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by Marc B. Edwards  
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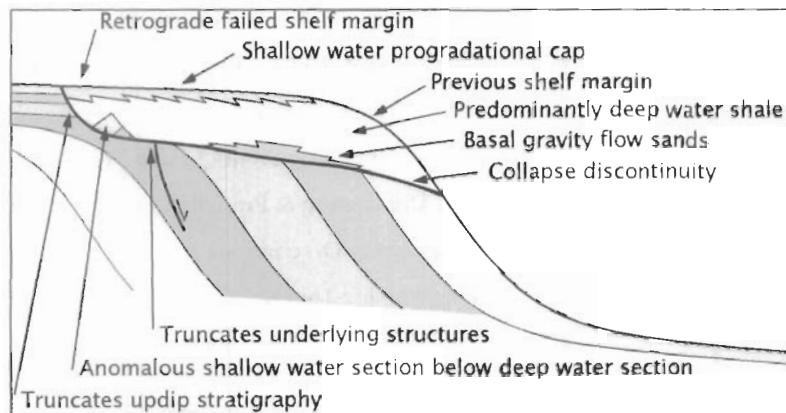


Figure 1.

## Origin and Significance of Retrograde Failed Shelf Margins—Tertiary Northern Gulf Coast Basin\*

### Abstract

The unusually high rates of sedimentation and subsidence in the Gulf Coast Basin are occasionally overwhelmed by a large catastrophic collapse of the shelf margin that relocates the shelf margin landward behind the headwall of a strike-parallel slump scar (Figures 1, 2). Unique reservoir and trapping opportunities are created by these genetically related processes: instantaneous (relatively speaking) creation of the collapse, emplacement of slump blocks into the collapse, possible uplift of the collapse scar headwall because of a isostatic rebound, and transport of sediment gravity flows into and across the collapse scar.

A review of the distribution of documented retrograde failed shelf margins suggests that many more remain to be discovered in the subsurface of the Gulf Coast Basin. It is recommended that careful geological modeling be combined with a regional perspective and 3-D seismic to discover new exploration opportunities in this hyper-mature basin.

(\*This paper was awarded a Grover E. Murray Best Published Paper Award for the 2000 GCAGS Transactions.)



### Biographical Sketch

MARC EDWARDS holds a BS degree in geology from The City College, New York, and a PhD from Oxford University. He has been an independent consulting geologist based in Houston for 20 years. Prior to that, he

worked for the Norwegian Continental Shelf Institute in Oslo and Trondheim, Norway, and for the Bureau of Economic Geology in Austin. Marc's consulting work has been in four main areas: creating multiclient nonproprietary regional studies of important productive trends in the Gulf Coast Basin, such as the Yegua, Miocene, and Wilcox; providing proprietary consulting services to the exploration and production sectors by interpreting a range of data types from 2- and 3-D seismic to well logs, whole cores, and dipmeter; authoring publications that present new concepts of use to the industry; and offering short course workshops on the topic of stratigraphic interpretation in growth faulted areas. Additional information is available on his Web site at [www.marcedwards.com](http://www.marcedwards.com). □

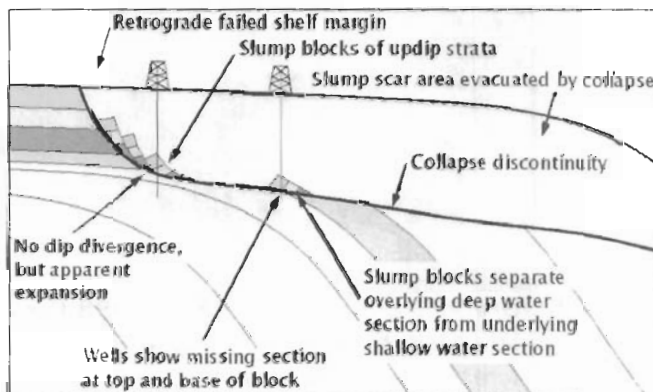


Figure 2.