

one of rapid diapiric growth, accommodating a thick infill of sediments in adjacent withdrawal “minibasins”. The second phase of activity began in the Early Cretaceous (Hauterivian), approximately coeval with the deposition of the O-Marker. During this time only a modest amount of salt movement and associated sediment growth occurred. Salt movement accelerated in the Late Cretaceous (Campanian-Maastrichtian), resulting in the formation of a salt withdrawal syncline that was subsequently infilled with younger Cenozoic sediments. The renewed movement was approximately coeval with deposition of Upper Cretaceous and Paleogene prograding sediments of the lower Banquereau Formation. Diapiric activity probably began to slow down again in post-Eocene time and by the Oligocene or Miocene had stopped completely. The cause of this third phase of reactivated movement is the main focus of this study.

There are a number of possible mechanisms for the third phase of reactivated salt movement. Because of its coeval timing and location, sediment loading by the prograding Banquereau Formation is a plausible mechanism for reactivation; however, theoretical understanding of salt diapirism clearly indicates a simple horizontal salt layer system would be too stable for renewed motion to be expected under the observed conditions. It is therefore likely that additional factors such as the weakness of pre-existing diapirs, tilting, or overpressures made the system more sensitive and allowed the system to move, even if Banquereau progradation was the main cause of renewed salt movement.

Upper Cretaceous-Cenozoic salt movement in the Abenaki Subbasin, offshore Nova Scotia

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Three large salt diapirs occur in the western part of the Abenaki Subbasin within the Scotian Basin, offshore Nova Scotia. These diapirs were active in three phases, as indicated by subsidence of the Mesozoic and Cenozoic basin fill and growth on syndepositional faults. The first phase of activity began soon after the deposition of salt in the Late Triassic and continued through the Jurassic and earliest Cretaceous. This phase was