the Upper Deschutes, all over 16 inches.

Despite the abundance of trout, stocking efforts in the Deschutes River near Bend occurred as early as 1916. Stocking of non-native fish such as brown, rainbow, and brook trout spread throughout the basin over the

next several decades. Construction of Crane Prairie and Wickiup Reservoirs for irrigation created thousands of acres of new opportunities for lake angling. These reservoirs, as well as high backcountry lakes that were nearly all fishless, were all stocked. Some were first stocked by carrying jugs of small fish in by horseback. In the 1950's, the use of fixed-wing aircraft increased the number lakes stocked and was later replaced by helicopter stocking in 1980. Today, 90 backcountry lakes are stocked every 2 years by helicopter, except for a handful stocked by llama teams.

100 years ago, fishing regulations were unknown. Earliest known records of fishing regulations on the Upper Deschutes River were in 1942 when open season was restricted to April 18 - October 31, with a bag limit of 15 pounds of fish per day. Gradually, regulations became more conservative and by 1951, the bag limit changed to 10 fish per day with not more than 5 fish over 12 inches. By 1959, Dolly Varden (bull trout) were finally included in the trout bag limit. By 1980, the bag limit was reduced to 5 fish per day in the Deschutes River and tributary streams. Today, regulations are very complex and vary throughout the upper basin. Protection of the wild-spawning descendants of the native redband trout is emphasized.

Today's angler in the Upper Deschutes Basin is presented with a very diverse fishing opportunity. There are 10 trout or closely-related species to pursue, and several other warm-water game species, the result of illegal introductions, a practice that may lead to critical impacts to the trout populations. The bull trout is no longer found in the Deschutes River above Bend, its

demise thought to be attributed to the blockage of passage at Wickiup and Crane Prairie dams, overfishing, competition from other introduced fish species, degradation of habitat, and other factors.

Although fish populations in the Upper Deschutes River Basin are very different today, the 100 or more miles of fishable rivers and streams and dozens of lakes and reservoirs continue to draw anglers from across the country to try their luck. One can only speculate what will draw fisherman 100 years from now.

- Tom Walker, Fisheries Biologist



A favorite fishing spot, 1921

# Newberry National



Paulina Lake from Paulina Peak, Sherri Lee

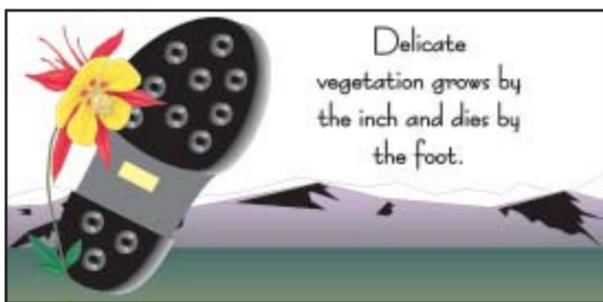
## History

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 caldera like Crater Lake. This feature formed after a series of collapses following big eruptive episodes and now contains two crystal clear lakes. The Monument also has many other fine examples of common volcanic features such as cinder cones, ash flows, lava tubes and flows, pumice and obsidian deposits.



## Recreation Pass Program Changes on the Deschutes National Forest

The Recreation pass program is changing in 2005. Individual charges have been eliminated at Lava River Cave. Cave admission is now included with every vehicle pass. The Monument also offers a discounted 3-day Monument Pass.

Recreation passes will be required at designated day use sites such as developed boat ramps, picnic areas and trailheads.

Passes accepted are:

- ◆ National Forest Recreation Day Pass
- ◆ Annual Northwest Forest Pass
- ◆ Golden Age Passport
- ◆ Golden Access Passport
- ◆ Golden Eagle Passport
- ◆ WA & OR Recreation Pass with Golden Eagle
- ◆ National Parks Pass with hologram upgrade

All passes, except the 3-day Monument Pass, are available at Forest Service offices throughout Washington and Oregon. The 3-day Monument Pass is sold only at Lava Lands Visitor Center, Lava River Cave, and Newberry Contact Station.

## 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.

## 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:** Miles 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)-  
mountain bikes in uphill direction only
- Paulina Peak (4 miles)

## Wildlife

**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, mixed conifer, mountain hemlock and white pine. All old growth stands are protected.

### 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.

## A Fed Bear Could Be A Dead Bear!

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.



Newberry Caldera, the area within the rim of Newberry Volcano, has been a wildlife refuge for nearly half a century. All wildlife there enjoys protection from hunting or harassment by human visitors. But the Caldera is also a highly popular recreation area containing over 400 campsites, two lakes, and spectacular volcanic scenery. Sometimes human and animal needs conflict and that most often revolves around food.

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 our food encourages them to stop foraging on their 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

