

Hatrockhound Gazette 2022

PO Box 1122, Hermiston, Oregon 97838



**Meetings at 6:30 on the 2nd
Tuesday of each month
First Christian Church of
Hermiston:
775 West Highland
(Go to back of church)**

**President - Doug Gill
V. Pres. - Mike Filarski
Secretary - Trista Meek
Treasurer - Mel Lambert
Members at Large - Louise
Lambert, Laura Tiffany**

**Contact Numbers: Mike 541-571-2593, Judi 541-720-4950
Newsletter/Website - Judi Allison**



**Hatrockhounds Gem and Mineral Society is Affiliated with:
The Northwest Federation of Mineralogical Societies
And The American Federation of Mineralogical Societies**



AFMS Rockhounds "Code of Ethics"

- I will respect both private and public property and will do no collecting on privately owned land without permission from the owner.
- I will keep informed on all laws, regulations or rules governing collecting on public lands and will observe them.
- I will, to the best of my ability, ascertain the boundary lines of property on which I plan to collect.
- I will use no firearms or blasting material in collecting areas.
- I will cause no willful damage to property of any kind such as fences, signs, buildings, etc.
- I will leave all gates as found.
- I will build fires only in designated or safe places and will be certain they are completely extinguished before leaving the area.
- I will discard no burning material - matches, cigarettes, etc.
- I will fill all excavation holes which may be dangerous to livestock.
- I will not contaminate wells, creeks, or other water supplies.
- I will cause no willful damage to collecting material and will take home only what I can reasonably use.
- I will practice conservation and undertake to utilize fully and well the materials I have collected and will recycle my surplus for the pleasure and benefit of others.
- I will support the rockhound project H.E.L.P. (Help Eliminate Litter Please) and will leave all collecting areas devoid of litter, regardless of how found.
- I will cooperate with field-trip leaders and those in designated authority in all collecting areas.
- I will report to my club or federation officers, Bureau of Land Management or other authorities, any deposit of petrified wood or other materials on public lands which should be protected for the enjoyment of future generations for public educational and scientific purposes.
- I will appreciate and protect our heritage of natural resources.
- I will observe the "Golden Rule", will use Good Outdoor Manners and will at all times conduct myself in a manner which will add to the stature and Public Image of Rockhounds everywhere.

Hatrockhound Gazette - September 2022

Tuesday, September 13th, 6:30 pm

What Is It? What's It Made Of? - Using our Rocks and Minerals Guide books we will figure out what a number of items are and what they are composed of. (Bring an ID Book, if you have one.)

Treats by Laura Tiffany and Trista and Warren Meek

September 24 – McBones Site

No August Meeting, So No Minutes

Although our numbers were few and the auction profits were a negative, we enjoyed some good company, good food and good fun at our picnic on August 20th



Relaxation and Conversation



Time for Bidding

For those who know them, Bill Shipp and Rita Watterson have sold their place and are moving to Fairfield, Idaho, where Bill has family. Bill served as our President at one time and Rita filled the Secretary position. We wish them the best.



FIELD TRIP SAFETY

The U.S. Forest Service provides these safety tips for rockhounding field trips:

- Stay out and stay alive; abandoned mines are potential killers. Rotten timbers, open shafts, toxic gas, and a lack of oxygen can be deadly.
- Rockhounding is mostly a rugged and dirty pastime. Clothing, especially footwear, should be serviceable and adequate for hiking in rugged terrain, digging, and weather conditions. Boots are recommended.
- Be prepared for extreme weather conditions including rain or snow at any time of the year. Temperatures in the winter can drop below 0 degrees and summertime temperatures can be over 100 degrees. Carry extra food, water, clothing, fuel and other supplies.
- Always tell someone where you are going and when you plan to be back.
- Always wear proper protective equipment (gloves, safety glasses, etc.) when striking or breaking rocks.
- Rockhounds may unknowingly create hazards through careless digging. Undermining the root of a tree is both destructive and dangerous, as it may cause the tree to fall. Tunneling through unsupported soil or under overhanging banks that may cave in on the digger are unsafe practices. Deep or steep-sided pits or trenches should be filled upon completion of digging, as they pose a hazard to both people and livestock.
- Be aware that the roads leading into the digging sites may be used by heavy trucks carrying logs, gravel, livestock or other products. Travel at your own risk. Unimproved roads can be dangerous to travel when wet, muddy or snowy. Rockhounds should inquire with the BLM or USFS about possible road closures and fire restrictions prior to visiting the rockhounding sites.
- Rattlesnakes may be found in certain areas during the warm months. Watch for them in rock slides, around damp areas, under old buildings, ledges, etc. Prompt medical treatment is always advisable if bitten.
- In the spring, wood ticks are found in sagebrush and timber fringe areas, where they can hang on the tips of bushy twigs and transfer to any person or animal that brushes past. Ticks can carry spotted fever and other infections. They should be removed promptly, and the bites should be treated.
- Protect your pets by keeping them under control at all times.

