



Friends of the Florissant Fossil Beds eNewsletter

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Every Fossil Needs a Friend

#47—April 2021

Interior Makeover of the A-frame

The Facilities crew has been working on changing the function of the A-Frame from a multi-use storage building to housing that can be used for temporary and seasonal employees of the park. What this entails is reconfiguring the bathroom for more function which in turn gives us more space in the kitchen for improved layout and function in there as well. The restroom will have a new shower/tub instead of the old shower only, as well a new toilet, sink, vanity, lighting, electrical, vent and heat. The kitchen will have more storage and new fixtures including the addition of a stove/range and microwave hood which is not currently in the building. The flooring throughout the A-frame will be new laminate wood flooring with no carpet, fresh paint in the interior and a new front door and screen. The deck will be refinished and then eventually replaced. In the basement, we are going to try and add a washer and dryer for the future residents. The infrastructure of some of the systems will need updating as well with the new fixtures we plan to install, we have already started on the plumbing infrastructure including re-piping the water and sewer lines and replacing electrical fixtures, wiring and load centers or panels. This project is an in-house project meaning it is using park base dollars with permanent staff doing all the work except for the waterline and septic installs. This means it may take longer to complete as we are working on it as we have time.



The Friends of the Fossil Beds have accepted to pay for the installation of a new waterline from the A-frame to the new water main that services the rest of the park, this is a big step in making the structure usable for our housing needs. The install will be this spring/summer as we are on the list of work for the contractor. We at the park are also working with our regional support for a project to install a new septic system as the second part of the water system. This along with your new waterline will get us the complete system and well on our way to park housing!





Additional Facility Projects

Trail maintenance on the Petrified Forest trail, Ponderosa trail, Boulder Creek trail and the Sawmill and Hans trails. Most of the work for these projects will be routine including trail widening and cleanup, drainage repair, tread surface repair and limbing.

Replacing a split rail fence throughout the park, all wooden fence replaced with new.

Replacing trail signs park wide, this project includes new uniform aluminum brown and white colored signs with round metal poles. The addition of metal for both sign and post is to hopefully reduce the amount of maintenance for signage and direct it to other needs. Plus, it will look great.

Re-working the amphitheater behind the Admin. building, this project will include replacing the current benches with new metal/plastic coated benches (like the tables in the picnic area) for longevity and reduced maintenance. Re-slopping the area for better drainage by adding DG (decomposed granite) on top of the current base to make a new base layer correctly sloped. This project will be done by our awesome volunteer trail crew.

The new-ish pathway or trail from the front of the Visitor center to the back where the stumps and trailheads are will have some maintenance work done for the start of the season. This work will include widening the trail to accommodate the two traffic and high use of the trail. More DG for the surface tread and improved drainage.

New this year: We have 2 seasonals coming on this year to help with all of our projects, their names are Maritessa and Nick. We also have a new seasonal custodian; his name is Gabriel and he will be replacing Paul who has been our custodian for the last few years as he has decided to hang up his boots. We will also have the Mile High Youth Corps in the park again this year for help with the trails and wooden fence replacement.

The park will also be upgrading the internet line from the 80's or 90's with a fiber line from the intersection of Teller 1 and Lower twin to the Maytag barn. This project is almost ready to go to contracting for bids, so no timeline for this project quit yet.

