

Figure 1. Isopach map of post-middle Cretaceous sediments (east of long 90°W); salt structures after Martin (1980).

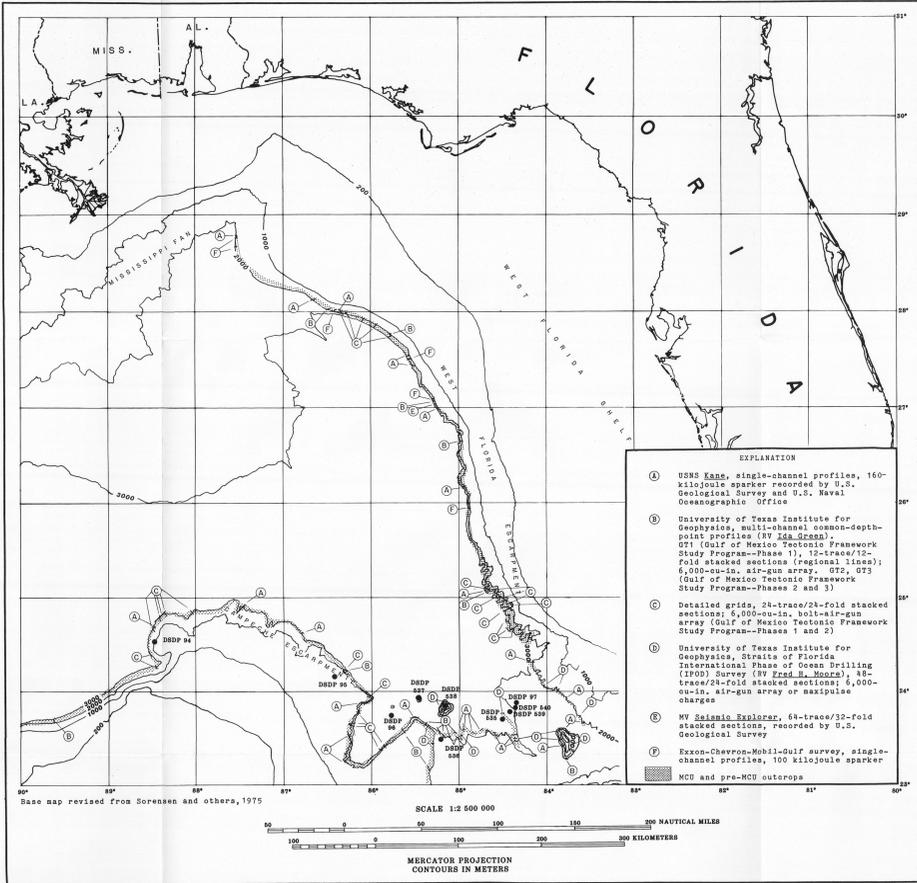


Figure 2. Distribution of the middle Cretaceous unconformity (MCD) and pre-MCD sediment outcrops in the eastern Gulf of Mexico. The annotated, heavy lines drawn across the stippled areas refer to parts of seismic lines used in the interpretation. Deep Sea Drilling Project (DSDP) sites are denoted by numbered solid circles.

