



Peak Experiences

The official visitor guide
of Lassen Volcanic National Park

November 2008 - April 2009



A Healthy Family Plays Together

contributed by Ranger Virgilio



I CAN CLOSE MY EYES and feel my first memories of winter fun as if they happened yesterday. I was eleven years-old, and it was just after Christmas, over twenty years ago. I couldn't tell you what I got for Christmas that year, but I have deep affection for the over-inflated truck tire inner tubes that carried my sister, mother, father, and I down countless hills at sensational speeds. Each trip down ended with me hauling a tube half my size back up the steep hill. It was tough work pushing my way up through the hip deep snow, but I enjoyed every moment. My thoughts were

always focused on the reward of my efforts: the downhill thrill to come. Some adults would call this exercise, building self-confidence, and personality development. I just called it fun.

As a child, I did not realize those early outdoor adventures would become a foundation for a healthy lifestyle. My experiences that winter day echo the findings of scientists concerned about the deteriorating health of our children. I was not surprised to learn that recent studies have shown nearly all children enjoy the feeling of accomplishment they gain after participating in an outdoor activity. My strong desire to climb that steep hill over and over again until my parents were literally tired of watching speaks to that finding.

Studies have shown that most children say participating in outdoor activities strengthens their family's relationship with one another. Again, this is not a surprise. I love my family dearly, and am very close to each of them. Children also say that getting into a natural setting allows them to escape the pressures of everyday life (yes, children have pressures too). Nature lets kids be kids.

Today I nurture the healthy kid in me by pursuing my love of the outdoors. I am a park ranger, and I would like to personally invite you and your family to come create cherished memories and promote healthy living just outside the doors of our new Kohm Yah-mah-nee Visitor Center.

Lassen
association



This visitor guide is made possible by a donation from the Lassen Association.
www.lassenassociation.org



Welcome to Lassen!

Winter in Lassen means shorter days, colder temperatures, a lot of snow, and an abundance of new ways to experience the park. I suggest

you start your day at our new Kohm Yah-mah-nee Visitor Center. There you will find some familiar comforts of home: warm fire, a book to read, and weekend food service. Open seven days a week, our friendly and knowledgeable staff is eager to help you make the most of your visit. Whether planning an overnight backcountry camping trip or a day of family fun on our nearby sledding hill, you can get all of the information you need while enjoying a cup of hot chocolate.

Our new visitor center brings new opportunities, and there is no better time to bring your family to Lassen. We know that children benefit from direct exposure to the wonders and mysteries of the natural world, we proudly see it every day. While here you can help your child become a Junior Ranger while enjoying some old-fashioned family fun in the snow. Lassen is a place of infinite discovery just waiting for your child to touch, see, and remember.

In this visitor guide, you will find important details that will make your visit safe and enjoyable. Whether you join a ranger for a guided snowshoe walk or venture out on your own, I have no doubt that the scenic backdrop of our snowy mountains will turn your time here into timeless memories.

Darlene Koontz
Superintendent

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National Park Service
U.S. Department of the Interior

Lassen Volcanic National Park
P.O. Box 100
Mineral, CA 96063



National Park Service
U.S. Department
of the Interior



Lassen Volcanic National Park

Established first as Cinder Cone and Lassen Peak National Monuments in 1907, Lassen Volcanic became a national park in 1916 because of its significance as an active volcanic landscape. Lassen Peak began erupting in 1914, had its most spectacular activity in 1915, and experienced minor activity until 1921. All four types of volcanoes in the world plus active hydrothermal areas are found in the park's 106,372 acres. Lassen Peak is one of the largest plug dome volcanoes in the world. It is considered to be active today.

CONTACT INFORMATION

Emergencies - DIAL 911

**Information
Kohm Yah-mah-nee Visitor
Center (year-round)**

(530) 595-4480

Fax Number

(530) 595-3480

**Park Website and E-mail
Address**

www.nps.gov/lavo/

lavo_information@nps.gov

Mailing Address

Lassen Volcanic National Park
P.O. Box 100
Mineral, CA 96063-0100

Fall and Winter Activities

Beginner-Intermediate Ski and Snowshoe Routes abound in the Manzanita Lake area (elevation 5,850 feet). The road is regularly plowed from the Manzanita Lake Entrance to the Loomis Ranger Station (one mile). Over 15 miles of cross-country ski trails begin at the Loomis Ranger Station. More experienced skiers can access challenging mountainous terrain from this area. See page 5 for suggested routes.

Intermediate-Advanced Skiers and Snowshoers delight in the steep terrain and sweeping views from the snow-covered Main Park Road (usually accessed from the Southwest Area). See page 4 for touring routes.

Fall Hiking: This is a gorgeous time to visit the park, with fall colors often persisting through early November. Until serious snowfall begins, you can enjoy fabulous hiking throughout the park without the crowds of summer.

Snowplay: The Main Park Road is plowed one mile from the Southwest Entrance to



the visitor center. Tobogganing, sledding, and tubing hills are nearby the Kohm Yah-mah-nee Visitor Center (elevation 6700 feet) and snowboarding is allowed one-fourth mile from the parking area.

Snow Camping: Free permits for Wilderness snow camping are available during business hours at the Kohm Yah-mah-nee Visitor Center information desk, and after hours at the visitor center 24 hour vestibule and the Loomis Ranger Station self-registration station.

