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Friends of the Fossil Beds Autumn '24 Newsletter

Autumn is a magnificent month to visit the Florissant Fossil Beds National Monument. The weather is wonderfully suited for hiking and exploration but, as always, do remember weather can be fickle and plan accordingly.

The summer crowds are on the wane, the air crisp and clean with the colors of autumn on full display.

Autumn beckons and welcomes you to the Fossil Beds.

Please accept the invitation and plan to visit the Fossil Beds and enjoy Mother Nature's annual autumn gifts.

Aspens growing along the Sawmill Trail in Autumn.



NPS photo/ Petersen

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We encourage submissions of articles relevant to the Florissant Fossil Beds National Monument and our natural environment. Our next publication date will coincide with the first day of winter. December 21, 2024

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Please contact us here.

Fantastic 55th Anniversary

- Patty Glatfelter -

Friends of Florissant enjoyed a fun, although modified, celebration of the Monument August 24th, 2024. Under perfect skies, park influencers past and present, gathered to eat cake, catch up on new Monument initiatives and tour the newly remodeled A-frame. Sydney Moreno, of the Facilities staff, guided the attendees through the remodeling process that will allow temporary park staff or interns a place to reside during their assignments at the Monument. There are a few projects to be completed in the upcoming months, but its active use is now in sight.

There were paintings displayed from Art in the Park and a gift for each attendee of a celebratory art card honoring the trio of women that defended the park.

Visitors to the Monument enjoyed cake under the stump shelter with the celebrants. Our new volunteer CPA, Jean Verrier and family, were introduced to attendees. His valuable contributions are already helping the Friends' organization to move forward with our new opportunities and initiatives...but more on that in a separate article.... With continued commitment, the Monument will be around to celebrate its 110th Anniversary in **2079!**







Pictures from 55th Celebration

- Linda Laverty -

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Wetland Restoration at Florissant Fossil Beds National Monument

- Jeremy Sueltenfuss -Ph.D. Associate Professor Department of Forest and Rangeland Stewardship, Colorado State University

Prior to its designated as a National Monument in 1969, Florissant Fossil Beds National Monument was homesteaded in the 1870's and used as cattle ranches for the following century. The homesteaded ranch contained large natural ground-water fed meadows dominated by native wetland vegetation. In order to irrigate hay pastures and provide access to drinking water for cattle, multiple earthen dams were constructed in the mid-1900s. These reservoirs remained functional for a few decades, and by the time this land was set aside to become a national monument, 8 dams had been constructed throughout the valley. While these dams held water back for a time, water eroded through the mead-ow around each of the dams, creating deeply incised erosional gulleys that continued to erode with time, with some sections eroding more than 6 feet below the original ground surface.

Channelization within the wet meadow significantly lowered the water table of the surrounding wetland, converting what was once a saturated wetland dominated by native wetland plants to a dry area full of invasive weeds.



Aerial photos of the Hornbeck meadow from (A) 1938 (B) 1956 (C) 1975 and (D) 2010. Most changes to the landscape occurred between 1938 and 1956, when all dams and associated ponds were constructed. Dams do not hold back water in 1975, and erosional gulleys have formed by the 2010 photo.

Groundwater-monitoring wells were installed throughout the impacted wetland in 2012 to understand the impact of channelization on groundwater levels and to plan for restoration activities. Groundwater depth in each well was measured throughout the summers, and these groundwater levels showed that the erosional gulleys were, in fact, lowering the water table and draining the surrounding meadow.

Using this information, a pilot restoration project was pursued in 2012 to remove three small earthen dams and place the material within the erosional gulleys in five strategic locations. This pilot restoration project was intended to see if filling in the gulleys would increase water levels throughout the valley; information that would be used to pursue a full-scale restoration of the valley. Construction of the pilot restoration project took place in October of 2012, and water levels responded the following year. Where water levels were once 6 feet below the ground surface in some locations, they were near the ground surface in the years following the pilot restoration project. However, these hydrologic improvements were largely only seen in the areas immediately surrounding the locations of the five plugs, indicating that a more substantial restoration was required to restore water levels throughout the valley.

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After many years of pursuing funding for the full-scale restoration of the Hornbek Meadow in collaboration with the National Park Service, funds were finally obtained in 2017 and planning for the fullscale restoration started immediately. Many logistical barriers exist when pursuing such a large restoration project, and the onset of Covid19 converted these logistical barriers into immovable obstacles. However, with the continued support of the National Park Service personnel at Florissant Fossil Beds, contractors with the Center for Environmental Management of Military Lands (CEMML) at Colorado State University, and the broader restoration team, restoration activities were able to commence in the fall of 2023. A crew of contractors from CEMML mobilized to the site in October 2023 and removed the large earthen berms throughout the project site. With one person on a backhoe removing the fill material, two individuals taking that material in dump trucks to the erosional gulleys, and one person manning the bulldozer to place the material into the gulches, all the erosional features throughout the project site were filled within a matter of two weeks.



