



BIG MORONGO CANYON PRESERVE

NEWSLETTER

Friends of Big Morongo Canyon Preserve

Spring/Summer, 2024

Morongo Valley, A Land on the Move... by Bruce Bridenbecker, Prof. Emeritus, CMC

The Rocks

As you travel on Highway 62 on the way to Big Morongo Canyon Preserve, metamorphic gneiss and schist which formed

About 259 million years ago, during the Mesozoic Era, granitic rocks intruded the Proterozoic rocks again. This occurred numerous times. Most of the intrusions

hornblende and white layers containing quartz and various types of feldspar. Dike swarms of late Jurassic to Cretaceous aplite and other granites also intruded the basement rocks (Figure 2).



Figure 1. Metamorphic gneissic rocks..

Photo. by Bruce Bridenbecker

from pre-existing sedimentary, volcanic, and igneous rocks were forcibly entered by younger granitic magmas. Geologists call this process intrusion. These are amongst the oldest rocks in Southern California and formed between 2.5 billion and 539 million years ago during the Proterozoic Eon. Radioactive dating techniques yield a minimum age of 1.75 billion years for the oldest granitic intrusions. This means the metamorphic rocks are even older.

occurred during the Jurassic and Cretaceous periods with each one having different rock types associated with them. Granite, quartz monzonite, granodiorite, and quartz diorite all of which are members of the granite family are found in the preserve and have been mixed with the older rocks. During the Cenozoic Era, the intrusions became less frequent with the youngest having an age of 2.58 million years. With the mixing of so many intrusive events, the geologic history is difficult to interpret. Notice the metamorphic rocks are banded and twisted (Figure 1). These features indicate periods of deformation and recrystallization. They form rocks made of black layers containing biotite and

A layer of younger Quaternary alluvium less than 100,000 years in age covers the basement rocks. Alluvium is a term for the sediment which has eroded off the mountains and filled the valley floor. It often forms what is called a sedimentary breccia (Figure 3).

The Formation of Morongo Valley

The Morongo Valley formed as a result of stretching between the Morongo Valley and Pinto Mountain faults and the rotation of the Eastern Transverse Ranges (San Bernardino and Little San Bernardino Mountains) which was caused by the right-lateral movement of the San Andreas Fault (Figure 4). This is an area where the San Andreas fault bends from the northwest to the west and intersects the Pinto Mountain fault. At the same time the San Bernardino Mountains are being uplifted between two thrust faults.

Three stages are used to describe the formation of the Morongo Valley (Figure 5 on p.7). In **Stage 1** the western pre-Pinto Mountain fault, which is the boundary of the San Bernardino Mountains and the

(continued on p. 6)



Figure 2. Granitic dike with smaller aplite dikes.

Photo by Joe Zarki



Figure 3. Sedimentary breccia.

Photo. by Bruce Bridenbecker

Friends of Big Morongo Canyon Preserve Offers Adult Education Classes!

Fulfilling BMCP's mission statement to "provide educational programs," we are excited to offer several new classes during March through May. These classes will meet at the Natural Science Education Center at the Preserve. All courses will be taught by well qualified instructors and are from 3-4 hours long. Class sizes are limited to 8. 'Young people' can enroll with their parent/guardian. See p. 8, "Upcoming Events," for a list of class titles, instructors, and course fees.

For more information or to register, go to: www.eventbrite.com/o/friends-of-big-morongo-canyon-preserve-61931405293, or call Kevin Wong at 760-792-1843.

Friends of Big Morongo Canyon Preserve

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NEWSLETTER

Editor: Joe Zarki

Spring/Summer, 2024

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Kaeliegh's Korner...

I am thrilled to share with you the latest updates and highlights from my role as a ranger at Big Morongo Canyon Preserve (BMCP). It's truly an honor to be part of such a remarkable community dedicated to preserving this precious ecosystem. Surrounded by an outstanding board of directors, dedicated volunteers, and enthusiastic visitors, my work here is deeply fulfilling.

