

MOUNT DIABLO REVIEW



MOUNT DIABLO INTERPRETIVE ASSOCIATION

Established in 1974

Spring 2006

MDIA, PO Box 346, Walnut Creek, CA 94597-0346 • 925.927.7222 • fax 877.349.5016 • www.mdia.org

Superintendent's Column

Storms Do Damage to Mount Diablo

by Craig Mattson, Superintendent



The New Year's storms caused extensive damage to the roads and trails of Mount Diablo. In the back country alone we know of approximately 25 major road washouts and slides that will require extensive repairs. North Gate Road was closed as a small drainage became a roaring river overtopping the

roadway, eroding out the supporting material. State Parks immediately got to the repairs with costs exceeding \$6,000 for materials alone.

Adding to the previous storms, Mount Diablo received several inches of snow the weekend of February 18th. Park visitors flocked to the park to play. Rangers estimate that we had about 8,000 people visit the park to play in the snow. It was reported that North Gate Road entrance was backed up for miles with cars waiting to enter the park. Parking was at a premium and people were parking at every roadside pullout.

We have had an interesting winter, and spring is likely to be spectacular with wildflowers blooming on the mountain. California poppies and buttercups are just beginning to bloom in Mitchell Canyon.



photo by
Mike Nelson

Earth Day

by Dan Stefanisko, Park Ranger Supervisor

Once again it's time to roll up your sleeves, put on the work gloves and come out to the park to participate in the annual Earth Day event at Mount Diablo State Park.

Since 1970 Earth Day has served as a date that calls attention to environmental stewardship and the ecological challenges facing our planet. Although each year many events served to educate the public about environmental issues and ways to save the planet, there had not been a statewide project that encouraged and enabled citizens to do something with their hands that would have a positive environmental impact to preserve and protect their local state and city parks.

The California State Parks Foundation developed its Earth Day Restoration and Cleanup program to fill this void by launching a volunteer-supported one-day event with an action component that resulted in thousands of people working on environmental projects throughout California.

Over the past eight years the Foundation, with generous support from numerous co-sponsors, has awarded over \$684,000 in grants while close to 50,000 volunteers have contributed more than 200,000 hours of work. These efforts have resulted in an estimated \$3.4 million in park maintenance and improvements.

Mount Diablo will be celebrating Earth Day on April 22, 2006. Festivities will happen between 8am and 1pm at the Mitchell Canyon entrance of Mount Diablo State Park. A variety of ecosystem restoration projects will take place. These projects will include planting native vegetation, exotic plant removal, barbed wire fence removal, trail restoration, and more.

Volunteers must pre-register by e-mailing Ranger Ryen Goering at junctionrangers@earthlink.net or call at (925) 837-6129 Ext. 5.

So, mark your calendars and hope to see you there.

MDIA President's Column

Welcome to the phenomenally beautiful Mount Diablo State Park! The Park is a 20,000-acre nature island at the edge of major metropolitan areas. You are visiting the Park at a special time of the year--Spring. Lovely native wildflowers are everywhere. If you are curious to know the names of particular wildflowers, the Mount Diablo Interpretive Association (MDIA) has published a full-color identification booklet containing 103 wildflowers commonly found in the Park. You can purchase it at most staffed locations in the Park, or on-line at www.mdia.org. And remember, do not pick the wildflowers--leave them for everyone to enjoy and treasure.



Rich McDrew, President

Mount Diablo State Park is but one of 278 State parks in California. The California State Parks Foundation compiled the following statistics regarding those 278 parks:

- Encompasses 1.5 million acres of land.
- 10,000 known historic and prehistoric archeological sites.
- 3,000 historic buildings.
- One million museum artifacts.
- 49,200 acres of old growth coast redwood forests.
- Contain 27% of the endangered, threatened or rare species.
- 2,400 permanent employees.
- 2,700 seasonal employees.
- Eleven patrol dogs in the park system.
- 15,000 campsites.
- 8,000 places to picnic.

