Over The Edge

Vore Buffalo Jump Foundation Newsletter

Volume XXXII Number 1 **P.O. Box 369**

April 2025 **Sundance, Wyoming 82729**

Annual VBJ Open House is June 1

Our annual open house will be held on June 1, the opening day of the 2025 summer season. We will be open from 8 am to 6 pm. No admission will be charged. A highlight is clean up of the bone bed. Volunteer archaeologists will be at work during the morning and will be glad to answer questions. Board members and summer staff will conduct tours, and visitors can dig for souvenir arrow points and throw darts at a target using an atlatl.

It's Field Trip Season !!

We are gearing up for the spring field trip season. The month of May is booked with schools from the region: Rozet, Sheridan, Rapid City, Newcastle, and five Gillette schools. A rough estimate indicates that we'll be hosting about 520 students. These field trips are fun, but they are also important educationally. As Emily Driskill, a 4th grade teacher from Gillette wrote in her letter of support when we applied for a Wyoming Cultural Trust Fund grant, "These field trips are an opportunity for a rich hands-on learning experience that is unparalleled! I have helped teach the lessons as well as observed the lessons as they were taught. Each year I learn a new tidbit of information, and walk away newly amazed. The students are able to take the information they learned in their books and apply it to real life. To see the layers of bones in the pit, and listen to the stories in the tipi...you feel as if you are transported back in time!" Each field trip requires at least five volunteers, and the board is incredibly grateful to those who give up their time to help make these field trips possible. We are always looking for help. If you would like to volunteer, please email us at info@vorebuffalojump.org.

Ted Vore explains artifacts to field trip students

Vore Scholars Continue Valuable Work

During this spring semester at the University of Wyoming, two Vore Scholars are hard at work in the University of Wyoming Archaeological Repository. Siofra Thomas Lynch is a PhD student at UW who received a previous degree from Wichita State. Siofra says that it had been a while since she was been able to handle faunal material, and she was very excited to get back into curating with this internship. She is interested in how past Indigenous groups used bison for shelter, ceremonial purposes, and particularly clothing. Her non-academic interests include reading and sewing, and she loves being able to work with her hands to make something.

Erin Walker is a triple major in anthropology, astronomy, and physics (wow!) and is an avid reader who loves to go on hikes with her dog. Erin applied to be a Vore Scholar to gain experience on the lab side of archaeology. She participated in a dig last summer and will be volunteering at an archaeological site this summer. She loves the excavation side of archaeology and the Vore Scholars Program has allowed her to learn more about what happens with finds once artifacts are back at the lab.

Both Scholars have cleaned skulls that will be part of a new exhibit at the Vore Site. The work on the bison skulls in the Repository is funded in part by a grant from the Wyoming Cultural Trust Fund.

Vore Scholars Sophia Thomas Lynch (above) and Erin Walker (below) are both helping prepare new exhibits for the VBJ

Bank Donation Supports VBJ Scholar Program

Sundance State Bank has given a donation to the Vore Buffalo Jump Foundation to support the Foundation's Vore Scholars Program. The Vore Scholars Program provides funding to two students each semester who work with staff at the University of Wyoming Archaeological Repository to properly store and curate the artifacts that have been removed from the sinkhole or to focus on a research project related to the artifacts. "Sundance State Bank has been a longtime supporter of the Vore Buffalo Jump Foundation, and we look forward to helping them bring back more Vore Scholars from the University of Wyoming to work on the Vore Collection. Not only does the Vore Buffalo Jump help preserve and share the history and culture of our area, but they also contribute to our economic success by bringing in visitors from all parts of the world," commented bank president Andy Miller.

Volunteer Archaeologists Work To Prepare The Excavation Unit For Field Trips And Summer Season

New Research Suggests Bison May Have Been Driven From More Than One Direction Into The VBJ

One of the goals of the VBJF is to support research on the collection of artifacts that have been removed from the Vore Site sinkhole. During the summer and fall of 2024, the VBJF board provided a stipend for Mackenzie DePlata Peterson, who is a graduate student at the University of Wyoming. Mackenzie was mentored by Wyoming State Archaeologist Spencer Pelton. Mackenzie's research relied on the database created over the past seven years, supported first by limited funds from the VBJF and then through a grant from the Institute of Library and Museum services.

