



## Fossil Discovery Trail Guide

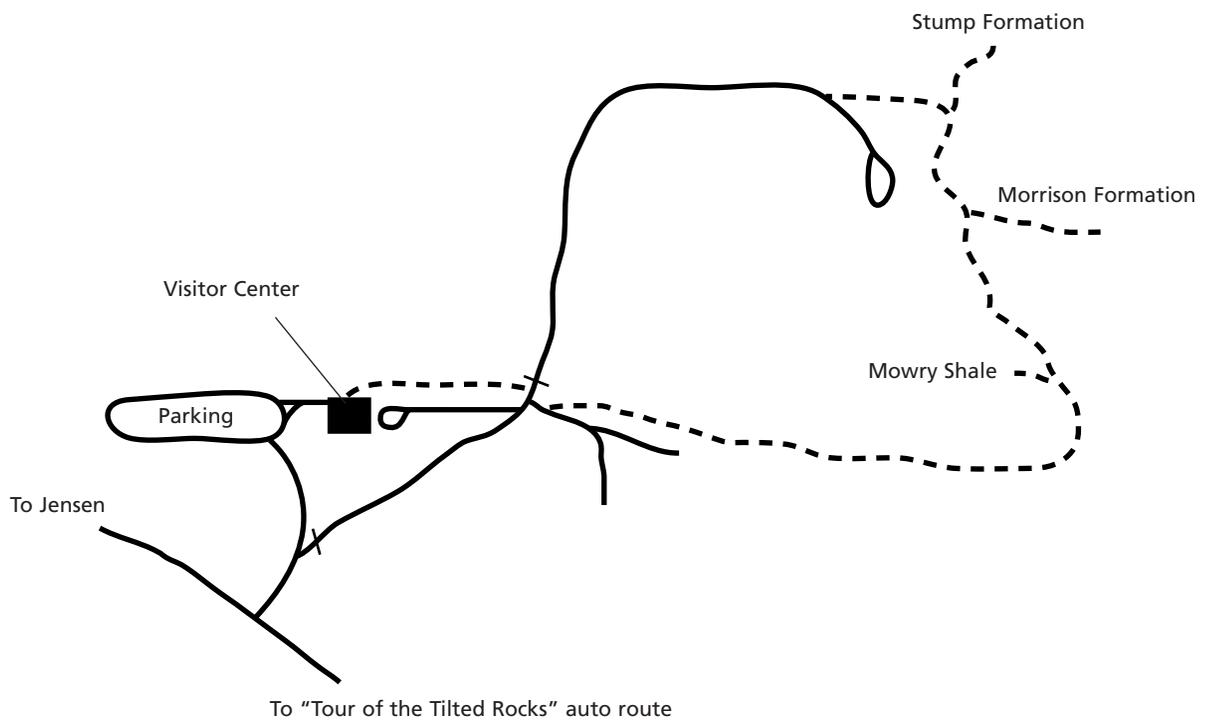


This trail journeys through millions of years of the earth's history, yet 20 years from now, it will appear to be unchanged. Though the landscape appears to be stagnating, dynamic forces are pushing and twisting the ground below, revealing the world's past environments. While the trail goes through rock layers representing many distinct environments, this guide focuses on three strikingly different ecosystems that illustrate how our planet has evolved.

### Overview

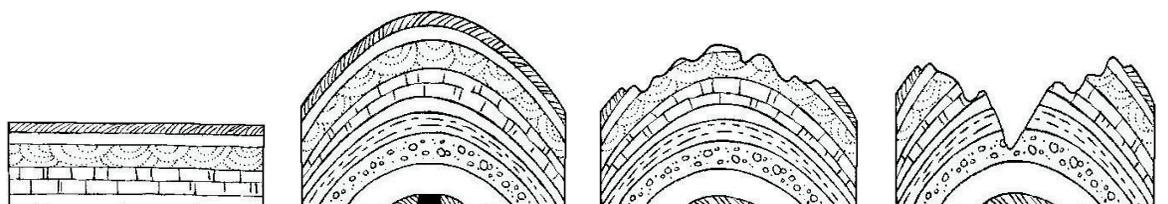
The trail begins at the visitor information area and is about  $\frac{3}{4}$  mile one way, with an approximate 250 foot elevation gain. The dinosaur fossils are about  $\frac{1}{2}$  mile from the trailhead, with about a 100 foot elevation

gain. Drinking water, sunscreen, and good hiking footwear are recommended. Touching the rocks and fossils is permitted, but fossils and rocks may not be collected or moved.