The preserve is a vibrant community where both familiar and new faces greet each other on the trails, stories are shared, and together we watch over the land and wildlife. The volunteers at BMCP are invaluable; their wealth of knowledge and unwavering dedication serves as a constant source of inspiration for me. Whether we're pulling invasive weeds, maintaining trails, birding, or conducting public outreach, their camaraderie and shared passion for conservation make every moment enjoyable. I've become acquainted with several regular visitors and relish the opportunity to interact with them. Engaging with visitors, sharing the joys of the preserve, and hearing about their encounters with wildlife contribute immensely to our understanding of the preserve's ecosystem. These interactions are particularly helpful for tracking elusive wildlife such as bobcats, with visitors reporting sightings approximately once a week. Personally, it took me a year of working at the preserve before I spotted my first bobcat in January followed by two more sightings in February. The thrill of seeing not one, but two bobcats on consecutive days was a highlight of my time here, especially noting the

distinctions in size and coloring between them.

One of the aspects I cherish most about my work is the opportunity to spend ample time at the preserve, walking its trails, and becoming intimately familiar with its landscapes, wildlife, and visitors. This continuous presence enables me to observe subtle changes in the preserve's ecosystem, from shifts in plant communities to fluctuations in animal activity, migrant bird arrivals, and insect activity. This winter, I had the privilege of witnessing the complete life cycle of a monarch butterfly in our native plant and pollinator gardens. Observing a monarch caterpillar feeding on milkweed, witnessing the transformation of two chrysalises, and ultimately seeing the emergence of a newly hatched monarch butterfly in December was a remarkable experience. Watching it dry its wings on rocks before nectaring on a California buckwheat was a moment I eagerly shared with visitors during a Sunday science activity at the nature center.

Sundays at the nature center are filled with engaging science and art activities for families, where adults often find as much enjoyment as the children. Witnessing the boundless curiosity and excitement of younger generations is truly incredible. Similar activities are incorporated into our docent-led field trips for school and recreation groups, aimed at educating participants about our natural world. One memorable field trip focused on bird beaks, illustrating to students how beak shapes are adapted for different food sources. During this activity, a young boy expressed interest in using binoculars, and after a brief tutorial, he successfully identified a California scrub jay using a bird ID sheet. His elation and pride in this achievement shone brightly. Not only was he eager to impart his newfound knowledge to his peers, but he also enthusiastically assisted them in mastering the use of binoculars. Such moments serve as a powerful testament to the vital role of environmental education in cultivating the future stewards of the environment.

(continued on p. 7)



BMCP photo



Stealthy bobcats are sometimes glimpsed by visitors as they stalk prey at the preserve. Photo by Joe Zarki

Executive Director's Report: Weathering the Storms With Your Support... by Kevin Wong

A question I am often asked is "When will the boardwalk and trails be repaired and reopened?" Due to Tropical Storm Hilary, on August 20, 2023, two areas of the boardwalk were severely damaged. A section of the boardwalk on the Marsh Trail was pushed off of its footings and is tilted to one side. Several sections of the boardwalk on the Mesquite Trail were completely displaced laterally with large "gaps", as much as 15 feet. Those areas of the boardwalk were closed for safety reasons. As this part of the preserve pertains to the County of San Bernardino, we were informed that they would take "the lead" on any repairs or replacement. The county has engaged a project cost estimator who already reviewed the damaged sections. Now they are working on the budgetary processes along with costs to other damaged parks within the Regional Park system. An added delay is due to the nesting of the federally endangered bird, the least Bell's vireo. This bird nests low to the ground (within one meter), and those nests are often found alongside of the boardwalks. The U.S. Fish and Wildlife Service establishes the vireo's nesting season as between February 15 to September 15. Consequently, the County of San Bernardino is estimating that repairs or replacement of the damaged boardwalk will take place in the fiscal year 2024/2025.

While we are waiting on the repairs, we will move forward on three projects to improve the preserve:

1. to replace aged trail signage and to create new interpretive signs in the preserve,
2. to replace and update the kiosk displays, and

3. to create a new website for the preserve.

