The Early Cretaceous Tracksite at Clayton Lake: Overview and previous studies

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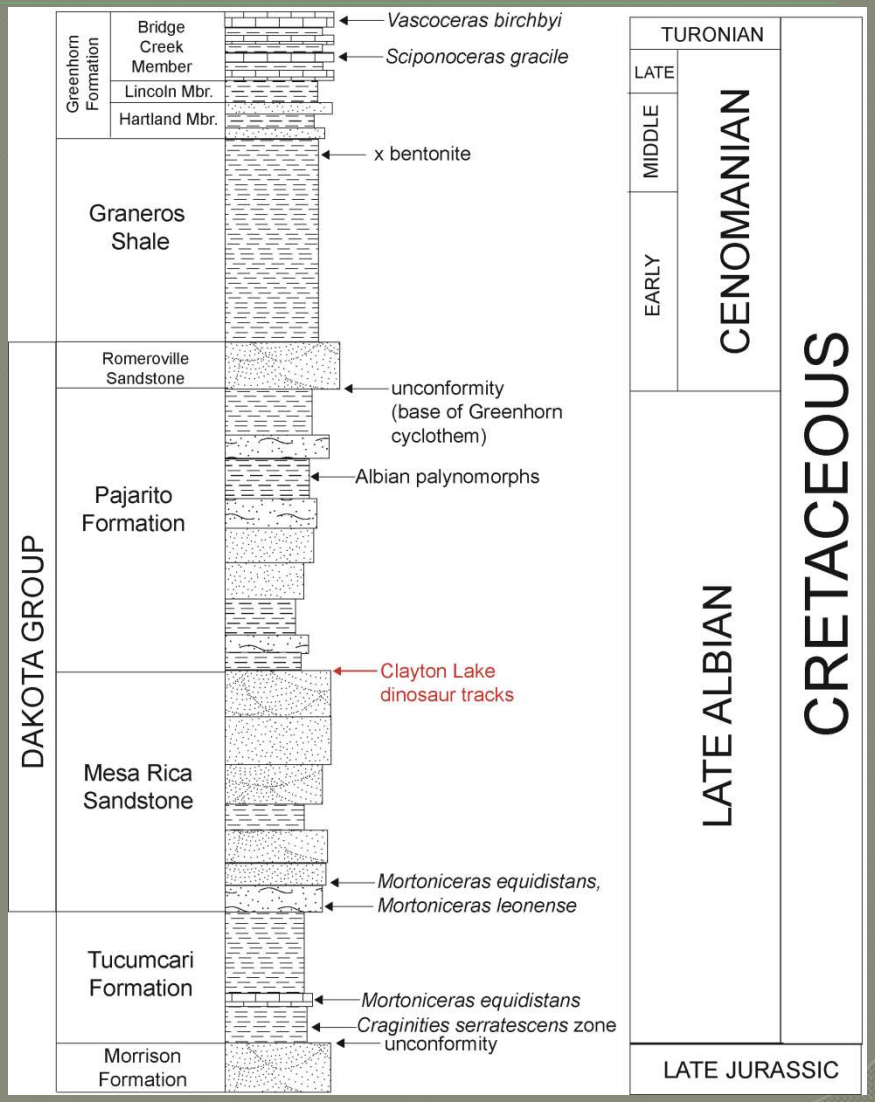
Location, history

- Clayton Lake State Park and Dinosaur Trackways
- In spillway of dam
- Discovered in early 1980s
- First scientific publication in 1985, various scientific studies through 2016