Ranger-Led Activities

Snowshoe Walks

Join a park ranger for a one to two mile adventure exploring winter ecology and Lassen's geologic history in the Southwest Area. Wear boots and dress warmly. Participants must be at least eight years old and able to do moderate physical exercise. Participation is first-come, first-served.

The walks are held Saturdays and Sundays from January 3rd through April 5th. Meet the ranger at 1:30 p.m. outside the Kohm Yah-mah-nee Visitor Center in the Southwest Area. The walks are 1 1/2 to 2 hours in length. The route and type of walk is determined by snow conditions.

For safety reasons infants and children in carriers/packs are not allowed on snowshoe walks.



For more information please telephone (530) 595-4444 ext. 5132 or ext. 5133, Monday through Friday.

Snowshoes are provided during the ranger-led walks by the National Park Service. A \$1.00 donation is requested for each pair of snowshoes used.

VISITOR CENTER UPDATE - OPEN FOR BUSINESS



Kohm Yah-mah-nee Visitor Center

photo by T. Bozeman

On September 21st the doors were opened and Lassen Volcanic National Park began operation of its very first year-round visitor center. Located near the Southwest Entrance, the Kohm Yah-mah-nee Visitor Center has something for everyone. Come experience our brand new park film in high-definition with digital surround-sound, then take a relaxing tour through our new exhibit hall. Purchase a cup of hot chocolate and watch the snowflakes fall as you enjoy the

warmth of our stonework fireplace. Our friendly and knowledgeable park staff are always ready to help you make the most of your visit. The operating hours of the visitor center are 9:00 AM - 5:00 PM daily, 365 days a year.

Be sure to ask about the sustainable design features that make this a state-of-the-art green building.



You Need To Know

For Your Safety

- Please remember that Lassen Volcanic National Park is a wild area with natural wonders that are also potential hazards.
- The National Park Service cannot guarantee your safety.
- Bring a first aid kit, high energy food, water, and extra clothing.
- Prepare for the unexpected: equipment failure, injury, or illness. Wet winter storms can turn a day trip into an agonizing ordeal.
- An emergency phone is available at the visitor center 24 hour vestibule.
- A pay phone is available in the Loomis plaza at Manzanita Lake.

Roads

- Carry tire chains in your vehicle.
- The Loomis Ranger Station is at the 5850' elevation and the Southwest Entrance is at the 6700' elevation.
- Be alert for icy road conditions and drifting snow.

Park Road Closures

- Call the visitor center for current park road information at (530) 595-4480.
- The Main Park Road usually closes by mid-November for the season due to snow. Visit the road conditions and spring road opening webpage at: http://www.nps.gov/lavo/planyourvisit/current_conditions.htm
- Plowing usually begins on the Main Park Road in early April; the road usually opens by mid-June.
- The Butte Lake, Warner Valley and Juniper Lake roads close to vehicle traffic for the season due to snow by late October and usually reopen by late June.

Trails

- Call the visitor center for current trail information at (530) 595-4480.
- Be aware that thermal areas may be covered by snow and that the snow may be dangerously thin and could collapse at any time.
- Do not walk or ski across lakes.

Campground

- The Southwest Campground is open for snow camping.
- Fires and fire pans are not permitted, self-contained barbecues are allowed on the paved parking lot.
- The cost to use the campground is \$14 per night, please register at the entrance station.

Accessible Facilities

- Kohm Yah-mah-nee Visitor Center: information desk, exhibits, restrooms, water fountain, food service, theater
- Manzanita Lake: Loomis Ranger Station, restrooms

Pets

- Pets are permitted within 50 feet from plowed roads or parking areas and must be on a leash and restrained at all times.

Snowmobiling

- Snowmobiling is not permitted anywhere within the boundaries of Lassen Volcanic National Park. Please ask a ranger about groomed snowmobile trails outside the park.

For additional park rules and regulations, please inquire at the Kohm Yah-mah-nee Visitor Center in the Southwest Area.

Into the Wilderness

Cross-country skiers and snowshoers who venture into Lassen's backcountry can expect spectacular vistas and snowy solitude. Adequate preparations and precautions may ensure a safe and enjoyable experience. Call the visitor center information desk in advance for information on snow, weather, and backcountry conditions.

Day Users

- Always sign in/out on trail register stands at the Kohm Yah-mah-nee Visitor Center and at the trailhead by the Loomis Ranger Station in the Manzanita Lake area
- Registration is helpful should search and rescue assistance be necessary

Overnight Users

- A Wilderness permit is required; ask about areas closed to camping
- Wilderness permits are available at the Kohm Yah-mah-nee Visitor Center (open seven days a week from 9 a.m. to 5:00 p.m.) or by calling (530) 595-4480; permits are available 24 hours a day at the Loomis Ranger Station self-registration station and the Kohm Yah-mah-nee Visitor Center 24 hour vestibule. An application for a Wilderness permit can be found at <http://www.nps.gov/lavo/>
- Park in designated overnight parking area ONLY; vehicles can be damaged by snow removal equipment if parked in other areas

Pets, Fires, Litter

- Pets are not permitted in the backcountry
- Open fires and fire pans are not permitted; use campstoves only
- Carry out all litter
- Dig latrines and bury human waste at least one foot deep in snow away from trails and drainages; carry out all waste paper