Mackenzie was interested in determining the direction from which bison were driven into the Vore Site sinkhole. If bison were drive off a cliff, identification of the jump points is usually a relatively straightforward process. At the Vore Site sinkhole, the herd could have been driven into the trap from any direction. During initial excavations and surveys conducted during the 1970s, drive line remnants were reported southwest of the sinkhole, and surveys conducted by the Office of the Wyoming State Archaeologist in 2015 and 2017 confirmed a driveline with 65 stone features located about 1.1 miles southwest of the sinkhole. These drivelines include cairns and stone circles; however, the distance away from the sinkhole makes it unclear whether the drivelines and hunts conducted at the Vore Site are associated. The identified drivelines could have been used in hunts that moved the bison herds to the southwest into small canyons.

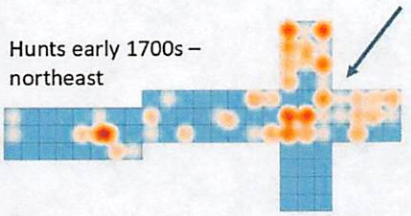
Mackenzie's hypothesis was that analysis of the locations of bison pelvic bones within the sinkhole could shed light on the direction the bison herd entered the sinkhole. She chose to focus on pelvic skeletal elements based on previous research on butchery practices. Her assumption is that bison were butchered where they died within the sinkhole. Other skeletal elements, such as the limbs, are often removed and broken for marrow. The pelvic bones do not contain marrow, and, given their weight, Mackenzie reasoned that they were likely left near to where the buffalo originally fell.

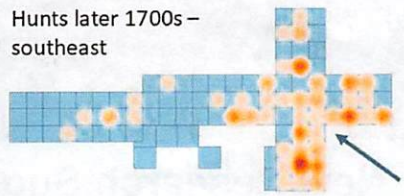
Although previous work established that there were likely 22 hunts at the Vore Site over a period of about 250 years, during excavations in the early 1970s, records kept on the artifacts separated them into 13 excavation levels. Mackenzie analyzed the concentrations of pelvic elements these levels and used statistical testing to determine whether the elements were concentrated with any directionality. She found statistically significant correlations between the concentrations of pelvic elements and the direction the animals were driven into the sinkhole for five excavation levels. These calculations suggest that the bison herds were driven into the sinkhole from different directions. Data from

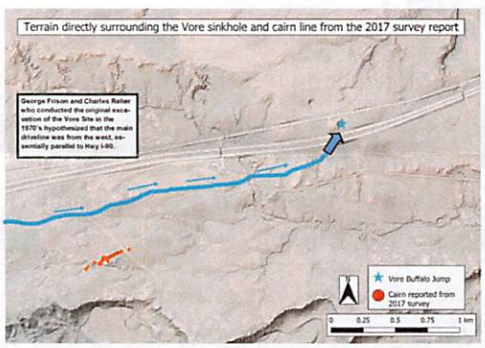
analysis of the two excavation levels that include bones from hunts that occurred in the early 1700s suggest that the herd was driven into the sinkhole from the northeast. More recent hunts may have used a southeastern drive pattern.

Mackenzie will be presenting her results on directionality of jumps at the Vore Site at the Wyoming Archaeological Conference in May in Cheyenne, and a manuscript she has written will become a chapter in a planned book on research on the Vore Collection. Mackenzie recently obtained funding through the George C. Frison Institute to perform radiocarbon dating of bones from four of the excavation levels at the Vore Site. These dates will be used to build an age-depth model for the Vore Buffalo Jump site to estimate the dates of each of the 22 jumps into the sinkhole. We will keep you updated on her research!

An aerial view of the Vore Site. Figures on the right represent the units of the 1970's excavation and Peterson's mapping of the skeletal distribution. Arrows indicate possible drive directions.

