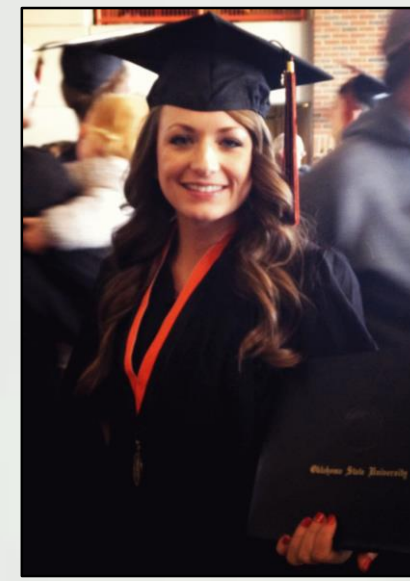


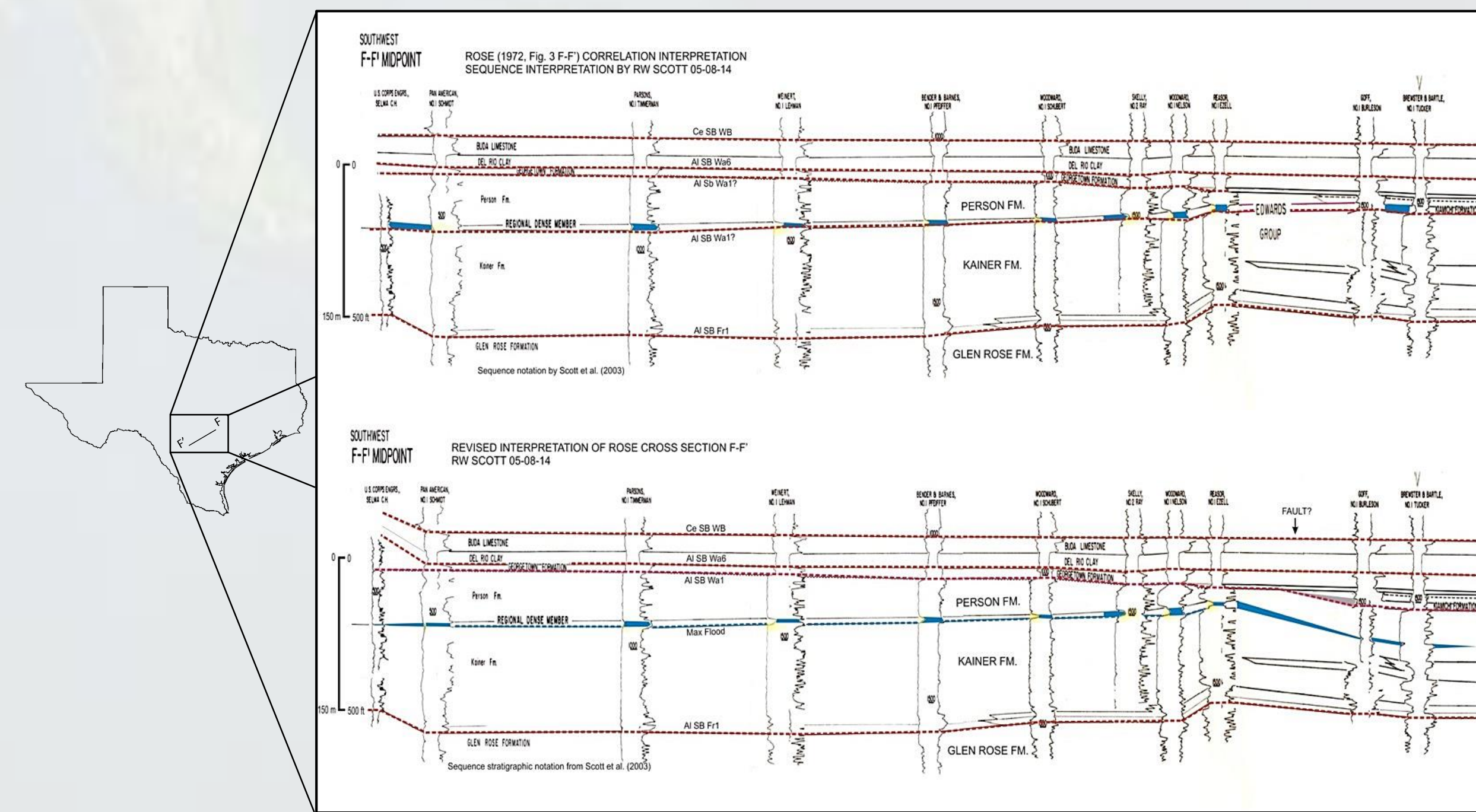
Middle-Upper Albian Sequence Stratigraphy: Interior Shelf to Shelf Margin, Comanche Shelf, Texas