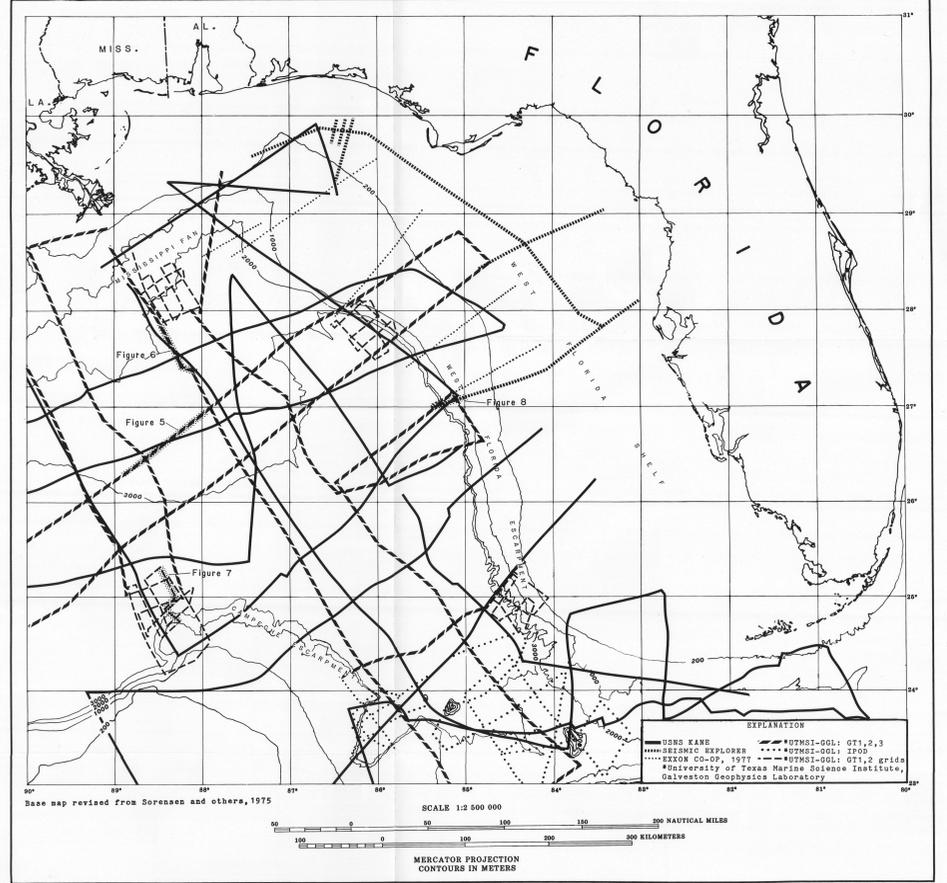


Figure 3. Track chart showing single-channel and multichannel seismic data used in this study.

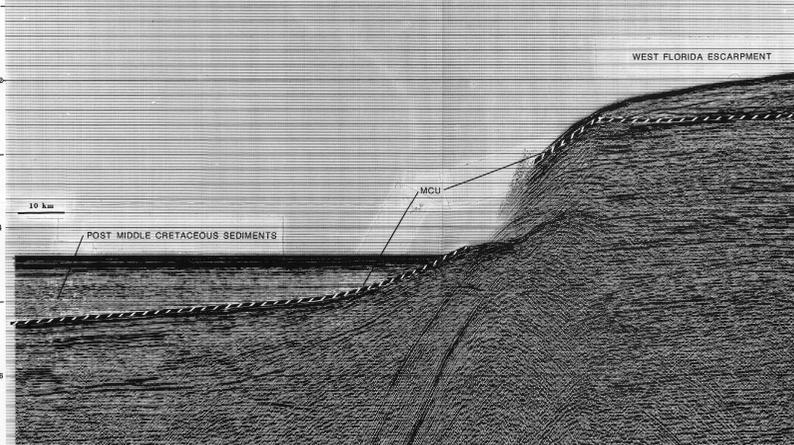
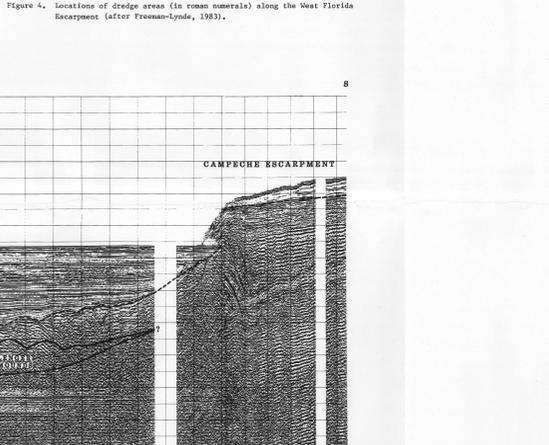
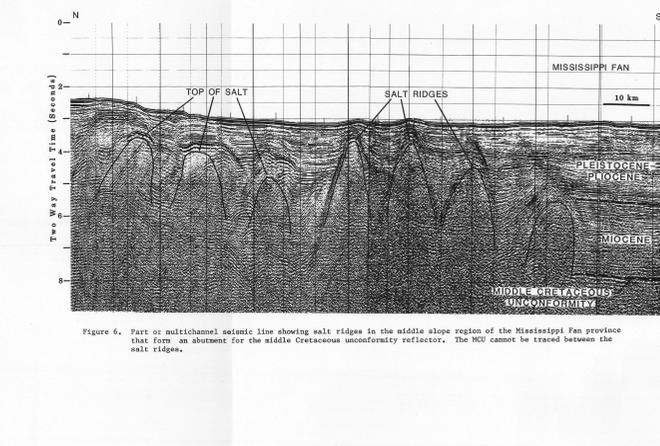
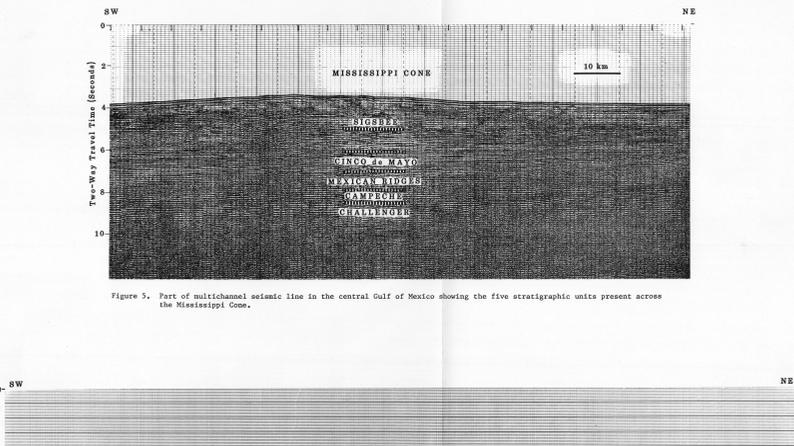
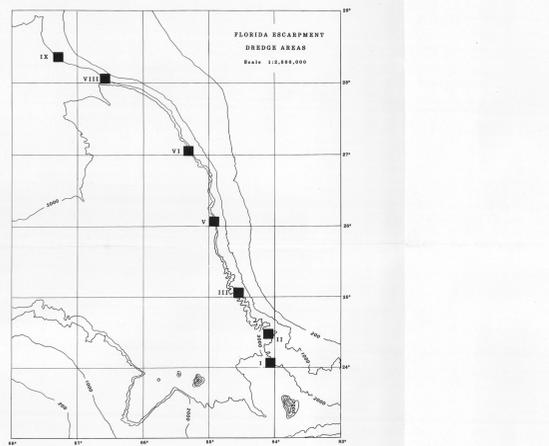