Water, Food, Clothing, Supplies

- Carry water; exercising in dry high-elevation air makes one particularly susceptible to dehydration
- Purify park surface water and melted snow before drinking by using 2-micron filters (or better) and boiling 5 minutes to avoid Giardia
- Potable water is available at the Kohm Yah-mah-nee Visitor Center and near the Loomis Ranger Station (only small containers will fit under the faucets)
- Store food and trash in a canister or hang out of reach of animals
- Always carry waterproof cold weather gear, even on sunny days

- Layer clothing to maintain an even temperature; excessive perspiration can lead to hypothermia
- Carry a topographic map and compass and know how to use them
- Pack an emergency ski tip, complete extra binding, and repair manuals

For Your Safety

- Always travel with a partner or a group
- Select a travel route familiar to at least one member of your party and equal to your experience and ability
- Be prepared for winter weather extremes (gale winds, subzero temperatures, blowing snow, whiteout conditions) which can kill unprepared travelers
- Postpone or terminate your trip if a storm is forecasted or appears to be building; weather can be unpredictable and fast-changing
- If caught in a storm, wait it out in a sheltered, avalanche-safe area until conditions stabilize
- Allow extra travel time during soft snow conditions
- Be aware that hydrothermal areas may be covered by snow and that the snow may be dangerously thin and could collapse at any time
- In case of emergency, the nearest telephone is at the Kohm Yah-mah-nee Visitor Center (Southwest Area) or the Loomis Ranger Station (Manzanita Lake Area)
- Remember: your best chance of survival is to use your own resources; be prepared and stay alert
- When accessing the plowed sections of the road during the spring road opening, please use extreme caution. Avalanches and rockslides can occur at any moment.



Climate Statistics

PARK HEADQUARTERS, MINERAL (ELEVATION 4850')

	Oct.	Nov.	Dec.	Jan.	Feb.	March	April
Average Maximum Temp (°F)	71	57	48	48	50	54	62
Average Minimum Temp (°F)	29	20	15	15	15	20	24
Lowest Minimum Temp (°F)	15	7	-12	-13	-7	-2	6
Average Snowfall (Inches)	1.0	10.5	27	31	30	31	11.25

MANZANITA LAKE (ELEVATION 5850')

	Oct.	Nov.	Dec.	Jan.	Feb.	March	April
Average Maximum Temp (°F)	69	56	50	50	51	53	61
Average Minimum Temp (°F)	30	21	14	13	13	16	23
Lowest Minimum Temp (°F)	10	2	-13	-13	-11	-7	-2
Average Snowfall (Inches)	3	18	31	34	28	33	14

Sunrise and Sunset Times (times calculated for flat terrain)

Day	November		December		January	
	Rise	Set	Rise	Set	Rise	Set
01	0734	1802	0708	1639	0727	1648
10	0644	1651	0716	1638	0727	1657
20	0656	1644	0723	1641	0723	1708

Day	February		March		April	
	Rise	Set	Rise	Set	Rise	Set
01	0714	1722	0638	1755	0649	1928
10	0704	1733	0724	1905	0634	1937
20	0651	1745	0708	1716	0619	1948



Cross-Country Ski and Snowshoe Routes

Virtually the entire park is open to the skier or snowshoer. Most routes described below are accessible with snowshoes or skis with climbing skins. Summit conditions on the various peaks may require an ice axe or crampons. These routes provide a variety of terrain and scenery. Sudden storms or avalanche conditions may be encountered. The wise winter traveler will turn back at any sign of inclement weather.

Visitors exploring Lassen's backcountry in the winter should take special precautions. Heavy snowfall and rugged terrain create serious avalanche conditions throughout the park. In addition to the ten essentials, it is strongly recommended that all visitors carry avalanche gear. This includes: basic knowledge of route finding and snow science, a probe pole, avalanche beacon and a lightweight shovel.

No backcountry camping is allowed within one-half mile of the plowed areas. All skiers and snowshoers are asked to sign in/out for day and overnight trips. Registers are located near the bulletin boards at the Loomis Ranger Station and the visitor center 24 hour vestibule. Common courtesy asks that snowshoers and snow players stay out of cross-country ski tracks.

Main Park Road from Southwest Area

Classification: Beginner to Advanced
Distance: Southwest Parking Area to Lake Helen 6.2 mi., to road summit at base of Lassen Peak 7 mi., to Kings Creek Meadows 11.6 mi., to Summit Lake 16.5 mi., to Hat Lake 19 mi., to Manzanita Lake 30 mi.

Elevation: Start (Southwest) 6700', high point 8500', Manzanita Lake 5850'

Average Skiing Time (one way): Lake Helen 3 hrs., Kings Creek 5 hrs., Summit Lake 8 hrs., Manzanita Lake 2 days
The route starts at the Southwest Parking Area and follows the unplowed Main Park Road through the park to Manzanita

Lake. Hazardous, steep side hills with icy conditions may be encountered. The Diamond Peak area has a history of avalanches. This area should be avoided by using the marked "Ranger Cutoff" trail just north of Windy Point (see map below). By mid-winter in the high, open country between the head of Little Hot Springs Valley and Reading Peak, it is difficult to find any trace of the road. High winds and whiteout conditions are common in this same area during winter storms. The road crosses several avalanche paths. Terrain off the roadway is generally steep south of Kings Creek and gentle northward. Good overnight snow camping areas (with wilderness permit) can be found a short distance from the road north of Diamond Peak, near Emerald Lake and Lake Helen, Kings Creek Meadow, Summit Lake and Hat Lake. This route offers good access into the heart of Lassen's backcountry.