### 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**  
April 23 - September 30  
Open Daily 9:00 - 5:00

**Lava River Cave**  
May 28 - September 4  
Open Daily 9:00 - 5:00

**Newberry Contact Station**  
April 23-September 30  
Open Daily 9:00 - 5:00

**Check for Road Conditions**

# Volcanic Monument



Used by permission, Paulina Peak from Paulina Lake, Kathy Pratt

## 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.

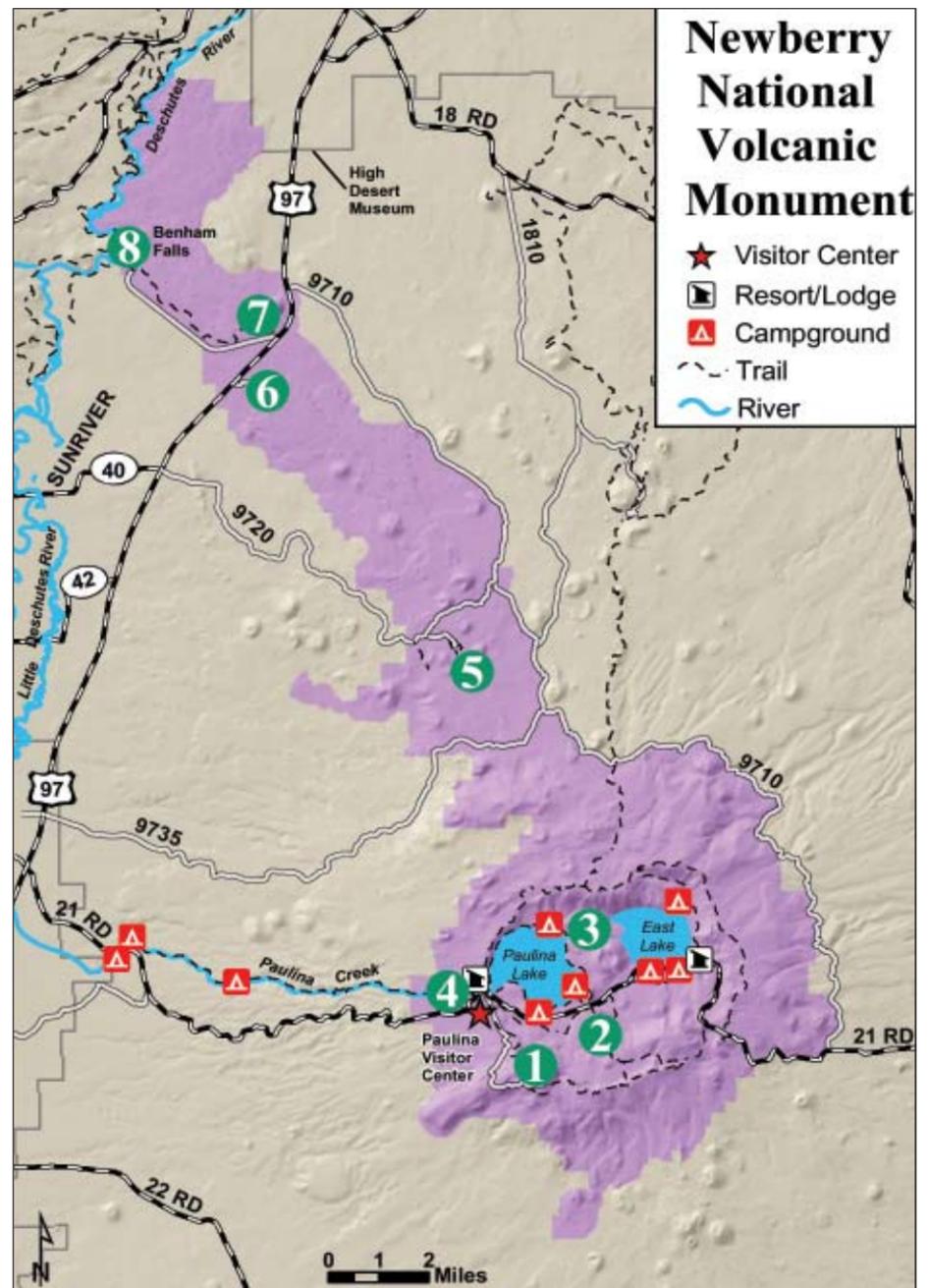
**2** Big Obsidian Flow is the result of the most recent lava flow of Newberry Volcano, 1,300 years and is the youngest lava flow in Oregon. Over 170 million cubic yards of obsidian and pumice erupted from a vent about a mile south of the trailhead. Native Americans used the glass for trade and tools. 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.



Ryan Miller, GIS

**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

# Choices for Tomorrow

## Rocks, Rivers, and Groundwater

Have you ever wondered where snowmelt and rainfall goes after it sinks into the ground? Young lava flows and other volcanic deposits from Newberry Volcano and the Cascade volcanoes form an extensive groundwater system of great importance to central Oregon communities. As mountain snow packs melt each spring, water rapidly sinks into fractured lava flows and rejuvenates groundwater systems.

Moving at rates of inches to feet per day, groundwater slowly flows through cracks and pore spaces in the rocks toward Bend and Redmond. In these low-lying areas, a meager 10 inches of annual precipitation does not significantly recharge the groundwater system. However, the Deschutes and Crooked Rivers flow across fractured Newberry lava flows and lose much of their water to the ground. The rivers' loss is the groundwater's gain as this represents a significant local source of recharge to the groundwater system.

As these rivers continue north, their canyons get deeper and closer to the water table. A few miles northeast of Redmond, these rivers drop

below the water table. Water lost by the rivers to the ground upstream returns to the rivers through springs in the canyon walls!

In the early 1900s, water was diverted from the Deschutes and Crooked Rivers through a network of irrigation canals adding up to 720 miles today. Like rivers, canals flow across fractured Newberry lava and lose about half of their water through leakage. Even more water is put into the ground across 164,000 acres of irrigated land. The combined artificial recharge from irrigation and canal leakage raises the water table by about 10 feet, and in some areas, as much as 100 feet! Moreover, this has added between 400 and 500 cubic feet per second of water to springs flowing into the lower Crooked River!

Efforts to line segments of irrigation canals with concrete have reduced water loss. This increases the amount of water available from canals, but may affect people who have enjoyed artificially elevated water tables in wells. Regardless of how surface and groundwater uses are balanced, virtually all of central Oregon's groundwater discharges to the Deschutes and



Photo: Michelle McSwain

Crooked Rivers downstream of Redmond. Consequently, consumptive use of groundwater will ultimately lower flow rates of these rivers.

During the mid-1990s, estimated consumptive use of groundwater was less than 1 percent of the Deschutes River flow rate near Madras. However, as central Oregon looks to the future of managing this invaluable resource for its growing population, understanding the interaction between rocks, rivers, and groundwater will become ever more important.

Ryan Franklin, BLM Geologist

## The Hordes Have Arrived and They are Green!



Youth crew member pulling a russian thistle patch.



Youth Conservation Crew member working on a common houndstongue

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 roughly 4,600 acres of countryside each year in the western public lands.

This "army" is described in terms suggesting a near-apocalypse mixed with a whiff of science fiction: "alien invasion," "explosion in slow motion," "biological wildfire." We use these grandiose phrases to describe the march of unwanted, non-native plants into our public (and private) lands. And they have insinuated their way into Central Oregon's natural beauty, into the ponderosa pine forests, along our most popular lakes and rivers, and into our grasslands.

Most people are perhaps best acquainted with long-familiar lawn weeds such as the dandelion and crabgrass; but for the pine forests and sagebrush country of Central Oregon, the concept of weed species threatening our wildlands is relatively new.

It's new but serious stuff. It has grabbed the attention of elk and deer hunting organizations, ranchers who graze their livestock on public land, foresters, equestrian groups, homeowners, scientists (there are even scientists who specialize in weed research), as well as the highest levels of the land management agencies entrusted with

the care of public lands. The head of the Forest Service, Chief Dale Bosworth, has listed invasive species as one of the "four threats" to our nation's ecosystems.

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, dalmatian 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 other plants from getting established nearby; seeds that get a jump-start on native plants by germinating sooner; producing 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.

