

MUSEUM OF THE ROCKIES

MONTANA STATE UNIVERSITY

SENATE NATURAL RESOURCES

Exhibit No. 7

Date 3-11-2019

Bill No. HB 229

To the Honorable Chairman Welborn and members of the Committee,

I strongly support House Bill 229, which, in Section 2, accurately defines “fossils” as any fossilized remains, traces, or imprints of organisms preserved in the Earth’s crust. It also correctly places fossil in the context of the “surface” estate, which is subject to severance by the title owner of the land it is found on.

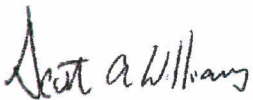
For over 100 years, to the great early 20th century paleontologists Barnum Brown and Earl Douglass, the state of Montana details a storied history of scientifically important discoveries. Many of these discoveries have been found on land that is privately owned and through trust and partnership with museums and universities these discoveries were donated to public repositories. The overall benefit of important specimens being repositied at public repositories cannot be overstated. While at these public repositories, specimens are made available for educational programming, public exhibition, college student study and scientific research, which in effect serves millions of people over the “life” of that specimen.

For nearly forty years the Museum of the Rockies in Bozeman, Montana has developed strong relationships with land owners who have recognized the benefits of a trusting collaboration. These partnerships include land owners in the following counties: Carter, Carbon, Custer, Dawson, Fergus, Garfield, Glacier, Hill, Park, Phillips, Teton and Valley. Not only have specimens donated to the Museum as a result of these partnerships provided years of student-led research, engaging public programming, and dynamic exhibits, but land owners have also allowed MOR to lead field work on their property, providing unique, hands-on experiences not learned in the lab or classroom.

Classifying a fossil as a mineral creates an atmosphere that would be cost-prohibitive for most, if not all, museums and educational institutions in Montana. In many cases mineral rights are dispersed over generations making it difficult (sometimes impossible) to track down all parties. Museums and other public institutions would simply avoid working on private land, thus robbing all Montanans of the benefits of specimens that would have been found there: exhibition, education, and research.

House Bill 229 and the definitions it provides helps preserve a practice that has been left in the hands of land owners and their partners for over 100 years. It ensures that future generations of students, scientific researchers, and the general public will benefit from these partnerships. This bill protects the heritage and partnerships that make Montana the great State that it is.

Respectfully Submitted,



Scott A. Williams
Paleontology Lab and Field Specialist
Museum of the Rockies

MUSEUM OF THE ROCKIES

MONTANA STATE UNIVERSITY

March 9, 2019

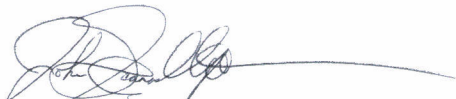
Dear Chairman Welborn and Members of the Committee,

I am the Curator of Paleontology at the Museum of the Rockies, Montana State University (MSU). I have a Bachelor of Science Degree in Geology from Rutgers University, a Ph.D. in Earth Sciences from MSU, and I have spent over 10 years studying the fossils of dinosaurs and other creatures that once roamed Montana. I am writing to you today in support of House Bill Number 229.

Fossils are the remains of living things which have been preserved by natural processes. Often they retain original components and structures. Studying the bones of a dinosaur or other ancient creature is very different than examining a rock. Our bones, like those of dinosaurs and other animals, are partially composed of hydroxyapatite – a substance derived from biological and not geological processes. If you look at dinosaur bone under a microscope, you can study it in much the same way as you would study the bones of modern animals. In dinosaur bone, you can see how the tissue is organized, you can determine how old the animal was, how fast it was growing, what its metabolism was like, and more. Recent research based on dinosaur fossils found in Montana has even found evidence that, in some cases, soft tissues including vessels and cells may be preserved in dinosaur bones after millions of years. Beyond dinosaur bones, examples of fossils include insects preserved in amber and woolly mammoths frozen in ice for thousands of years; these are the original soft tissues of these animals.

