Figure 1. copy continued from page 11. A time-series of photographs of the eastern Chenier Plain coast illustrating rapid coastal progradation between 1987 to 1993. In this sector of the coast the average progradation rate has been about 50 m/yr during this time period. The "flood" of fine-grained sediments supplied by the Atchafalaya River coastal mudstream initiates and feeds these dramatic coastal changes.
(a) NOAA-12 satellite AVHRR image of coastal turbidity. Turbid waters from the Atchafalaya are advected westward to the prograding Chenier Plain coast.
(b) Aerial photograph from January 27, 1987 illustrates a sector of the coastline at the initial stages of rapid progradation.
(c) Aerial photograph from January 22, 1988 illustrates that a mud arc is starting to form along the coast.
(d) Aerial photograph from April 1993 reveals a 0.5 km zone of new land which is being rapidly colonized by coastal plants on the landward side and is fronted by semi-consolidated mudflats on the seaward side.

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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 km^2 and individual fans range from 150 to 450 km^2 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 75m 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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Dates, magnitudes and rates of Holocene sea-level changes were reviewed at the 1995 meeting of the American Association for the Advancement of Science.

Richard B. Alley (Penn. State U.) described laminae in Greenland ice cores, with details at the annual level. A major event of unknown nature occurred at roughly 8,000 B.P. Gerard Bond (Lamont-Doherty Observ., N.Y.) described sediment cores from the North Atlantic, with a major event at 8,000 B.P. Published work of K. S. Petersen (Danish Geol. Survey) from a well near Vust (Denmark) was reviewed: A rapid sea level rise (25 m), then a similar drop centered at 8,000 B.P. at 8-15 cm/yr

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 couplet, 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.