Along with these "new" projects, we continue to work on the Education Center. Originally, the building was a homestead cabin and is one of the "treasures" of the preserve. Last year, the Education Center was closed due to the possibility of a pine tree falling on the building. The county contracted an arborist to cut the tree down, but the contracting process took several months. During the months of closure, an interior water leak caused damage to the bathroom with a resulting mold issue. In addition, rodents took up residence inside. When we were able to gain access to the building, Ranger Kaeliegh and I started to clean every surface of the interior of the building and install new educational displays. Dan Ward and I repaired the water leak, cut out the sheetrock (resolving the mold issue), replaced the bathroom vanity sink and added a storage cabinet. We also had the building fumigated for termites. Since then, the Education Center has been open for weekend Family Science programs provided by Ranger Kaeliegh, and it is used for the weekday school field trips. Visitors are surprised to be able to gain access to the Education Center, "We've never seen this building open", and they enjoy seeing the children working on science projects. In February, the county contracted an arborist to cut out the parasitic mistletoe infesting the big cottonwood tree at the Education Center parking lot. This is the biggest tree in the preserve, and we wanted to preserve it as the weight of the mistletoe is causing branches to break off and fall to the ground. The next project on the Educa-

tion Center is to have the roof replaced. We had some water leaks during the tropical storm that damaged the ceiling in the tool room. The roofers have been scheduled for early March.

The last three months have been a whirlwind of activities including a very successful Year-End Giving Campaign, followed by a fundraising event at the Spaghetti Western Restaurant. As a small non-profit organization that depends on community support, we are greatly encouraged by the outpouring of the donations. With only 1.5 full time employees, we depend on our volunteers for our many current and future projects. Last year, the volunteers of Big Morongo Canyon Preserve provided 9,607 hours to the preserve, a **staggering** number, which demonstrates the love our volunteers have for the preserve. That number translates to 200 hours per volunteer! Our volunteer education team participated in the Environmental Education Collaborative Symposium in Riverside for continuing education in workshops and lectures. Friends of Big Morongo Canyon Preserve had a community table for outreach with other educators to share our programs, successes, and to network with professionals who share our enthusiasm for outdoor education for children and young adults.

We also have adult classes scheduled for the spring and the schedule is found on page 8 of this newsletter.

Please send me any suggestions, comments, and/or compliments to me at director@bigmorongo.org.

From the Computer of the 'Prez'...

There is not a day that goes by that I am not thankful for the volunteers here at the Preserve. Many you often see them—like the kiosk ambassadors, the trail folks and education docents.

Another group works tirelessly for the preserve, and in some cases, you might not recognize them if you were to meet them out on one of our trails. They are members of the Board of the Friends of Big Morongo Canyon Preserve. Each in their own way has skills that help to govern the stewardship of the preserve. They all have one thing in common and that is a passion for the preserve. This board is a

working board and each does more than just attend board meetings. They put in many hours and a big portion of those hours are behind the scenes.

The board is working on developing a strategic plan. Our first step in this process was to hire a professional to help us. A survey of the board and our staff gave us a blueprint of what we are doing well and what things we need to focus on and improve. Each and every member of the board was present for the first planning session where we discussed the results of the survey and set out our next steps.

by Maureen McCarty

This was a wonderful beginning. The professional planner wrote me after the session, "I walked away so excited and happy for BMCP! The engagement and discussion that took place was *exactly* the purpose of the review." She noted that many boards she works with don't come together as our board does.

Out of that meeting your board has the next steps in sight. We will be meeting to create a Vision Statement along with a few meaningful and achievable goals. Stay tuned to hear more about this. I am so proud to be a member of this remarkable Board of Directors.

Morongo's Blue Rascal, the California Scrub-Jay...

by Jane Olson

It's a bird with attitude. Read any article about it and you will find many descriptive adjectives used to attempt to illustrate the nature of this bird: brash, jaunty, mischievous, animated, vocal, playful, saucy, or loud. You can see this bird any time of the year at Big Morongo Canyon Preserve. The California scrub-jays, *Aphelocoma californica*, can usually be found at our feeders looking for seeds. Or the jays may be seen shadowing visitors on our trails.