- 3,760 miles of trails for hikers, bikers and equestrians.
- 86 million people visit the parks annually.
- \$2.6 billion spent annually by park visitors in local communities.
- 600,000 school children annually attend park interpretive programs.

If you like this free newsletter published by MDIA, and MDIA's cleanup program, and the more than 250 MDIA trail signposts, as well as operation of the Visitor Center in Mitchell Canyon, and other like initiatives, please consider supporting MDIA's work through your membership. There is a membership application form in this newsletter, or you can go to our comprehensive and artful website www.mdia.org. Organized in 1974, MDIA is an all-volunteer (we have no paid staff) 501c(3) non-profit in the State of California. 95% of the dollars received by MDIA is reinvested back into the Park. And, since MDIA relies on volunteers, we could always use your help on a variety of initiatives, from doing administrative tasks, to data processing, to doing trail work. Don't be bashful. You will get a tremendous amount of satisfac-



MDIA Visitor Center in Mitchell Canyon

tion knowing that you are helping the environment, and making the Park better for you, your children, and your grandchildren. It is a worthy legacy. President John F. Kennedy would have said it this way: "Ask not what the Park can do for you, but what you can do for your Park."

Get Down and Get Dirty!

by Sue Donecker

If you like to play in the dirt our Globe Lily Trail work day is for you. Exercise and camaraderie are the orders for the day as we enhance the trail for others. You can choose to trim, shovel or rake. Just meet Harry Silcocks at the Mitchell Canyon Visitor Center at 9:00am, Saturday, April 1. (No this is not an April Fool Joke!) Bring lunch, liquids, and work gloves if you have a favorite pair. Don't forget to cover up with sun block. Rain date is Saturday, May 6. Seriously, you can do as much or little as you like and stay as long as you please. The work will continue until 3:00pm. See you there!

For The Birds!

by Sue Donecker

MDIA is working on new displays for the Mitchell Canyon Visitor Center of our fine feathered friends who reside and pass through our wonderful park. Mitchell Canyon seems to be a favorite spot for birders, but to see them all, you have to move around the Park. We have been very fortunate to enlist help from Dave Furseth, Phil Grover, and Joe Oliver. We hope to have our display ready by April. Stop by and take a look. The Visitor Center is open on weekends and holidays from 8am to 4pm March through October, and 9am to 3pm November through February.

Restoration in the Park

by Dave Caniglio

There are many fine volunteer efforts and opportunities going on in our beautiful Park. The focus of this brief concerns the resource management part of things. We already have the Trail Maintenance Crew, the Trash Removal Project, the Trail Sign Project, and probably others. I would like to make a case and strike up some renewed interest in a Restoration Crew.

Over the past year, a really nice green house has gone up at Mitchell Canyon. Thank you to Boy Scout Troop 540. Bryan Sparks and crew built the structure, and Robert Harper the inside shelving. Plans remain for wheel chair accessibility and a water-line. Thanks also to park staff member Sue Schwartz for nurturing the project along. The prospect of a native plant nursery in the Park has been evolving over the past decade with each of the several restoration projects, Mitchell and Pine Meadows, Mitchell Creek, Pine and Little Pine Canyons to name a few.

This past '05 Earth Day a couple of restoration efforts took place again at Mitchell Canyon. One site along Mitchell Creek had Poison Hemlock growing out of control. It was removed and planted with Hedge Nettle. The other site was the hill slope behind the Visitor Center where erosion and an unwanted trail combined to scar and destabilize the area. Coast Live Oaks, and Purple Needle Grass, among some other stuff, were planted there. The plants were supplied by Natives Here Nursery. Maintenance has been ongoing since. Currently Blue Elderberry and Valley Oak trees are being worked with for these sites.

A Volunteer Restoration Crew could sustain and build on these and past projects. Important to the effort is finding a green house manager to add some native plant propagation know-how. If interested contact Ranger Ryen Goering, the volunteer coordinator at 925-837-6129 or Dave, restoration volunteer at 925-287-9733. In the years ahead, we can propagate the park's native plants, collected with state authorization, from cuttings, divisions, seeds, bulbs, etc., design, and restore some critical sites. One choice area would be around the Mitchell Canyon Visitor Center. After the past winter holiday storms and landslides, we have ample sites to choose from. Let's do it and form an ongoing crew and infrastructure, and the public will surely want to get involved.

