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### **Paleoenvironments of the Whitmore Point Member of the Jurassic Moenave Formation, St. George, Utah**

The Jurassic Whitmore Point Member of the Moenave Formation in the St. George, Utah area contains a recent discovery of abundant dinosaur tracks. Six lithofacies are used to systematically describe the stratigraphic framework and to establish the paleoenvironments related to the dinosaur track horizons. The channelized, fine- to medium-grained, red sandstone facies contains scours, tool marks, upward-fining, trough cross bedding, and current ripples, and is interpreted to represent small streams and some sheet-wash deposits. Reddish brown mudstone/siltstone facies associated with channel sandstones suggest floodplain deposition. Some of the thickest, track-bearing sandstone units are similar to the fluvial channel deposits, but show an increase in symmetric ripples, triclinal salt casts, and mud cracks. The distinctive evaporate casts indicate an increase in lake salinity, probably as a result of evaporation. The upper portion of the Whitmore

Point Member contains red and green mottled sandstone facies, laminated mudstone/siltstone facies, and pale green sandy carbonate facies containing small domal stromatolites, and scattered complete fish, bones and scales. These features indicate lacustrine conditions. Overall, the Whitmore Point Member shows more fluvial influence in the lower part, and this changes to more lacustrine deposition upsection as facies contain a marked increase in carbonate lithologies, stromatolites, semionotid fish, conchostracans, ostracods, and possible coprolites. These faunas suggest a shift where a lake system grew over time from an ephemeral terminal basin to a stable, sizeable desert lake. Many of the fluvio-lacustrine margin beds allowed good preservation of the variety of tracks and traces.