Ridge Lakes

Classification: Advanced Intermediate
Distance: 2.5 mi. round trip
Elevation: Start (Sulphur Works) 7000', high point 8000'

Average Skiing Time (one way): 1 hr.
To reach this trail, follow the unplowed Main Park Road from Southwest Parking Area about ¾ mi., cross the bridge just before reaching Sulphur Works, then turn left (northwest) away from the road and follow the drainage just west of the Sulphur Works thermal basin. The trail climbs rapidly to the Ridge Lakes basin. Several good camping spots (with Wilderness

Sulfur emissions are prevalent throughout the Sulphur Works Area. These heated gases melt out snow caverns which may be unrecognizable due to new snow covering the openings.

Fatalities have occurred from visitors breaking through snow and falling into these heated caverns. Multiple vents can occur in terrain that appears to be skiable.

Know where the vents are and use caution throughout the area.

permit) can be found on the north shore of Ridge Lakes. If weather is severe, more protected camping can be found about ¼ mi. below Ridge Lakes along its outlet creek. Avoid the area just south of Ridge Lakes during periods of avalanche danger. The trail loops north from Ridge Lakes to rejoin itself about ¾ mi. below the basin.

Lassen Peak

Classification: Advanced
Distance: 20 mi. round trip
Elevation: Start 6700', summit 10,457'
Average Skiing Time (round trip): 3 days
Most skiers and snowshoers allow 3 days to summit Lassen Peak in the winter. A likely itinerary includes setting up camp near Lake Helen (day 1), summiting Lassen (day 2), return trip (day 3). Remember that conditions on the mountain are most stable in early morning hours, afternoon travel is not recommended. A Wilderness permit is required for all overnight visits to the park.

The safest route up the mountain follows the summer trail through the forested section and continues on the southeast ridge to the summit. Weather conditions



on Lassen Peak can deteriorate rapidly, creating whiteout conditions and high winds.

