



Spirit Mound Trust News

P. O. Box 603 | Vermillion, SD 57069 | info@spiritmound.org | www.spiritmound.org | December 2017

Viewing the Year from the Top of the Mound

By Jim Heisinger

The Lewis and Clark Spirit Mound Trust began informally in 1984. We worked alone for almost twenty years to publicize Spirit Mound history, find a way to purchase the land, restore its prairie habitat, and open it to the public for their education and enjoyment. Help came in a surprising way!

In 1996, Stephen Ambrose's book *Undaunted Courage: Meriwether Lewis, Thomas Jefferson, and the Opening of the West* was published. Subsequently Ken Burns directed an engaging PBS documentary about the journey of Lewis and Clark. The book and the documentary intensified public interest in Spirit Mound. It became of both state and national interest as the bicentennial of the 1803-1806 expedition approached because Spirit Mound is one of the few remaining places where we can be certain that Lewis and Clark actually stood. The Trust was no longer alone in its plans for this historic landmark.

Twenty seventeen has been a transformational year for prairie management at Spirit Mound. Thanks to the contributions of Trust members, we purchased a new, 37-horse-power Kubota tractor, a 60-inch mower, and a 14' by 24' prefabricated garage, all donated to the state for dedicated on-site use. The sixty-inch mower is adjustable over a wide range of cutting heights, a very important attribute.

Frequent, timely mowing is a powerful tool for prairie restoration. Newly seeded prairie areas must be kept mowed at prescribed heights to set back many faster growing, early season invasive plants, particularly brome. Brome is even encroaching on our successfully seeded areas, and spring mowing will help control this problem. Expanding sweet clover infestations can be gradually eliminated by timely mowing to prevent the biennial species from going to seed. This onsite equipment will be especially important for two ongoing projects, the prairie remnant and Monarch Meadows.

The prairie remnant is a unique, five-acre habitat on the western side of the trail, that has never been plowed, near the summit. Its relatively dry soil forms a shallow cap overlying Niobrara chalk, deposited over 65 million years ago, when the area was under the Western Interior Seaway.

If in early May you visit the remnant and get down on your hands and knees, you will see some plants that are not found elsewhere in the park. You will, for example, see two species of puccoons, and most importantly the prairie violet (*Viola pedatifida*) which is less than 8 inches tall.



Photo by Mark Wetmore

Regal Fritillary on Prairie Remnant.

In 2001 state and federal funds, along with at least \$50,000 of Trust and other local contributions, made it possible to acquire the 320 acres of land and begin prairie restoration. Though it is the smallest park managed by the South Dakota Division of Parks and Recreation, Spirit Mound continues to draw numerous out of state and foreign visitors, wanting to follow in the footsteps of the Corps of Discovery. Since the beginning of the project the Trust has worked as a partner with park managers. We have secured grants, purchased and installed signs, designed restoration projects, and purchased seeds and equipment. It has been a wonderful, mutually supportive relationship.



Photo by Mark Wetmore

Prairie Violet at Spirit Mound, May 5, 2017

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View from the Top continued

Prairie violets are the sole host of regal fritillary larvae. The beautiful regal butterflies have experienced historical population declines and range constriction. Researchers at the Nature Conservancy's Platte River Prairies have reported that thatch and violets are the major factors controlling the number of regal fritillaries. The thatch serves as overwintering habitat for larvae. Since controlled burns, a common prairie management tool, would kill larvae directly and eliminate the thatch, the Trust wants the remnant to be a refuge from fire.

The Parks Division has agreed with our request to set aside the remnant as a never burned fire refuge for regals and other species that might be eliminated by fire. We will experiment with other techniques to restore and maintain the area, utilizing mowing, inter-seeding and herbicides.

A second ongoing project is Monarch Meadows, a wet, ten-acre area bordering both the south and north sides of Spirit Mound Creek. In 2016 it was seeded as a pollinator plot with 40 species of flowering plants, including several species

of milkweed, the favorites of larval and adult monarchs.