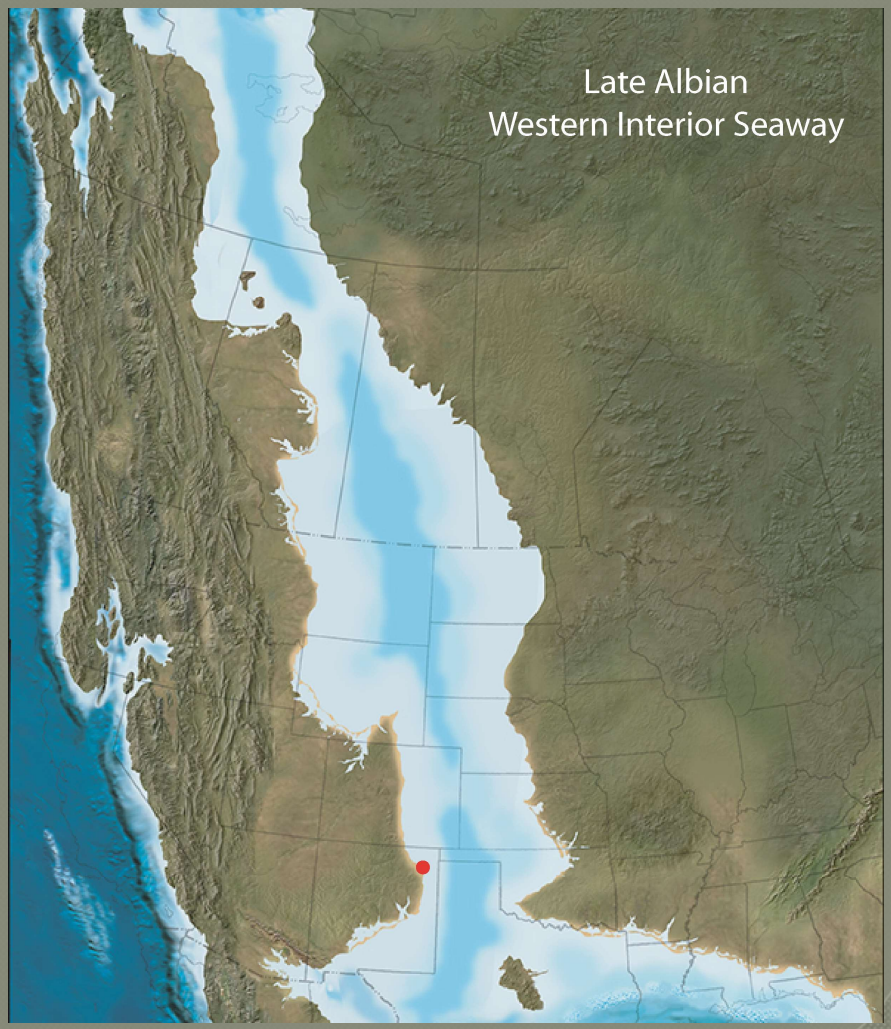
Stratigraphic position and age

- Tracks are at contact of Mesa Rica Sandstone and overlying Pajarito Formation
- Strata of late Albian age based primarily on ammonite biostratigraphy and palynostratigraphy
- ~ 105 Ma



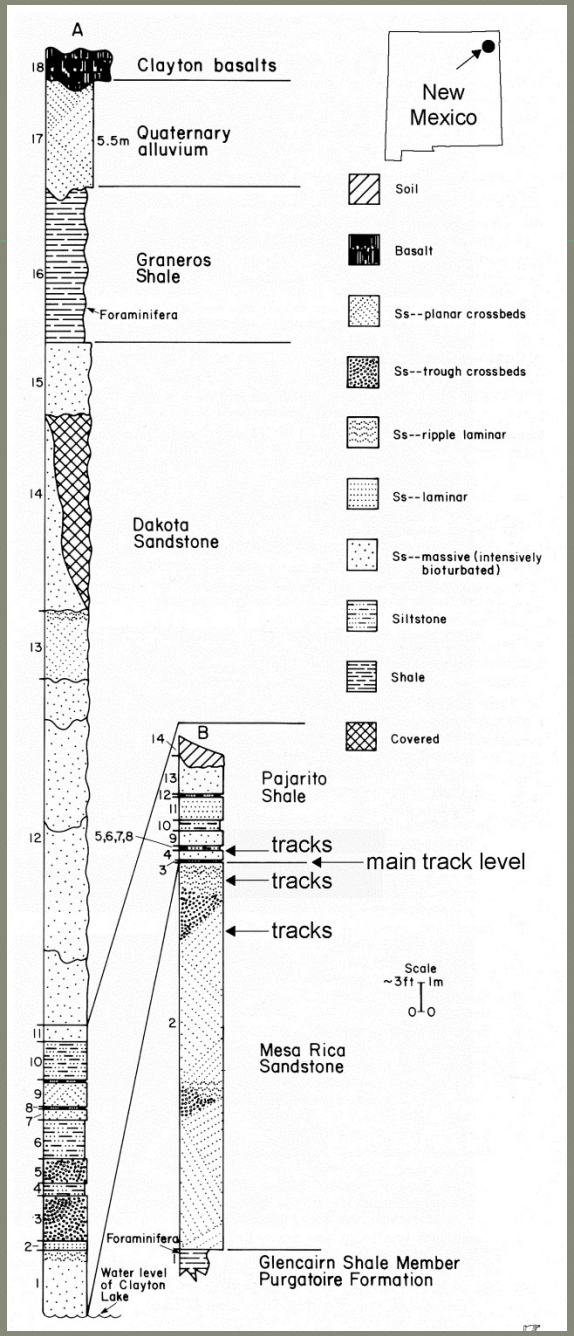
Depositional setting

- Strata with tracks were deposited at or near western shoreline of Western Interior seaway
- In regressive depositional system—Mesa Rica delta and delta front sandstones prograded over by Pajarito floodplain deposits