After walking along the hillside, the trail turns and enters a small canyon. Geologists theorize that the vertical rock layers before you were once horizontal. During a period of regional geologic unrest, about

65 million years ago, the layers were gradually pushed up into an arch, which eroded into the tilted rock layers you walk through today.



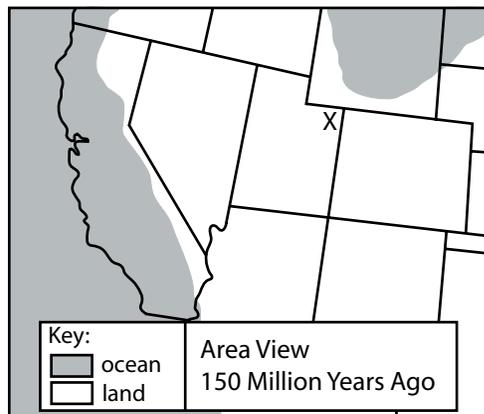
## Mowry Shale

Along the coast of an ancient sea, exploding volcanoes (near the present day California and Nevada border) filled the air with dust, which settled onto the sea bottom giving the Mowry Shale a silver gray color. From studying the fossils in the shale, geologists believe that at the time the Mowry Shale was deposited (approximately 100 million years ago) this area was an inland sea. Perhaps the volcanic ash in the water killed the fish, and the strong currents at the bottom of the ocean tore the decomposing bodies apart, leaving numerous fossilized fish scales. These fossil scales look like dark gray to golden colored circles on the flat grayish rock pieces.



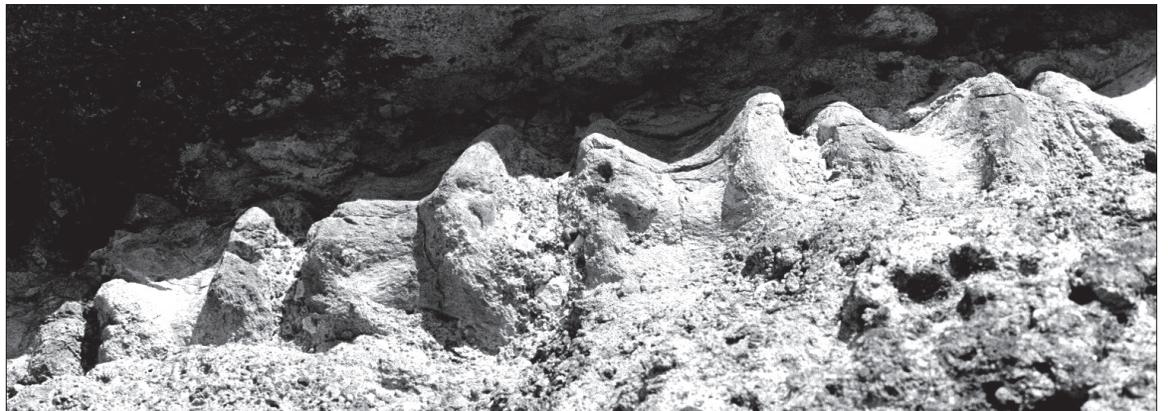
## Morrison Formation

The trail continues back through more layers of time, entering the Morrison Formation, the world of the dinosaurs. In this area, paleontologists discovered fossils representing 10 different species of dinosaurs, ranging in size from about 7 inches



to 76 feet. Though these spectacular dinosaur fossils are magnificent, they tell us little of what the environment was really like. Studying other fossils, such as tortoises, clams, crocodiles, and plants, provides a better understanding of this past environment. Scientists believe approximately 150 million years ago, the area was semi-arid, with year-round streams. Ferns dominated the plant life, along with conifers, ginko trees, tree ferns and horsetail rush, far different from today.

Along the rock face of the spur trail, numerous dinosaur bone fragments are embedded in the rock along with a few large bones, such as leg bones and vertebrae. Look high on the cliff face for the vertebrae (pictured below) and at the base of the cliff face for a leg bone. The rock also contains numerous clam shell impressions.



## Stump Formation

Approximately 163 million years ago, this area was also part of a large inland sea. The Stump Formation reveals evidence of an ocean environment with a larger variety of life than the Mowry sea. Fossils in the Stump Formation include belemnites (a relative of the squid), clams, snails, and ammonites. Careful examination of the large rocks on the ground in this area reveals numerous small clam-like fossils.



The rock layers along the Fossil Discovery Trail represent a time 75 to 163 million years ago. Each rock layer encases clues that reveal the changing environments of nearly 90 million years. The Fossil Discovery Trail ends at the road, just uphill from the last stop. To return to the visitor information area, follow the road down hill or return via the same trail.