

# TRAILMAP

INTERPRETING THE FOSSIL HISTORY OF RABBIT VALLEY

# TRAIL THROUGH TIME



Museum of Western Colorado  
AND  
Bureau of Land Management





## Rabbit Valley Trail Through Time

**W**elcome to your outdoor museum. The Rabbit Valley Research Natural Area and Trail Through Time is administered by the Bureau of Land Management and the Museum of Western Colorado. Development of the site and ongoing research has been made possible by the Colorado Natural Areas Program, the BLM Geologic Advisory Group and numerous local volunteers, agencies, businesses and organizations.

Your help in protecting this valuable paleontological site is essential. Enjoy the ancient wonders as you walk along the Trail Through Time, but leave them in place for future visitors to discover and appreciate. **It is illegal to remove, deface, or destroy rocks, fossils, artifacts, plants, animals or site improvements. It is also illegal to remove vertebrate fossils anywhere on public lands.**

## For Your Comfort & Safety

The Trail Through Time is a moderately strenuous one and one-half mile loop which takes approximately 90 minutes to complete. To protect fragile desert plants, hike only on the designated trail.

- Summer temperatures can be extreme (up to 105° F). Take water and sun protection.
- Biting gnats are prevalent in May and June.
- A section of the trail (around stop #8) is slippery and impassable when wet. Steeper sections are slippery even when dry.
- Pets and smoking are discouraged on the trail. Pack out all trash.
- Adjacent lands are privately owned and sheep or cattle may be grazing in the area. Respect the lands and property of the local ranchers.
- People with disabilities will need assistance on this trail. Restroom is not wheelchair accessible. For more information, contact the Museum of Western Colorado, 242-0971.

## Once Upon a Time, 140 Million Years Ago...

Before you begin your walk, take a moment to imagine this place 140 million years ago — not a desert but rather a lush floodplain and hills covered with giant conifer trees and cycads (plants resembling palms). The climate is warm and humid. Forests, rivers and swamps are populated with crocodiles, turtles, and herds of dinosaurs who spend most of their day single-mindedly browsing on ferns and treetops. The constant buzz of insects is punctuated with the sudden cries of flying reptiles.

During the millions of years since that day in the Jurassic Age, many rivers, streams, lakes, and seas have deposited thousands of feet of sediment. Remnants of the plants and animals were preserved by being buried in the sediments. Over time, immense heat and pressure within the earth turned the sediments to rock and the plants and animals into fossils.