One of the most common invasive plant species on Deschutes National Forest is spotted knapweed (*Centaurea maculosa*), which was accidentally brought into North America in the late 1800's from Eurasia. In 2001, scientists discovered that the roots of spotted knapweed release a chemical that inhibits other plant species from becoming established nearby, which allows it to crowd out these plants and thus invade new territory. This chemical, properly called a (-)-catechin (a flavonoid similar to the antioxidant found in green tea), inhibits the germination of other plant seeds, including those of other invasive plant species, but does not harm the seeds of spotted knapweed. This discovery raises hopes of isolating an ecologically-benign herbicide. The plants that coexist with spotted knapweed in its native land have found their own counterresponses to this form of chemical warfare, but not our native plants, helping to explain why this invasive species is so successful here.

On the Ochoco National Forest, one of the most troublesome weeds is

common houndstongue (*Cynoglossum officinale*). Named for the roughness of its leaves, this weed has been invading roadsides, grazing allotments, and old timber sale units at an alarming pace. It is an excellent "hitchhiker" because its seeds are prickly and hitch rides on the coats of livestock and wildlife, as well as vehicles. It is also toxic to animals, and thus does not get eaten.

Essentially anywhere a vehicle can go, it is possible to have a weed population present. These plants 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.

With the help of many volunteer groups, 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 by state and county personnel, and support and participate in local weed boards and other partnerships.

Public land managers have a new approach of putting back some of the native vegetation to help keep the weeds out. Also very important is to keep weeds from becoming established in the first place. The Forest Service puts "weed prevention measures" into its contracts and makes weed education of its employees and the public a priority.

You can help by practicing good weed prevention habits—not parking your vehicle in a weed patch, not encouraging "attractive" weeds on your property, becoming familiar with weeds of concern in your area, and reporting them to the local authorities—your county weed board or state office, Forest Service, and Bureau of Land Management.

The invasion won't be over anytime soon; it will require a long-term investment of our time, vigilance, commitment, and money to maintain our Central Oregon wildlands the way we want them—weed-free and lovely to look at.

- Charmaine 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.

[www.co.deschutes.or.us](http://www.co.deschutes.or.us) - local weed info in Deschutes Co., Oregon

[www.weedcenter.org](http://www.weedcenter.org) - Center for Invasive Plant Management

[www.nps.gov/plants/alien](http://www.nps.gov/plants/alien) - Plant Conservation Alliance

[www.egov.oregon.gov/ODA/PLANT](http://www.egov.oregon.gov/ODA/PLANT)

[www.invasivespecies.gov](http://www.invasivespecies.gov)

# Choices for Tomorrow

## Making Memories - A Century of Recreation Experiences

Since their creation as parts of the Cascade Forest Reserve (1893) and Blue Mountains Forest Reserve (1906), the Deschutes and Ochoco National Forests have played an important role in central Oregon's economic and social history. These national forests were the major suppliers of timber during the decades when mills formed the core of central Oregon's economy.

Coupled with awesome natural scenery as well as the many world class trout filled lakes and streams, and other wildlife in the area have attracted visitors to this area for decades. Primitive access roads, often no more than muddy dirt tracks on old wagon trails through the forest, had



been constructed to most of the important points in and adjacent to these national forests by 1908. As cars became more common and roads were improved, recreational use increased proportionally to the relative ease of access and travel into the area.

Today, the diverse landscapes, cultures, experiences, and distinctive places of the Deschutes and Ochoco National Forests, along with the Crooked River National Grassland, encompass just over 2.5 million acres of central Oregon. These public land areas offer a wide variety and multitude of recreational opportunities and experiences. Some of the most popular activities, which draw over eight million visitors to central Oregon each year and establish this area as the Mecca of America's Great Outdoors, include boating, day use sites, dispersed and developed camping, fishing, white water rafting, guides and outfitters, rental and summer homes, destination resorts, rock hounding, summer and winter trails, wildlife viewing, winter recreation, and the rapidly growing and highly popular Off Highway Vehicle use.



The value of the forest as a place to play and enjoy has been reflected in recent years by the creation or expansion of seven Wilderness areas, six National Wild and Scenic Rivers, the Oregon Cascade Recreation Area, the Metolius Conservation Area, and Newberry National Volcanic Monument. These special management areas clearly emphasize and demonstrate central Oregon's shift from a timber-based economy of the past to a more contemporary economy which balances timber, tourism, and special uses preservation. Conservation education, forest health, fire ecology, and community partnerships have become the catch phrases in today's Forest Service goals. These are the new trends that the Forest Service will face head on in meeting its century old "Caring for the Land and Serving the People" mission.

- *Ronnie Yimsut, Landscape Architect*



## 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 the mountains and volcanic landscape to reach you.

- *Tom Walker, Fisheries Biologist*

## The Wickiup Dam Project

Delivering water to distant dry farms was the reason for building Wickiup Dam in the late 1930s into the 1940s. "Wickiup" is the name given by early Native Americans living in the basin area to the shelters they built. Work on the dam was by one of the largest groups of Civilian Conservation Corps (CCC) ever assembled. During World War II, Mennonite conscientious objectors also worked on this ambitious project.

To create the reservoir basin, Shevlin-Hixon cleared 11,000 acres just using hand saws. As the scene of Oregon's last big log drive, veteran river drivers guided enormous logs down 40 miles of turbulent Deschutes River waters. Dynamite was often used to blow out log jams.

In 1949, celebrations throughout the area commemorated completion of the dam. Water began to flow smoothly down the Deschutes River, through irrigation canals, tunnels, and bridges to the community of Madras, over 90 miles away.

Half a century later, inspections revealed seepage problems weakening the dam. A possible earthquake posed a threat to downstream residents and wildlife. The dam was reinforced by the Bureau of Reclamation to ensure public safety.



*Oregon's last big log drive on the Deschutes River, courtesy of Deschutes Historical Society*

## 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!

## 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.



*"Caring for the land and serving people"*

# Getting Off the Beaten Path

Scenic Byways are a way of getting in touch with the pulse of the communities and cultures of central Oregon. Traveling the three National Scenic Byways on the Deschutes National Forest will bring you face to face with incredible scenery and fascinating stories about people of the past. Each byway offers opportunities to learn about Native American lifestyles and their history, early explorers and trappers traveling through as yet unmapped territory, homesteaders eking out a living on the high desert, and loggers, farmers, and miners changing the look of the landscape.