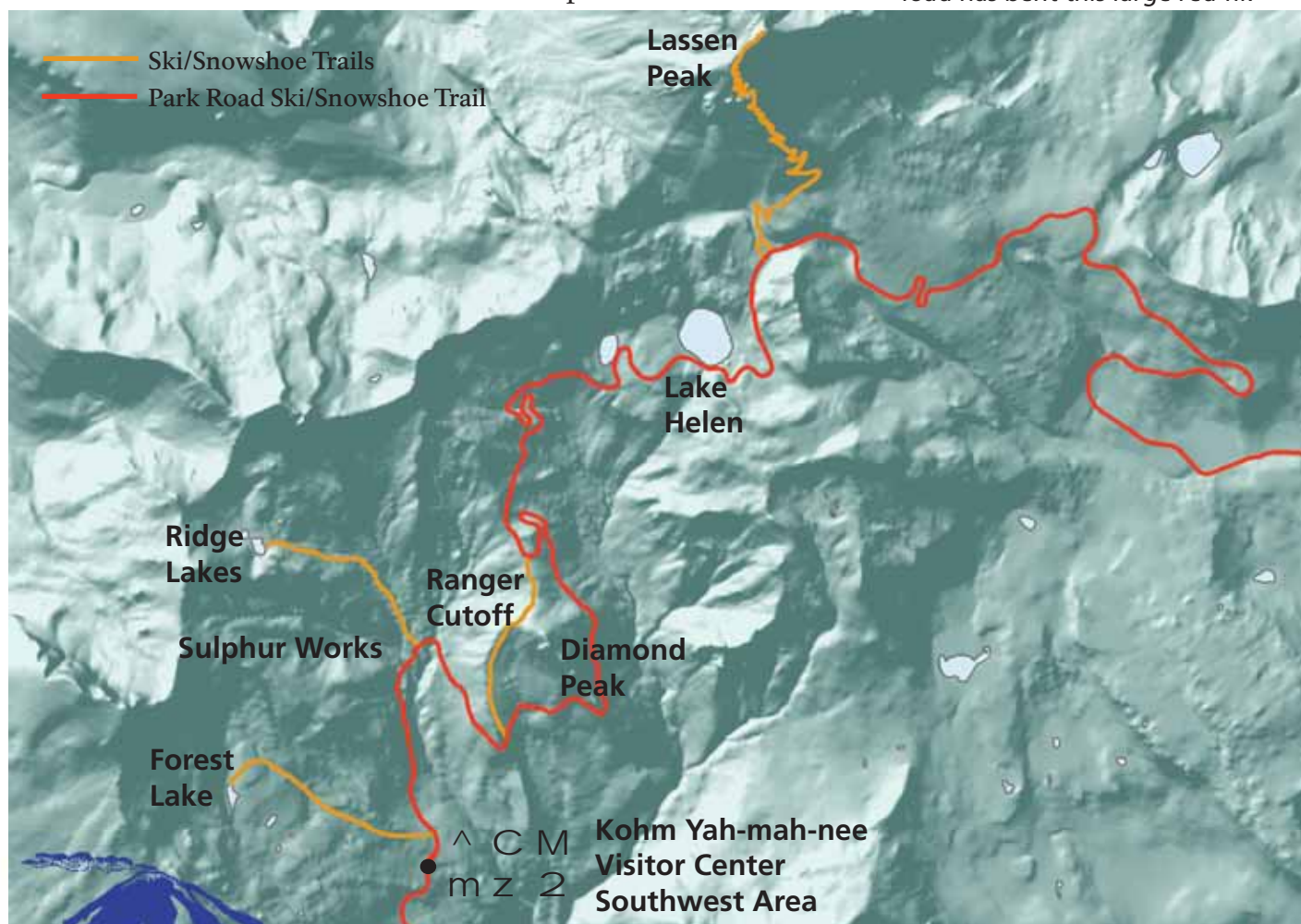
Forest Lake

Classification: Intermediate
Distance: 1 mi.
Elevation: Start 6700', high point 7500'
Average Skiing Time: 2 hr.
Description: The trail begins at the Southwest Parking Area and follows the unplowed Park Road 100 yds, then turns (south) and follows a shallow bowl several hundred yards until another larger bowl is reached. At this point the trail turns right (west) and passes through the bowl to a flat area. Look for a ridge on the right (north). Follow the crest of the ridge toward the west until a turn to the left (south) up a steep face. Continue to the southwest, staying above some large open areas to the south. On reaching the next ridge, turn right (west) and follow the ridge to the open bowl area beneath Brokeoff Mountain. Do not travel into the bowl--turn left (south) and follow the markers to Forest Lake.



The annual weight of a heavy snow load has bent this large red fir.

Southwest Area Winter Recreation Map



Brokeoff Mountain

Classification: Advanced
Distance: 4 mi. one way
Elevation: Start 6650', summit 9250'
Average Skiing Time (one way): 4 hrs.
Most skiers access the summit via the southwest ridge. Nevertheless, getting onto this ridge can be difficult as the various routes inevitably take a traveler through hazardous canyons. Traditional routes often use the Forest Lake trail or the summer trail which begins near the park entrance. Numerous avalanche paths exist on all aspects of the mountain. Travelers should use extreme caution. Many skiers reserve travel on Brokeoff Mountain until spring when snow conditions traditionally stabilize.

Summit conditions during inclement weather often include high winds with little or no visibility. Large, overhanging snow cornices at the summit make any approach to the edge extremely dangerous.



Manzanita Lake Snowshoe Loop

Classification: Beginner

This trail is recommended for foot traffic only, not skiing

Distance: 1.6 mi. around lake

Elevation: Start 5800', high point 5850'

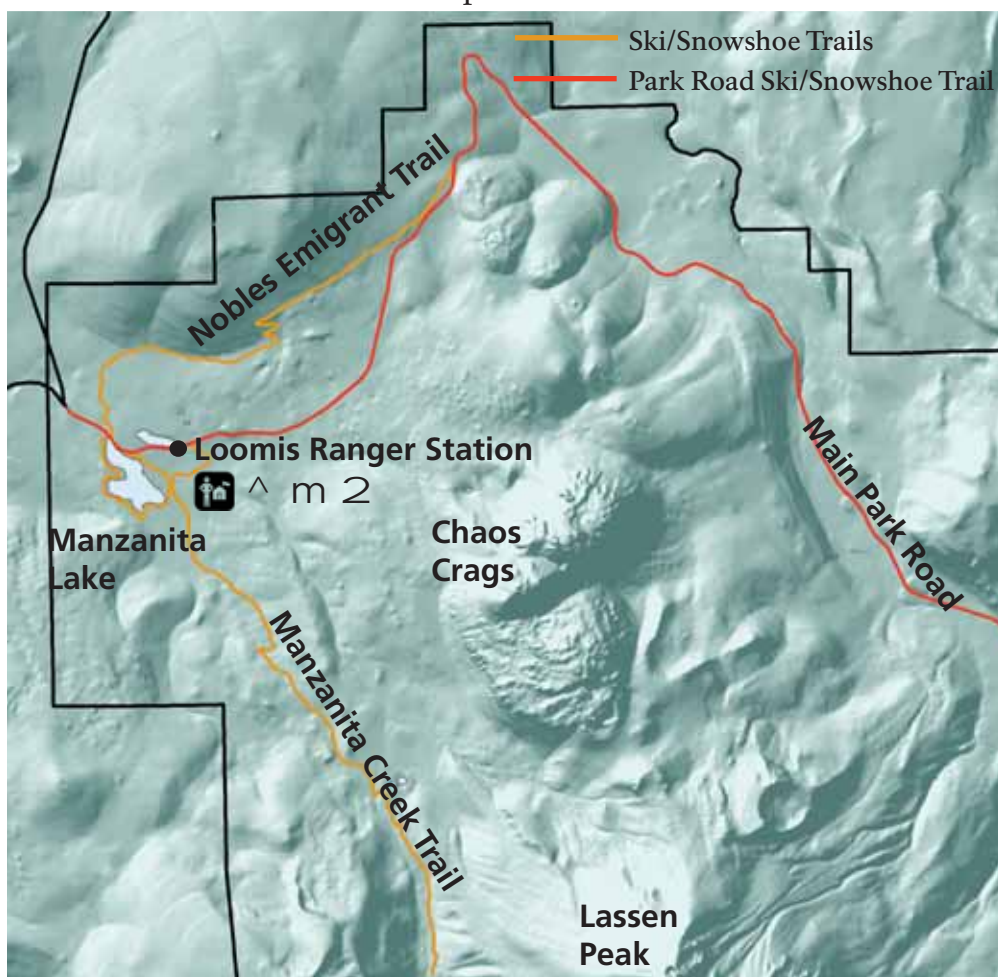
Average Time (round trip): 1.5 hr.


The route starts near the Loomis Ranger Station and circles the lake.