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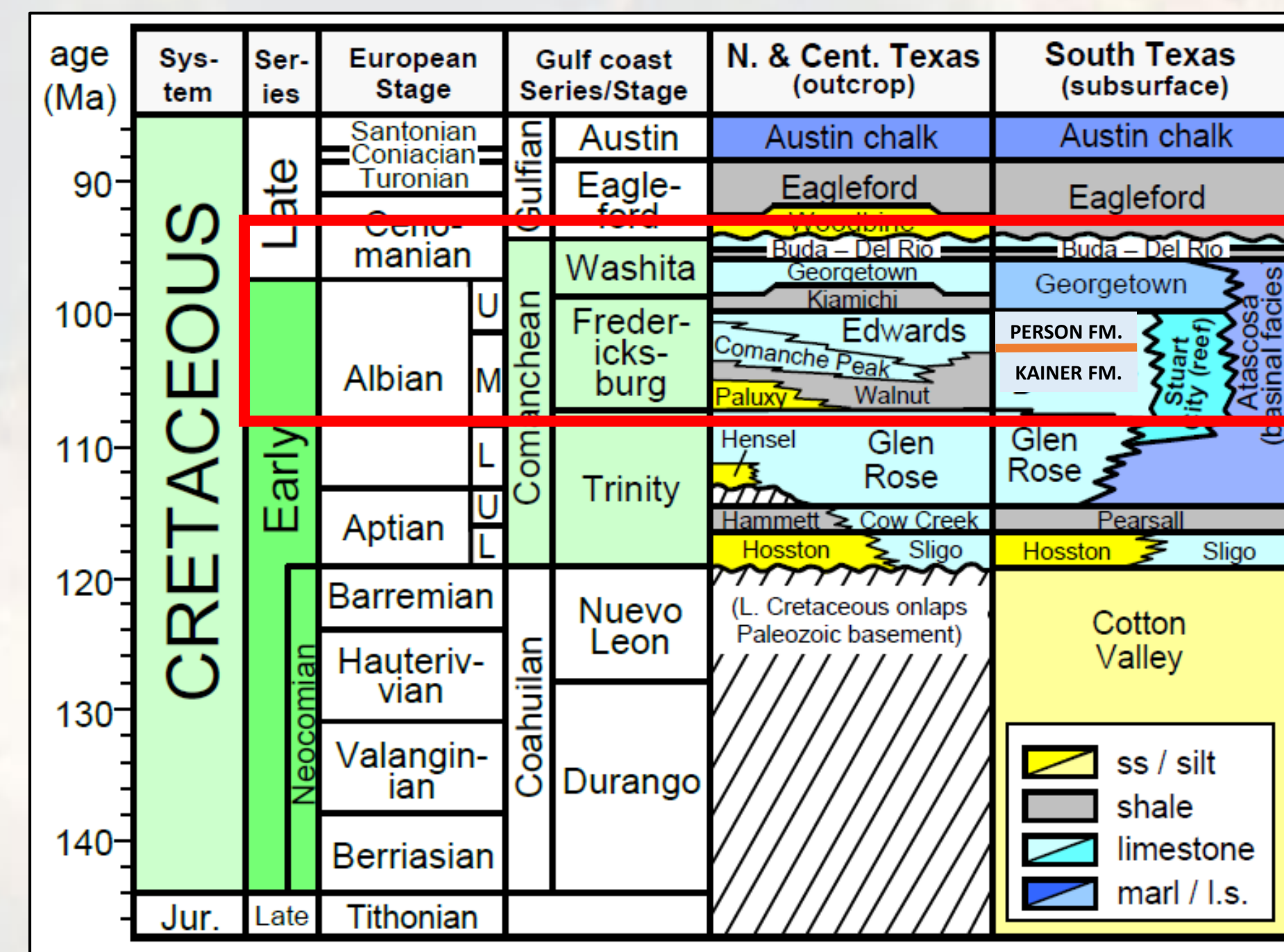


Abstract

This project is designed to authenticate one of two hypotheses existing for Comanchean stratal correlation between subsurface intervals in the Gulf Coast Basin of East-central Texas with intervals cropping out in the Pecos River Valley of West Texas. Rose (1972) interprets correlation of the informal regional dense member (RDM) with the Washita-age Kiamichi formation while Scott's 2007 correlation is within the Fredericksburg-age outcrops. Compiled biostratigraphic and chemostratigraphic evidence are needed to conduct precise correlations. Petrographic analyses provide a basis for correlation via age-restrictive benthic foraminifera and allow detailed interpretation of depositional environments. Geochemical processing for $\delta^{13}C$, $\delta^{18}O$ and TOC offer evidence of depositional environment and diagenesis, subaerial exposure contacts, and oceanic oxic conditions at the time of deposition to further constrain the nature and ages of stratigraphic contacts. Constructing accurate stratal correlation interpretations is a necessity for future development, interpretation, and exploitation of the Early Cretaceous Comanche Shelf carbonates to develop accurate hydrocarbon models in Texas.