Native wetland vegetation that had been growing at the bottom of the erosional channels was salvaged during the restoration process, and immediately placed on top of the new ground surface. In addition to the salvaged vegetation, native seed was spread across the project site in the fall of 2023. Both the salvaged plant materials and the native seed facilitated rapid revegetation of the project area, which was evident throughout the summer of 2024. Additional live wetland plants were installed throughout the site in the summer of 2024, and we are all excited to see how the site develops over the next few years.

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Projects like these can only be accomplished with a close-working team of passionate collaborators. What started out as a small pilot restoration project over a decade ago became a large valley-wide restoration project, successfully restoring the wetland ecosystems of Florissant Fossil Beds National Monument. It has been a great honor to collaborate on this project, and I am deeply grateful for all the folks who participated in this effort along the way, and particularly grateful for the support and friendship of the Florissant Superintendent Penny Wagner, for without her interest and perseverance, this effort could not have been as successful as it was. I am excited to see this restoration area continue to recover and excited to bring my family and friends to visit Florissant Fossil Beds National Monument for years to come.

Jeremy Sueltenfuss, Ph.D. Jeremy.sueltenfuss@colostate.edu

Definition of a Wetland

EPA Article

"Wetlands are areas where water covers the soil, or is present either at or near the surface of the soil all year or for varying periods of time during the year, including during the growing season. Water saturation (hydrology) largely determines how the soil develops and the types of plant and animal communities living in and on the soil. Wetlands may support both aquatic and terrestrial species. The prolonged presence of water creates conditions that favor the growth of specially adapted plants (hydrophytes) and promote the development of characteristic wetland (hydric) soils.

Inland/Non-tidal Wetlands

Inland/non-tidal wetlands are most common on floodplains along rivers and streams (riparian wetlands), in isolated depressions surrounded by dry land (for example, playas, basins and "potholes"), along the margins of lakes and ponds, and in other low-lying areas where the groundwater intercepts the soil surface or where precipitation sufficiently saturates the soil (vernal pools and bogs). Inland wetlands include marshes and wet meadows dominated by herbaceous plants, swamps dominated by shrubs, and wooded swamps dominated by trees. Certain types of inland wetlands are common to particular regions of the country. For more information, see Wetland Classifications and Types for a full list.

Many of these wetlands are seasonal (they are dry one or more seasons every year), and, particularly in the arid and semiarid West, may be wet only periodically. The quantity of water present and the timing of its presence in part determine the functions of a wetland and its role in the environment. Even wetlands that appear dry at times for significant parts of the year -- such as vernal pools-- often provide critical habitat for wildlife adapted to breeding exclusively in these areas."

Spring Astronomy - Florissant Fossil Beds Night Sky

- Mark Harter, FLFO Volunteer Ranger, Astronomy Lead -September 2024

Fall -- it's the time of year when the aspens change into their brilliant golden colors, and the summer star constellations are replaced by some of the most spectacular and popular constellations of the night sky! Say goodbye to the Summer Triangle, Cygnus, Lyra, and Aquila. Say hello to the emergence of Orion, the mighty hunter, his faithful dog Canis Major (with the brightest star in the night sky, Sirius), the Gemini twins, Cassiopeia (which points to the spectacular Andromeda Galaxy), Pegasus, the flying horse, and the Pleiades (Seven Sisters) just to name a few. Along with all of these are rich stellar nebulas, star clusters, and new looks at numerous planets.

Fire in the sky! There are two major meteor showers this fall. The first is the annual Orionid meteor shower, which peaks on Oct. 20-21 between midnight and dawn, with clearsky rates of about 20 meteors an hour (look towards the Orion constellation). Not to be outdone, the annual Geminid meteor shower peaks December 13-14 (look towards the Gemini constellation). Unfortunately, during both meteor shower peaks there will be near full moons, so that will limit some viewing. But remember -- with meteor showers, you can actually see meteors a couple weeks before and after the peak days, so keep looking up in those dark night skies!

Fall also brings us the last Night Sky Astronomy Program of the year at the Florissant Fossil Beds National Monument. Weather permitting, it is planned for Friday October 25 from 7:00-9:00 pm, with a weather backup on Saturday Oct 26. Our recent summer Night Sky Astronomy program (August 2) was a huge success with 288 visitors, plus 14 telescopes and 12 astronomers from the Colorado Springs Astronomical Society (CSASTRO), during which we observed nebulas, galaxies, comets, and satellites. Fall night skies are usually some of the clearest of the year, so we hope to see all of you out there on Oct 25 for a great display of the heavens!