Appreciation for Friends' Internship Support

by Mariah Slovacek, Paleontology Guest Scientist Intern

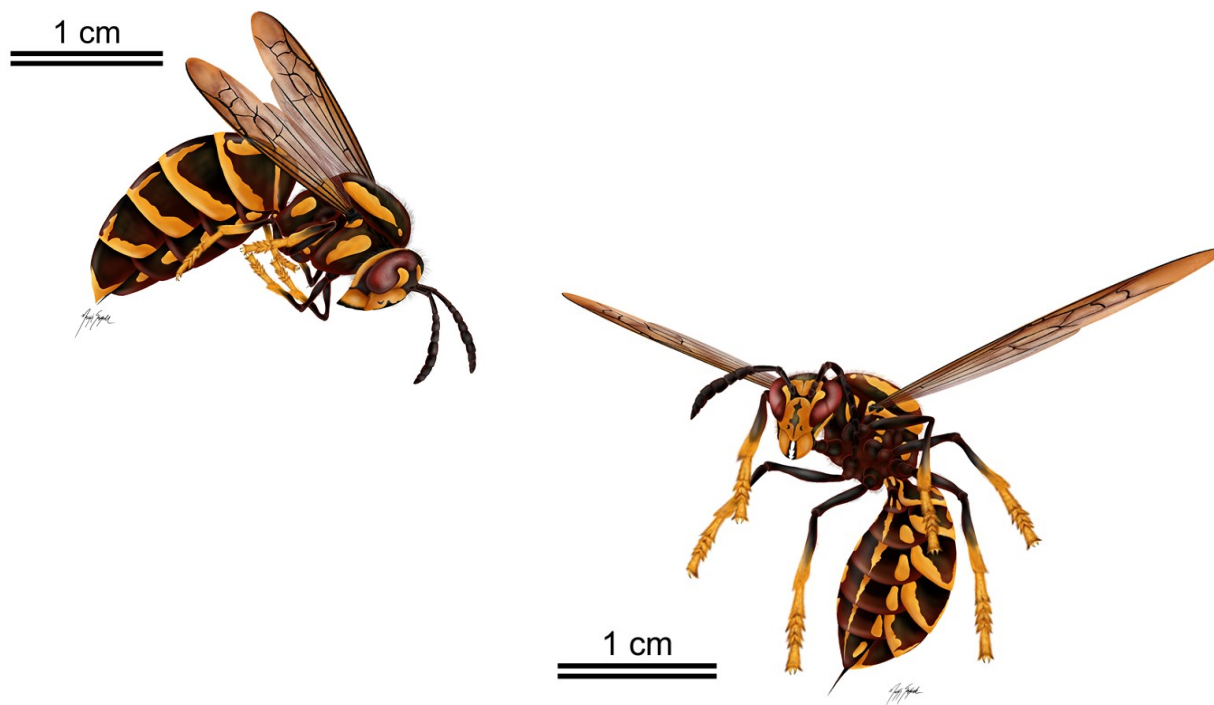
I am thrilled to be able to continue working with the Monument again this year, thanks in part to the contribution from The Friends of the Florissant Fossil Beds! I have been teleworking from Fort Collins on several paleontology projects, and there will be even more projects to start once I can return to the Monument in person later this year. These projects include continuing the full inventory of collections in preparation for the upcoming renovation of our collection room. In addition, there will be new content for everyone to check out in the coming weeks on the FLFO website.

Until I can return to the park, I am working on several other projects that are largely website-based. First, I am creating a series of artistic reconstructions of select flora and fauna alive during the Eocene at the Monument. This includes the redwoods, the famous wasp (*Palaeovespa*), and the abundant extinct relative of the beech *Fagopsis*.

I am also making a virtual trail tour that highlights various stops of interest on the Monument's trails which can be visited from the comfort of home. Specific stops from the Geologic Trail and Petrified Forest Loop will be expanded with an emphasis on their unique Geoheritage.

Thank you for helping me continue contributing to the Monument!

As a sneak peak of the reconstructions, see a couple perspectives of the wasp as it might have looked during the Eocene!



New *Florissant Explorer* Trail App Soon to Be Released

The Monument is nearing completion of the new mobile trail application “*Florissant Explorer*” that visitors will be able to download and use along the trails with an iOS device such as an iPhone or iPad. Using the device’s navigation features, users will be able to follow the trail to designated locations where the app will provide content describing geologic features and history.

