

ABSTRACT

EVIDENCE FOR PRE-K/T EXTIRPATION OF MARINE REPTILES AND DINOSAURS OF THE MORENO FORMATION, FRESNO COUNTY, CALIFORNIA

Detailed stratigraphic examination of the Maastrichtian-Danian aged Moreno Formation of central California indicates that marine reptiles and dinosaurs, including mosasaurs, plesiosaurs, and hadrosaurs, were locally extirpated before the Cretaceous/Tertiary boundary event. The Moreno Formation represents continuous deposition across the Cretaceous/Tertiary boundary. The boundary is placed within a 2.4-meter thick interval approximately 6.7 meters above the contact between the Marca Shale Member and the overlying Dos Palos Member of the Moreno Formation.

Forty marine reptile and dinosaur localities were measured to determine stratigraphic positions relative to the Cretaceous/Tertiary boundary. The highest fossil locality is that of a mosasaur. The site is located in the Marca Member, 7.5 meters below the Marca/Dos Palos contact. Based on an average sedimentation rate of 89.5m/my, these organisms were dying out approximately 218,000 years before the K/T boundary.

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