Several things point to this species being intelligent. For one thing, it is an omnivore. Besides the seeds from feeders and other sources, it eats fruit, insects, lizards, small snakes, caterpillars, and nestling birds. Omnivores have a lot more to learn about securing their food than species that have a diet restricted to one food group. Another activity that has developed this bird's brain is its habit of-



Seeming very self-assured, scrub-jays appear to have their world figured out. Photo by Dan Ward

caching food for later consumption. Jays can remember where they stashed thousands of different items. They can also remember when the items were stashed and consume the most perishable ones first. Most of the time, jays are very sneaky about where they hide their food. They watch to see if they are observed. Studies have revealed that they know which birds in their area may have observed them and how likely they are apt to pilfer their food. If a jay suspects that its food may be at risk of being swiped, it moves it. The complexity of the caching process that preserves food indicates that jays are planning for their survival in the future. Caching may explain why jays



It takes a thief— California scrub-jays have been known to steal acorns from acorn woodpecker mast trees. Photo by Dan Ward

have such an alert posture and seem to be keeping track of all within their view – including you.

California Scrub Jays impress most people as being predominantly blue. The blue on our California scrub-jays is a bright blue that attracts attention. The blue is not derived from pigment like the red or yellow we see on the feathers of other birds. Nature creates blue in feathers through the structure of the feather itself. The microstructure of the barbs that form the vane (the flat part of the feather) are designed to absorb all the colors in white light except the wavelength of blue. The blue wavelength is reflected and is visible as blue from most angles. Because of the blue color in our jays, we hear many visitors refer to them as blue jays. Blue jays are another species of jay found in the middle and eastern parts of the United States.

California scrub-jays are in the group of birds called songbirds. Our jays have a large and varied repertoire of calls, but none really could be described as "songs." However, they do have an impressive array of specific vocalizations for specific purposes. Long-term studies of scrub-jay behavior have shown that between auditory and visual displays they have created a language of their own. Bird watchers are aware that many birds have alarm calls that other birds interpret as warning of danger in the area. What some researchers discovered was that scrub-jay calls even differentiate between different types of threats. Some calls say that

the threat is on the ground, such as a cat. Other calls say that there is a hawk nearby. They even differentiate between species of hawks. Jays are good mimics. They put that skill to a sneaky use at feeders. While perched nearby, they imitate the call of a hawk. The feeder area empties of all other birds and the jays have the food to themselves – at least for a little while. Observers say this strategy does not work more than once during a short time period. It seems

that there are other birds that are smart, too.

California scrub-jays are easy to observe at Big Morongo. Generally, they are not as scarce as so many of our migratory birds are. The next time that you cross paths with one of our jays, appreciate its self-confidence. Its alert posture seems to convey that it has its world figured out. If only we could all do the same.

References

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Geofferey E. Hill. 2010. *Bird Coloration*. National Geographic Society.

David Allen Sibley. 2020. *What It's Like to be a Bird*. Alfred A. Knopf, inc.

Jon Young. 2012. *What the Robin Knows*. Houghton Mifflin Harcourt.

https://en.wikipedia.org/wiki/California_scrub_jay



Smarter than the average bird, scrub-jays have a brain/body mass ratio that rivals many primates and cetaceans. Photo by Roxanne Evans

BIG MORONGO CANYON PRESERVE

Springtime-- 'Tis' the Season for Wildflowers...



May your life be like a wildflower, growing freely in the beauty and joy of each day.

Native American Proverb

To see the world in a grain of sand, and a heaven in a wildflower, hold infinity in the palm of your hand, and eternity in an hour.

William Blake

Some may wonder why I chose wildflowers when there are hunger and unemployment and the big bomb in the world. Well, I, for one, think we will survive, and I hope that along the way we can keep alive our experience with the flowering earth. For the bounty of nature is also one of the deep needs of man.

