UNCONFORMITY-BOUNDED SEQUENCES OF THE CENTRAL SCOTIAN SHELF: INDICATORS OF DIFFERENTIAL TECTONISM AND RESULTANT HYDROCARBON MIGRATION

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Stratigraphic analysis of the Sable Island C-67, Onondaga E-84, Oneida 0-25 and Naskapi N-30 well sections shows that a succession of ten unconformity-bounded sequences are present, ranging in age from Pleistocene to ? Early Jurassic.

Regional epeirogenic oscillations produced a cyclic alternation of depositional and erosional episodes with diapirism locally accentuating the differential erosional effects. The present sedimentary pile of the Scotian Shelf is a complex of the resultant differentially-preserved sequences.

Study of these differential erosional relationships gives a direct measure of the amount of effective uplift that occurred during any particular erosional episode, whether locally or in terms of regional variations. This information can then be directly applied to delineate the spatial relationships through time of petroleum source, migration path and reservoir rocks in the region. Reliance on seismic exploration can thus be broadened by integration of regional geologic and geophysical analyses.

At least four lithically-distinct sequences occur in the offshore Tertiary. Analysis of these units is vital to the delineation of hydrocarbon migration patterns in the offshore region since the Cretaceous.