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 straight channel to its natural meanderings. The new Wickiup Dam Interpretive Site will describe Oregon’s last big log drive and the construction of the dam.

To access the Cascade Lakes Scenic Byway, follow signs through Bend to Mt. Bachelor and the Cascade Lakes. Return north to Bend via Highway 97 or by crossing the Deschutes and Little Deschutes rivers on Forest Road 42. The best time to take this drive is between June and October. Minimum driving time is 3 to 5 hours. This drive is closed during winter beyond Mt. Bachelor to south of Davis Lake.



The McKenzie Pass-Santiam Pass National Scenic Byway starts in Sisters and quickly climbs two passes while carving through 82 miles of jagged lava landscapes suddenly softened by lush forests and sheltering trees. This dramatic byway follows an 1860s wagon road. Brilliant views of contrasting dark and light are offered over a foreground of lava and a backdrop of the magnificent North and Middle Sisters. The hidden South Sister is visible from the Cascade Lakes National Scenic Byway to the south.

The stark contrasts between fire and ice give way to a softer textured environment as you drive through old growth forests and the gentler west side understory of vine maple and other deciduous vegetation. A pause at Proxy Falls will take you to fern covered hillsides and a beautiful display of cascading water. A short hike to Linton Lake is worth the refreshing view. Native American stories and pioneer history await you at Dee Wright Observatory, Sahalie Falls, Koosah Falls, and the new scenic byway portal at the McKenzie Ranger District.

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.



Cascade Lakes, McKenzie Pass-Santiam Pass and Outback National Scenic Byway maps courtesy of [www.byways.org](http://www.byways.org). Visit their website for more information.



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 one mile away at Fort Rock State Park. The fortress-like rock formation that rises above the sagebrush plains is an unforgettable sight.

Summer Lake is a wildlife area that is part of the Pacific Flyway where waterfowl can be viewed. Silver Lake is less of 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.



# Getting Off the Beaten Path

## Celebrating the Future of Central Oregon Communities by Honoring the Past

During the summer of 2005, central Oregon celebrations honoring the past are bicentennial of the Lewis & Clark Corps of Discovery, 150<sup>th</sup> anniversary of the Middle Oregon Treaty Signing of 1855, and 100<sup>th</sup> anniversaries of the Forest Service and City of Bend. These historic events have influenced and shaped the current and future picture of central Oregon communities. Only 150 years ago, the Deschutes and Ochoco National Forests, Crooked River National Grassland, City of Bend, and other central Oregon lands were part of the original territories of the Wasco and Warm Springs tribes.

The Middle Oregon Treaty of 1855 established a relationship between the Wasco and Warm Springs tribes with the United States government. The Treaty recognized the Confederated Tribes of Warm Springs as a distinct, sovereign nation with self-governing authority. The land reserved by the tribes is critical for

exercising that self-governing authority. Through the signing of the Treaty, the Wasco and Warm Springs tribes ceded approximately ten million acres to the U.S. government to make room for incoming settlers, while retaining 644,000 acres in central Oregon. Later, a band of Paiutes was moved to the reservation. Today these three distinct tribes occupy the Confederated Tribes of Warm Springs Reservation.

The original territory of the Wasco and Warm Springs tribes covered lands between the Cascade Range, Columbia River, Blue Mountains, and south of Bend. They shared many hunting and gathering areas along the Columbia River with traditional fishing places at Sherars Falls and Celilo Falls and digging for roots east of the Deschutes River and further south and east to Shaniko, Paulina, and Prineville.

The original territory of the Paiutes covered lands from southeastern Oregon to Nevada,

Idaho, California, and Utah. The Paiute bands coming to live at Warm Springs were from the Lake, Harney, and Malheur counties of Oregon. Less dependent on fish than the Wasco and Warm Springs, these high plateau people migrated great distances to hunt and gather.

In June, The Museum at Warm Springs will open its new exhibit "Yesterday, Today and Tomorrow" which includes educational sessions about the Middle Oregon Treaty and Ceded Lands to central Oregon communities. As a partner in this celebration, Lava Lands Visitor Center will host a special exhibit "Celebrating the Future by Honoring the Past" which includes a traveling exhibit of "Yesterday, Today and Tomorrow" and a photographic exhibit of the Forest Service's 100 Years in central Oregon. Included will be student art work from both the Warm Springs and Bend communities.



### Ray Atkeson Memorial at Sparks Lake

*"It has a beauty all its own standing out from any other place in the state of Oregon."* - Ray Atkeson, May 10, 1990

In 1987, in recognition of his preservation ethic and pursuit of excellence,

Ray Atkeson was honored as Oregon's Photographer Laureate, the first and only photographer to ever receive this title. Shortly before his death in 1990 at the age of 83, he expressed to a friend that Sparks Lake was the most stunning landscape in Oregon. A special memorial to him from the people of Oregon was to be at this special place.

Dedicated in the fall of 1994, an accessible interpretive trail and spectacular viewpoint were created through a unique partnership between the Oregon Parks Foundation and the Deschutes National Forest. Built and funded by volunteers, youth work crews, and foundations throughout the state, the views from this site are one of the most photographed locations in central Oregon.

The lifetime work of Ray Atkeson helped create a visual foundation for a preservation land ethic. This memorial provides an incredible setting to continue his philosophy of teaching others to learn and discover nature through the medium of photography.

### Sled Dog Race

During winter, the Cascade Lakes Scenic Byway becomes a race course. Top mushers from the U.S., Europe, Canada, South Africa, New Zealand, and Argentina compete in the Atta Boy 300 World Sled Dog Championships in January. This race attracts mushing legends such as Doug Swingley, 4-time Iditarod champion, Buddy Streeper, Melanie Shirilla and Gwen Holdmann, two of the top women in the sport. This year, there were 36 teams in the 6 dog class and 26 teams in the 12 dog class.



Photo courtesy of Dennis Lipscomb



### Dee Wright Observatory

Established in the 1930s by Franklin D. Roosevelt, the Civilian Conservation

Corp (CCC) program provided employment for thousands of young Americans out of work during the depression. Many hand crafted and rustic structures were constructed in recreation areas throughout the country. A wonderful reminder of this era is the Dee Wright Observatory which is located at the top of McKenzie Pass and provides panoramic views of the Cascade Range. Completed in 1935 and named for Dee Wright, the foreman for the project, this unusual observatory is topped by a bronze peak finder that locates surrounding mountain peaks and lists the distance.