Mark Harter is a Florissant resident, and as a FLFO Volunteer Ranger, leads the FLFO astronomy events. He is a retired military Veteran (Air Force), and is an Aerospace Engineer supporting the United States Space Force and Office of Space Commerce.

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Volunteer Trail Crew Update

- John Schwabe -

The volunteer trail crew consisting of Ruth Gulliver, Mark Silas, Corky Capps and John Schwabe have had a busy summer season. A large portion of the trail maintenance work was brushing dense young pine trees in and adjacent to the Hans Loop and Old Mill Trails. The trail brushing had been deferred for many years. The crew started in May and finished in early September. The small tree cutting is very selective and natural looking. Other maintenance work was on the Petrified Loop Trail, fixing a chronic trail tread erosion site.

A large portion of this summer's work was prepping for potentilla shrub planting in the Visitor Center Circle. Twenty plants were purchased by the Friends. The Florissant Fossil Beds staff are planning a native plant flower garden to create a unique entrance for the Visitor Center.

Future fall trail work includes new trailside bench placement and fixing priority trail tread erosion sites on the east side of the Monument. The trail crew will miss Parker Severson, but greatly appreciate Sydney Moreno for stepping up and being a great NPS maintenance person providing solid guidance and leadership.



An Example of a Finished Product from the trail maintenance crew that enhances Monument enjoyment.



Planting native plants near the parking area.



Required tree trimming and fire mitigation.

Always a need to be aware of the power of gravity.



Smiles earned for a job very well done. John, Corky, Ruth. (Mark in spirit)

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Volunteers at Work

- Ruth Gulliver -

We installed a park bench at the Boulder Creek/Hornbek Wildlife Loop Junction. It is situated so those seated will be able to see the rehabilitated wetlands directly in front and Pikes Peak in the distance.

In addition, we worked on the Boulder Trail adding material to deep ruts and opening/constructing drainage for water coming down the trail.

We managed to photo the first people to sit on the bench (outside of Mark and Corky). Their only request was to be able to hold one of our tools in the photo...no problem... We now have a FLFO trail crew version of American gothic.

Bluebird sky, 70°, no wind.



Rest Easy, Hikers!



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Thank You, Trail Crew!

Art in the Park Fun for Kids and Adults

- John Schwabe -

It was another successful season at Florissant Fossil Beds National Monument, sponsored by the Friends. Six morning sessions had over 140 kids and adults participating in watercolor, pencil and crayon coloring. Using the late Steve Petersen's wildlife photographs as examples, Michelle Melville-Speck drew outline drawings for coloring. The wildlife included birds, plants and mammals. The drawings were printed on cardstock, which is good for watercolors and other mediums. For young children there was also crayon rubbings of insect and leaf stencils.

The key organizers and teachers are Friends' board members Michelle Melville-Speck, Laine Weber and John Schwabe. Though the program was designed for individual kids, adults and families were the largest user groups. They filled the picnic tables, making it a great atmosphere for art.





Artwork from the Art in the Park activity.

Art in the Park Fun for Kids and Adults

- Artists at Work -









- WANTED -

Members who would like to either join our Board or help with events and projects!

Contact Sally McCracken at sammckind@aol.com.

The Florissant Fossil Beds National Monument is maintained in 'visitor ready' condition through a coalition of the efforts of Mother Nature, paid staff members, and a volunteer workforce.

- Mother Nature is concerned with the natural development of geologic entities and the flora and fauna found within.
- The paid staff members are busy with the logistical management requirements necessary for day-to-day operations, visitor access and overall National Monument presentation.
- The volunteer work force works with Mother Nature and the paid staff members to, in short, do what needs to be done to assist Mother Nature and the paid staff in maintaining a safe and welcoming environment for all to enjoy.

There is always a need for additional volunteers that are willing to help Mother Nature and the National Park Services staff members. The type of work can vary from clerical, visitor interface, and trail and general Monument maintenance tasks.

Information on trail and general Monument maintenance tasks can be requested by contacting: John Schwabe at jspg@live.com.

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"Start where you are. Use what you have. Do what you can." Attributed to Arthur Ashe

rom the Archives In Praise of Fall

Jon Tyson on Unsplash

Amongst the Aspen By Laine Weber

This article originally appeared in the October/November 1991 Friends' newsletter. Laine Weber has been a park ranger at Florissant for many years and is now a 6th-grade science teacher at Woodland Park Middle School, although she returns to the park as a seasonal ranger in the summer. She has been a generous supporter of the Friends for many years. Laine and Kent Borges, the second Friends' president, produced the newsletter every two months for several years. Many thanks go to Laine for her help and support.

