

The Temporal Implications Of Storm Deposits From Equilibrichnia Within The Baldonnel Formation, Northeast British Columbia

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ABSTRACT

A detailed outcrop study of the Baldonnel Formation in northeastern British Columbia reveals a remarkable trace fossil assemblage. This suite includes excellent examples of equilibrichnia that formed as a result of organisms vertically adjusting to aggradations and degradation of the sediment surface. Common equilibrichnia observed within the succession include *Diplocraterion*, *Teichichnus*, and bivalve adjustment traces (*Siphonichnus*). These ichnofossils lend insight into the temporal nature of the depositional environment (a seasonally storm-dominated shoreface). Detailed observations of the nature of burrow spreite, the inferred direction of animal movement in the substrate, and the magnitude of animal adjustment in the sediment substrate, can be related to the magnitude of storm erosion, and ensuing sediment deposition. Post-storm colonization patterns and persistence of robust (2-3 yr old?) bivalves support the interpretation of deposition within a storm-dominated shoreface environment. Traces that persist upwards through amalgamated bed-sets represent colonization of, and equilibration through sediment that was deposited during individual storm events. Where ichnologic data are absent or ignored, one may interpret the amalgamated bedsets as representing multiple storm deposits. This analysis of equilibrichnia within a shoreface environment demonstrates further applications of ichnology in the reconstruction of temporal sedimentary events.