Recently restored and repaired, the Dee Wright Observatory now offers an accessible trail through the lava fields. The ½ mile Lava River Interpretive Trail gives visitors an opportunity to experience a lava flow firsthand with stunning views of the seemingly close Cascade Range.



Winter touring on McKenzie Pass



### Early Homesteaders

The Fort Rock Valley was the last homestead area in the United States. People

came because of promises of great farming opportunities on land covered with wheat and orchards. The advertising attracting homesteaders was mostly hype and very inaccurate in reporting rainfall. Finding desert conditions and dry farming, homesteaders stayed awhile and then migrated to Bend to work for the Shevlin-Hixon and Brooks-Scanlon Lumber Mills which opened in 1915. Fort Rock Valley residents came by wagon to Bend once or twice a year to replenish supplies, camping overnight along the way.

In the 1910s, rabid coyotes were fairly common. Ranchers alternated between peaceful coexistence and war on coyotes depending upon the number of calves killed. Rabbit drives were held when becoming a nuisance to homesteaders raising crops and gardens. A good excuse for social gatherings and celebrations, often 2,000 to 3,000 rabbits were killed with clubs and distributed among participants for food, animal food, or for their skins.

Most of the homesteader family stories collected in "Portraits: Fort Rock Valley Homestead Years" describe both hardships as well as highlights of the ingenious lifestyle they pioneered. Having to deal with a challenging environment and limited resources, these homesteaders had enduring spirits admired by all today. (Source: *Portraits: Fort Rock Valley Homestead Years and an Interview with Judy Fine, Fort Rock Homestead Village Museum*)



Judy Fine, President of Fort Rock Valley Historical Society plays church pump organ donated to the museum by the Tuttle family.

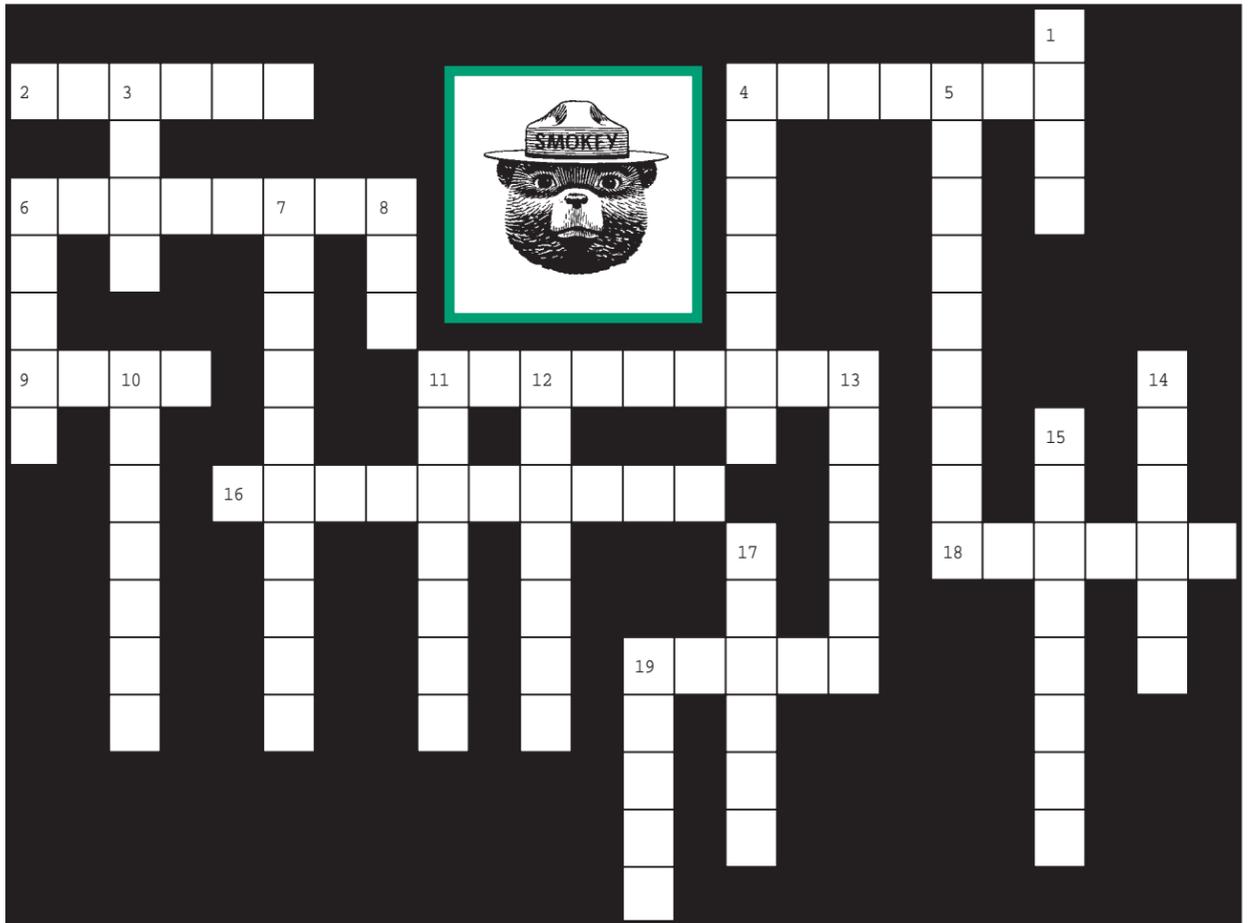
Fort Rock Homestead Village Museum is open Memorial Day Weekend through September 10:00 a.m. to 4:00 p.m.

# Kids' Corner

# Happy 61st Smokey!

## Down

1. Don't \_\_\_\_\_ with matches.
3. If you see a forest \_\_\_\_\_, tell a grown-up, right away.
4. Careless \_\_\_\_\_ can cause fires.
5. \_\_\_\_\_ can start forest fires.
6. Smokey was a \_\_\_\_\_ bear.
7. Smokey says that you can make a \_\_\_\_\_.
8. Only \_\_\_\_\_ can prevent forest fires.
10. Smokey was found in the \_\_\_\_\_ National Forest in New Mexico.
11. There should be at least ten feet \_\_\_\_\_ around a campfire.
12. Never play with \_\_\_\_\_.
13. You should have a \_\_\_\_\_ and water at every campfire.
14. Fires can \_\_\_\_\_ quickly.
15. Never let \_\_\_\_\_ throw cigarettes on the ground.
17. \_\_\_\_\_ for listening.
19. Smaller campfires make it easier to see the \_\_\_\_\_.