## Today...

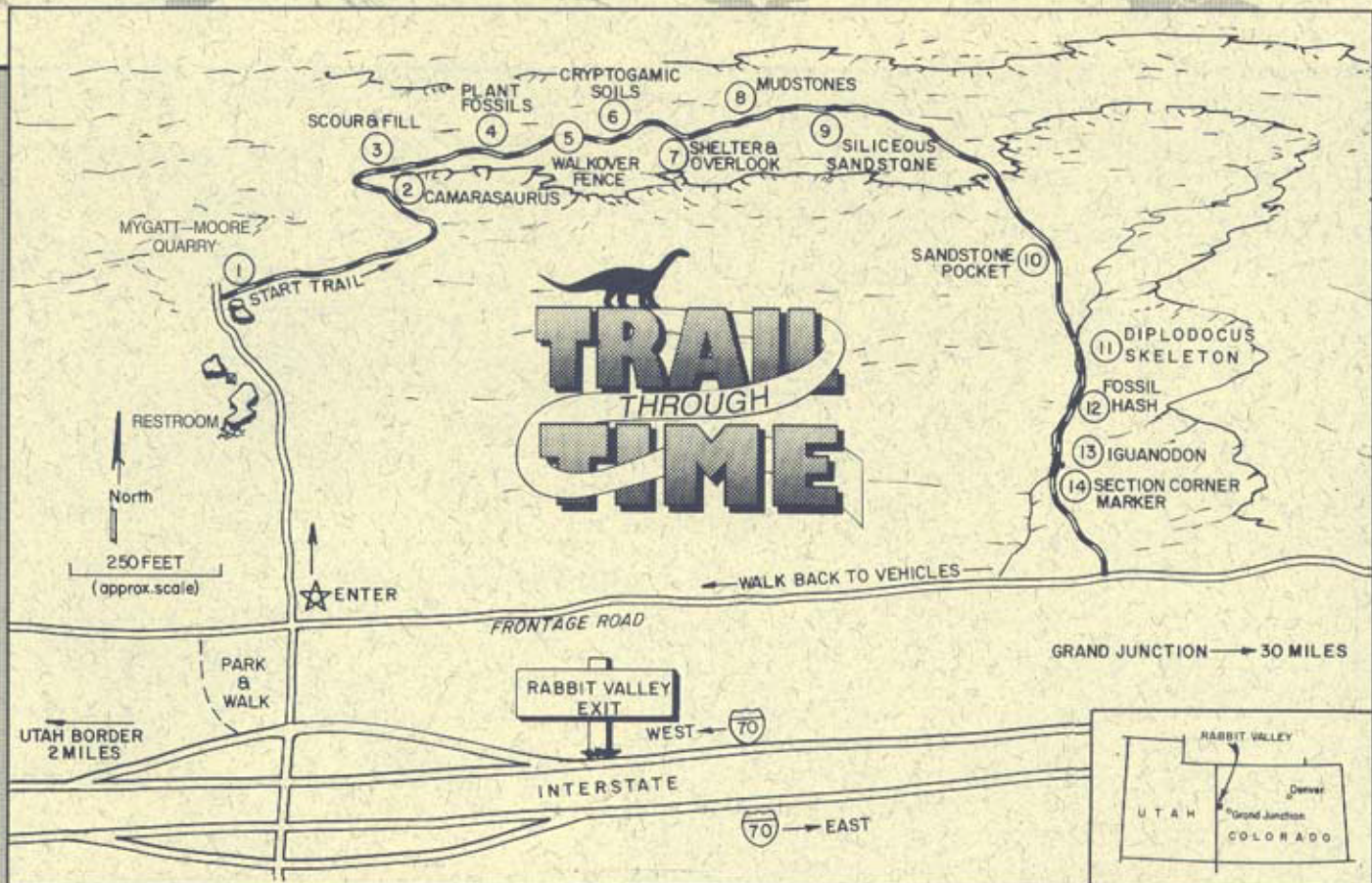
Rabbit Valley is vastly different now than it was during the Jurassic Period. In today's drier climate erosion prevails, exposing the fossil evidence of the prehistoric landscape.

Today's vegetation includes seasonal wildflowers, prickly pear and hedgehog cactus, saltbush, rabbitbrush, Mormon tea, and scattered juniper trees. Wildlife species living here include pronghorn, coyote, rabbits, bats, ground squirrels and mice. Rarely seen are whip snakes, garter snakes, midget faded rattlesnakes and scorpions. More likely to be seen are one of the several varieties of lizards such as the yellow-headed collared lizard, or birds such as rock wren, raven, red-tailed hawk, turkey vulture and golden eagle.