Pine Martens have adapted to harsh winters and are active all winter long.

Manzanita Lake Area Winter Recreation Map





The Lassen Volcanic Backcountry Ski Patrol is on patrol! They can be identified by nametags, red jackets and the universal first aid symbol. They are volunteers who work weekends. They can provide information about routes, updated avalanche assessments and the park in general. You may also meet the ski patrollers snow camping at the Southwest or Devastated Areas where they may be available after hours in the case of an emergency.

Nobles Emigrant Trail

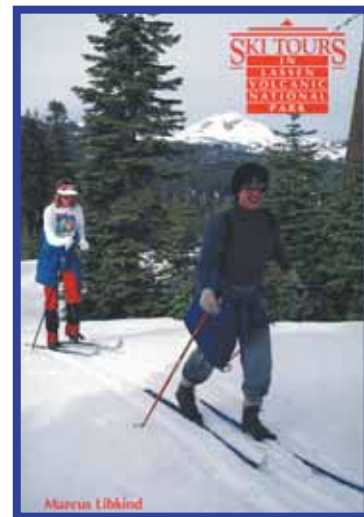
Classification: Beginner to intermediate

Distance: 7 mi.

Elevation: Start 5850', high point 6350'

Average Skiing Time (round trip): 3-4 hrs.

The trail starts at the Main Park Road across from the Loomis Parking Area. The route joins the historic Nobles Emigrant Trail at the base of Table Mountain. The trail then climbs a portion of the southeast flank of Table Mountain and continues through heavy fir forest at a gradual descent, then rejoins the Main Park Road at Sunflower Flat. Turn right (north) to follow the Main Park Road back to make a loop.



*Ski Tours in Lassen Volcanic National Park \$14.95; Available through the Lassen Association.
lassenassociation@yahoo.com
or 530-595-3399*

Manzanita Creek

Classification: Intermediate

Distance: 7.5 mi.

Elevation: Start 5850', high point 7400'

Average Skiing Time (round trip): 6 hrs.

The trail leaves from the Loomis Ranger Station, crosses the footbridge, and turns right onto the Manzanita Lake Campground road. Travel through the campground to the Manzanita Creek trailhead sign. The route is mostly a gradual climb of over 1000 feet. Suitable snow camping sites are found along the upper portion. Be sure to obtain a wilderness permit. Beware of Loomis Peak, which has several avalanche chutes that may reach the trail toward the upper end.

Near the Park: McGowan Lake & Nanny Creek

Classification: Beginner to Intermediate

Distance: 5 mi. to Nanny Creek

Elevation: Start (Highway 89) 6080', end (Highway 36) 5110'

Average Skiing Time (one way): 2 hrs.

The trail leaves Highway 89 on the unplowed McGowan Lake Road (3.5 miles south of the Southwest Entrance Station). The route is marked with blue and white ski touring signs and proceeds across a flat and slightly descending landscape. Skiers will pass through largely forested areas with some meadow clearings, ending at Highway 36 at Nanny Creek. The trail does not go to McGowan Lake which is on private property. This trail makes for a good one way ski if vehicles are available for shuttle.

Lake ice is dangerous and unstable. Lake shores may be difficult to recognize due to snow. Please stay off lake ice.

Be "Avalanche Aware"

ALWAYS obtain weather and avalanche information before entering the park's backcountry (see Color Avalanche Danger Descriptors on back page). At times, backcountry travel may not be advised due to high or extreme avalanche conditions.

STORMS

- 80% of all avalanches occur during or soon after a storm.
- When new snow falls on top of old snow, the avalanche danger is much higher.

SNOWFALL

- Snow falling at a rate of 1" or more per hour increases avalanche danger rapidly.
- With high winds, leeward slopes can become dangerously loaded with snow, even with just a few inches of snowfall.

WEATHER CONDITIONS

- Rapidly changing weather conditions (wind, temperature, precipitation) can cause unstable snow.

SOUNDS

- Unstable snow can settle beneath a

skier's weight with a "whumff."

RECENT AND PRIOR AVALANCHE ACTIVITY

- If you see a new avalanche, suspect dangerous conditions.
- Avoid old slide paths, steep open gullies/slopes; watch for areas with small trees bent over and trees with broken limbs.

ROUTE SELECTION

- If you must cross a dangerous slope, stay high and near the top; avoid avalanche fracture lines.
- If you must climb or descend a dangerous slope, go straight up or down; do not traverse back and forth.
- Areas of dense timber, ridges, or rocky outcrops can be safer; use them for rest stops.
- Only one person should cross a dangerous slope at a time.
- Snow softens as the day grows warmer, this can make a return trip more difficult.
- Each person should carry a shovel.
- Carry and learn to use an avalanche transceiver.



