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The Holocene Carbonate Ramp of Kuwait, Northern Arabian-Persian Gulf

The carbonate ramp of southern Kuwait contains a suite of environmental settings, facies types, scales and trends, which provides a complimentary wave dominated model to compare with the classic tidal dominated Abu Dhabi ramp model from the southern Arabian-Persian Gulf. Knowledge of Holocene inner and mid ramp systems is important for interpreting and characterizing reservoirs and understanding the evolution and characteristics of ancient sequences. Within the details are significant lessons for understanding flow unit continuity and reservoir heterogeneity which can be directly applied to field-scale problems.

The onshore coastal system in Kuwait consists of oolitic strand plains on headlands and narrow beach ridges along reentrants that are periodically cut by tidal channels. Tidal channels are always located down current of the headland strand plains and feed discontinuous, closed-coast type tidal flats and sabkhas. New sampling and mapping in the offshore portion of the ramp over the past few years has greatly expanded an understanding of facies distribution patters and facies associations including ooid and skeletal shoals and patch reefs along the inner ramp system. A mid ramp trend of 5 buildups occur 20km to 40 km offshore. These vary in size from a small pinnacle to large coral buildups with satellite patch reefs. The larger offshore buildups contain islands; some with excellent beach rock development. These buildups rise from a 30m to 40m deep seabed of green marls. Limited seismic data provides a few hints at the possible antecedent topography controlling their location.