The innovative design of this mobile app has been developed by our CESU partner Mike Kelly with Northern Arizona University. The Paleontology Division staff has provided much of the effort in developing content for this during the past year as they teleworked during the pandemic. Paleontology intern Mariah Slovacek created new artwork and diagrams; Museum Technician Conni O’Connor located photo images and resolved technical issues; and Paleontologist Herb Meyer developed text descriptions and Geologic Trail concept. Lead Interpreter Jeff Wolin provided reviews and has been organizing volunteers to test the app before it is released to the public.

The most detailed content is for stops along the Geologic Trail and the Petrified Forest Loop. Here, visitors will be able to stand beside our new trail exhibit panels and view videos in the app that describe features in greater detail and with more illustrations than the panels provide. One of the most innovative features of the app is along the Geologic Trail, where users will have the option to select among three levels of learning content: Junior Ranger, Explorer, and Geologist. This provides the opportunity to better fit the content to a user’s background so that young users are captivated, while those with a scientific background will find satisfaction from more robust content about Florissant’s geology. We hope that this will help set new precedents in the National Park Service to provide content that goes beyond the old default where “one size fits all.” In addition to the primary trails, all of the Monument’s backcountry trails will also have selected locations where users can navigate to learn interesting facts along their hike.

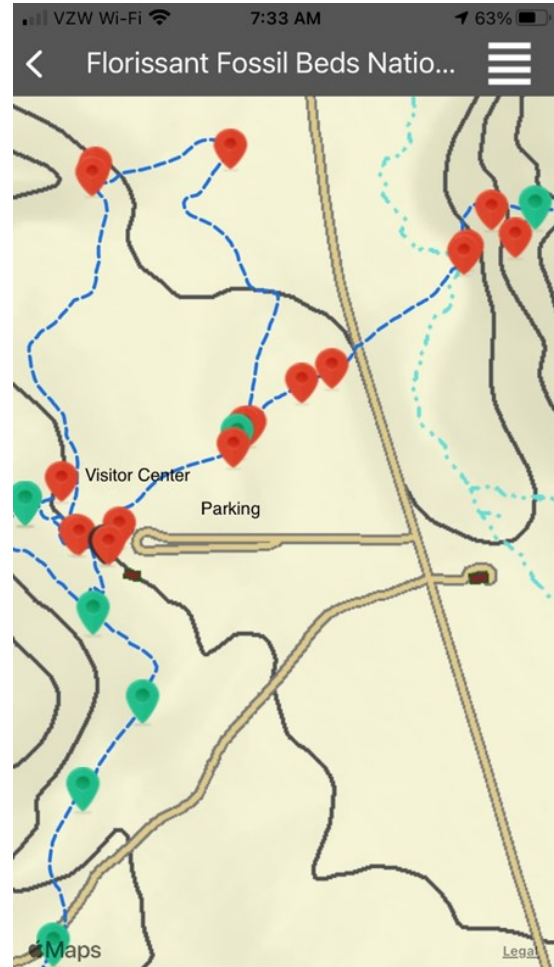
The new *Florissant Explorer* app is expected to be tested by a team of volunteer users this spring and released to the public this summer. Our Paleontology staff has already been making presentations of this new concept and design for audiences at scientific meetings. We hope that all of you will have a chance to try this out next time you visit FLFO!



The mammoth is one of many new illustrations designed to provide visual content.



Front page of *Florissant Explorer* mobile app.



Map navigation page showing designated stops along the trails.

Eastern and Southern Rocky Mountains




New diagrams illustrate concepts of geology related to particular stops along the trail. Audio narration is accompanied by text to provide accessibility.