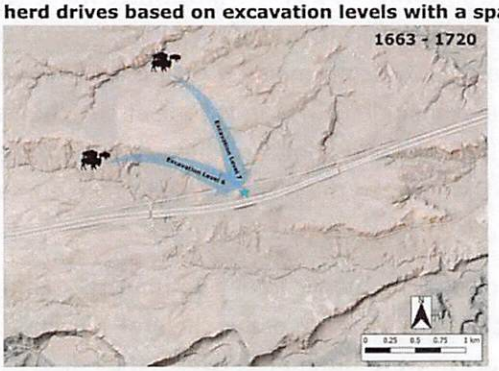


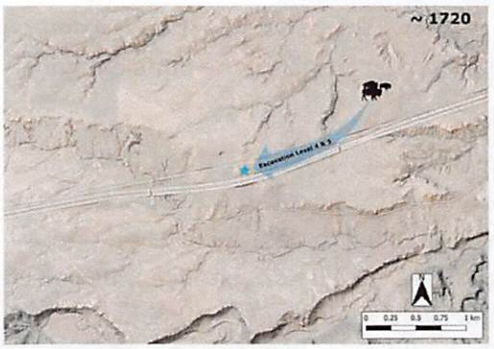




George Frison and Charles Reher who conducted the original excavation of the Vore Site in the 1970's hypothesized that the main driveline was from the west, essentially parallel to Hwy I-90. They thought the line of cairns may have anchored "deadmen"...essentially scarecrow-like decoys that bison could see in the distance... designed to keep the herd bunched up and moving the desired direction.

Likely direction of herd drives based on excavation levels with a spatial score of three





Mackenzie Peterson's analysis, based on skeletal distribution recorded in Reher's 1970's data, indicates that bison were driven into the Vore Buffalo Jump from several directions during different periods of use. It's possible they are all partially right. Stay tuned!

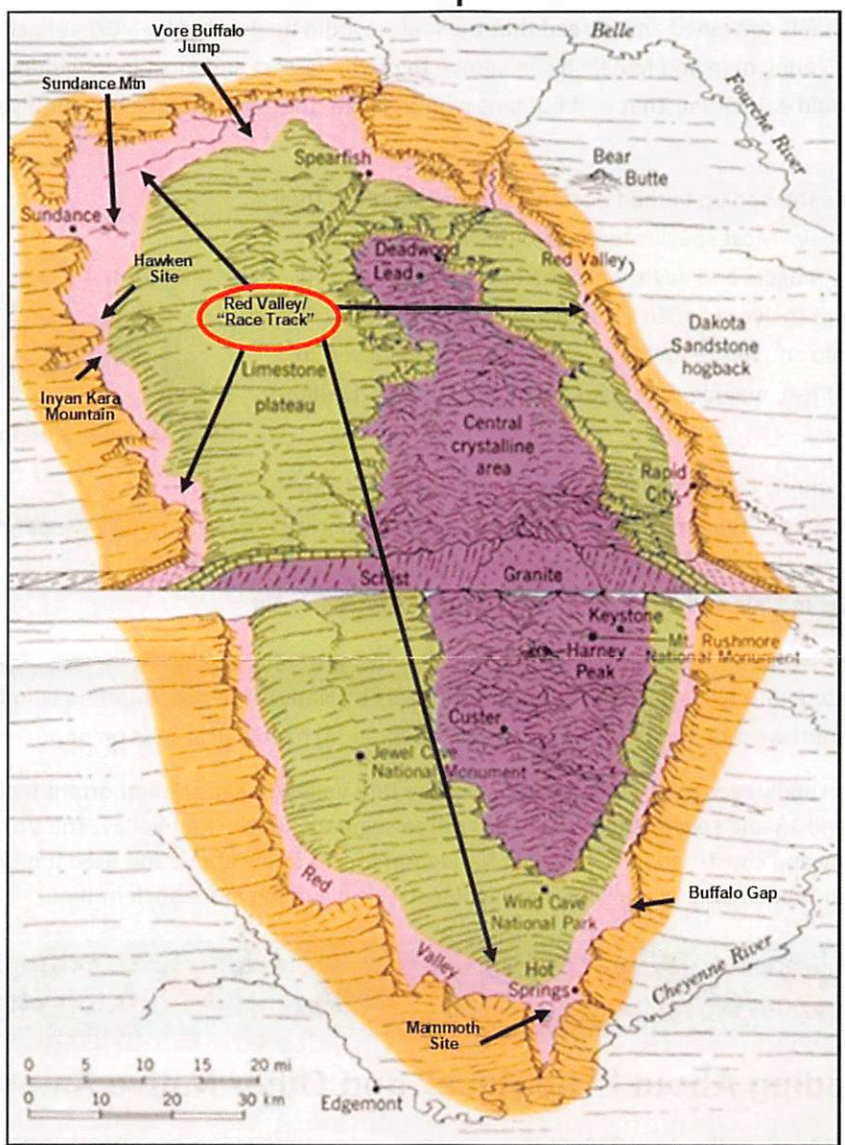
The VBJ Was A Pit Stop On The Black Hills Race Track