If the preserved remains of dinosaurs and other prehistoric organisms were to be considered “minerals” in the same economic sense as silver and gold, this would hinder future discoveries and education, endanger in-progress research, and threaten our continued understanding of life on Earth. For these reasons I am in support of upholding the historically and scientifically accepted understanding that the term “minerals” should not include the fossils of dinosaurs and other ancient creatures.

Sincerely,



John B. Scannella, Ph.D.
John R. Horner Curator of Paleontology
Museum of the Rockies, Montana State University

THE MONTANA DINOSAUR TRAIL



WWW.MTDINOTRAIL.ORG

The Montana Dinosaur Trail project funding partners include all trail facilities listed inside, along with the organizations and agencies listed below:



www.southeastmontana.com



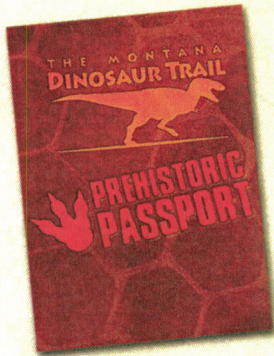
www.missouririver.visitmt.com



www.centralmontana.com



www.visityellowstonecountry.com



www.stateparks.mt.gov



www.blm.gov/montana-dakotas



**US Army Corps
of Engineers**
Fort Peck Project

[http://www.fws.gov/refuge/
Charles_M_Russell/visit/visitor_
activities/FPIC.html](http://www.fws.gov/refuge/Charles_M_Russell/visit/visitor_activities/FPIC.html)



www.visitmt.com



www.commerce.mt.gov

The Montana Dinosaur Trail Prehistoric Passport is your guide back in time - millions of years back - as you explore the Montana Dinosaur Trail. Passports available at each trail facility or online at www.mtdinotrail.org.

Get yours today!

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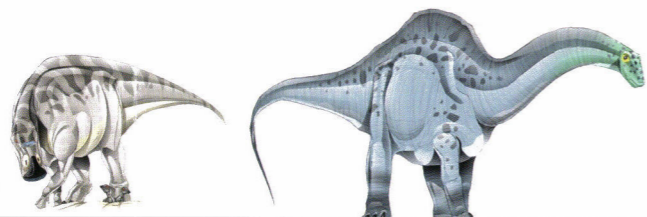
THE MONTANA DINOSAUR TRAIL



150 MILLION YEARS IN THE MAKING



THE MONTANA DINOSAUR TRAIL



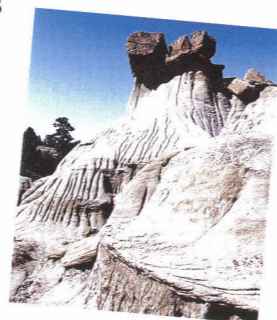
Today, Montana is filled with uncrowded spaces. But that wasn't necessarily the case when dinosaurs ruled the earth. In fact, Montana has yielded some of the world's most significant dinosaur discoveries. For instance, the *Maiasaura* nests found at Egg Mountain near Choteau have been hailed as one of the most important discoveries ever for dinosaur biology: Maiasaura, or mother lizard, is Montana's official state fossil. The first *Tyrannosaurus rex* fossil—as well as the largest *Tyrannosaurus rex* ever unearthed—were found in Montana. And “Leonardo” the mummy dinosaur (a *Brachylophosaurus*), named by the Guinness Book of World Records as the “world's best preserved dinosaur,” has its home in Malta, Montana.



YOU KNOW WHERE. NOW HERE'S WHY.

Landscape and access—two keys to Montana's “Paleo Treasures.” Montana is, of course, known for its stunning variety of landscapes, ranging from the rugged peaks of the Rocky Mountains to the sweeping eastern plains. The folding and shifting that produced these varied

landscapes also exposed rock formations from nearly every geologic era—including the Cretaceous and Jurassic periods, when dinosaurs lived. In other words, the rock formations filled with dinosaur fossils are “at the surface,” often exposed in dry, rocky, “badland” environments. That means very little vegetation and topsoil cover the fossils, so erosion has helped paleontologists (or, in most cases, farmers, ranchers, hikers, and the like) discover them. Finally, because Montana is sparsely populated, sites haven't been disturbed or covered by heavy development. Put it all together, and you have the ideal conditions for discovery!