Autumn in the mountains of Colorado is truly a magical time. As if to compensate for the fact that a long winter is just around the corner, the aspens display a glorious brilliance, the stored-up summer sunlight given back for all of us to see. While the display is a marvel in and of itself, the story of the trees is equally marvelous.

Aspens have a mystique, yet they are the most widely distributed tree in North America. They are found in mountainous areas from Alaska to Mexico. Widely distributed in space, they also provide a link with the distant past. Aspen probably became established during the Pleistocene, when vast sheets of ice covered much of the northern hemisphere. For aspen seeds to sprout, they require 4-6 weeks of constant moisture and bare soil, conditions that were prevalent at the margins of retreating glaciers, but now prove to be rare.

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Thus, today the aspen's primary means of reproduction is vegetatively, through root suckering. Sprouts shoot up from the roots of a parent tree, all genetically identical. Leaves of the same shape emerge in the spring and change color in the fall at the same time. These clones or "families" have the same color and texture of bark, the same branching characteristics, and share susceptibility to insect damage and disease. A group of clones can be distinctly different from the "family next door." Close observation of a massive aspen forest reveals a mosaic of differences. To a great degree, all aspens are susceptible to disease and in- sects. The aspen is host to more than 250 types of fungi, numerous bacterial and viral infections, and most types of insects. Despite the attacks, few trees die, as they are strengthened by their photosynthetic bark. Unique in this respect, the net photosynthetic gain is about 2%, enough to help the stressed trees recover and live to an age of up to120 years.

The 700 million acres of aspen forest in the western U.S. are of greater importance to more species of wildlife than all other species of trees in the montane forest ecosystem combined. Wildlife can be elusive, but many animals leave signs on the trees that one can look for. Many different species of birds feed and nest amidst aspens. Aspens are a favorite food of cavity nesters, because the relatively soft wood is easily excavated. Also, look for circular dot patterns high on the trunks, made by feeding yellow-bellied sapsuckers. Elk spend a good deal of time amongst the aspen, calving in the aspen forests in the spring and feeding on the inner bark in the winter. You can find scarring on the trunks from their lower jaws scraping away at the bark. You can judge how long ago the elk were there by the darkening that occurs as the tree attempts to heal its wounds. Bear find various foods in the lush understory of the aspen forest and may stop to sharpen their claws as they forage about, leaving marks about five feet from the ground. Beaver and aspen are a match made in heaven. Beavers feed on the bark and down trees for building materials for dams and lodges. Signs of their activity are hard to miss.

The mercurial leaves of Populus tremuloides (the flattened stems permit the leaves to flutter at the slightest breeze, hence the Latin name, "trembling" or "quaking") tell us that winter is near but the sight of them still brings pleasure. Knowing a bit more about them will add to the enjoyment.





Colorado Gives Day December 10, 2024

- Patty Glatfelter -

Work is currently underway for establishing the Friends of Florissant participation in this year's Colorado Gives Day. Jordan Brown, of the Colorado Gives Foundation, is consulting with the Friends' board to create a fundraising page for this one day of exceptional giving from Coloradans. Our participation in this widely known and well-managed philanthropic effort will nourish our capacity to provide opportunities at the FFBNM.

These programs fulfill the mutual mission of scientific research, interpretation, education and preservation of the resources. Junior Ranger programming, educational field trips and seminars, community and school outreach programs, all require funding that falls outside of the Monument's designated budget. Our hope is that by these ongoing fundraising efforts, we can continue to make FFBNM a destination for a wide variety of individuals to explore, learn and protect our special place.

More information on the Colorado Gives organization can be found at the following website: <u>Colorado Gives</u>



New Legacy Fundraising Opportunities for Friends' Mission Unfolding - Patty Glatfelter -

It is a thoughtful process in 2024 as the Leadership team, board members, John Wright, Colorado Gives Foundation representatives and Jean Verrier, CPA engage in developing an action plan for fundraising to assist the joint educational mission of Friends of the Florissant Fossil Beds and the Monument.