New Wayside Exhibits Feature Florissant's Geoheritage

Since last summer and up until last week, the Monument has been installing new wayside exhibits on the Ponderosa Loop, Petrified Forest Loop, Stump Shelter exhibits, and the Hornbek Homestead. These panels were part of a project that began in 2018 in partnership with Northern Arizona University. We chose the theme of "Geoheritage" to guide the work of the exhibits. Geoheritage is defined as, "the significant geologic features, landforms, and landscapes characteristic of our Nation which are preserved for a full range of values that society place on them, including scientific, aesthetic, cultural, ecosystem, education, recreational, tourism, and other values. Geoheritage sites are conserved so that their lessons and beauty will remain as a legacy for future generations."

We also worked with our associated Tribal representatives and developed four panels called, "Arc of Heritage" "Native Voices" "We are Still Here" and "The Land Provides." Collectively, the panels help visitors understand that Native peoples (nearly 20 associated tribes) are still connected to this land and have a relationship that goes back nearly 10,000 years. The panels include a diversity of perspectives about the Native people's view of the land. These panels serve as an important and visible way to honor the Native people's relationship with the land and promote diversity and inclusion of all peoples in the story of the park. All of the other panels interpret the diversity of values that have been placed on the land by the various peoples who have been here including settlers, collectors, scientists, commercial tourism, and the fight to save the area from development. One of the panels, called "Arc of Heritage" (pictured below) sums up the idea of Geoheritage and changing values through time in a very creative way.

Florissant Fossil Beds National Monument
National Park Service
U.S. Department of the Interior


Arc of Heritage

Changing Values Over Time

Past human activities on the Florissant Fossil Beds National Monument landscape are part of the Monument's heritage. The previous occupants of this area related to this land differently, reflecting different cultural and societal values. Through time, we can see these changing activities and relationships as a kind of "Arc of Heritage" that reflects a diversity of values and perspectives. The heritage story began with tribal people who developed deep cultural and subsistence connections to the land through generations, but were forcibly removed from the land, against their will, in the late 1800s. The subsequent settlement of the area brought economic leveraging of the land which was valued by homesteaders, loggers, fossil-collectors, ranchers, and real estate developers. Today the National Park Service values preservation and protection of the landscape through stewardship and scientific research within a world class fossil deposit.

How will society value this place in the future?

Tribal
Ancient ancestors of Tribal people lived in this landscape and made use of its resources as long as 10,000 years ago. A Midland Point (above) was discovered at the Monument in 2017, documenting the human use of this landscape in the distant past.

Economic Uses
Historic economic values fueled mining, lumbering, ranching, and fossil-selling on this landscape.