This year, the southern portion, on a relatively well-drained slope, was adorned with blue vervain, iron weed, swamp milkweed and other plants that thrive in moist environments. It was so beautiful in early August that, since we had a tractor, we mowed a rough trail for adventurous butterfly fans. We intend to continue to mow this trail, and in future years, we'll provide descriptive signs .

Alas, the northern part of the Meadows is flat and poorly drained. It was flooded in the spring of 2016, and standing water made it difficult to schedule mowing. Lacking an on-site tractor and mower we could not take advantage of occasional dry periods. Now, with our on-site tractor and mower we can take advantage of such brief windows of opportunity. Rescue plans for the northern section focus heavily on timely mowing, some reseeding and the cautious application of herbicides.

The View From the Parking Lot

By Clarence Pederson

Perhaps the title of this section of the newsletter should be "The View From the Tractor Seat" because I am honored to be the designated driver of the very fine Kubota tractor and mower. With this machine we are trying to mow areas of weeds and brome grass that we do not want to go to seed and compete with the native grasses and forbs. I have spent hours of quality time in areas such as Monarch Meadows and the prairie remnant. The mowing started late this spring because of the need to have a new building in place before acquiring the tractor. Next spring we will start earlier and be even more ambitious in our efforts to prevent the growth of brome, thistles and other undesirable plants.

The view from the parking lot, to the top of the mound, should be getting a bit clearer. Now, with the help of a battery powered chain saw and loppers, I'm removing volunteer trees from the prairie. After cutting, I treat the stump with Tordon spray to prevent re-growth. The planned prairie burns should help with this somewhat daunting task.

Visitation at the park continues to impress me. Some folks come regularly and others are there for a one time visit or special occasion.



Clarence Pederson and the tractor.

Photo by Mark Wetmore

On a very windy day in late April, a number of people ascended Spirit Mound for a wedding. As they leaned into the strong south wind and exchanged vows, I wondered what they were thinking about their choice of selecting this site to tie the knot.

In June, Jim and I encountered several interesting camping vehicles from a variety of states. Because of our excellent powers of observation we noticed that all the visitors were women. We found that we were among "Sisters On the Fly" whose summer adventure was following the Lewis and Clark Trail. Check out their Facebook page to see pics of their cool campers and stories of their adventures. Maybe some of you will be inspired to join them.

In addition to the "sisters," last summer I met folks from Texas, St. Louis and Jefferson City, Missouri, Germany, and Kansas who specifically said they were following the Trail.

One day in August, the local weather reports included news of a solar storm resulting in the possibility of an aurora borealis that night. Sandy and I and a couple of friends headed out to Spirit Mound about the time it was getting dark. When we arrived the parking lot was already nearly full of cars and people in chairs awaiting a glimpse of this phenomenon. It turns out that among local stargazers the Mound is considered a pretty good dark spot, because it has no yard light and few farm lights surrounding it. Before the night was over, 50 to 60 cars either parked or drove through the lot.

In September, while cutting volunteer trees, I met a couple who said they were traveling the L & C Trail and were from Maine. I mentioned that my brother lives in Farmington, and it turns out they know him and work with Bob at the University of Maine. What a small world it is and how interconnected we are.

Digital Mapping at Spirit Mound



Figure 1: Historical and current air photos.

by Tim Cowman

Maps and air photos have been used to interpret and represent features on the earth for a long time. In the last 20 years, mapping has seen a significant movement to the digital age. The digital mapping revolution is powered by a technology known as geographic information systems, or GIS. Digital mapping makes use of the locational information that can be assigned to maps, air photos, and any point or line feature. Interpreting the history and managing the future of Spirit Mound can be enhanced by the use of digital mapping. An example is shown in figure 1. Three air photos taken in 1967, 1998, and 2016 show how the Mound has evolved over those years. For reference and comparison, the current hiking path up the Mound is shown as a solid red line on all three photos. Some apparent changes from 1967 to 1998 are the development of the large feedlot on the northeast side of the Mound and an increase in the density of trees growing on the southeast side of the Mound. Visible changes between 1998 and 2016 include the removal of the farm, feedlot, and trees. Progress to restore the property from cropland to native prairie is also visible.



Figure 2. Area and year of controlled burns.

