**Deep Water Deposits of the Tanqua and Laingsburg Subbasins, Southwest Karoo Basin, South Africa: Analog for the Gulf of Mexico**

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The Tanqua and Laingsburg subbasins in South Africa had near-contemporaneous formation and filling and contain Permian-age basin-floor and slope fans that display characteristics similar to deposits in the northern Gulf of Mexico. Outcrop area for each subbasin is about 650 km² and individual fans range from 150 to 450 km² with lateral continuity of individual fans up to 34 km. With a sandstone/shale ratio of 75–90%, the arenaceous fans vary in thickness from 20 to 60 m with interlying shales ranging from 20 to 75 m in thickness. Both subbasins were influenced in their formation and in the architecture of their deposits by structures and events associated with the Cape Fold Belt.

Having undergone little tectonic tilting, the highly continuous outcrops in the Tanqua subbasin expose two fans continuing from mid-fan channel complexes with associated levee-overbank deposits to sheet-like outer fan lobes, while three other fans expose outer fan depositional lobes. Paleocurrent directions for four of the fans are from SSW to S and a direction of W to WNW for the fifth. These fans most likely had a single point source which migrated over the time of basin fill. Unrestricted deposition suggests an open basin depositional setting. The Laingsburg subbasin was strongly influenced by the tectonism associated with the Cape Fold Belt. Deposition occurred in a deeper and narrower basin and the deposits, except for the overlying deltaics cannot be correlated with those of the Tanqua subbasin.

The two subbasins, while associated with an active margin, were likely filled at slightly different times. Both had a distant source area which led to deposits exhibiting characteristics of a passive margin depositional environment. Understanding the evolution of the subbasins and the tectonic conditions under which the submarine fans were deposited leads to the determination of the mechanisms that influenced the formation of the fans and their resulting architecture. These fans permit detailed studies on their architecture necessary to 1) increase our understanding of fine-grained, “low” sandstone/shale ratio fans, 2) determine influences of paleostructures and tectonics on basin fill, 3) carry out detailed reservoir simulation programs, and 4) make predictive models of deep-water sands in the northern Gulf of Mexico.

**Sudden Change: Climate and Sea Level**

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W. F. Tanner (Florida State U.) described the beach ridge plain in northern Denmark, where a sequence of more than 270 Holocene ridges shows the date of the big Mid-Holocene sea level change: 8,000 B.P., with a magnitude of “more than 14 m,” plus smaller changes. These data showed vertical magnitudes of the larger sea level events (except the Mid-Holocene catastrophe) in the range of 1-to-5 meters. W. C. Parker (Florida State) sought possible cycles in the same sequence, but they were too poorly defined for detailed forecasts.

Charles R. Bentley (U. of Wisconsin) examined the possibility of an early collapse of the West Antarctic marine ice sheet, with a sea level rise of about 5 meters, but concluded that it is unlikely.