John Wright, son of Vim Wright (an original member of the Defenders of Florissant-see summer newsletter) proposed the establishment of a Legacy Endowment to specifically support interns at FFBNM. He is willing to provide a generous donation to launch the fund. To establish such a remarkable project would require outside expertise, a new level of technological support for monitoring funds and innovative ways of encouraging donor commitment. The Legacy team was formed in early 2024. Members include Jan Beals, Treasurer; Sally McCracken and Patty Glatfelter of the Friends' leadership team, as well as board members Therese Johnson and Jerry McClain. Options for guidance were explored, and the Colorado Gives Foundation (CGF) was earmarked as our optimal partner organization. Tim Zeckser represents CGF to consult with the Legacy Fund team. Jean Verrier, CPA, was recruited by the Friends to assist with this major initiative. His prior experience with large nonprofits provides a level of expertise that the Friends had not had access to in our past endeavors.

Jan Beals has donated countless hours of creative thought to help assess the appropriate fiscal technology and provided the necessary data and documentation to attain such a valuable goal. She has worked closely with Jean Verrier and Wendie Warner to determine our needs. Each team member's special skills are moving the Friends' organization to offer a higher level of contribution to the Monument's original mission of scientific research and preservation of one of our nation's special places. At this point in time, a launch date of December 2024/January 2025 is anticipated if all necessary tasks are completed.

More information on how the Friends' membership and outside donors can contribute will appear in upcoming e-blasts and newsletters.



Stay Tuned!

"Alone we can do so little; together we can do so much." - Helen Keller.

Friends Offsite Activities

- Gary Censoplano -



Board Member Gary at the Lake George Rock & Mineral Show Aug. 17, 2024.



Board Member Laine at the Lake George Rock & Mineral Show Aug. 16, 2024.

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Friends Offsite Activities

- Gary Censoplano -



Maintenance Supervisor Sydney & Ranger Clara at the Woodland Park Farmer's Market Aug. 9, 2024.



Ranger Robin & Board Member Laine at the Woodland Park Farmer's Market July 19, 2024.

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This is Where We Live - Some of us -

Florissant Colorado is located at the coordinates of <u> $38^{\circ}56'40''N 105^{\circ}17'24''W$ </u> and is an unincorporated town within Teller County in the state of Colorado. Florissant, Colorado, has a general altitude of 8,200 feet with local changes of elevations and depressions. The 2020 census (<u>**C**</u>ensus <u>**D**</u>esignated <u>**P**lace</u>) resulted in a count of 128 (<u>Wikipedia</u>) and a zip code - 80816 - tabulation area count of 5,180.

The town of Florissant was founded by Judge James Castello in 1870 and was named after his home town of Florissant, Missouri. You can visit Judge James Michael Castello's grave at the Florissant Cemetery. You can find more information on Judge Castello and the precise location of his grave <u>here</u>.

Florissant is an unincorporated town, primarily rural, populated with several - *more than two but not many* - local businesses, and has highway access to the city of Woodland Park (~20 Miles) and the large city of Colorado Springs (~33 miles).

The most recognized 'tell' of Florissant, Colorado, is the Florissant Fossil Beds National Monument. The Florissant Fossil Beds is globally recognized as a veritable cornucopia of geological findings and artifacts that allow a peek into earth's fascinating history. We learn where we, and Mother Earth, have been in order to better understand where we are going.

Recommended Reading



Braiding Sweetgrass

"As a botanist, Robin Wall Kimmerer has been trained to ask questions of nature with the tools of science. As a member of the Citizen Potawatomi Nation, she embraces the notion that plants and animals are our oldest teachers. In Braiding Sweetgrass, Kimmerer brings these lenses of knowledge together to show that the awakening of a wider ecological consciousness requires the acknowledgment and celebration of our reciprocal relationship with the rest of the living world. For only when we can hear the languages of other beings are we capable of understanding the generosity of the earth, and learning to give our own gifts in return." <u>GoodReads</u>

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"The most diverse fossil bed in the United States provides a unique picture of what life was like 34 million years ago. In the rocks of Florissant, Colorado, lying in the shadow of Pike's Peak, is the evidence of a long-lost world. Encased by the ash of volcanoes that erupted tens of millions of years ago, animals such as insects, fish, and mammals were fossilized in the same deposits as flowers, trees, and the delicate leaves of plants. This amazing collection of animals and plants from the same place at the same time provides a rare, uniquely comprehensive glimpse of life in the past." <u>GoodReads</u>

Available Here

BRAIDING SWEETGRASS Indigendus wisdom, scientific knowledge, and the teachings of plants

ROBIN WALL KIMMERER

"A great teacher, her words are a hymn of lose to the world." - ELIZABETH GILBERT



Probably not a good day for an emergency.



NPS Public Domain

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The staff of the typesetting group would like to, once again, extend their appreciation to Michelle for her eye for grammatical detail and willingness to review content and provide appropriate edits.

- Our staff has updated all corrections and suggestions-recieved received. -