Name That Mount Diablo Site



Do you recognize where this is in Mount Diablo State Park? For the answer, turn to page 7.

Mitchell Canyon Discovered!

by Rich McDrew

Discover Mitchell Canyon in Mount Diablo State Park! It is one of the most scenic canyons in the Park. A fire-road, with a very gentle slope for two miles, follows Mitchell Creek. Surrounded by high hills, it leads you deep into the north side of the Park. Lined with pine, oak, and buckeye trees, it gives the hiker, biker, equestrian, and the strolling family group, a chance to enjoy the serenity of a pristine natural environment. Situated along the first one-mile of the fire-road, are ten numbered posts equally spaced on the side of the fire-road. The numbers on the posts are keyed to a free pamphlet in which is described the natural environment of that particular vicinity. The pamphlet can be obtained in a box at the beginning of the fire-road or at the nearby Visitor Center. Mitchell Canyon also offers several connecting trails for the more serious hiker in order to explore other parts of the Park. For example, you can hike to the summit and back from Mitchell Canyon. It is only 14 miles round trip!

According to the authoritative HISTORY OF CONTRA COSTA COUNTY, published in 1926, "Mitchell Canyon, at the base of Mount Diablo, is named for him [Isaac Mitchell]". Isaac Mitchell (1829-1921) was a native of Kentucky. He came to Contra Costa County in 1849 with the gold rush, and initially engaged in farming in the San Ramon Valley. He later purchased a large tract of land in the canyon where he lived until his death. He and his wife had six children.

The trailhead to Mitchell Canyon is at the south end of Mitchell Canyon Road in Clayton. In addition to parking, a day-use picnic area, and restroom facilities, there is the Mitchell Canyon Visitor Center (MCVC) operated for the Park by the Mount Diablo Interpretive Association. The MCVC is open 8:00 AM to 4:00 PM on weekends and holidays, and docents provide information as well as sell useful items such as trail maps to the visiting public. Displays of natural features in the Park are also in the MCVC.

Come and discover Mitchell Canyon!

Geologic Guide to Falls Trail Loop

By Ken Lavin and Karen Synowiec
(From MDIA's MOUNTAIN NEWS, FALL 1996)

The Falls Trail loop is one of Mount Diablo's most popular hikes. In addition to impressive cascades and wildflower displays, the walk provides an introduction to the fascinating geology of Mt. Diablo. The loop is six miles long, with a total elevation gain of 1,300 feet. Portions of the route are rugged, so it is advisable to wear lug-soled boots.

The trail head is at the end of the Regency Drive cul-de-sac in Clayton. The first portion of the trail follows Donner Canyon Road south along Donner Creek. Although Donner Canyon Road is wide and well-graded, this first part of the hike is often challenging after a heavy rain, because of the peculiar geology underlying the lower portion of Donner Canyon.

These rocks belong to the 140 million year old Knoxville Formation, part of the Great Valley Sequence. These Mesozoic (Dinosaur) age rocks are composed of material weathered off the ancestral Sierra Nevada mountains and deposited into an ancient sea. The Knoxville Formation includes units of mudstone that are rich in clay minerals. Clay is extremely porous and readily incorporates water between flat, platy grains. Although porous, clay is nearly impermeable, and therein lies the problem. The "fat" clusters of water molecules cannot squeeze through tiny pore spaces between the clay grains nor overcome the electrostatic attraction exerted by the platelets. The water stays trapped in the pore spaces. The applied result of these hydrogeologic properties is a muddy goop that sticks to the bottom of your

boots as you slog up the trail.

About one mile up Donner Canyon, you will encounter the old Donner Cabin site on your left. Once a park residence, the cabin burned down several years ago. Beyond the cabin site, the trail climbs steeply for a short distance. As you climb keep a sharp eye out for gray-brown chunks of sandy limestone in the soil. These chunks represent concretions encased in the Knoxville mudstone.