DISCOVERY IN COMFORT

While the dinosaurs had to fend for themselves, each of the Montana Dinosaur Trail stops can help you discover their community's lodging, restaurants, entertainment, and recreation services—amenities to add comfort to your adventure.



THE MONTANA DINOSAUR TRAIL



WWW.MTDINOTRAIL.ORG

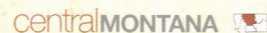
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www.southeastmontana.com



www.missouririver.visitmt.com



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www.visityellowstonecountry.com



www.stateparks.mt.gov



www.blm.gov/montana-dakotas



US Army Corps of Engineers
Fort Peck Project

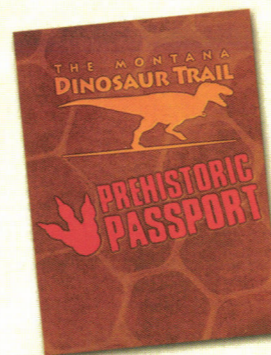
http://www.fws.gov/refuge/Charles_M_Russell/visit/visitor_activities/FPIC.html



www.visitmt.com



www.commerce.mt.gov



The Montana Dinosaur Trail Prehistoric Passport is your guide back in time – millions of years back – as you explore the Montana Dinosaur Trail. Passports available at each trail facility or online at www.mtdinotrail.org.

Get yours today!