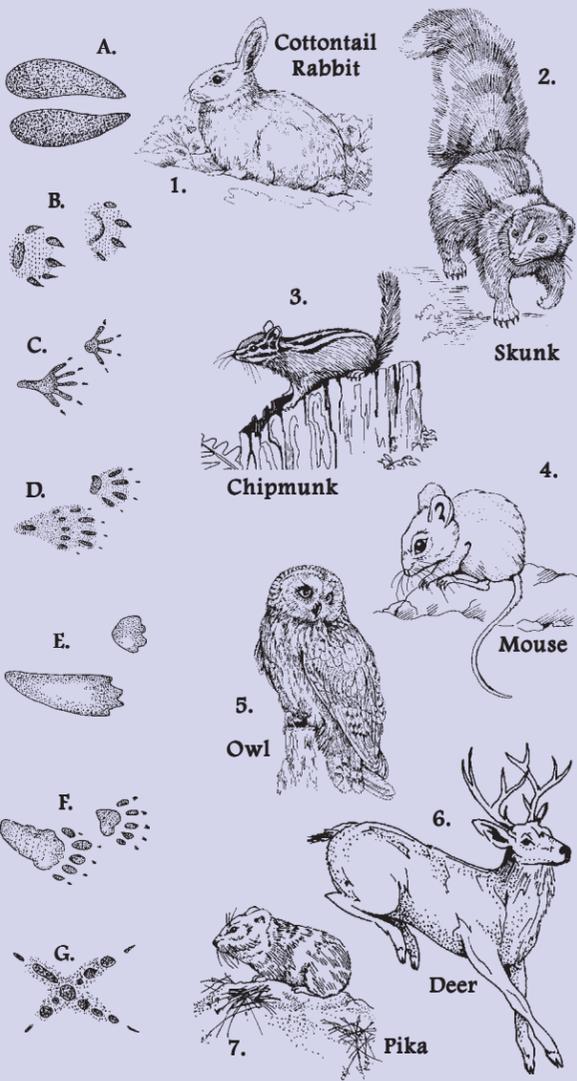


## Across

2. Smokey teaches fire \_\_\_\_\_.
4. You should always be \_\_\_\_\_ with fire.
6. This year is Smokey's 60th \_\_\_\_\_.
9. Never leave a campfire unless it is out \_\_\_\_\_.
11. Grown-ups should put out \_\_\_\_\_ by stirring them with dirt and water.
16. You are part of Smokey's fire \_\_\_\_\_ + \_\_\_\_\_ team.
18. Happy Birthday \_\_\_\_\_.
19. You should always keep your campfires \_\_\_\_\_.

## Can You Track an Animal?

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



## Lava Lands Salutes Our Visiting Schools

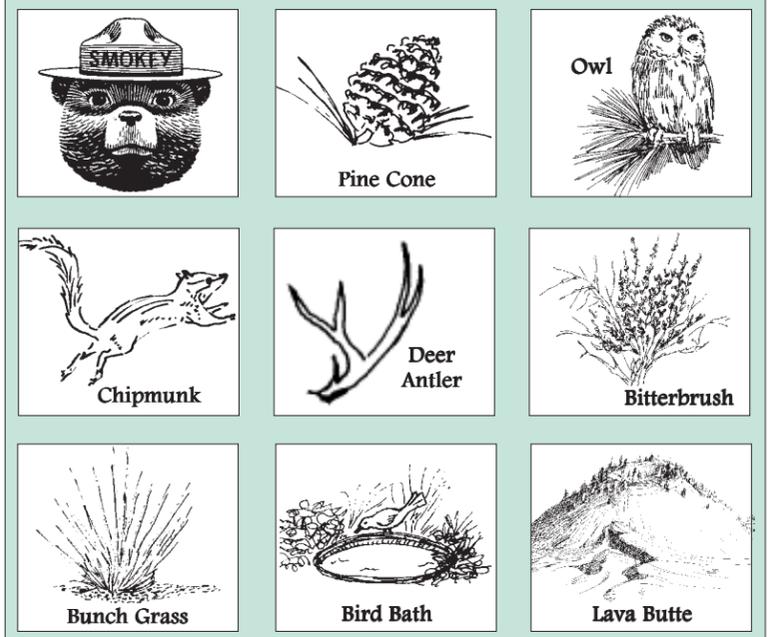
We thank the more than 8,000 students, teachers and parents who choose Lava Lands as their outdoor classroom every year. Lava Lands Visitor Center offers three different school programs: *Project SNOW* winter ecology in January, February and March; *Pathway to Discovery* spring geology and ecology during May and June; and *Time, Tracks and Trails* fall archeology and cultural heritage in September and October.

We also offer snowshoe nature tours on Mt. Bachelor in winter. 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.

## 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.



## Wildlife on the Web... Are you ready to explore the natural world around you?



The Central Oregon Wildlife Viewing Website makes it easy and fun! Explore your wildlife viewing options, print a customized guide, then get outside! Local wildlife biologists are available online to answer your questions. Visit [www.fs.fed.us/r6/centraloregon/wildlife/index.shtml](http://www.fs.fed.us/r6/centraloregon/wildlife/index.shtml)

*"For me, and thousands with similar inclinations, the most important passion of life is the over-powering desire to escape periodically from the clutches of a mechanistic civilization. To us the enjoyment of solitude, complete independence, and the beauty of undefiled panoramas is absolutely essential to happiness." - Bob Marshall, 1901-1939*

ANSWERS:  
 Tracks: A-6; B-7; C-4; D-3; E-1; F-2; G-5  
 Crossword: Down-play, fire, campers, fireworks, black, difference, you, incoln, cleared, matches, shove, spread, growumps, thanks, stars. Across-safety, careful, birthday, cold, campfires, prevention, Smokey, small