Digital mapping is also used to track land use and management efforts at the Mound. Figure 2 shows how the area of controlled burn events over time can be represented. The colored

polygons represent the area of each burn. A label representing the year of the burn is placed in the center of each polygon.

Many features of the Mound are not obvious from looking at an air photo or from walking the property. Overlaying point and line features on an air photo or topographic map is another great use of digital mapping. In figure 3, the locations of several important Mound features are shown on a 2016 air photo of the Mound. Labels explain what these features are, including the remnant prairie area, Monarch Meadows, and the Monarch Meadows Trail.

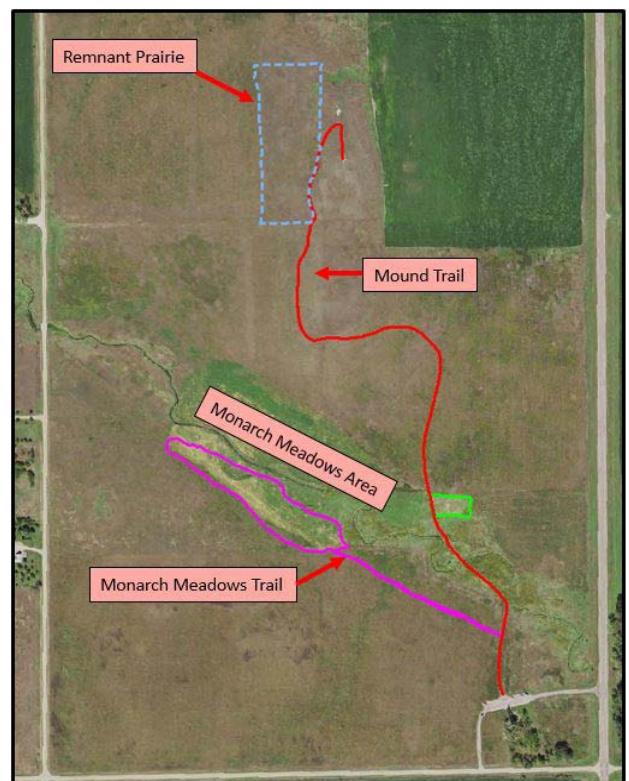


Figure 3. Spirit Mound features shown on a recent air photo.

Upland Sandpipers at Spirit Mound

by David Swanson

Upland Sandpipers are unique grassland-nesting shorebirds related to the curlews and are a common breeding species in the short and mixed-grass prairies of the northern Great Plains. Upland Sandpipers also nest in other grassland areas of North America, including Spirit

Mound Historic Prairie in southeastern South Dakota, where it is an uncommon breeding species. In appearance, their upperparts are checkered with dark brown and buff, while their underparts are whitish, with streaks on the breast and sides. Other features aiding identification include their yellow legs, medium-length, mostly yellow bill, long neck, and small, dove-like head. Early in the breeding season, from late April through May, this species is more often heard than seen by hikers on the Mound trail when it gives its rising-then-descending "wolf whistle" call to mark its territory and attract a mate. This call is often given in song-flights over the breeding territory, and these flights include unusual rapid-fluttery wing beats that also help one to identify the species.

The sandpiper's scientific name is *Bartramia longicauda*. The first (genus) name is in honor of William Bartram, an American Naturalist of the late 18th and early 19th centuries; the second (species) name refers to its well-developed hind toe. The long toe allows Upland Sandpipers to perch, and they can often be observed standing atop fence posts at the edges of grasslands or pastures.

Upland Sandpipers are long-distance migrants, breeding in grasslands across much of North America, with the northern range boundary including the Canadian Prairie Provinces west to east-central Alaska. The species winters in the Pampas grasslands of Argentina.

The breeding cycle at Spirit Mound begins with their arrival in mid-April, with nesting in progress by mid-May. Chicks are usually independent of parents by the end of July, and most individuals have departed for their winter grounds by early September. Like most grassland bird species, this sandpiper nests on the ground, with the nest well hidden in grasses, often with grasses arching over the nest for protection. The nest itself is a small, simple scrape or depression lined with dead grasses. The female typically lays a clutch of four eggs, which are incubated by both parents and hatch in about 23-24 days. Like most shorebirds, the young are mobile at hatching and are covered with downy feathers. The young tend to leave the nest shortly after hatching, but are cared for by their parents until they are able to fly, which usually



occurs about a month after they leave the nest.