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THE MONTANA DINOSAUR TRAIL

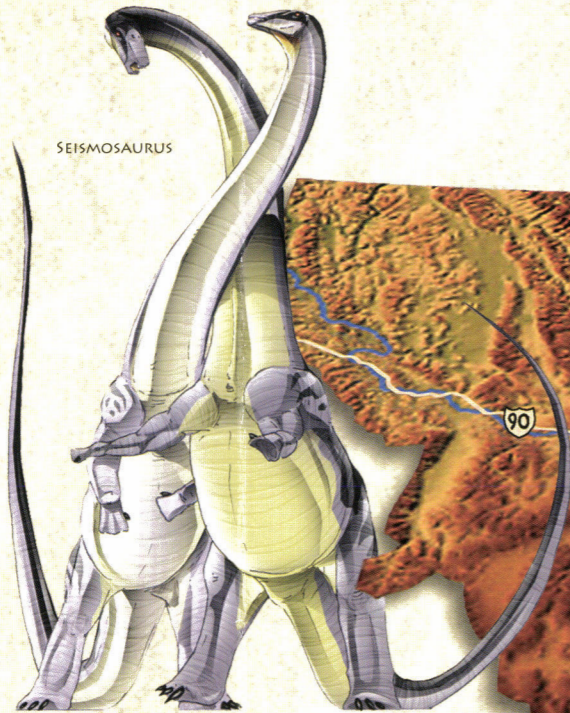


150 MILLION YEARS IN THE MAKING

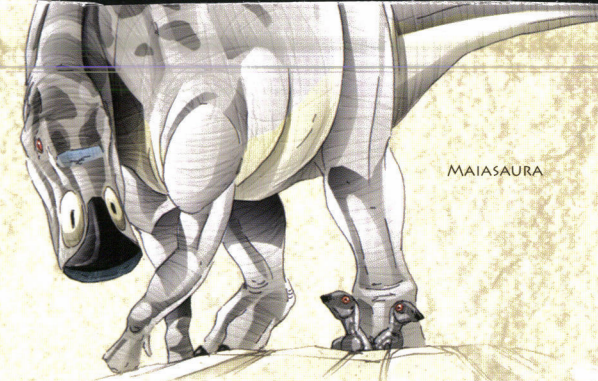
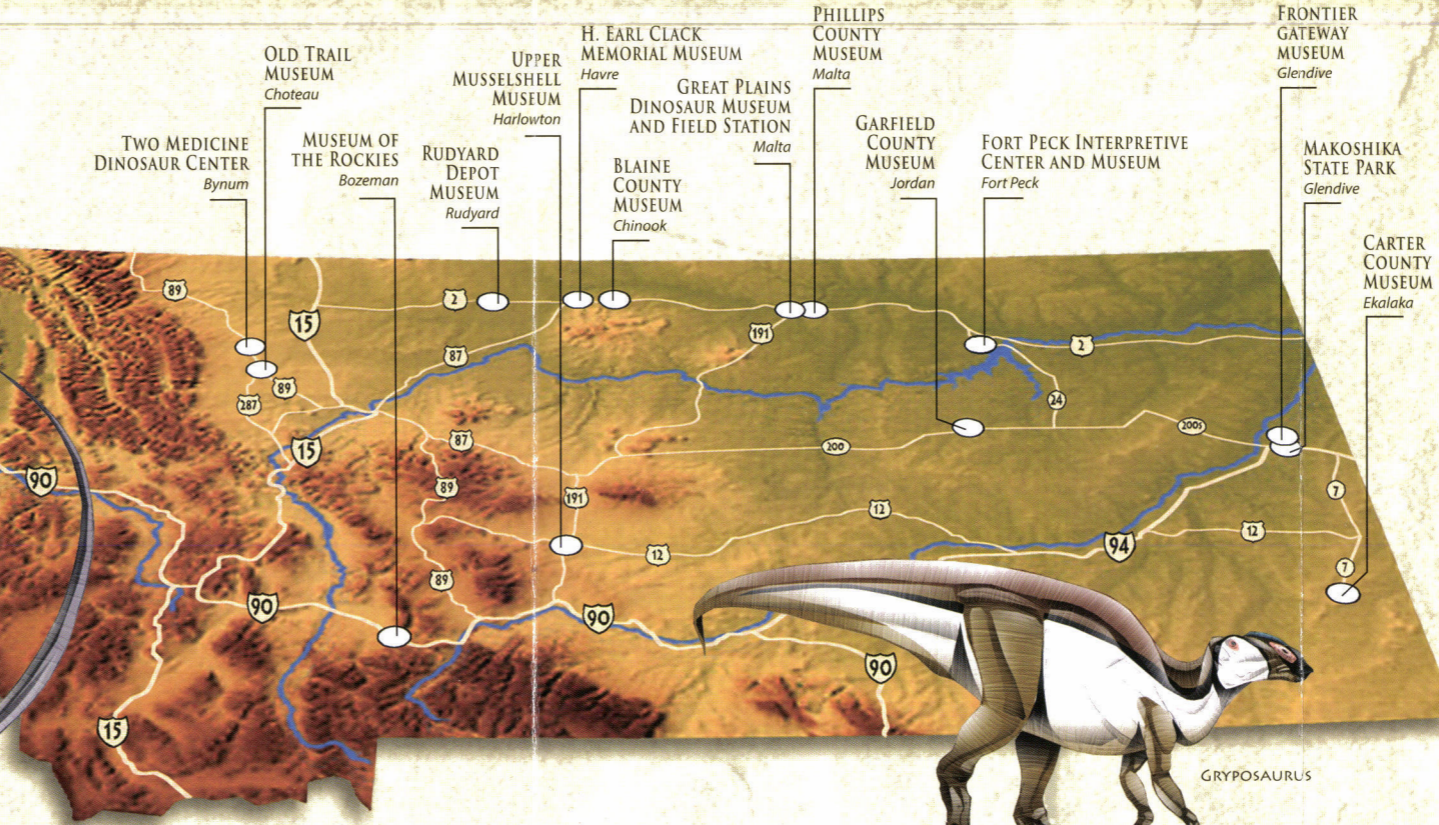