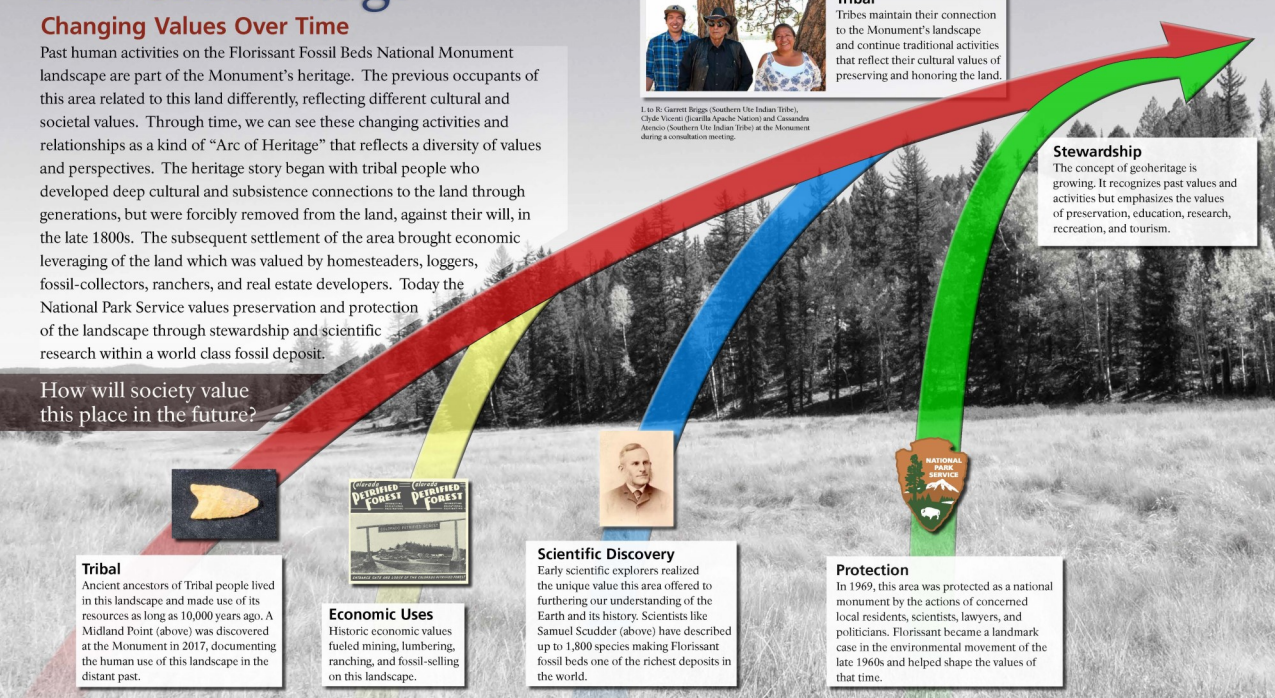
Scientific Discovery
Early scientific explorers realized the unique value this area offered to furthering our understanding of the Earth and its history. Scientists like Samuel Scudder (above) have described up to 1,800 species making Florissant fossil beds one of the richest deposits in the world.

Protection
In 1969, this area was protected as a national monument by the actions of concerned local residents, scientists, lawyers, and politicians. Florissant became a landmark case in the environmental movement of the late 1960s and helped shape the values of that time.

Stewardship
The concept of geoheritage is growing. It recognizes past values and activities but emphasizes the values of preservation, education, research, recreation, and tourism.

Tribal
Tribes maintain their connection to the Monument's landscape and continue traditional activities that reflect their cultural values of preserving and honoring the land.

Left to Right: Garrett Briggs (Southern Ute Indian Tribe), Clyde Viretti (Jurilla Apache Nation) and Camille Alencos (Southern Ute Indian Tribe) at the Monument during a consultation meeting.



Featured Fossil: Extinct Suborder of Odonata Newly Recognized from Florissant

by Herb Meyer (FLFO Paleontologist) and Bruce Archibald (Simon Fraser University, British Columbia)

The insect order Odonata includes the modern dragonflies and damselflies. There are 19 species that have been described from the fossil record at Florissant, but some of those are only known from wings.

In the first paper to be published about Florissant paleontology in 2021, Dr. Bruce Archibald and others have reassigned four Florissant fossil specimens to a new extinct suborder of Odonata. These are distinct from the suborders of true dragonflies (Anisoptera) or damselflies (Zygoptera) that you might see flying around Florissant today, and the new extinct suborder has been named Cephalozygoptera. What do we call it for a "common name"? There isn't one! Cephalozygoptera means "head damselflies" in Greek, but using that as a common name suggests that they are a kind of damselfly, which they are not, yet they are closely related. So, for lack of a common name, you will need to learn how to say this word: Cephalozygoptera (pronounced "Sefa-lo-zeye-gop-tera"). And we have two species from the fossil record at Florissant!

Most of the actual fossils are not recent discoveries. Two species of the new suborder were first described in 1908 by T.D.A. Cockerell from the University of Colorado, who classified them as damselflies. He named one *Phenacolestes parallelus*, based on a single fossil showing only the tip of a wing, which became the name-bearing type specimen. Later, Cockerell found another one showing most of the body, but that was after the type specimen already had been published. That was probably the reason why the more complete specimen was hidden in the collection at CU and not included when we developed our database of published Florissant fossils from other museums in 2002 (<https://flfo-search.colorado.edu/>), and it hasn't received the popular attention that it clearly deserves. It's a wonderful fossil, as you can see from this photo! Cockerell named his second, closely related species *Phenacolestes mirandus*, also based on a lone wing.