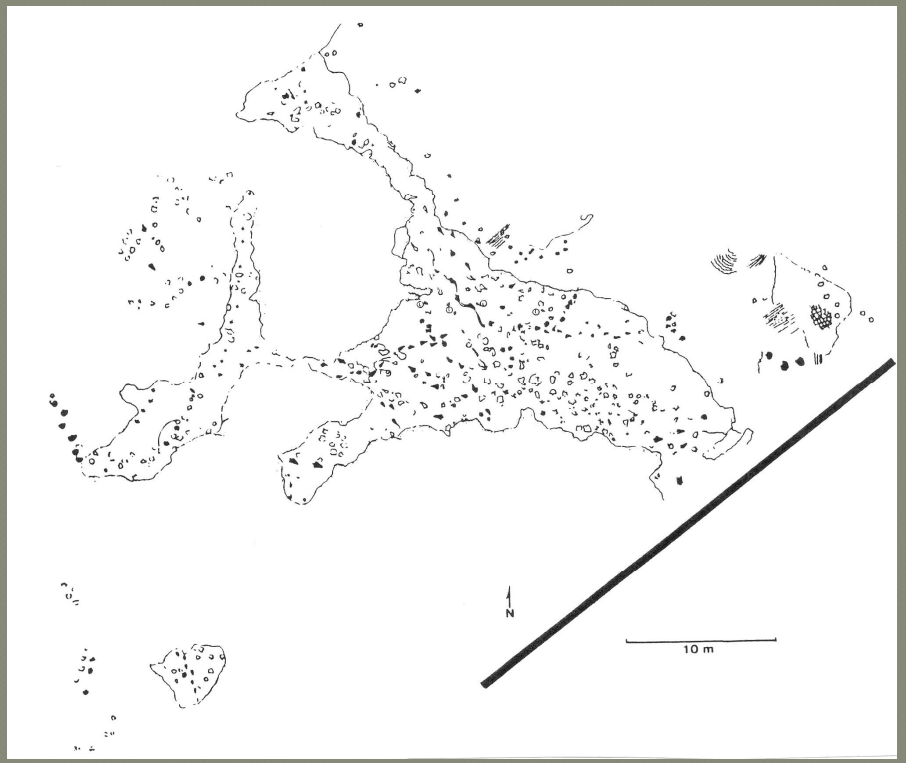
Stratigraphy of the tracksite

- Tracks are at 4 stratigraphic levels
- Lowest level, 1 = a few crocodilian tracks
- Level 2 = a few ornithopod tracks
- Level 3 = main track level
- Level 4 = a few ornithopod tracks



Previous studies

- Traditional methods—mapping, photography, tracing on acetate
- Gillette & Thomas (1985), Bennett, Hunt, Lockley and Lucas (various papers), Dalman & Lucas (2016)—most comprehensive study
- Estimated from 250 to 500 tracks

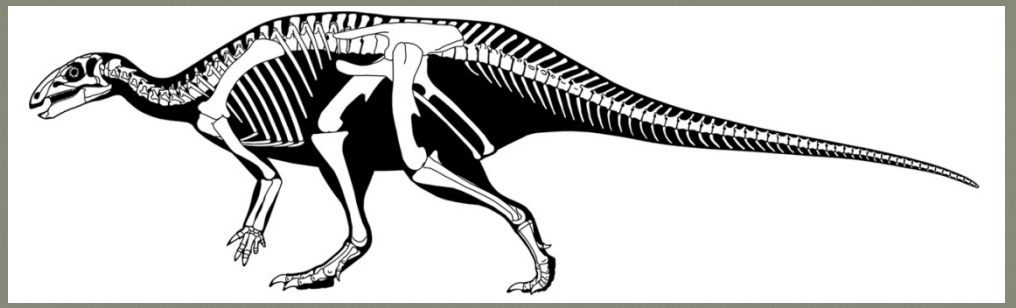


The only published map of the tracksite, from Gillette & Thomas (1985)