Lady Bird Johnson



Deserts are famous for wildly colorful wildflower blooms in years of plentiful rainfall. Shown above are just a few of the hundreds of species of native wildflowers found at Big Morongo Canyon Preserve and the surrounding public lands of Sand to Snow National Monument and Joshua Tree National Park. Going clockwise from the upper left are desert willow, *Chilopsis linearis* (photo by Joe Zarki), desert dandelion, *Malacothrix glabrata* (photo by Robb Hannawacker), desert bluebells, *Phacelia campanularia* (NPS photo by Hannah Schwalbe), California fuchsia, *Epilobium canum* (NPS photo by Alessandra Puig-Santana), bladderpod, *Peritoma arborea* (photo by Larry Rosen), Coulter's lupine, *Lupinus sparsiflorus* (photo by Robb Hannawacker), Spanish needle, *Palafoxia arida* (photo by Robb Hannawacker), hedgehog cactus, *Echinocereus engelmannii*, (photo by Joe Zarki), and sacred datura, *Datura wrightii* (NPS photo).

BIG MORONGO CANYON PRESERVE

Morongo Valley, A Land on the Move...(cont. from p. 1)

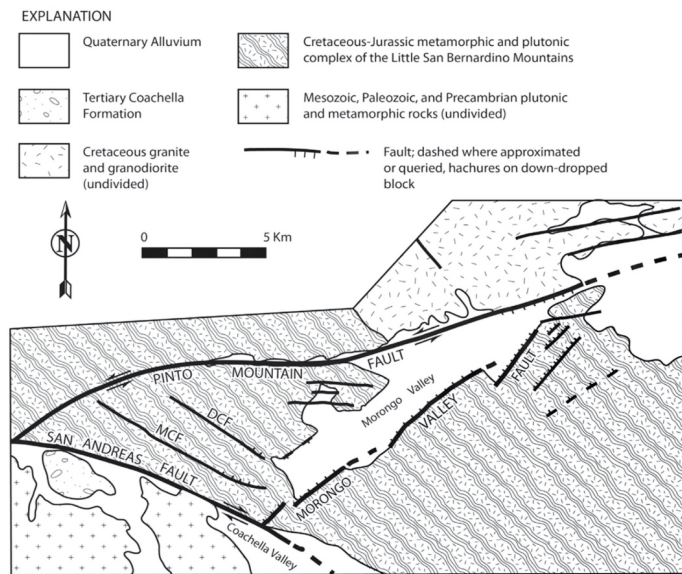


Figure 4. Generalized Geologic Map of the Morongo Valley Block. DCF denotes Dry Canyon Fault and MCF, Mission Canyon Fault. Hopson (2013).

Mojave Desert, forms a curved trace along the north side of the Little San Bernardino Mountains. The fault is located where the Morongo Valley fault joins the pre-San Andreas fault. The Eastern Transverse Ranges are starting to rotate in response to the right-lateral motion of the pre-San Andreas fault.

In **Stage 2** a kink (arrow) forms in the western part of the Pinto Mountain fault as right-lateral shear drags the west end

of the San Bernardino Mountains and the Pinto Mountain fault to the northwest. The Morongo Valley fault forms allowing the Eastern Transverse Ranges to rotate. A stretching of the crust is occurring between the Pinto Mountain and Morongo Valley faults. The San Andreas fault, is forced into an east-west direction as the San Bernardino Mountains are moved across it.

In **Stage 3** a stretching of the crust between the Pinto Mountain and Morongo Valley faults continues

which results in the down-dropping of Morongo Valley. Normal fault movement occurs along the western edge of the Mission Canyon and Dry Morongo Canyon faults to accommodate the down-dropping of Morongo Valley. The gray in the diagram represents the town of Morongo Valley.

Sources:
Hopson, Forrest. (2013). *The Origin of Morongo Valley, An Extensional Basin in the Eastern Transverse Ranges, Southern California in Palms to Pines: Geological and Historical Excursions through the Palm Springs Region, Riverside County, California:* (pp. 87 - 93). San Diego Association of Geologists and Southern California Geological Society.