By Gene Gade

The Red Valley

If one looks at a satellite photo, shaded relief or geological map of the Black Hills, it's easy to discern a relatively unforested band around the perimeter of the uplift. The band generally has a distinct light-red color and varies in width from a few hundred yards to several miles in width. Geologists usually refer to it as the Red Valley because its floor is the mixture of red shales and siltstones of the Spearfish Formation. The sediments are relatively soft and easily eroded compared to the hard limestones, schist and granite that form the inside margin of the Red Valley. The outside rim is formed by a ridge or "hogback" of the Dakota Sandstone that is also much harder than the mixture of sediments in the Red Valley.

The relatively soft sediments of the Red Valley also contain substantial layers of whitish mineral called gypsum that is soft (hardness of only 2 on a Moh scale where 10 is hardest) that is often used in construction materials (sheetrock, plaster, cement, etc.). Gypsum is also more soluble than the core rocks of the Hills and, as water runs downhill, some of it becomes ground water. This water dissolves the gypsum in places, creating many, small, shallow caverns in the Spearfish sediments. When the roofs of these caves collapse, sinkholes of various sizes form at the surface. Dozens of sinkholes exist in the Red Valley. The famous Mammoth Site near Hot Springs, South Dakota is one such sinkhole.



Geologic Map of the Black Hills

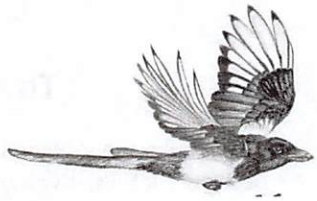
A Vore Site Connection

The drain of one the larger sinkholes sealed off at some point, forming a pit that is now about forty feet deep and nearly 200 feet in diameter, with about 20 feet of bone and sediment below the current floor. About 500 years ago, Native Americans saw the sinkhole's potential as a pit trap for bison hunts and began to use what is now known as the Vore Buffalo Jump.

The Race Track

Several tribes in the region refer to the Red Valley as the "Racetrack" and, to many people, the associated story is at least as interesting as the geological interpretation. The Suhtai and their close relatives, the Cheyenne, as well as the Lakota Sioux have detailed legends about the Racetrack. It is not just a tale about an exciting and entertaining event. The Great Race story is their explanation of how humans created order out of a previously chaotic world. Moreover, the Great Race is connected to other things of great importance to the tribes, including the Sun Dance and the Medicine Lodge. Several regional landmarks on or near the Racetrack are mentioned in the stories. Inyan Kara Mountain was supposedly the starting point for the Race. Some say that Sundance Mountain was the location of the elders' four-day ritual that evolved into the Sun Dance and became a sacred ceremony that is held periodically by a number of Plains tribes around the summer solstice. Buffalo Gap, in the southeast corner of the Black Hills, is said by some to have been both start and finish line. Bear Butte, near current Sturgis, South Dakota, is also mentioned. Tribal versions of the Great Race differ in details, but some common threads tie them together. **(Continued on next page)**