From Flatirons Facets, Mar/Apr 2022 via AFMS Newsletter, April 2022

Why Are There Fossils in the Rocky Mountains?

Finding Sea Creatures at 7000 Feet



Photo: Surrounded by rock heading to Our Lake.

Why are there fossils in the Rocky Mountains? Sea Creatures don't live at 7000 feet, so you wouldn't expect to see their ancient fossilized remains. But that's exactly what you can find if you look close enough. Find out why and where to find them.

Spotting the distinct fossil of a horned clam or brachiopod during a nature hike makes trudging uphill worth the effort. And while it's enjoyable to simply find them, delving into how they formed adds a new layer of delight.

Six years ago, Bill Hansen, a friend and geologist, opened my eyes to the geological wonderment of the Rocky Mountain front in Central Montana as he led my kids on a school field trip. I have since visited the area numerous times. This region, particularly on the plains just beyond the mountains, is well-known in paleontological circles as where *Maiasaura peeblesorum*, the “good mother lizard,” was discovered by Marion Branvold, owner of the Trex Agate Shop in Bynum in 1977. After she showed her finds to paleontologist Jack Horner the following year, he and his team discovered multiple nests and specimens, ultimately naming the area “Egg Mountain.” While evidence of dinosaurs remains within the Two Medicine Formation stretching onto the plains, the mountains hold older treasures.

Geology of the Rocky Mountains

It’s difficult to describe Sun Canyon without enthusiastic hand gestures emphasizing its grandeur. During the 20-mile drive to the entrance of Sun Canyon, the vast plains stretch to the east while the magnificent Sawtooth Mountain dominates the western view within the Sun River Wildlife Management Area. The massive walls of Madison limestone standing at the entrance of the canyon were formed by the same process that created the marine fossils in the higher elevations when a shallow tropical ocean covered this entire region.

“The big walls were big slabs of limestone on this shallow ocean floor,” says Rob Thomas, regents professor of geology at the University of Montana Western and co-author of *Roadside Geology of Montana*, considered the go-to tome of Montana’s stunning geological landscape.

Thomas points out that it was a vastly different world during this time. The North American plate was slightly south of the equator and Montana was a warm, humid environment.

He notes, “(Montana was) low lying at the time. It was a time of very high standing sea levels. All the water was in the bucket.” There were also no major ice formations throughout the world. It was the perfect time for growth in the water and land, including enormous insects, such as dragonflies with 10 to 11-foot long wingspans.

Ancient Life in the Seas

Within these warm, clear waters, light reached well within its depths creating an optimum environment for marine life, including the living versions of the fossils we find today. Thomas says the horned and tabulate corals, which are both now extinct, “Probably had a relationship with photosynthesizing algae. These made a living in the light zone.” Meanwhile, the clam-like brachiopods filtered the water for organic bits of matter that were abundant in this environment.

Fossils in the Rocky Mountains - How it Happened

Over the millennia, deposits of sediment and organic matter settled upon other deposits until 100 million years ago when the Farrallon Plate collided with the floor of the Pacific Ocean. “It shoved great slabs of rock west to east. Those slabs form the Overthrust Belt. It’s like taking a deck of cards and sliding them across the table. You get older over younger,” Thomas explains.

The younger layer, which holds evidence of the dinosaurs found in this region, was shoved underneath the older layers from the ancient ocean floor. As a result, the fossils of marine life once found deep within the ocean relocated thousands of feet above sea level.

Yet, this wasn’t the end to the region’s transformation. Beginning 50 million years ago new forces caused the Rocky Mountain front to dome upwards through faults pulling apart the thinning surface, along with erosion playing a part in exposing the rock. “That’s why we can see what we can see,” says Thomas.

Places to Find Fossils in the Rocky Mountains

Scouring the lower elevations, which are still roughly 4500 feet above sea level, is a good place to start looking for marine fossils.

The Wagner Basin

Bands of coral within the limestone near the pictograph cliffs along the Sun River and clamshells dotting the prairie landscape are wonderful finds.

One of my favorite places for a kids’ hike in Sun Canyon is Wagner Basin.

The beginning of the trail parallels massive limestone walls adorned with faded pictographs from Indigenous People. Roughly a half-mile along the trail is the “skull tree” where local artists display wildlife images painted on deer skulls, and a picnic table in the grove in this lovely rest spot, with hats off to whoever packed it back there.

