

ANOXIC SEDIMENTATION IN THE EAGLE FORD GROUP (UPPER CRETACEOUS) OF CENTRAL TEXAS

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ABSTRACT

Anoxic conditions prevailed during Eagle Ford deposition. Environmental indicators include the generally dark color of Eagle Ford shale, millimeter laminations, a general absence of infauna, authigenic pyrite, and the high ratio of pelagic to benthic fossils. Benthic fossils are rare and are represented mainly by the bivalve *Inoceramus* and the foraminifer *Cibicides*. In marked contrast, pelagic fossils occur abundantly. Particularly distinctive are the foraminifers *Globigerina* and *Heterohelix*, but ammonites and fish scales also occur.

The Eagle Ford Group exposed along the Balcones Fault Zone in Central Texas is subdivided into two formations. The older is the Lake Waco Formation consisting in ascending order of the Bluebonnet flags, Cloice Shale, and Bouldin flags Members and the younger is the South Bosque Formation. The South Bosque Shale is brown to dark gray or black. This contrasts markedly with the fissile, thinly laminated dark gray shales that characterize the Cloice. Interbedded thinly laminated shale and millimeter laminated, pelletal mudstone are typical of the Bluebonnet and Bouldin Members.

The vertical sequence is interpreted to represent a single transgressive - regressive event with the deepest water conditions existing during deposition of the Cloice. We suggest that minimum water depths during deposition of the Group were 60 to 100 feet and that the anoxic conditions resulted from a combination of water depth, upwelling and possibly silled conditions due to the San Marcos Arch.

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