# Partnerships and Volunteers

## Celebrating the USDA Forest Service Centennial in the High Desert

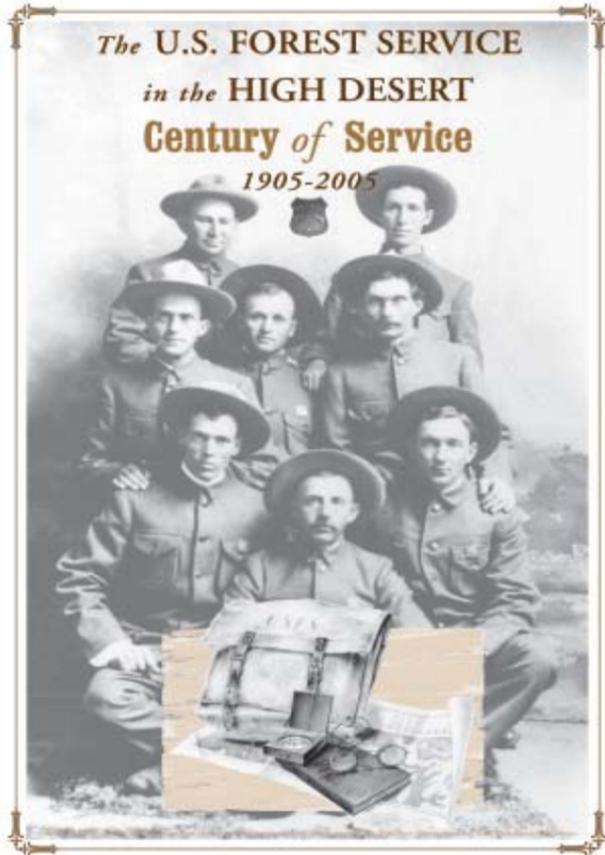


exhibit feature the early beginnings of the Forest Service, timber, fire, land use, recreation and community. A diorama of an early 20<sup>th</sup> century ranger's tent camp is the visual centerpiece of the exhibit, representing the seasonal quarters used by Forest Service staff for over a century. 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. - *Virginia Gibbons, Public Affairs Specialist*

In celebration of a "Century of Service" (1905-2005), the Forest Service has planned 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 focuses 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 exhibit includes a working fire finder (historic fire locating tool utilized by fire lookouts), other forestry tools and artifacts, many historic photos, and first hand accounts of life in the woods. This exhibit opened in January 2005 and will be on display through December 2005.

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



Forest Service Centennial Exhibit/Celebrating the Ochoco National Forest at the Bowman Museum in Prineville.

For additional information on Centennial activities in Central Oregon, visit our website at [www.fs.fed.us/r6/centraloregon](http://www.fs.fed.us/r6/centraloregon) or visit the New Century of Service website at [www.fs.fed.us/newcentury](http://www.fs.fed.us/newcentury) for Centennial information and activities planned nationwide.

## Conservation Legacy and Partnerships: Working Together to Share Our Heritage

Every year thousands of students from Central Oregon and beyond experience the spectacular natural beauty and unique heritage of this region by participating in the **Conservation Education Programs of Newberry National Volcanic Monument**. Spending a day exploring and observing, students leave with a greater understanding and appreciation for the cultural and natural resources found here.

Student scientists trek across lava flows, snowshoe through winter woods, and participate in archaeological excavations. They learn about how the natural world affects our lives and the lives of earlier inhabitants of Central Oregon. The programs offered at the Monument are made possible through partnerships with organizations such as WolfTree, AmeriCorps, Northwest Interpretive Association (NWIA), the Archaeological Society of Central Oregon (ASCO), and countless hours donated by dedicated volunteers.

WolfTree and the Forest Service have maintained a partnership for many years. WolfTree's experienced educators bring professionalism and a sense of adventure to the table. Northwest Services Academy's AmeriCorps volunteers contribute many hours of dedicated service to the Forest Service's conservation program while earning education awards in the process. NWIA plays a major partnership role in our educational programs and interpretive services through

funding and staff support for our daily operations. Thanks to our partnership with Mt. Bachelor Ski & Summer Resort, Forest Service interpretive staff and volunteers offer programs both summer and winter on the mountain. ASCO assists with our fall education program and offers training for interested people. A core of devoted and passionate volunteers provides community outreach through our conservation education programs.

**Time, Tracks, and Trails**, an archaeology program, is held every fall at the Lava Lands Visitor Center. Students get their hands dirty investigating the historic grounds surrounding Lava Butte. Students gain new knowledge of the culture resources and heritage of people of the past. Participants make observations, form hypotheses, and report the conclusions of their findings. This program is appropriate for grades five through twelve.

**Project SNOW** begins after the New Year offering a scientific inquiry experience at Mt. Bachelor. Participants in the program Study Nature Outdoors in Winter focusing on various aspects of winter watershed ecology: snow conditions and snow crystals, climatology, and how forestry and wildlife adapt to the rigors of life in winter. Project SNOW is also appropriate for grades five through twelve.

When spring arrives, students return to Lava Lands for the **Earth Science** program. They participate in a 90-minute ranger program followed by a hike on the Trail of the Molten Land. Classes may also do self-guided explorations of Benham Falls, Lava River Cave, and Lava Cast forest. The Earth Science program is appropriate for all grade levels.

**Junior Ranger** programs at the Newberry Caldera in July and August continue the tradition of recreation and education for families. Hands-on activities stimulate the scientific minds of participants and are a fun, educational way to experience the Monument.

As our community comes together to explore and understand our shared heritage of natural and cultural resources through the **Conservation Education Programs of Newberry National Volcanic Monument**, we are continuing a conservation legacy for future generations. Come join us this year, opportunities abound! - *Seth Callos, Conservation Education Coordinator*

## Wilderness Volunteers Help Wilderness Visitors

As they have every summer since 1993, a few good men and women are serving Three Sisters Wilderness visitors at trailheads and on trails as volunteer wilderness information specialists. You can meet these friendly volunteers between July 1 and Labor Day at the Green Lakes Trailhead Information Station 25 miles west of Bend.

At the most popular entrance to Oregon's most popular wilderness, volunteers assist visitors with information, wilderness permits, user fees, and the few regulations that help keep the wilderness wild. They also gather visitor statistics, maintain trailhead facilities, and help in emergencies.

Ever wanted to be a volunteer ranger? This may be your chance! Wilderness volunteers are reliable citizens who supplement the Forest Service's small wilderness ranger staff. All enjoy the satisfaction of providing an important public service.

Volunteers must be at least 18 years old and willing to serve at least 8 days during the season. Requirements are strong communication skills, being physically fit, and having first-hand knowledge of the Three Sisters Wilderness.

If you qualify and enjoy working with people, contact Todd Cardin, Volunteer Coordinator for the Bend/Fort Rock Ranger District at (541) 383-4794.

*"Caring for the land and serving people"*

**NORTHWEST INTERPRETIVE ASSOCIATION**

Visit our bookstores throughout the Deschutes and Ochoco National Forests at Lava Lands Visitor Center, Bend/Fort Rock Ranger District, Crescent Ranger District, Deschutes National Forest Supervisor's Office, Sisters Ranger District, and Ochoco National Forest Supervisor's Office.