Figure 7. Part of multichannel seismic line showing salt in the Challenger unit. The core deeply buried, pillowlike mounds that pinch out just seaward of the Campeche Escarpment base. These salt features slightly arch the middle Cretaceous unconformity (MCD) and overlying sediments.

Figure 8. Part of multichannel seismic line (WV Seismic Explorer) showing post-middle Cretaceous sediments thinning against the West Florida Escarpment.

MAPS SHOWING DISTRIBUTION OF THE MIDDLE CRETACEOUS UNCONFORMITY
IN THE EASTERN GULF OF MEXICO

By
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INTRODUCTION

Several theories on the origin of the Gulf of Mexico basin have been introduced by various researchers (Sorensen, 1970; Forsman and Sorensen, 1971; Haxel and Sorensen, 1972; Wood and Halpern, 1974; Pilger, 1979; Butler and others, 1980; Sorensen and Sorensen, 1980; Sorensen and others, 1981). Although the latter two authors have reached one or another of the latter two theories, the latter two authors have generally recognized the early extension of the basin and the middle Cretaceous unconformity (MCD). This event represents a major shift from the Gulf of Mexico continental margin to the Gulf of Mexico basin.

Recent data collected by the U.S. Geological Survey and the University of Texas Institute for Geophysics (UTIG) have been used to map the MCD and its relationship to the deep stratigraphy and structure of the eastern Gulf of Mexico. The MCD is defined as the top of the middle Cretaceous (MCD) in the eastern Gulf of Mexico. The MCD is defined as the top of the middle Cretaceous (MCD) in the eastern Gulf of Mexico. The MCD is defined as the top of the middle Cretaceous (MCD) in the eastern Gulf of Mexico.

DATA COLLECTION

Single-channel data (400-kilohertz sparker) were collected along the USNS Kane in 1980 by the U.S. Geological Survey and the U.S. Naval Oceanographic Office (USNO). The data were processed by the U.S. Geological Survey and the U.S. Naval Oceanographic Office.

SEISMIC CHARACTERISTICS

Seismic units in the eastern Gulf of Mexico are (from oldest to youngest) the Challenger unit, the Campeche unit, the West Florida Escarpment, the Middle Cretaceous, the Oligocene, and the Neogene. The Challenger unit is the easternmost unit and is characterized by its depth and weak seismic signal. The Campeche unit is the second unit and is characterized by its depth and weak seismic signal. The West Florida Escarpment is the third unit and is characterized by its depth and weak seismic signal. The Middle Cretaceous is the fourth unit and is characterized by its depth and weak seismic signal. The Oligocene is the fifth unit and is characterized by its depth and weak seismic signal. The Neogene is the sixth unit and is characterized by its depth and weak seismic signal.

RESULTS OF SEISMIC ALONG THE WEST FLORIDA ESCARPMENT

In late 1981, a dredging program was conducted along the West Florida Escarpment. The program was conducted by the U.S. Geological Survey and the U.S. Naval Oceanographic Office. The program was conducted by the U.S. Geological Survey and the U.S. Naval Oceanographic Office.

CONCLUSIONS

The MCD is a major tectonic event that is characterized by its depth and weak seismic signal. The MCD is a major tectonic event that is characterized by its depth and weak seismic signal. The MCD is a major tectonic event that is characterized by its depth and weak seismic signal.