From there, the best direction to go is toward the saddle below the majestic Castle Reef gaining over 1000-feet in roughly 2.5-miles, topping at 5500-feet. It’s like an Easter egg hunt with a cardio aspect, and looking closely at rocks is a good reason to catch your breath. The hike can pay off with excellent examples of horned coral.

Bob Marshall Wilderness

North of Sun Canyon, approximately 23 miles as the raven flies, are more exceptional fossil finds along spectacular hikes. Located within the Bob Marshall Wilderness, Our Lake is a combination of beautiful scenery and an alpine lake known for excellent fishing, all combined with a myriad of fossils. Along the 3.5-mile hike, gaining 1500 feet to the lake that sits at 7300 feet, there's a prominent limestone section where fossils are frequently spotted within the rocks. The entire area around the lake is equally good with rock fields surrounding the cirque. Besides fossils, this is the home to marmots and pika, two residents of these alpine areas that make the most of the short summers. The marmots have been particularly bold these past few years, obviously accustomed to frequent hikers, and are quick to lick or chew on sweaty packs and hiking poles. Either secure equipment above their reach, or make ready to chase them down to retrieve hiking poles or other gear.

Far less brazen, pika, the adorable rabbit relative lives among the rocky slopes.

Visitors almost always hear their "eep!" before spotting a glimpse of them dashing over the boulders. When sitting quietly, it's easier to figure out their pattern foraging on nearby forbs and grasses, then running them back to add them to the hay piles beneath the rocks. These caches supply food sources throughout the year as they remain active in their rock dwellings during the long winters.

Headquarters Pass

A sister hike to Our Lake, Headquarters Pass originates at the same trailhead and a main gateway to the Bob Marshall Wilderness. Also 3.5-miles one way, Headquarters adds 300 feet in overall elevation gain, but the views and the rich fossil history are worth it. The hike begins through the forest within view of Rocky Mountain, which at 9392 feet is the highest peak in the Bob Marshall, and parallels Headquarters Creek.

Before the final pull through the switchbacks to the pass, there's a lovely spring that is the perfect place to grab lunch. It's also a hot spot for fossils where it's almost impossible to look at the rocky slope and not find a horned coral or other specimens. This is also the realm of pikas, a bonus during any stop.

While mountain goats are sometimes seen near Our Lake, there is a fairly consistent group near Headquarters Pass. Montana Fish, Wildlife and Parks often surveys this area, and we counted 16 along the upper slopes near the switchbacks to the pass one July while during another season a nanny and kid met us on the trail. Even knowing the geological history of the region, it's always a bit surreal to have marine fossils where we find mountain goats and pika. The final push through the series of switchbacks along the limestone terrain tops out at the 7749-foot-high pass. Expect wind at the top. The trail continues west paralleling Headquarters Creek and leading to any number of geological adventures, particularly considering that the Bob Marshall Wilderness holds the deepest cave in the United States, the Tears of the Turtle Cave at 1659-feet-deep, as well as the Virgil the Turtle's Greathouse at 1586-feet, which is the third deepest.

Fossils in the Rocky Mountains - Collecting Do's and Don'ts

As with shells along the beach, it's tempting to take a few home, but should we? As a general rule, according to the United States Department of the Agricultural, "Fossil hunting allows the collection of petrified wood, invertebrate and plant fossils for personal use. Invertebrate fossils, such as clams, do not have an internal skeleton.

Collection of vertebrate (has internal skeleton) fossils requires a permit (36 CFR 261.9i)." This allows hobbyists to bring home fossils of the marine life found along these wonderful hikes, but be sure to check with district offices before collecting to ensure there is no exception.

What began as a simple field trip for the kids turned into an eye-opening revelation of the geological history of the Rocky Mountain front. The reality is that these marine fossils scratch the surface of the wonders written within these rocks. Discovering more of its fascinating stories remains a life-long pursuit.

This story about sea creatures at 7000 feet previously appeared in Rock & Gem magazine. Story and photos by Amy Grisak. By [Admin](#) July 18, 202

Mark your Calendars. September 24th for a field trip to the "McBones" site. We will be greeted and have a bit of time to look over the artifacts displayed of the Mammoth dig. We will then be given a chance to learn more about the animal with an informative presentation. Afterwards we can go to the area where the mammoth is being excavated. The work at this site is conducted from April through October with the help of volunteers.
Mark your Calendars September 30th-October 2nd NFMS Show & Convention Hosted by PRGMSA in Hillsboro, Oregon at the Wingspan Facility