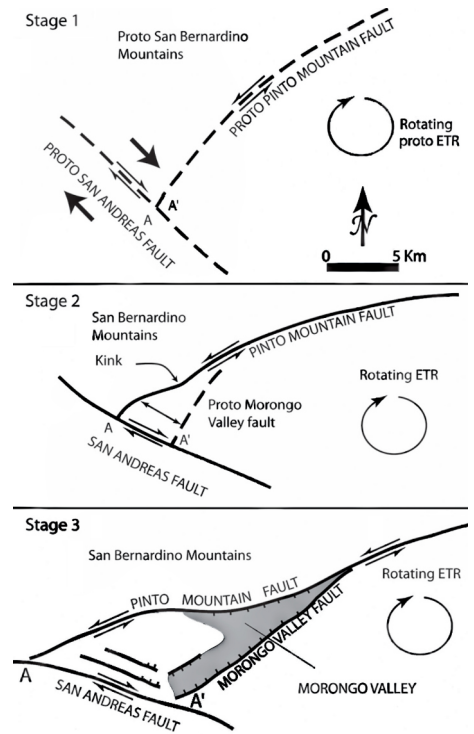


Figure 5. Evolution of Morongo Valley. Hopson (2013).

sions through the Palm Springs Region, Riverside County, California: (pp. 87 - 93). San Diego Association of Geologists and Southern California Geological Society.

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Big Morongo Canyon Kids...

Sometimes kids do say the most interesting things! Many kids of all ages from kindergarten through high school have had the opportunity to join volunteer education docents and explore the preserve. Many of them had never been to the preserve and were not familiar with nature while others have been there with family and were eager to share what they knew. Some quotes from recent outings with the kids include: "This is the first toad that I have seen in real life!", "Are there monkeys here?", "Can I eat this plant?", "Look there is a deer!", "How did that old car get here?", "How did that tree fall down?", and "Is that a real mountain lion on that roof?". Of course, a common question is "when can we eat lunch?". A favorite experience was when a brightly colored summer tanager seemed to be following the group on the trail. The kids were convinced that it was following them! The kids often get really excited to

be at the preserve and learn about the plants, animals and birds that they see on the trails. The bird feeder area outside the nature center is a popular spot to stop. Although many love seeing the birds and want to know the names of the birds they see, others get focused on the water feature hoping to see a toad.

Approximately 551 children visited the preserve last year accompanied by teachers and chaperones. They have come from a variety of locations including Desert Hot Springs, Yucca Valley, Twentynine Palms and a home school program traveled to the preserve from Los Angeles. Each volunteer docent usually takes a group of about 10 children on a short hike. The focus is on connecting what they see on the hike with what they are studying in the classroom. The docents have all been trained on the state standards for the grade level of the

by Pam Kersey, EdD

kids who are there. Besides walking the trails with a preserve volunteer the students have hands-on learning opportunities as they visit the education center. Ranger Kaeliegh Watson provides interesting learning opportunities for the kids such as setting up owl pellets that they can dissect and inspect. If a child is uncomfortable with touching or looking at the small bones found in the pellets, no problem! Kaeliegh has lots of less intimidating options for the kids to explore.

Many schools lack the funds to pay for busses to take kids on field trips. To overcome those obstacles the preserve has written grants to fund these opportunities. So, if you happen to be out on a trail at Big Morongo Canyon Preserve on a weekday and you hear lots of excited young voices it is probably a group of kids on a field trip with an education docent having a great time!

BIG MORONGO CANYON PRESERVE

Canyon Sonnet

*Browsing behind the roadside's split-rail fence,
The mule deer, with its large, comical ears,
Lifts its head and freezes, its muscles tense,
Gives me the side-eye, its brown marble peers.*

*We watch each other, then it bounds away,
As I continue toward the web of trails,
Eager to explore the preserve today.
Butterflies? Bobcats? Owls, hawks, cottontails?*

*Water, life's essence, draws all of them here,
Resident birds and those just passing through
Find refuge and rest where they need not fear
The loud chaos we humans often do.*

*Ancient tectonic plate movement and shift
Created the springs that feed mesquite trees,
Cottonwoods, arrowweed, thrive on their gift.
Along the boardwalk, watch out for the bees.*

*So much abundance to feel and observe:
Thank you, Big Morongo Canyon Preserve.*

Caryn Davidson

Kaeliegh's Korner... (cont. from p. 2)

Stewarding the beautiful lands of Big Morongo Canyon Preserve is both an honor and a responsibility that I cherish deeply. I am grateful for the opportunity to work alongside such dedicated individuals and contribute to the preservation of this invaluable ecosystem. Together, we are committed to preserving its rich biodiversity for generations to come.

