

Field Trip to the Cottonwood Creek Dinosaur Trail, Alcova, Wyoming

How to get there: Take Highway 220 west from Casper, turn left through Alcova (take a side trip to see the dam) follow the road round the lake, past the Black Beach road, and turn right on the Cottonwood Creek road. Look for the small "longneck" dinosaur sign and turn right. There is a small parking area and the interpretational signs start at the base of the trail.

This trail is on public land (Bureau of Recreation). Please do not collect the fossils. Leave them for others to enjoy.

NOTE: It is illegal to collect vertebrate fossils, such as dinosaurs and marine reptiles, from public land without a permit.

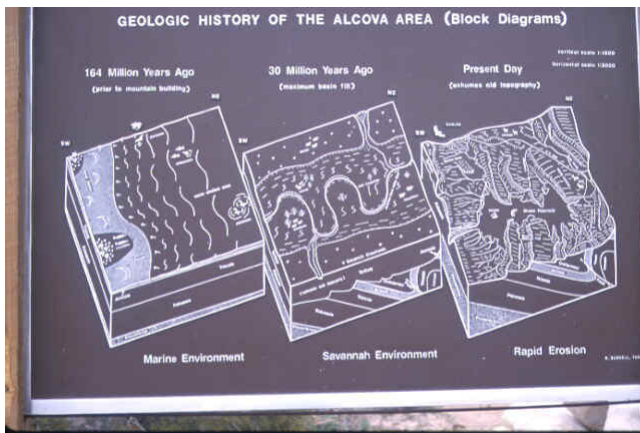
This "Virtual Field Trip" was made possible by a grant from BOCES (Board of Cooperative Educational Services), a joint venture between Casper College and the Natrona County School District.

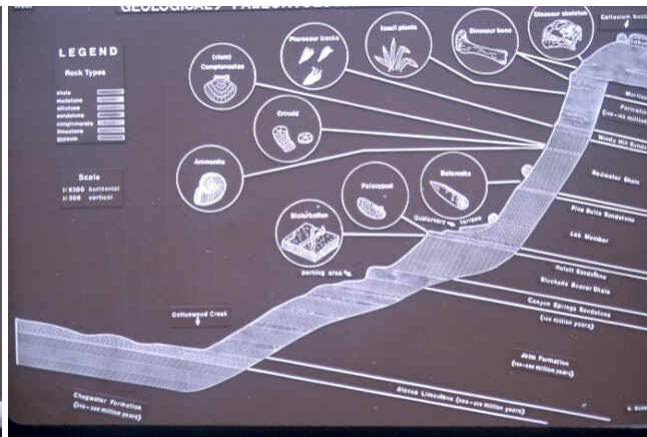
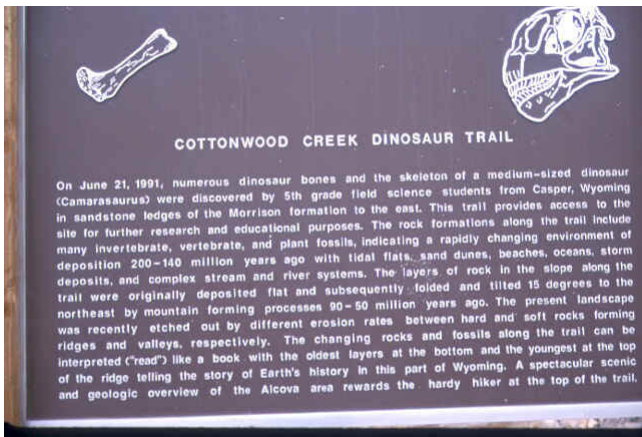


1. General view of the ridge.

Lowest unit is the Jelm Formation (Late Triassic - Early Jurassic)

Grey to pinkish-orange, fine-grained sandstones and siltstone which exhibit medium to large scale cross-bedding and are thought to be eolian (windblown) in origin.





2. Interpretational signs at the start of the trail.



3. Canyon Springs Sandstone Member, Sundance Formation (Late Jurassic/Calloviaian)
Yellowish white, fine grained sandstone, approximately 14 feet thick.
A shoreline deposit, part littoral (beach) and part eolian dune.



4. Stockade Beaver Shale Member, Sundance Formation (Late Jurassic/Calloviaian)
Calcareous, greenish-gray shale and mudstone, about 50 feet thick.
Interbedded with very fine-grained sandstone stringers, some ripples towards the top.
Shallow marine to clastic tidal flat at the top.



5. Hulett Sandstone Member, Sundance Formation (Late Jurassic/Calloviaian)
 Light green to buff colored, fine grained sandstone, approximately 3.5 feet thick
 Oolitic, laminated with ripple and current marks formed in shallow water.
 Regressive beach deposit.



6. Lak Member, Sundance Formation (Late Jurassic/Calloviaian)
 Red to orange siltstone and very fine-grained sandstone with massive, abundant
 white gypsum stringers, lowest four feet is bedded gypsum layer(photo). Approximately 75 feet).
 Lagoons which periodically evaporated in desert conditions, sediments are probably eolian.



7. Remnant of yellowish gray fine sand/silt deposited in the Quaternary, and subsequently eroded, lies unconformably on red rocks of the Lak Member.



8. Colluvium: Huge boulders of the Lakota Conglomerate (Cloverly Formation, Cretaceous) have tumbled downslope from the top of the ridge.

9. Pine Butte Sandstone (Late Jurassic/Callovia)

A greenish-white, fine-grained sandstone, poorly indurated and only 2 feet thick represents a transgressive beach deposit

at the base of the next marine invasion. (no photo)



10. Redwater Shale Member, Sundance Formation (Jurassic/Upper Callovian-Lower Oxfordian)

Greenish-gray, glauconitic mudstones and shales with some interbedded sandstones and limestones.

Contains many fossils including *Camptonectes* clams, crinoids (sea lilies) and the bullet-shaped belemnites.

The Tate Museum's marine reptiles, "Charlie", the ichthyosaur, and "Jeffrey", the plesiosaur, were found in rocks of this age.

Shallow marine deposits, the accumulations of bioclastic limestones are the result of shells being torn up and redeposited in layers during storms.

11. Windy Hill Sandstone

12. Pterosaur Prints

13. Morrison Formation

The Morrison Formation has been the subject of a long term research project by Al Allen,

Emeritus Professor and Curator of Stratigraphy at the Tate Museum. In his paper "Morrison Formation Stratigraphy between the classic Como Bluff and Thermopolis areas, Wyoming in the Tate Museum Guidebook No. 1 (1996), Al offers detailed descriptions of cross-sections of the Morrison. According to Al:

"Studies of the Morrison terrestrial contact with the marine upper Sundance point to a gentle but definite uplift of the sea floor. Such regional uplift is manifested by an angular unconformity. Morrison paleoenvironments began abruptly with high temperature, arid highlands, small rivers prone to flash flooding, with ponds, marshes, pans, and wooded areas similar to the present day Okavango Delta of Africa."

He also notes that dinosaur bones tend to be concentrated in the sands of stream channels or in floodplain mudstones. No bones have been found in windblown deposits.

14. Dinosaurs

From this point - just climb a little further and stand on top of the Lakota Conglomerate to enjoy fantastic views of the lake and surrounding country.