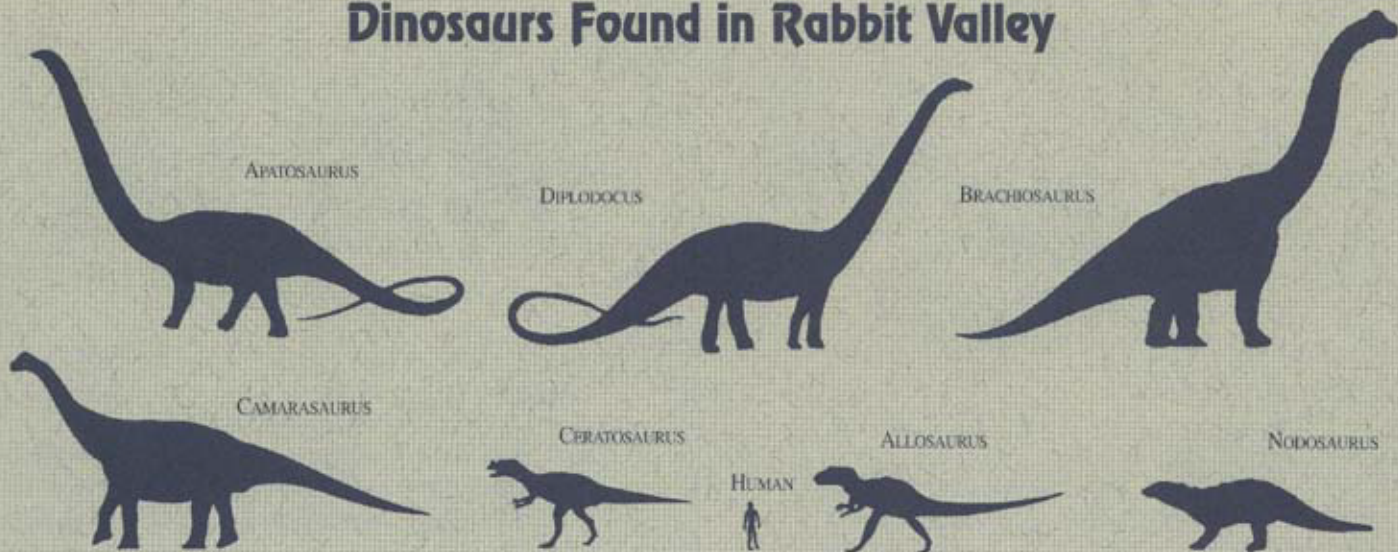
## Presented By

The Department of the Interior's Bureau of Land Management and the Museum of Western Colorado.





## Dinosaurs Found in Rabbit Valley





## THE TRAIL BEGINS HERE



### 1. Quarry View

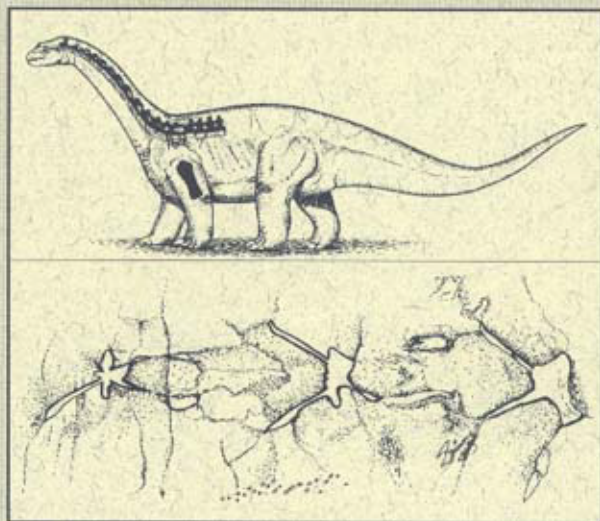
The Trail Through Time begins at this lichen-covered boulder. The mounds of dirt to the north mark the location of the Mygatt-Moore Quarry, a scientifically important quarry where numerous dinosaur fossils have been excavated.

Frequently, during the warmer months, paleontologists are at work in the quarry. They carefully pick through the gray rock exposing the large but fragile bones. They also search for tiny remains of plants or animals which are extremely important as clues to the past environment. When the scientists are not at work, the quarry is buried under layers of dirt. Trained volunteers assist with the excavations and regularly patrol the site.

The quarry appears to have been an ancient watering hole which must have been visited by thousands of dinosaurs over thousands of years. A number of dinosaurs died here, providing a convenient meal for meat-eaters who came to drink. Teeth marks and actual teeth of allosaurs and ceratosaurs found in the scattered bones of plant-eating dinosaurs show that scavengers trampled and feasted on the carcasses.

Other dinosaurs found so far are *Camarasaurus*, *Diplodocus*, *Brachiosaurus*, a very large *Apatosaurus*, and an armored nodosaur. A rare fish was found in the layer above the quarry.

