At Clayton Lake in Union County, northeastern New Mexico, an extensive dinosaur tracksite is exposed in the dam spillway. Tracks are present at four stratigraphic levels across the contact of the Lower Cretaceous (upper Albian) Mesa Rica and Pajarito formations. The main track level is on the top sandstone bedding surface of the Mesa Rica Formation. Previous studies have counted 260 to as many as 500 dinosaur tracks at this level that are mostly of ornithopods (Caririchnium), but that also include two kinds of theropod tracks (Magnoavipes, cf. Irenesauripus) and a single quadrupedal trackway of an ankylosaur? (Deltapodus). The associated invertebrate ichnoassemblage is shallow burrows assigned to Arenicollites, Planolites, Taenidium and Thalassinoides, representative of the Scoyenia ichnofacies. The paleoenvironment of the tracksite is broadly interpreted as a sandflat at or very near the shoreline of the Western Interior seaway. Paleontological study of the Clayton Lake tracksite began in 1982, and Gillette and Thomas (1985) published a map of the tracks. This, the only published map of the tracks, was made by standard grid, tape and compass techniques, and identified nearly 500 dinosaur tracks at the site, mostly of ornithopods. Subsequent studies focused on some individual tracks, detailed the stratigraphy and geological age of the tracksite or presented short summaries of the tracksite (e.g., Lucas et al., 1986; Gillette and Thomas, 1989; Bennett, 1992; Hunt and Lucas, 1998). Lucas and Dalman (2016) restudied the tracksite without cleaning it, so it was not mapped. They counted 260 dinosaur tracks at the site. Traditional photography, under low angle natural light, was used by Lucas and Dalman to document individual tracks, and some trackways were traced on acetate film to produce trackway maps. Our photogrammetric study in 2019 yields extensive data with which to more accurately interpret the geology and ichnology of the tracksite than was possible by previous studies using traditional field methods.

References