Steep slopes and snow cornices on Bumpass Mountain

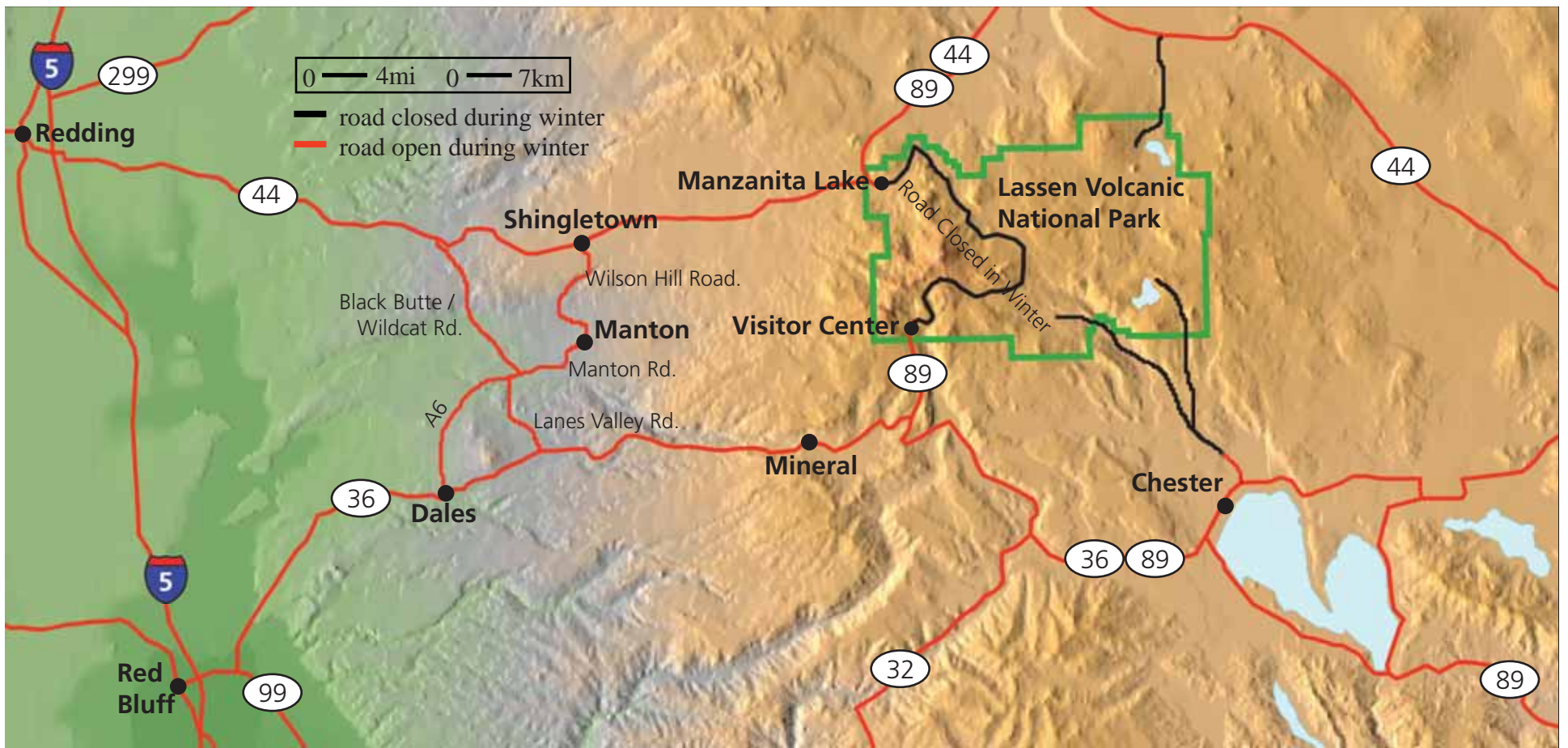
(NPS Photo by K. Pietras)

- Report any unstable areas to a ranger.
- IF YOU ARE CAUGHT IN AN AVALANCHE**
- Discard all equipment.
- Make swimming motions and try to stay on top, working your way to the avalanche's side.
- If you are pulled beneath the surface, keep your mouth closed.
- As you begin to slow to a stop, make air space in front of your face with your hands; keep your arms close to your body.

IF YOU ARE A SURVIVOR

- Mark the place where you last saw the person buried and search directly downslope.
- Probe the snow in an even line across the snowfield using ski poles, shovels, or skis.
- If you can, send someone for help.
- If you are alone, do not abandon your search and go for help unless it is minutes away; the buried person has less than a 50% chance of survival after 15 minutes.

Lassen Volcanic National Park Area Map



NEARBY BUSINESSES

Lassen Volcanic National Park does not endorse the organizations and enterprises listed below, but we wish to thank them for their generous support in producing this publication as a visitor service.

South of Park, Highway 36:
Mineral and Mill Creek

South of Park, Highway 36:
Mineral and Mill Creek

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Located 9 miles from Lassen Volcanic National Park's Southwest Entrance on Highway 36 E. in Mineral, CA
*Check in at the Lassen Mineral Lodge General Store www.volcanocountry.com

West of Park, I-5:
Red Bluff

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The Lassen Association (LA) has assisted the National Park Service since 1939 in providing park visitors with interpretive and educational merchandise regarding the many and varied features of the park.

We provide books, maps, trail guides and videos about the natural and cultural history of Lassen Volcanic National Park. Additionally, we offer a large selection of educational gift merchandise to enhance your park experience - memories to take home. Visit our book and gift stores located in the Kohm Yah-mah-nee Visitor Center, Loomis Museum or our web site www.lassenassociation.org.

For information on how to join our mission visit our online membership program at www.lassenassociation.org. Or contact us directly at (530)595-3399 or email at lassenassociation@yahoo.com.



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Website: <http://www.lassenparkfoundation.org>

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Migrate, Hibernate, or Tolerate?



Western Tanager

Wild animals have three main methods to deal with winter: They can leave it by migrating; they can avoid it by hibernating or they can live with it by tolerating and adjusting to its severe conditions.