The new monograph was published by *Zootaxa* in New Zealand and has five authors. The work includes much more than Florissant, and the title is "*The Cephalozygoptera, a new, extinct suborder of Odonata with new taxa from the early Eocene Okanagan Highlands, western North America.*"



Phenacolestes parallelus is an extinct Cephalozygoptera. Photo courtesy of University of Colorado Museum of Natural History, UCM-4545, scale bar 5 mm.

Paleontology Division Plans New Summer Projects

by Herb Meyer, Paleontologist

The past year has been very quiet in the Monument's Paleontology Lab. After a year of immersing into many projects while teleworking, the Paleontology Division staff is hoping for a return to the park by summer, and we are planning several new projects. There is a lot to show for our year of teleworking: developing content for the new trail exhibits and mobile trail application; updating our collections databases and drafting a Museum Management Plan; creating new artwork reconstructing Eocene fossils; and publishing ten scientific papers and abstracts with colleagues and some of our former paleontology interns. Although "real" conferences have gone "virtual," this has provided even more opportunities for our staff to participate in many events related to paleontology and collections, and without having to travel to do so. We have also remained active with our collaborators for ongoing work in Sexi, Peru, including the publication of an article in a Peruvian journal. Some of these projects are being assisted by our Paleontology Guest Scientist Intern, and we especially thank the Friends for providing critical financial support that has helped to extend her position through the end of 2021.

As we hope to get back to normal by summer, we are beginning to plan field activities with our university partners. One project will be with conservators from the University of Pennsylvania, who will continue to test methods for stabilizing the fossil stumps. The large stump below the patio behind the visitor center will be the focus of attention as this project examines some of the loose pieces that were reattached two years ago and implements new treatments that will eliminate moisture accumulation on the top of the stump and in the pit below. If you visit the monument during June, you may see scaffolding around the stump and a lot sediment being shifted around.

Another project will be with the University of Colorado Boulder to look at landforms that formed during the Pleistocene. There were no glaciers in the Florissant basin, but other features such as boulder fields and some mysterious mounds west of the county road are evidence for much colder conditions during the ice age. We will be trenching into one of these mounds and installing dataloggers to monitor temperatures below the ground surface, which will help to assess how climate change is affecting the processes of geomorphology.

We also expect to resume activities to organize the paleontology collections and monitor conditions of paleontological sites within the Monument. Both of these projects will involve our interns. The collections project will help us prepare for the upcoming renovation of the collection room, and the monitoring project will apply new techniques for collecting precise GIS data about site locations.



Research conservators from UPENN will continue work to test stabilization methods for petrified stumps.

The Friends' Board News

The Friends' Board hopes that all our members are well and finding time to be outside which would include hiking at the Florissant Fossil Beds. This has been a difficult year for so many people in so many ways. We hope that we can soon all be together again at the Florissant Fossil Beds whether it is for a hike, a fun event, or an exciting program.

At the beginning of the year, we held our annual retreat to set goals for 2021. We had lost Board members and 2 officers. We decided to work with a leadership team of 3 people who would share the responsibilities for reorganizing, updating, and moving the Board forward. We saw the following goals most important:

- Development of a budget – The Treasurer's duties for the Friends of the Fossil Beds were masterfully handled by Jeff Brandt for many years. With the change of the treasurer's position to Jan Beals, Jeff worked with Jan to facilitate a smooth transition. Furthermore, we have formed a Finance Committee comprised of Jan Beals, Jeff Brandt and John Schwabe to continue to refine our financial processes.
- Draft a Donor Recognition Process in concert with the Superintendent, Therese Johnson which will be in compliance with NPS guidelines
- Seek new Board members
- Fill officers' openings
- Continue planning and offering seminars
- Continue quarterly publication of our newsletter – Many thanks to our newsletter editor, Troy Ruiz who does an outstanding job every quarter.
- Send a letter to all members notifying them that their membership has been extended to two more years because of COVID 19 and our inability to offer many programs and events that are part of a membership package.
- Updating our membership roster and creating an active membership committee
- Update items on our website - www.fossilbeds.org - Many thanks to our webmaster Wayne Johnston who does an awesome job