Populations of this species are stable or may be increasing in South Dakota, but are declining in some areas of North America, where grasslands are disappearing or being degraded. The encouraging population trend for South Dakota suggests that if you keep an ear out for the "wolf-whistle" call of these sandpipers in May as you hike the Spirit Mound trail, you are likely to be rewarded with a view of these birds displaying their showy song-flights.

Third Pin in the Series



For the past two years, Spirit Mound Trust has issued a series of limited edition pins

intended to honor a prairie bird returning to the restored habitat.

This year the Upland Sandpiper has been added to the collection of the Bobolink in 2016 and the Northern Harrier in 2017.

The 1" by 2" enamel pins are \$10 each

plus \$4 shipping for one, or \$5 shipping for two or more pins.

For those near Vermillion, the pin(s)

may be purchased at

Pressing Matters located at 102 East Main Street, Downtown Vermillion, or email to info@spiritmound.org and we will arrange pickup or delivery, or use the order form on the back page of the newsletter.



We Love to Hear from Our Friends and Neighbors

Living on Spirit Mound

This year Dale Hanson shared with us his story, "Living on Spirit Mound," posted on our website. Hanson's family lived north of the Mound on what was known as the McDonald Farm from 1959-64. He attended 1st through 4th grades at Spirit Mound School, which was located 150 yards south of Spirit Mound Creek, on the gravel road just west of the Mound. Here are some of the memories he shared:

Winter was a fun time at school. The ditch along the gravel road between the Spirit Mound Creek and the school would drift full of snow behind the fence, which separated the field from the ditch. During recess, we would dig snow tunnels the length of the ditch towards the creek. The snow was deep enough that our snow tunnels were tall enough that we could walk through them. We would also build snow forts in the schoolyard and then have snowball fights during recess. During extremely cold weather, the schoolhouse furnace had a hard time keeping the one room schoolhouse warm. The furnace was located in the front right corner of the building. Even though we wore our winter coats all day at school, we pushed our desks in a semi-circle up close to the furnace to take advantage of as much heat as possible. The kids who had their desks closest to the furnace had to make sure their crayons were not located at the front of their desks or they would melt.

In 1959, Spirit Mound was marked with a monument located on top of the mound commemorating the Lewis and Clark visit. Also located within a few feet of the monument was a pipe, about four inches in diameter, with a removable steel cap on it. It was never clear what the purpose of the pipe was. The history of the Mound was known within the community, but the number of tourists who visited the Mound while we lived there could be counted on two hands. Preserving the Mound and its history was just not a priority or even a thought.



This 1954 National Geographic photo is captioned "Young Pilgrim Files a Progress Report." The pipe mentioned above in Dale Hanson's narrative is remembered as a place to drop notes or names written on slips of paper.

Follow this link to our website to read Hanson's entire memoir "Living on the Mound": www.spiritmound.com/spiritmoundtrust.htm

We invite you to share your own photographs, memories and experiences. Submit them to spiritmound.org/memories.html. After review, selected entries will be posted on the website for others to enjoy, or perhaps, included in a newsletter.

A Spring Journey

What a pleasure it was to receive this thank-you note, dated May 10, 2017:

Dear Friends,

Today I accomplished a long held goal: As I drove to Spirit Mound, it began to spit a bit of rain. Not enough to prevent me from walking the trail to the top of Spirit Mound.

I savored the sounds and scenery, the bulletins and tracts.

I saw bobolinks and a goldfinch. From the "peak" I heard the mating call of rooster pheasants far below and saw pheasants flying into the thick, tall weeds and grass—a portent of a good crop of birds.

Although I have lived my whole life within 35 miles of Spirit Mound and have driven past on many occasions on highway 19, and I even ran on a "road race" from highway 19 just east of the Mound, 6 miles to Vermillion once, I always wanted to climb to the top! You have made that deliciously easy with a great hiking trail.

