
Contrasting salt tectonic styles on the western versus central parts of the Scotian Margin, offshore Nova Scotia

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A major Late Triassic to Early Jurassic(?) synrift salt basin underpins much of the Scotian Margin, and formed as Nova Scotia rifted and ultimately broke apart from its Moroccan conjugate. Observed structural styles on the margin were preconditioned in part by the synrift basement fabric (including transfer zones) and development of rift-related accommodation and prominent basement blocks

that controlled the original thickness and distribution of salt. Using available 2D/3D seismic data-sets, this poster highlights two considerably different salt tectonic styles that dominated the western versus central parts of the margin, reflecting significant first-order differences in post-salt deposition and postrift subsidence. Landward to seaward variations in the amount, rate, and symmetry of postrift subsidence were most important along the western Scotian Margin, where most of the primary salt basin is now located in deepwater after subsiding up to 8 km after continental break-up. Increased subsidence seaward of the margin hinge zone tilted the landward parts of the salt basin, generating a region of gravity gliding and raft tectonics above the autochthonous salt layer, with vertical diapirism and sediment downbuilding dominating seaward areas where shortening also took place. In contrast, much of the primary salt basin on the central parts of the margin occupies a more landward position below the present day shelf. Increased Jurassic and Cretaceous sedimentation here expelled salt into two separate but linked salt canopies referred to as the Sable Shelf Canopy and the Sable Slope Canopy. A common detachment surface connects these canopies in multiple locations as thin-skinned extensional systems in landward areas expelled salt seaward into the Sable Slope Canopy. Recognition of four distinct salt expulsion styles (salt-based detachments, counterregional systems, hybrids and salt stocks) allows for a higher order subdivision of the Sable Canopy Complex.