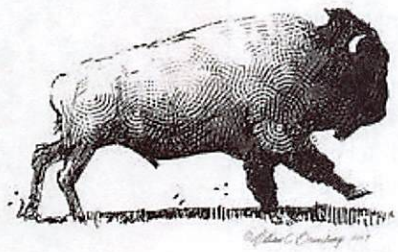
The Great Race



First, tribal accounts agree that the ancient world was in chaos. That world was populated by many types of beings, including some gigantic animals now extinct. Species relationships were not clearly defined. Animals could transform into other species. Humans, for example, could become bison or other animals and vice versa. Humans could mate with other beings and have non-human offspring. Moreover, bison could eat people just as people ate bison. It was clear to humans that these relationships needed to be defined.

A great council among the animals convened and agreed that the issues would be decided by a Great Race around the Black Hills. The race would be between a young man and female bison known to be the fastest and most long-winded. The winner of the race would determine who could eat whom. That is, if humans won the race, they could eat bison, but bison could no longer eat man and vice versa.

All the birds and other animals showed up in the finest, most colorful bodies they still have today. Most species teamed with the bison. Swift hawk, crow, magpie and eagle were the only ones who raced on the side of the young man. The race was long and the young buffalo and her team led most of the way. However, just before the finish, magpie, swooped down and crossed the line first.



The elders had a four-day ceremony in the medicine lodge and decided in favor of human beings., because magpie, a teammate of the human, had won the race. The ceremony gave people power over the buffalo, but humans would recognize their dependance on bison and would thereafter refer to themselves as buffalo people. To this day, Cheyenne admire the magpie and it is the only bird they will not kill or eat.

The Racetrack was an easy pathway used by roaming bison herds to move through the Black Hills between the Powder River Basin and the Dakota prairies. No doubt it was used for thousands of years by Native American hunters who followed the great beasts. The Hawken Kill Site southwest of Sundance is one of several older archaeological sites on or near the Racetrack.

Modern highway engineers certainly recognize the importance of the Red Valley/Racetrack. Important highways including I-90/ US 14, US Highways 85, 385 and 18 and several State Highways utilize segments of the Red Valley. The Vore Buffalo Jump was rediscovered during the survey and construction of I-90, but Native Americans knew about and used it nearly half a millennium ago. According to legend, their human and animal kin used the Racetrack in a much more ancient time.

For Further Reading About "The Race" and Other Native American Stories

Stands In Timber, John and Margot Liberty. 1972.***Cheyenne Memories.*** Yale University Press. 330 pgs.

Grinnell, George Bird. 1926. ***By Cheyenne Campfires.*** Yale University Press. 305 pgs.

LaPointe, James.1976***. Legends of the Lakotas.***Indian History Press, San Franciso

Powell, Peter. 1969. ***Sweet Medicine: The continuing role of the Sacred Arrows,, the Sun Dance and the Sacred Buffalo*** Hat ***in Northern Cheyenne History,*** University of Oklahoma Press

DaMiallie , Raymond J. edit. 1984. ***The Sixth Grandfather: Black Elk's Teachings Given to John Neihardt***. University of Nebraska Press

Catch the Dream...

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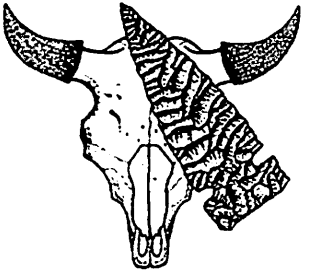
Vore Buffalo Jump Foundation, PO Box 369, Sundance, WY 82729



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Contact us by e-mail at info@vorebuffalojump.org.

The VBJF is a 501(3)(c) non-profit organization. The Foundation is administered by a volunteer board and has almost no administrative overhead. Membership dollars and contributions go almost entirely to fund site improvements and interpretive programs.