The quarry was discovered in 1981 by Pete Mygatt and J.D. Moore, of Grand Junction, who reported their fossil find to the Museum of Western Colorado. The Museum and Dinamation International Society are currently excavating the quarry. You may view the quarry from here or hike in for a closer view.



### 2. *Camarasaurus*

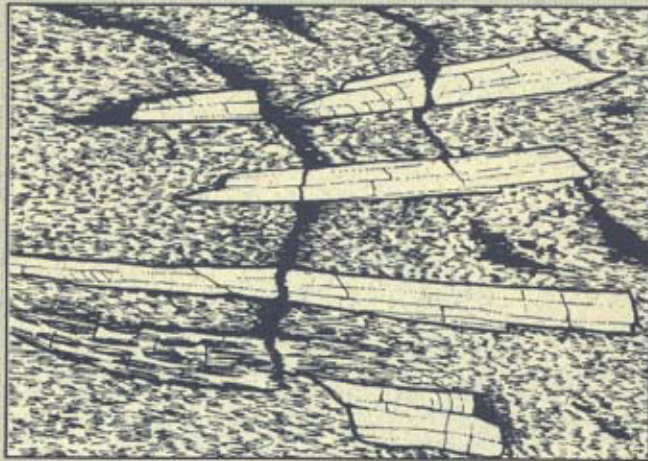
This 50-foot 10-ton plant-eating dinosaur spent its life roaming through lush forests near lakes and rivers. Look carefully in the rock here for the light grey neck vertebrae of a *Camarasaurus*. Part of a front limb bone is also visible. Portions of the skull were discovered nearby and can be seen at the Museum of Western Colorado's Dinosaur Valley exhibit in Grand Junction.



### 3. Ancient Stream Channel

These rocks were once part of an ancient streambed. Notice the "scour and fill" structure within this pebble conglomerate boulder. This was caused by one stream channel intersecting and eroding another. *continued on back*



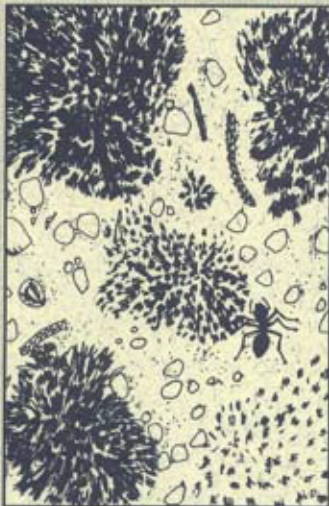


#### 4. Plant Fossils

These twig and branch impressions are plant fossils deposited some 135 million years ago in a geologic formation known as the Burro Canyon. Plant fossils are clues to the prehistoric environment and climate and to the diet of plant-eating dinosaurs. Watch for more plant fossils along the trail.

#### 5. Sheep Fence

Installation of the walkover fence assures protection to grazing livestock. In this arid country, four acres are required to graze one sheep per month.

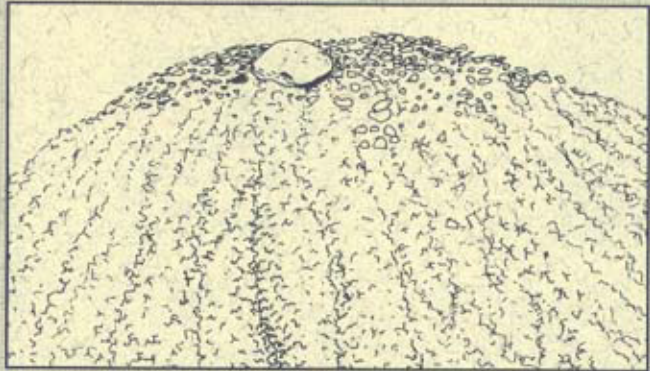


#### 6. Cryptogamic Crusts

The very fragile black soil crusts seen on the far hill-sides are actually slow-growing (50-100 years) lichens, fungi, mosses, and algae. They reduce soil erosion and add important nitrogen to the soil. Avoid destroying cryptogamic crusts by staying on the designated trail.

