MIOCENE DELTAIC SEDIMENTATION, LOUISIANA GULF COAST

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Miocene deltas and delta complexes o f south Louisiana differ from each other in shape, distribution, and three-dimensional geometry. Such distinctions in morphology, as well as the temporal and spatial interrelation ofsedimentation and gravity tectonics are explained in terms of a conceptual model of a paralic basin in which rates of deposition and rates of subsidence vary.

If rate of deposition exceeds rate of subsidence, deltas prograde and normal regressive basin-filling sedimentation results. Initiation of slump faulting and associated uplift of low-denisty materials i s contemporaneous with the prograding of a younger delta beyond the distal end of an older one. If rate of deposition equals rate of subsidence, deltas build vertically and spread laterally. If rate of deposition is less than of subsidence, regional transgression results, and minor deltas are modified by marine processes.

Examples of each condition from the south Louisiana Miocene, shown by maps and cross sections, could be used as analogues for interpreting regional geology of less-well known ancient delta complexes.