AVACERATOPS



SEISMOSAURUS



MAIASAURA



ALBERTOSAURUS



GRYPOSAURUS



TRICERATOPS



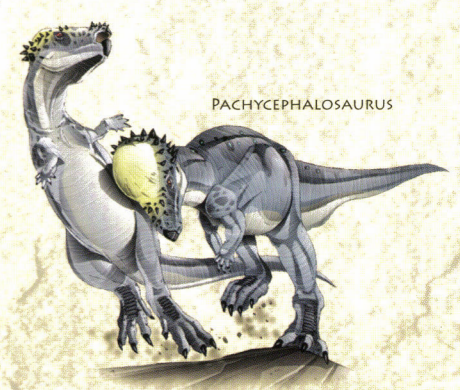
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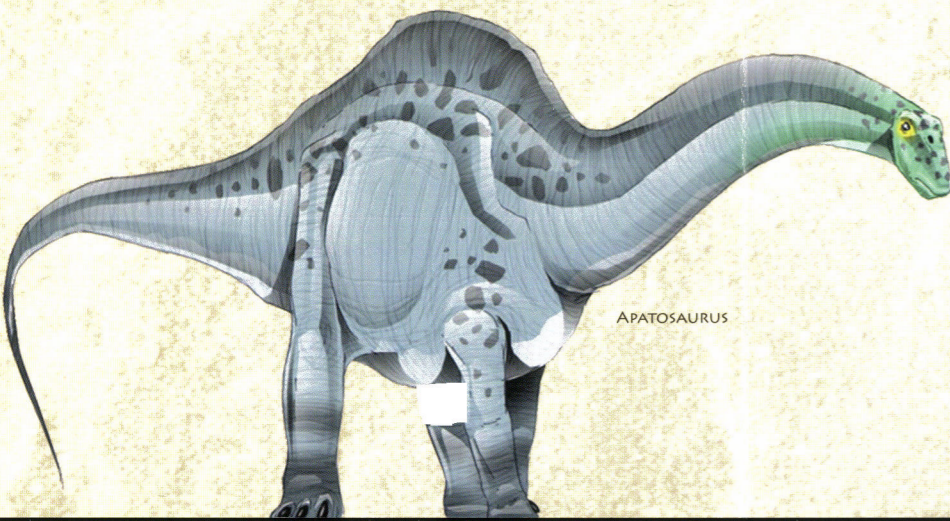
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DEINONYCHUS



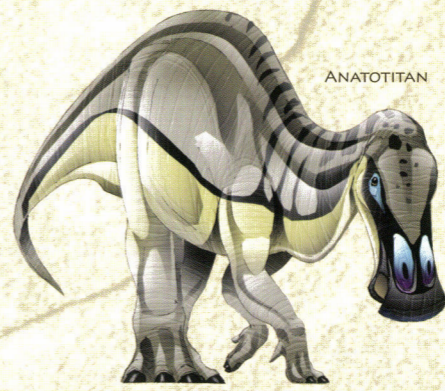
PACHYCEPHALOSAURUS



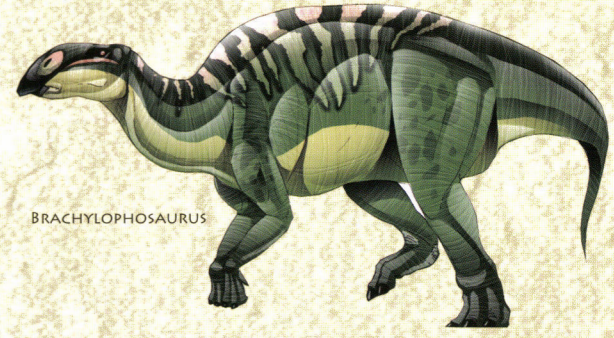
APATOSAURUS



TYRANNOSAURUS



ANATOTITAN



BRACHYLOPHOSAURUS

CAN YOU DIG IT?

Yes you can. But before you strike out on your own here's some things you need to know.

Montana is a patchwork of private, state and federal land. Before entering private land you need the land owner's permission. On public lands—federal or state owned—you may need a permit. Learn the



rules before heading out by checking in with the local offices of the Bureau of Land Management, U.S. Forest Service, or Montana Department of

Natural Resources and Conservation. Your best bet is to contact any Montana Dinosaur Trail facility to find out about dig opportunities where you can help unearth important fossils with guidance. All trail facilities follow the Society of Vertebrate Paleontology Code of Ethics which prohibits the illegal collection and sale of paleontological resources.