#### 7. Shelter and Overlook

This location gives an excellent view of the Uncompahgre Plateau on the southern horizon, the Colorado River canyons, and the LaSal Mountains in Utah to the southwest.



#### 8. Bentonitic Mudstones

These extremely fine greenish mudstones are decomposed volcanic ash deposited along slow-moving stream channels. They may be the result of nearby volcanos or of volcanic activity elsewhere on earth which deposited ash over huge distances. BE CAREFUL! Bentonite is very slippery when wet.



#### 9. Siliceous Sandstone

In this boulder is a layer of sandstone which has been cemented together by an unusually hard material, silica. The cement is actually more wear-resistant than the sand grains within it. The silica may be a product of volcanic activity.

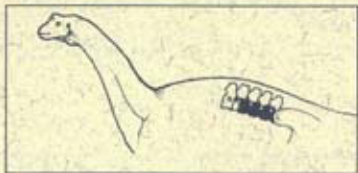
*Just ahead on the trail is a boulder containing a large fossil tree stem.*





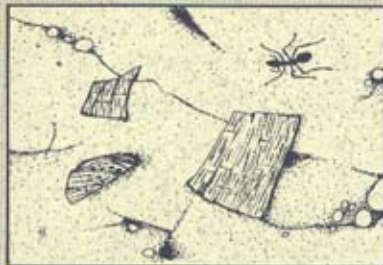
### 10. Pocketed Boulder

The large rock has eroded in a peculiar way. Its "pocketing" was formed by softer areas of the stone eroding faster than the surrounding rock.



### 11. Diplodocus Skeleton

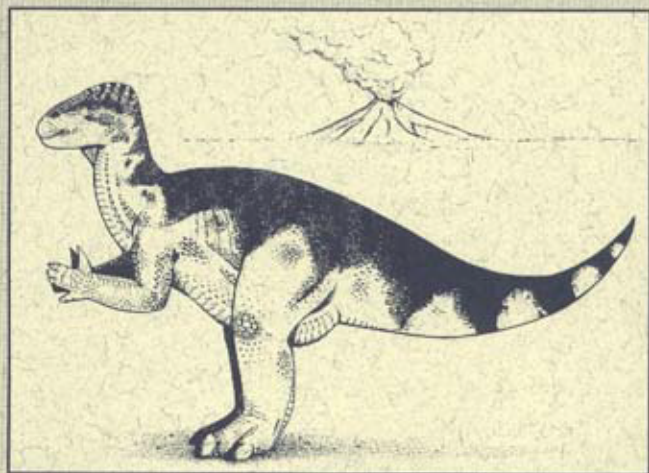
At 80 feet, Diplodocus was one of the longest dinosaurs. Look for vertebrae (backbones), and the partial ribs and femur of a young Diplodocus on the ground near the numbered post. The vertebrae are arching into the hill towards the tail of the animal.



### 12. Fossil Hash

Look closely at the boulder on the ground in the dry streambed to your right. Bits of fossil bones and plants that were deposited in an "old" stream are now

being eroded out of the "new" streambed. The original dinosaur bones were broken into fragments as they were swept along the ancient stream channel.



### 13. Iguanodontid Dinosaur

This location has revealed an iguanodontid dinosaur that is nearly five million years older than previously known specimens. This juvenile dinosaur was a plant-eater who would have grown to be 16 feet high, 29 feet long, and weighed 6000 pounds. The animal's skull and other bones have been excavated and are being studied.

### 14. Section Corner Marker

Placed here by the Bureau of Land Management, this marker identifies the common corner of four square-mile sections. Section markers are used by geologists and paleontologists to measure precise locations of geologic features and fossil finds. This is the last stop. Follow the trail to the frontage road, turn right and hike back to the parking area. You may keep your copy of this brochure (one per group, please) or help us recycle by leaving it in the receptacle at the gate. Thank you.