And today on my 87th birthday, I climbed to the top of the Mound!

It's been a great day. Thank you all!

Russ Graham

Spirit Mound Trust's Board of Directors:

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Spirit Mound Cemetery Update

by Cindy Kirkeby

Many changes marked the 2017 year at Spirit Mound Cemetery. Big news is that, completely unexpectedly, on the hot weekend of June 3rd and 4th, almost all the down or tipping markers were cleaned, repaired and straightened! Brent Richardson and three of his children – Sawyer, Clarissa and Noah – came from their home in Sheldon, ND, along with the appropriate equipment, supplies, and expertise, to clean and reset the stones, and to trim the lower branches of the old Scotch pine.

Spurred by his knowledge of family history, Brent had tracked down my sister Nancy Carlsen and me in the early 1990's, and informed us that we were all three descendants of early pioneers Alonzo and Cordelia Richardson, both buried at Spirit Mound Cemetery. Brent had taken basic and advanced courses in gravestone preservation, and he wanted to repair and preserve the stones at the little prairie cemetery where our great-great grandparents were buried. We'd wanted to straighten the fallen stones for years, but lacked both the know-how and the funds to get the job done. Brent's interest, initiative, and hard work changed our wishes into reality – we felt like the old cobbler whose shoes were sewn by elves in the night.

We gave him a \$100 Trust check to slightly defray his expenses. That was the total in our account at that time that had been designated for the cemetery by donors. It was almost insignificant compared to their work and expenses. We are enormously grateful to Brent and his family for their care, skill, and dedication in cleaning and resetting nearly all of the gravestones, and for providing a meticulous written record of their work.

In August, Deb and John McDonald placed a new stone just south of Andrew McDonald's monument, marking the site where they had previously scattered the ashes of John's parents, Eleanor and Burdette McDonald. Burdette was the grandson of Andrew McDonald, who in 1908 had purchased the original Hixson homestead on Spirit Mound. This was the first new stone placed at the cemetery in many decades.

We are grateful for Marvin Walz's continued dedication to the cemetery. For several years now, he has mowed the burial enclosure and the gently winding access from the road, and tended the American flag at the entry to the enclosure.

Mark Wetmore continued to gradually bring back the prairie remnant surrounding the grave enclosure, using spring mowing and experimenting with an early glyphosate treatment of a small area of the brome. He's getting enormous fun from the project; the contrast with the adjacent non-managed area is remarkable. Oodles of native grasses are showing, and an increasing variety of forbs are blooming, including prairie violets, leadplant, ox-eye, and one lone butterfly milkweed, possibly from the seed we broadcast a few years ago.

The sturdy little cottonwood we planted in the spring of 2016 thrived this last summer, nearly doubling in height.

Clarence Pederson installed a foam bumper around the top edge of its wire fence to save it from injuring itself in the wind off the valley – one of Sandy Pederson's fine ideas.

In June, we planted some of Cathy Beard's cemetery spurge in front of Alonzo Richardson's headstone under Nancy's watchful eye, as she related stories about the pioneers carrying the little plant to homesteads and cemeteries across the West. Mark approved of the species as an "honorary native" because we'd found some of the plants growing wild in the prairie remnant.

The great sadness of the year was the death of Nancy Carlsen on July 25th. Her service on the cemetery board was such an inspiration to Mark and me, and her quiet enthusiasm, gentle spirit, and incredible knowledge of local lore are greatly missed.

Nancy wrote in the 2016 Newsletter, "It is our hope to develop some sort of 'seating area' near the Cottonwood in the future to further tie Spirit Mound with Spirit Mound Cemetery and to provide a resting place to watch the myriad birds observed still using the Scotch Pine as a prairie perch." A number of people directed memorials for Nancy to the Spirit Mound Cemetery c/o The Spirit Mound Trust. Mark and I would like to use some of those gifts to create a seating area near the Cottonwood in Nancy's memory.

We invite everyone to visit the little pioneer cemetery with its reviving prairie, and to enjoy the serenity and the view from the bluff overlooking the Vermillion River on 463rd Ave. between 311th Street and 310th Street in Spirit Mound Township.