Many animals migrate. More than 83 species of birds nest in the park. Most of these birds leave northeastern California before winter sets in and return in spring. Western tanagers fly as far south as Costa Rica. Many

songbirds, from swallows to warblers, fly to western Mexico for the winter. How many people do you know who head south to places like Florida when winter weather arrives?

Spending winters in the tropics conjures up images of sun bathing on a balmy beach. For birds, however, winter is no vacation. Birds of all sizes fuel their long distance flights by burning fat, so they must store body fat prior to migration and eat enough to replenish this fat as it is burned. Travel to and from nesting areas is full of perils, including storms, predators,

obstacles such as radio towers, and the search for food in unfamiliar landscapes.

Many flying animals choose not to migrate during Lassen's harsh winters. Some insects, such as Lassen's California tortoise shell butterflies, survive the winter by producing glycerol, a form of sugar

that resists freezing. On cold nights, birds such as the Mountain Chickadee enter a controlled hypothermia; lowering their body temperatures allows them to save fat that would have been burned to maintain their normal high body temperature.

Hibernation is a strategy used by animals including bears, bats, golden-mantled ground squirrels, and chipmunks. In the fall, bears put on fat by gorging on berries and pinenuts. While bears are denning, their temperatures can drop 15° F and their bodies slow down to reduce energy consumption. Even so, bears will burn 15 to 40 percent of their body fat over the winter, requiring a bear to consume 20,000 calories a day or more in preparation for winter hibernation. Bears may wake up, but do not have to eat, urinate, or defecate. Female bears can give birth during hibernation.

Animals that confront winter have a wide variety of adaptations for survival. Adding fat and gaining weight for hibernation are adaptations. Storing food is a common behavioral adaptation. Beavers stash twigs underwater where they will be available all winter. Pikas, the "haymakers of the mountains," dry grasses they collect in summer for consumption under winter's blanket of snow.

Many small animals take advantage of the insulating value of the snow. Once the snow cover is about eight inches deep, the temperature at ground level becomes almost constant regardless of how cold it gets above.

Voles remain active all winter by living under the snow where their food is still available and they can build warm nests of grass. Unfortunately for voles, weasels will successfully hunt them in their own tunnels, even using the nests as sleeping quarters, and lining the nest with the fur of the previous occupants.

Surviving the winter season can be challenging for not only Lassen's wildlife, but for park visitors as well. Visitors must also be prepared to deal with rigors of winter.



American Black Bear



Mountain Chickadee

Avalanche Danger Color Coded System

Always plan ahead when traveling into the backcountry. Before leaving home, you can learn more about avalanche safety and check on current conditions in the Lassen area by calling the visitor center. The National Avalanche Center's website, www.avalanche.org/~nac, is an excellent source for safety tips and information on avalanche danger.

Check weather reports and avalanche conditions posted at the visitor center and Loomis Ranger Station. Lassen Volcanic uses the standard color-coded system shown at right.

Danger Level	Avalanche Probability and Avalanche Trigger	Degree and Distribution of Avalanche Danger	Recommended Action in the Backcountry
LOW (green)	Natural avalanches very unlikely. Human triggered avalanches unlikely.	Generally stable snow. Isolated areas of instability.	Travel is generally safe. Normal caution is advised.
MODERATE (yellow)	Natural avalanches unlikely. Human triggered avalanches possible.	Unstable slabs possible on steep terrain.	Use caution in steeper terrain on certain aspects
CONSIDERABLE (orange)	Natural avalanches possible. Human triggered avalanches probable.	Unstable slabs probable on steep terrain.	Be increasingly cautious in steeper terrain.
HIGH (red)	Natural and human triggered avalanches likely.	Unstable slabs likely on a variety of aspects and slope angles.	Travel in avalanche terrain is not recommended. Safest travel on windward ridges of lower angle slopes without steeper terrain above.
EXTREME (black)	Widespread natural or human triggered avalanches certain.	Extremely unstable slabs certain on most aspects and slope angles. Large, destructive avalanches possible.	Travel in avalanche terrain should be avoided and travel confined to low angle terrain well away from avalanche path run-outs.

Gear Up For Safe Driving In Snow Country!

Please remember that high-elevation roads are often icy or snow-covered during the fall and winter and can be very hazardous, especially when temperatures drop during the evening and early morning hours.



The main park road that connects with Highway 89 is closed throughout most of the winter. The road is plowed to the Kohm Yah-mah-nee Visitor Center from the Southwest Entrance and to the Loomis Ranger Station from the Manzanita Lake Entrance Station. Visit the website for road status at: http://www.nps.gov/lavo/planyourvisit/current_conditions.htm for up-to-date information. The 17 Road (31N17 from Mineral to Viola), other U.S. Forest Service, and some county roads close for the winter.

Carry tire chains in your vehicle from October through May. Chain requirements can be instituted at any time; even four-wheel drive vehicles with snow tires can be required to chain up. Watch for highway advisories posted in Red Bluff and Redding. Caltrans will post chain requirements on Highways 36 and 44.

To check for chain requirements, road closures, or other highway advisories before your trip, call the Caltrans Highway Information Network at 1-800-427-7623 or go to the Caltrans website at www.dot.ca.gov/hq/roadinfo.

Caltrans also offers important tips for winter driving in snow country at www.dot.ca.gov/hq/roadinfo/wntdriv.htm.

Have a safe and enjoyable trip! We look forward to seeing you in the park.