The top falls

Continue up the Donner Canyon 3/4 of a mile to the junction with the Meridian Ridge Trail. In-springtime, look for the California State Flower, the Poppy, and the California State Bird, the Quail. Pause at the trail junction and examine California's State Rock, Serpentinite.

Serpentinite is a metamorphic rock, created by the hydrothermal alteration by seawater of peridotite, the rock

which comprises the mantle of the earth. The mantle is the layer of the earth's interior that lies between the relatively thin crust and the earth's core. Serpentinite is an ultramafic rock, rich in the elements iron and magnesium. Serpentinite also contains concentrations of nickel and chromium. This unusual mineralogy results in a distinctive plant community dominated by scrub oak, manzanita, and digger pine. Although only 1% of California's underlain by soil derived from serpentinite, fully 10% of California is endemic plant species grow in a serpentinite substrate.

Turn right (west) at the junction of the Donner Canyon Road and Meridian Ridge Road, proceed uphill 1/10 of a mile on the Meridian Ridge Road and turn left at the intersection with the single-track Middle Trail. Finding the route to the falls was once a formidable task, but strategic intersections have been well marked through the determined efforts of Harvey Brosler, Paul Bennett, and other volunteers as part of an ongoing MDIA sponsored trail signage project. New trail posts have been erected throughout the park and signs are being affixed to the posts. Ranger Jay Sherman and former Ranger Burt Bogardus have also been instrumental in the project.

The Middle Trail winds up the serpentinite hillside with serpentine twists and turns for 1/2 mile, to the junction with the Falls Trail. At the intersection, take the Falls Trail, which branches to the left. After another 1/4 mile climb, the trail dips to cross a creek. During the cold winter months, this creek crossing provides a truly remarkable spectacle. Here, thousands of ladybird beetles cover every rock, tree and shrub. "Ladybugs" spend the winter in semi-

hibernation on Mount Diablo. When the weather warms, the ladybugs mate and fly off on prevailing easterly winds to coastal valleys where they will lay eggs to produce the next generation of beetles.



Falls found midway between other falls

As you continue up the Falls Trail, notice -that the mottled serpentinite is replaced by a dark colored rock. This is basalt, an igneous rock erupted from volcanic vents on the ocean floor at tectonic plate spreading centers. These are the oldest rocks on the mountain. Radiometric and paleomagnetic studies indicate that the basalt is 190 million years old and formed thousands of miles out in the Pacific. These rocks were rafted here from their remote origin at spreading oceanic ridges by movements of the Earth's plates. The basalt is part of the Franciscan assemblage of rocks.

The basalt on Mount Diablo is sometimes referred to as pillow lava. Molten rock that erupts underwater cools quickly on the outside while the inside of the flow keeps moving, pushing the mass into a tube or pillow shape. These pillow structures are especially conspicuous on the cliffs surrounding the falls. These rocks are also called greenstone because the erupting lava reacts with seawater to form new minerals, such as chlorite, which give the basalt a greenish cast.

Finally, you will reach the Falls about 1/2 mile beyond "ladybug cove". Notice that the water flows over and through the basalt. Freshly formed basalt is generally not a good aquifer, but the rocks on Mount Diablo have been highly fractured over the millennia and so are able to store and transmit water to produce the seasonal waterfalls.

Continue north along the Falls Trail. The fantastically contorted red rock is Franciscan chert. Chert is a biogenic sedimentary rock, composed of the recrystallized skeletons of single-celled creatures called radiolarians. Radiolarians look like "amoebas in glass houses". These planktonic organisms live in the warm surface waters of tropical oceans and build their skeletons ("tests") out of silica. After radiolarians die, their tests slowly settle to the frigid bottom waters of the ocean floor to form a siliceous ooze. The ooze is buried, compressed, and over time, "lithifies" to form solid chert.