VISIT ALL THE TRAIL STOPS. (THE DINOSAURS DID.)

The Montana Dinosaur Trail will show you the amazing variety Montana has to offer—in its scenic treasures, its paleontological treasures and in the communities, large and small, that host the trail stops. The exhibits, visitor services, and information at each stop may change, but one thing will stay constant as you travel the trail: you'll be roaming the same ground dinosaurs once roamed themselves.



SITE MAP:

BRACHYLOPHOSAURUS
CANADENSIS



THE MONTANA DINOSAUR TRAIL



EXHIBITS ★ Unique paleontology displays, interpretation, replicas or actual skeletons of dinosaurs and other fossils found in Montana.

PROGRAMS 📱 Facility provides public/visitor education programs and/or guided tours of paleontology displays associated with the facility. Regularly scheduled or upon request.

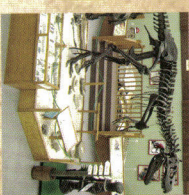
FIELD DIGS 🛠️ Facility operates or is formally affiliated with organization(s) conducting paleontology field digs open to the public. Strict adherence to the Society of Vertebrate Paleontology Code of Ethics is required.

Bluff icon indicates activity available at each location.

Phillips County Museum

Malta ★

Fossil discoveries from the nearby Judith River Formation are featured inside the museum. Meet "Elvis" the 33-foot long *Brachylophosaurus* fossil, one of the best articulated skeletons ever found. A dramatically posed 28' *Albertosaurus* stands tall greeting visitors. Other significant items are a 700-pound *Apatosaurus* femur visitors can pose with and a Skull Game for children. In the underwater sea area a fantastic 4' by 4' Crinoid plate is displayed. Is it plant or animal? Season, hours of operation and admission fees are available at www.phillipscountymuseum.org, pcm@istriangle.com, or 406.654.1037. Located at 431 US Hwy 2 East next to the Great Plains Dinosaur Museum.



Two Medicine Dinosaur Center

Bynum ★

Education through Research is our motto! In addition to our museum - which features local discoveries like the first baby dinosaurs found in North America - we also offer public, hands-on dinosaur dig programs throughout the summer. These programs run from a half-day site tour all the way to our two-week long Paleo Training Course. Advanced registration required. Season and hours of operation available at www.twomedicinecenter.org, info@twomedicine.org, 1-800-238-6873. Downtown Bynum, US Hwy 89, look for the dinosaurs!



Upper Musselshell Museum

Harlowton ★

The museum's centerpiece is "Ava," the full-size skeleton replica of a "first of its kind" *Araucarioxylon* found in the Judith River Formation outside nearby Shawmut. The museum also has a hadrosaur tibia and fibula, numerous dinosaur leg bone and hip bone fossils, and fossilized ancient sea creatures. Open Memorial Day-Labor Day. Hours of operation available at www.harlowtonmuseum.org, museum@mittinouch.net, 406-632-5519. Two locations downtown: 11 & 36 South Central Ave.



Garfield County Museum

Jordan ★

The museum features Cretaceous fossils from the Hell Creek Formation. The first *T. rex* ever discovered was found near Jordan in 1902! Exhibits include a full *T. rex* skull, full-size *Triceratops* replica, and a pachycephalosaur domed skull. Free. Open June 1-August 31. Hours of operation available online at www.garfieldcounty.com/our-museum.html. Located on US Hwy 200 East.



Great Plains Dinosaur Museum and Field Station

Malta ★

Located in the heart of "dinosaur country," the museum features many extraordinary fossils: fish, invertebrates, turtles, plants, crocodile and a variety of Jurassic and Cretaceous dinosaur species, such as *Camarasaurus*, *Stegosaurus*, *Triceratops*, pachycephalosaurs, tyrannosaurs, a new species of horned dinosaur and "raptor", and superbly preserved juvenile and adult specimens of *Brachylophosaurus*. Summer field dig programs are offered for adults and children. Collections room, fossil preparation lab, and gift store. Seasonal hours of operation, admission fee available at www.greatplainsdinosaur.org, 406-654-5300 or dinosaur@istriangle.com. Located on Hwy 2 East next to the Phillips County Museum.



