MACRO-INVERTEBRATE DEPTH ZONES FOR THE LOWER MESOZOIC IN THE WESTERN INTERIOR OF THE UNITED STATES

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Lower Mesozoic macro-invertebrate faunas from the Thaynes Formation (Triassic) and Twin Creek Limestone (Jurassic) in the Western Interior are allocated to the shallow marine depth zonation (consisting of composite assemblages A through D) recently described in greater detail for the Western Cordillera Jurassic. The allocations demonstrate the applicability of the zonation as an important tool for basinal analysis for much (if not all) of the Mesozoic column.

Poor documentation of composite assemblage D in the Western Interior Jurassic is a notable exception to the general application of the depth zonation. The assemblage occurs in mud-rich lithologies offshore of where undisputed benthonic shelly faunas thrived, and yields diverse cephalopods but an otherwise taxonomically depauperate fauna. The inoceramid and pectinid bivalves (such as *Bositra*) that are so characteristic of the open marine Jurassic strata associated with the assemblage in the Western Cordillera are absent from the Twin Creek Limestone. The fauna from that formation indicates not only deposition far from an open marine influence, but deposition of most of the formation in water depth less than 50-100 m.

Dark grey to black, thinly laminated mudrocks, associated with composite assemblage D and suggesting an anoxic environment, are widespread in the Western Cordillera and stratigraphically restricted in occurrence in the Western Interior.