Chert, on the Falls Trail

Notice that the chert is in discrete layers, with bands of shale (composed of volcanic ash and fine silt blown from land) spaced in between ribbons of chert. The bedding develops when the soft ooze hardens to rock. In a process called diagenesis, the molecules of sil-

ica segregate themselves from the shale to form separate chert-shale couplets.

Examine the intricate chevron folds. These folds develop during plate subduction, long after the ooze has hardened into solid rock. This is an example of "uniform flow" or "ductile deformation", in which solid rock deep underground is shaped under conditions of high confining pressure, high temperature, but low directed stress.

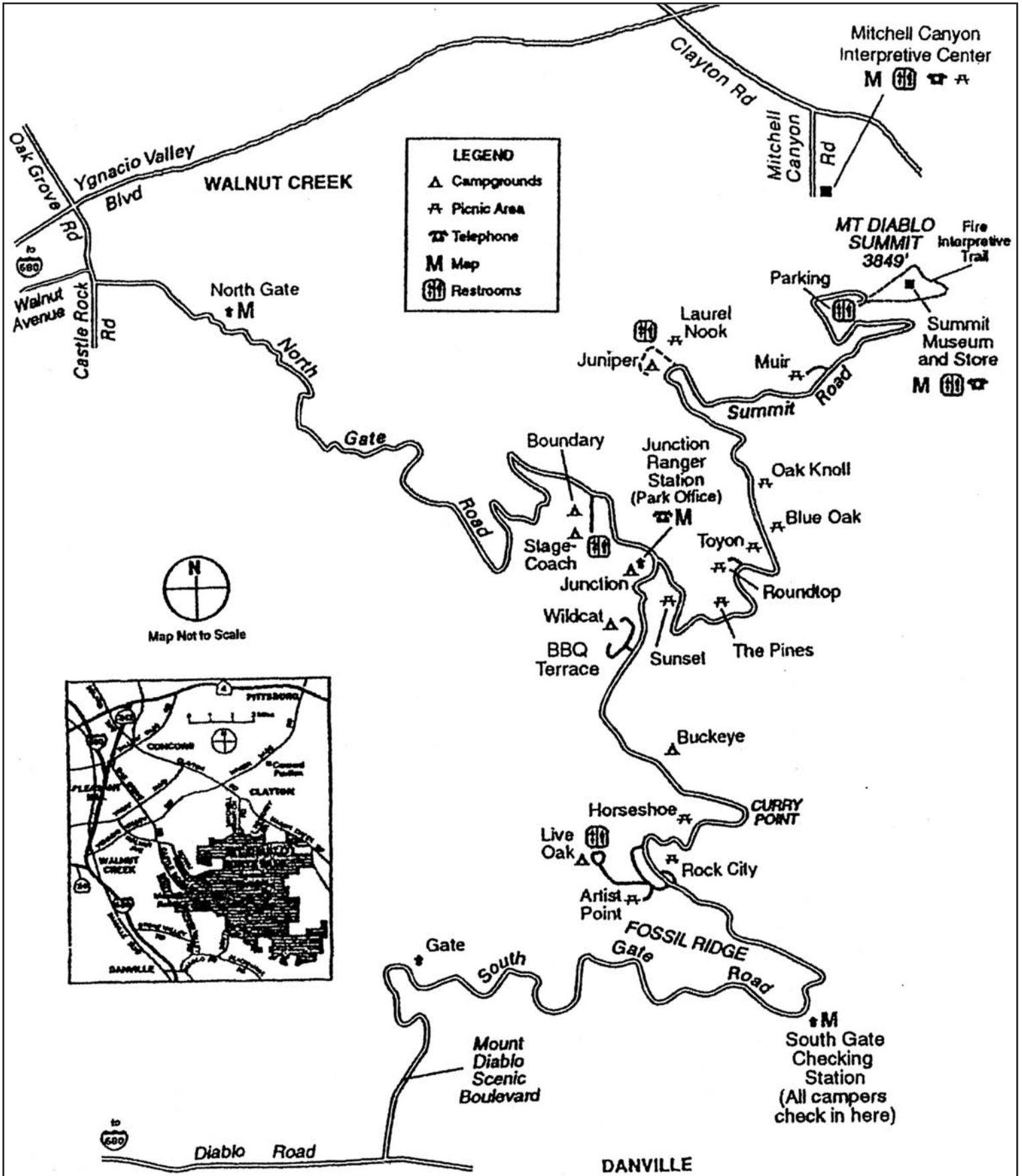
The trail continues to climb briefly beyond the falls, then descends to meet Cardinet Oaks Road in 1/2 mile. As you descend, notice that the vegetation growing on the chert soil is rather sparse. In contrast to the Knoxville formation soil, soil derived from chert is both porous and permeable. This gives the soil a poor water-holding capacity and serves as a limiting factor on the plant life.