Only Spirit Mound Trust membership fees or donations that are specifically directed towards the cemetery effort are used there. All undesignated funds are reserved for the Mound site. Please remember if you wish to help the cemetery restoration, funds must be specified accordingly.



Richardson Family working at the cemetery.

Night Walk at Spirit Mound

by Norma Wilson

I was lucky to be one of sixty people gathered on Friday evening, October 13th, to experience Spirit Mound beneath the night sky. National Park Service Rangers Daniel Peterson and Lisa Yager told the group gathered there to be alert for what we could see, hear, smell, taste and touch along the trail and to be aware of the mysteries that surround this historic monument. It was the stories about the *caotina* (little spirit people) they had heard from the Omaha people that made Lewis and Clark want to visit the Mound in 1804.

As the sky darkened, Sandy Pederson noticed the National Space Station passing over the Mound, and her husband Clarence pointed it out to us. After we'd walked a short distance up the trail, Ranger Peterson, stopped the group to sense our surroundings—the colors, as dusk fell and the western sky glowed pink, the sound of crickets, the cool, damp air near Spirit Mound Creek, and the smell of sunflowers as we passed by the meadow.

As we approached the Mound, the big dipper (also known as Ursa Major, the Great Bear, and Callisto) appeared above it. Standing atop Spirit Mound at night under the stars, I felt a prickly awe as I imagined what it would have been like two centuries ago when there were no lights intruding on the darkness, no sounds of trucks, no highways, and when numerous herds of buffalo, elk and deer grazed on the grasses below.



Photo by Mark Wetmore

Saturday, June 3, 2017 a crew from Avery Sign Company in Sioux City, installed a new sign, replacing the original one destroyed by wind

Spirit Mound Board Member and Colleague

by Mark Wetmore

Spirit Mound, and all of South Dakota's natural world, lost a dear friend in July, when Nancy L. Carlsen succumbed to lung cancer.

She was a woman of many interests, historian, nature lover, an artful, meticulous cartographer and an environmental/social activist all her life. Besides being a colleague with her on the Mound board, I worked with Nancy and her sister Cindy Kirkeby, as co-members of the Spirit Mound Cemetery board, and enjoyed the experience immensely.



Mound Membership

Spirit Mound Trust membership is \$10 per year. Additional donations, as well as the purchase of Bird Pins and the Ron Backer prints are welcome. All donations are tax deductible.

Your support helps to develop a better, more diverse historic prairie and fund other programs to make the Mound a more interesting place to visit. Our address is P.O. Box 603, Vermillion, SD 57069. If you live in the Vermillion area and would like to avoid shipping charges on the pins, send an email to info@spiritmound.org to make arrangements.

Thank you for your support.

Spirit Mound Trust

P.O. Box 603
Vermillion, SD 57069

ADDRESS SERVICE REQUESTED



Photo by Paulette Maire-Wigle

Spirit Mound Historic Prairie Membership Renewal and Order Form

Spirit Mound Trust membership is \$10 per year. Additional donations are welcome, and all are tax deductible. Your support helps to develop a better, more diverse historic prairie and fund other programs to make the Mound a more interesting place to visit. If you live in the Vermillion area and want to avoid shipping charges on the pins, send an email to: info@spiritmound.org to make arrangements.* Please join us:

Please add my name to the 2018 membership roll of the **Lewis and Clark Spirit Mound Trust**.

I enclosed my check for \$10 (tax deductible*). Members will receive our newsletter. Additional contributions are welcome.

Name _____

Address _____

City _____

State _____ Zip _____

Phone/email (Optional) _____

*Tax exempt 501 (c) (3) organization (No 93-0921345)

Please send me the following:

Ron Backer print \$100 ea \$ _____

2016 Bobolink Pin \$10 ea \$ _____

2017 Harrier Pin \$10 ea \$ _____

2018 Sandpiper Pin \$10 ea \$ _____

+ \$4 shipping for 1 pin / \$5 for 2 or 3 pins

Shipping on pins \$ _____

Membership \$10 form on the left \$ _____

Total Amount Enclosed \$ _____

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P. O. Box 603
Vermillion, SD 57069

Thank
You!