Northwest Interpretive Association is a nonprofit organization supporting educational programs and visitor services of the Forest Service and other public land agencies. Proceeds from the sale of educational materials are used to fund interpretive programs, publications, exhibits, and much more.

Members receive a 15% discount on materials at NWIA's 140 bookstores located throughout the northwest and a subscription to the member newsletter Discoveries. Please support Deschutes and Ochoco National Forests and the other public land agencies you enjoy.

For more information visit our website at [nwpubliclands.com](http://nwpubliclands.com) or contact us at the following address:

 Northwest Interpretive Association  
909 First Avenue, Suite 630  
Seattle, WA 98104-3627  
(206) 220-4140

# Centennial Activities!

## 2005 Visitor Center Hours and Interpretive Program Schedule

### Lava Lands Visitor Center and Lava Butte

April 23 - September 30\*, Daily 9:00 am to 5:00 pm

Interpretive programs are offered July 1 to September 4. Check at the information desk for the weekly schedule.

\* Check visitor center for construction schedule update.

### Lava River Cave

May 28 - September 4, Daily 9:00 am to 5:00 pm

Self-guided exploration of a mile-long lava tube cave.

Lantern available for rental - \$3 each

### Mt. Bachelor Interpretive Program At Pine Marten Lodge

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 Contact Station, Paulina Contact Station, campground bulletin boards, and Big Obsidian Flow for the weekly schedule.



A fully restored Forest Service 1935 Chevrolet Fire Engine is parked in the main entry of The High Desert Museum and attracts lots of visitor attention.

### Historic Elk Lake Guard Station

June 21 through Sept 13, 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.

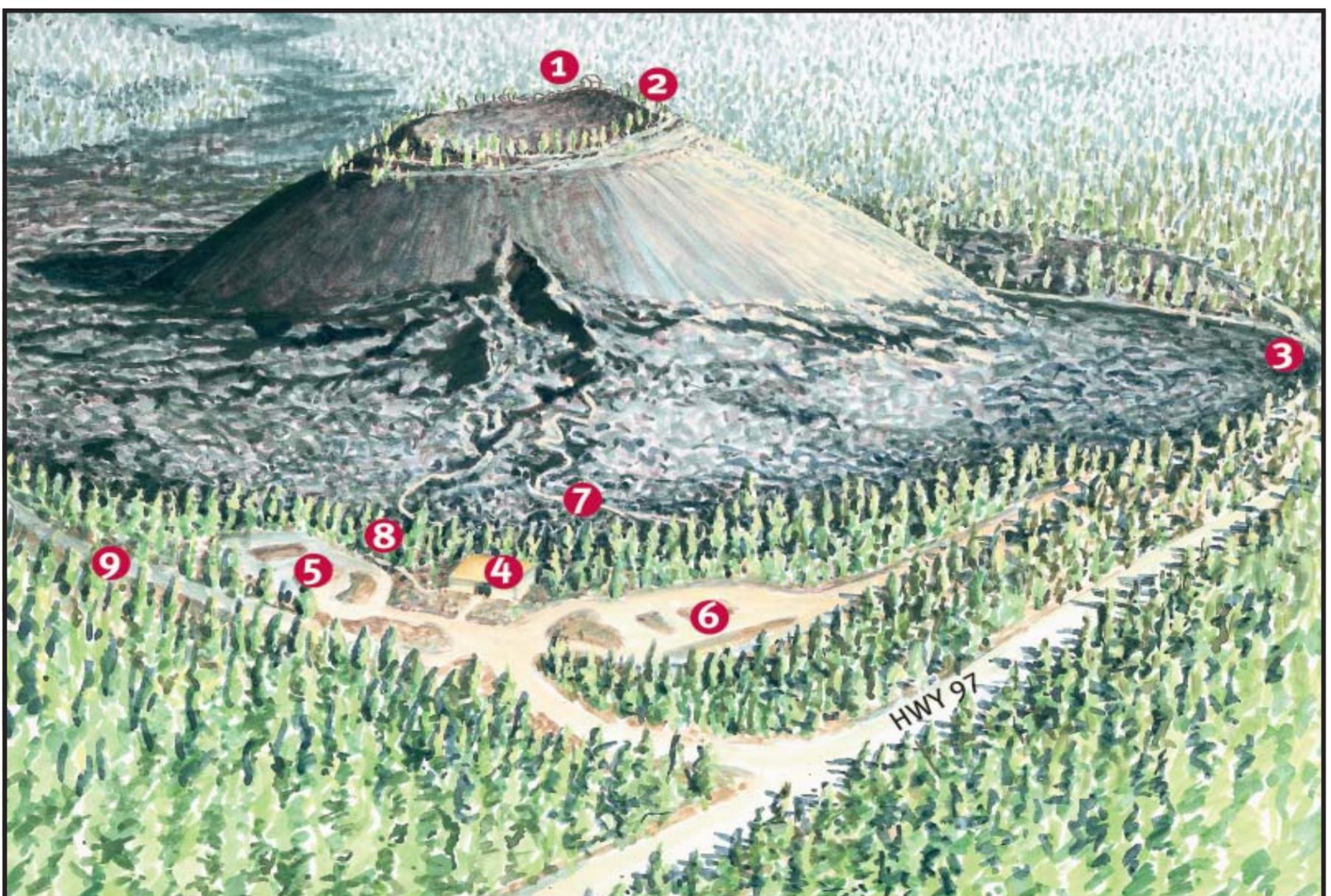
### Redmond Air Center

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.

## 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 Supervisors Office of any National Forest and ask for the PIT Traveler, the Passport In Time newsletter, or write to: Passport In Time Clearinghouse, PO Box 31315, Tuscon, AZ, 85751-1315 or visit our web site at: [www.passportintime.com](http://www.passportintime.com)

## Newberry National Volcanic Monument - Lava Lands Visitor Map



- |                      |                   |                               |
|----------------------|-------------------|-------------------------------|
| 1 Lava Butte Lookout | 4 Visitor Center  | 7 Trail of Molten Land        |
| 2 Crater Rim Trail   | 5 Visitor Parking | 8 Whispering Pines Trail      |
| 3 Lava Butte Road    | 6 RV Parking      | 9 To Benham Falls Picnic Area |

Artist: Dennis McGregor



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