Walk down Cardinet Oaks Road and cross Donner Creek in 4/10 of a mile. As you cross the creek, see if you can identify the Franciscan cobbles and boulders that line the creek bed. Continue 1/10 of a mile to the junction of Donner Canyon Road, turn right, and return to the trail head.



Donner cabin site

Mount Diablo State Park



How to Read Trail Signs



Trail signs are located at the intersections of most trails. The arrow at the top of the sign indicates the direction of the trail you are currently using. The name is indicated with small letters underneath the arrow. The name of the next trail, or trail intersection, that you will encounter is indicated with larger letters, displayed vertically. The distance to this trail or intersection is indicated at the bottom of the sign. For example, this trail sign is located on Juniper Trail, with the Lower Summit parking lot .10 miles ahead.



It is Soto Springs near Red Road — see MDIA Trail Map, Edition 5, Coordinates C3.

Q & A

by Harvey Brosler

Q. How do you get to summit of Mount Diablo?

A. Either by North Gate Road, which is off of Oak Grove Road in Walnut Creek, or by South Gate Road, which is off of Blackhawk Road in Diablo. Other entrances, such as the entrance at the end of Mitchell Canyon Road in Clayton, do not allow for such access.

Q. Are dogs allowed on trails or roads within the Park?

A. No.

Q. What is the Mount Diablo Interpretive Association that publishes the Review?

A. The Mount Diablo Interpretive Association (MDIA) is a non-profit wholly volunteer association which has an agreement with the State of California Department of Parks and Recreation to assist the Park staff of Mount Diablo State Park in supporting and enhancing interpretive and educational activities on Mount Diablo.

One of its major activities is the operation of the Mitchell Canyon Visitor Center at which volunteer docents provide information about the Park and at which maps, brochures, pamphlets and other items can be purchased. Much of the material is developed and published by MDIA. Membership dues and net proceeds from sales are used to support MDIA activities.

Q. What is the most direct route to hike to the waterfalls?

A. The most direct route is to drive to the end of Regency Drive in Clayton and park. Take Donner Canyon Road to the end, left on Cardinet Oaks Road, and then right on Falls Trail, returning by way of Middle Trail to Cardinet Oaks Road. For more detailed information see a Mount Diablo trails map.

Q. When is the best time to see wildflowers and how can I identify different wildflowers?

A. The best time is normally late February to May. One way of identifying wildflowers is to purchase the MDIA publication "Mount Diablo Wildflowers", a publication that has 103 photographs of the most common wildflowers found in the Park. The brochure may be purchased at the Park or by mail from MDIA, P. O. Box 346, Walnut Creek, California 94597-0346.

Save Mount Diablo generously publishes the "Events Schedule" which includes hikes in Mount Diablo State Park. This schedule may be found on-line at www.savemountdiablo.org or via a link at www.mdia.org. It can also be obtained at various locations in the park.

MDIA PRODUCT ORDER and MEMBERSHIP FORM

(Profits from sales support the educational programs of MDIA)

Thank you for your mail order.
If you would like to further support MDIA you might consider joining the Association.

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Mount Diablo Interpretive Association

Membership Application

Membership Dues are Deductible to the Full Extent by Law

Membership Category (check one)

- _____ Student \$15
- _____ Senior 55+ \$15
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- _____ Contributing \$100
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