Plants, invertebrate trace fossils

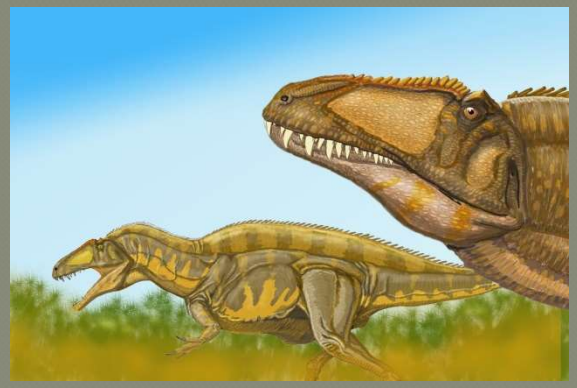
Ornithopod tracks

- Most common kind of track (more than 95% of the tracks)
- Assigned to ichnogenus *Caririchnium*
- Tracks of a primitive ornithopod, like *Tenontosaurus*



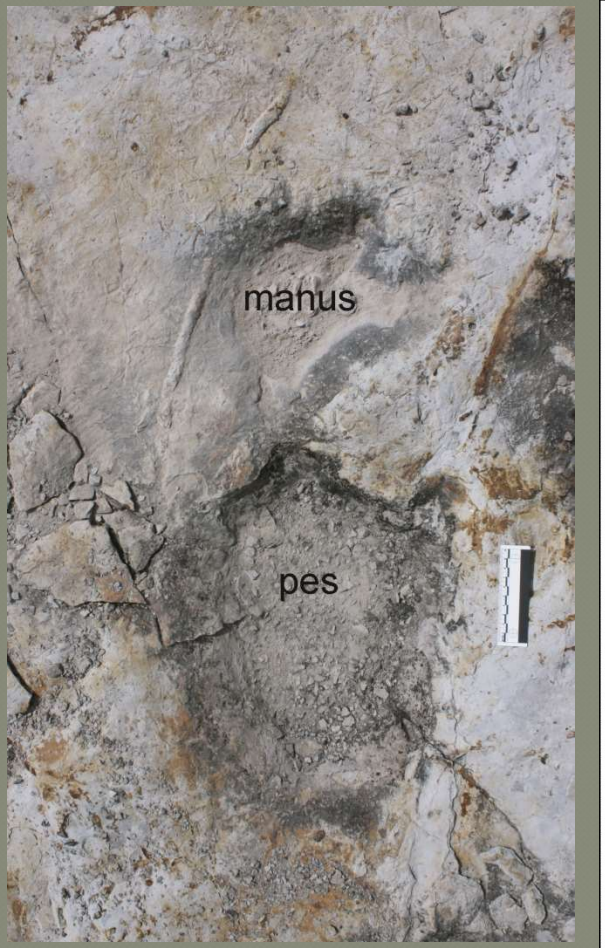
Theropod tracks

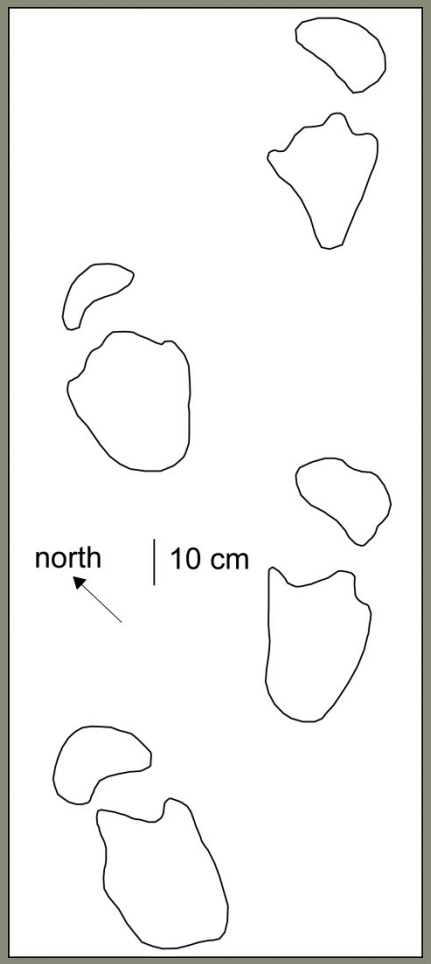
- Rare, two kinds
- *Magnoavipes* = footprints of an ornithomimosaur (small, ostrich-like theropod)
- *Irenesauripus* = footprints of an acrocanthosaur
- (or similar large theropod)



Ankylosaur trackway

- One trackway of a quadrupedal dinosaur
- Ichnogenus *Deltapodus*
- Trackway of an ankylosaur





2019 photogrammetric study

- Collaboration of CNM faculty and students, NM Museum of Natural History, and State Parks
- Cleaned site
- Extensive photogrammetric database, combined drone and ground-based imagery

Photogrammetric data

Prospectus

- The photogrammetric database provides very detailed and extensive data not previously available
- Use to evaluate further the paleotopography, sedimentation, taphonomy and ichnology of the Clayton Lake tracksite