Thank you for your support and dedication to our shared mission!



Kaeliegh meets Katy(did). Photo by Tom Scalan



FRIENDS OF BIG MORONGO CANYON PRESERVE

PLEASE RETURN YOUR TAX-DEDUCTIBLE DONATION TO:

**FRIENDS OF BMCP
P.O. BOX 780
MORONGO VALLEY, CA 92256**

Yes, I Want to Help!

NAME(S) _____

MAILING ADDRESS _____

CITY _____ STATE _____

COUNTRY _____ ZIP _____

EMAIL _____

Secure Credit Card Donations and Monthly Gifts May Be Made at:

www.bigmorongo.org

ENCLOSED GIFT:

- | | |
|--------------------------------------|------------------------------------|
| <input type="checkbox"/> \$ 10.00 | <input type="checkbox"/> \$ 35.00 |
| <input type="checkbox"/> \$ 50.00 | <input type="checkbox"/> \$ 100.00 |
| <input type="checkbox"/> \$ 250.00 | <input type="checkbox"/> \$ 750.00 |
| <input type="checkbox"/> \$ 1,000.00 | |

NEWSLETTER (WINTER, SPRING/SUMMER, FALL)

- EMAIL MAIL NEITHER

SUPPORT

FRIENDS OF BIG MORONGO CANYON PRESERVE

Friends of Big Morongo Canyon Preserve is a nonprofit 501(c) (3) association organized for the support of programs at Big Morongo Canyon Preserve. We are dedicated to the exploration, preservation, and stewardship of the preserve by protecting and managing its resources, and by providing educational programs, access for wildlife viewing, and recreational opportunities for the enjoyment of its visitors.

Credit card donations can be made at www.bigmorongo.org. Donations may also be tax deductible.



All bird photos above courtesy of Dan Ward Photography.

A NEW SATURDAY BIRD WALK!

Starting March 2, a new bird walk, *Birding for Fun*, will be offered periodically on Saturday mornings at 8:00 a.m. Kaeliegh Watson and Kathy Snyder will help visitors meet some of BMCP's exciting birdlife. Come join them!

CALENDAR

AT BMCP

APRIL – AUGUST

Gate open 7:30 a.m. to Sunset

365 days a year

BIG MORONGO CANYON PRESERVE BIRD WALKS

Bird walks are offered each Wednesday morning at 8:00 a.m. (7 a.m. starting in April) to 10:30 a.m. Meet at the main preserve parking area. Recently seen bird lists are updated weekly and may be viewed at: www.bigmorongo.org/birds

During April, the *Birding for Fun* walk will be offered on April 13 and April 27. Check www.bigmorongo.org for future dates.

AMBASSADOR KIOSK

Friday, Saturday & Sunday: Ambassadors will be at the kiosk to provide information on the latest BMCP happenings. They are very happy to tell you about recent wildlife sightings, safety precautions, and make recommendations for walks based upon weather, fitness, and time. BMCP "branded" merchandise is available for sale at the kiosk. The kiosk also has educational displays including historic and geologic, fauna, and bird sightings of the preserve.

UPCOMING EVENTS & COURSES (See p. 2 for more details)

March 30, 9:30 a.m.-12:30 p.m. "*Capturing Big Morongo Canyon Preserve with Acrylics*" with Janis Commentz.

April 20, 8:00 a.m. Earth Day: Public Cleanup at BMCP.

April 26, 8:30 a.m. - Noon. "*Identifying Birds by Sight and Sound*" with Robin Roberts.

May 4, 7:30 p.m. "*Viewing the Night Sky*" with Jim and Ellen LaMotte.

May 18, 8:30 a.m.-12:30 p.m. "*Gouache Painting for Beginners, Great for Nature Journals!*" with Fran Calvert.

June 1, 8:00 a.m. Celebrating "Black Birders Week" with a birdwalk.

To register for all classes. see: <https://www.eventbrite.com/o/friends-of-big-morongo-canyon-preserve-61931405293>

Course fees are \$65 per person. Class size limited to 8 participants.