H. Earl Clack Memorial Museum

Havre ★

The museum displays 75 million year old dinosaur eggs and embryos found in local exposures of the Judith River Formation. Research suggests these are *Lambeosaurus* eggs (a "duck bill" dinosaur) laid along the banks of an ancient river and estuary of the Cretaceous Bearpaw Sea that once covered this area. "Stygi" a skull cast of the rare *Syngimoloch* (a species of pachycephalosaur) and an *Albertosaurus* head mask are also displayed. The famed archeological treasure—the Wahpapa Chu gun Buffalo Jump Site—is adjacent to the museum. Free. Seasonal hours of operation available at www.hearclackmuseum.org, 406-265-4000. Located on US Hwy 2 West in the Holiday Village Mall.



Frontier Gateway Museum

Glendive ★

An official county museum located in the heart of the Hell Creek Formation rich with Cretaceous fossil remains. Full size replicas of *Stegoceras* found in the Glendive area are on display along with fossils from *Triceratops*, *Hadrosaurus*, *Theocoelosaurus*, aquatic, and plant fossils. Open Daily Memorial Day-Labor Day. Guided tour available upon request. Free. Hours of operation available at www.frontiergatewaymuseum.org, 406-377-8168 or frontiermuseum@gmail.com. Located at 201 State Street (Take exit 215 off I-94, then Belle Prairie Frontage Rd).



Blaine County Museum

Chinook ★

The Paleontology Department displays a dozen Judith River Formation exhibits including hadrosaur, *Gorgosaurus* and *Ankylosaurus* fossils from the area. Remains of gigantic marine reptiles mosasaur and plesiosaur are featured, along with invertebrates from the area's ancient ocean (75-500 million years ago). In the Look, Touch, and Wonder room guests can handle fossils of sea creatures, plants, and dinosaurs that roamed this area millions of years ago. Free. Open all year. Hours of operation available at www.blainecountymuseum.com, 406-357-2590. Located 4 blocks off US Hwy 2, 501 Indiana Street.



Carter County Museum

Ekalaka ★

This is Montana's first county museum and the first to display dinosaurs found in the state. Its exhibits include a mounted skeleton of *Anatotian copei* (one of a few nearly complete skeletons of this species found) a complete skull of *Theriatops*, and a full cast of Wyrex the *T. rex*. Carter County has produced pachycephalosaurs, mosasaur, plesiosaur, ankylosaur, the first and most complete juvenile *T. rex*, and the only known pterosaur from the Hell Creek Formation. Mounts and casts of all of these are on display along with other real dinosaur bones. Free. Open all year. Hours of operation available at <http://cartercountymuseum.org>, 406-775-6886. Located at 306 N. Main.



Depot Museum

Rudyard ★

The Rudyard area has provided dinosaur specimens for the Museum of the Rockies (MOR) and other premier institutions for years. Now an MOR affiliate, the Depot Museum's signature display is the "Oldest Sorehead," a fully articulated *Crypsosaurus* found near here. The facility's lifelike duckbill dinosaur and egg nest display places you right next to these ancient creatures, plus other permanent and changing dinosaur exhibits. Open Memorial Day to Labor Day and winter by appointment. Hours of operation available at <http://rudyardmuseum.com>, 406-355-4322 or 4356. Located off US Hwy 2, 4th Avenue NW.



Fort Peck Interpretive Center and Museum

Fort Peck ★

The Center's signature attraction is "Peck's Rex™," one of the most complete *Tyrannosaurus rex* skeletons ever found. The lobby features a life-size replica of Peck's Rex, and the exhibit hall displays a full-size skeleton cast. A Cretaceous Sea display and several other dinosaur exhibits are also highlighted. Free. Open daily May-Sept. Seasonal hours Oct-Apr. Hours of operation available at http://www.fws.gov/refuge/Charles_M_Russell/visit/visitor_activities/FPIC.html, 406-526-3493. Located 1.5 miles east of Fort Peck townsite, Lower Yellowstone Rd.