In keeping our priorities in mind, we added 3 new Board members. A big thank you goes out to Patrick Glover, Bev Harms and Jan Wilson for being willing to join the Board. We will introduce you to them in future issues of the newsletter. In this newsletter, we will introduce you to Bev Harms. Bev quotes, "I am excited to be a new Board member for the Friends of the Florissant Fossil Beds. My husband Craig and I love hiking and snowshoeing in the Park. My friendship with Board member Linda Lavery brought me to the Board. Craig and I moved to Woodland Park in 1976. Craig has been the Director of the Woodland Park Wind Symphony and Swing Factory for over 25 years. I play bass clarinet in the Wind Symphony. We have recently been able to start rehearsals again and have several performances scheduled for this summer. Loren Harms is an aircraft maintenance line supervisor for Horizon Airlines in Portland, OR and Vanessa Sakimoto Harms is a paralegal and is married and living in Honolulu. I am retired and help with the Divide Food Pantry distribution. I look forward to working to help promote the beautiful Florissant Fossil Beds national Monument."

We are always looking for people to serve on the Friends' Board who have an interest in the Florissant Fossil Beds National Monument and wish to help the Monument meet its mission. Please contact any one of the listed members of the Board to find out more about serving.

For over the last 25 years, The Friends have offered in person seminars that were offered for the general public and for CE and graduate credit for teachers. Most of the seminars offered were full day seminars often including field trips. These seminars had generally focused on paleontology, geology, ecology, natural history, history, and art. All seminars were generally offered during the summer months. Years ago, we offered some seminars in Colorado Springs at the Tuff Science Hall at Colorado College.

In 2019, at the end of the seminars for the year, we decided to no longer offer graduate credit through Adams State University. As we began planning the 2020 seminars in January of 2020, we suddenly had to stop planning. The Florissant Fossil Beds NM, like all the NPS areas, shut down because of COVID 19. It was well into 2020 before we saw a way forward to keep our members engaged and offer programs. We couldn't do any in-person programs or events at the Monument. In early fall, a suggestion was made to begin virtual seminars. Since then we have offered 3 virtual seminars that have been very successful. John Stansfield did a program, titled The Bicentennial Celebration of the 1820 Long Expedition of the Front Range, Debbie Barnes presented a program on Bird ID's just before the Great Backyard Bird Count in February and most recently Dr. Ian Miller, Curator of Paleontology and the Director of Earth and Space Sciences at the Denver Museum of Nature and Science in Denver presented a program on Corral Bluffs in Colorado Springs entitled "After the Asteroid: Earth's Comeback Story." We intend to try to offer a virtual seminar about every 2 months, especially since we are still unable to offer in-person programs and events at the Monument. Be watching your emails for notification of upcoming virtual seminars. These seminars are free to the members and friends, but we do encourage donations and have received them each time we have offered a virtual seminar. Donations can be made through Pay Pal on our website or by sending a check to the Friends at PO Box 851, Florissant, CO 80816.

We were sad not to be able to host the Great Backyard Bird Count that we have held at the monument for 7 years. We also continue to be unable to hold any events such as seminars, art shows or fundraisers at the Monument. We look forward hopefully to be able to again do in-person programs there.

We thank all our members for your constant support both with interest and donations. We hope that you all stay well, and we look forward to seeing you at the Florissant Fossil Beds NM soon.



Bev Harms, one of the three newest Board members