Stratigraphy



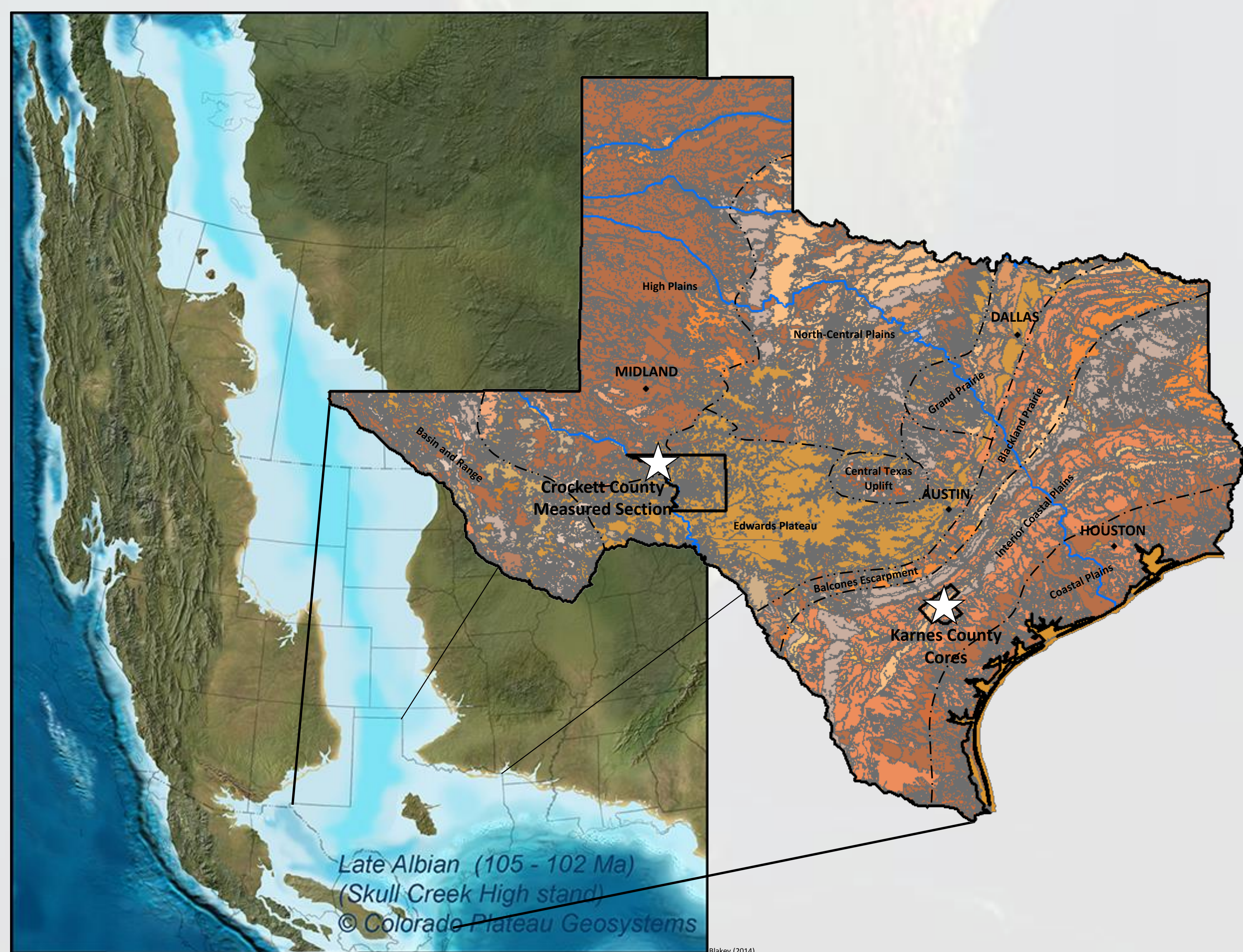
Methods

- Document, measure, and sample Crockett county outcrops and Karnes County cores
- Construct lithostratigraphic logs to provide visualization of depositional cycles
- Conduct detailed petrographic analyses of microfossils for biostratigraphic data
- Incorporate isotope geochemical data analyses for evidence of environmental parameters during diagenesis
- Identify fossil zones, sequence boundaries, and subaerially exposed intervals to add legitimacy to interpreted correlation of outcrop formations with subsurface formations

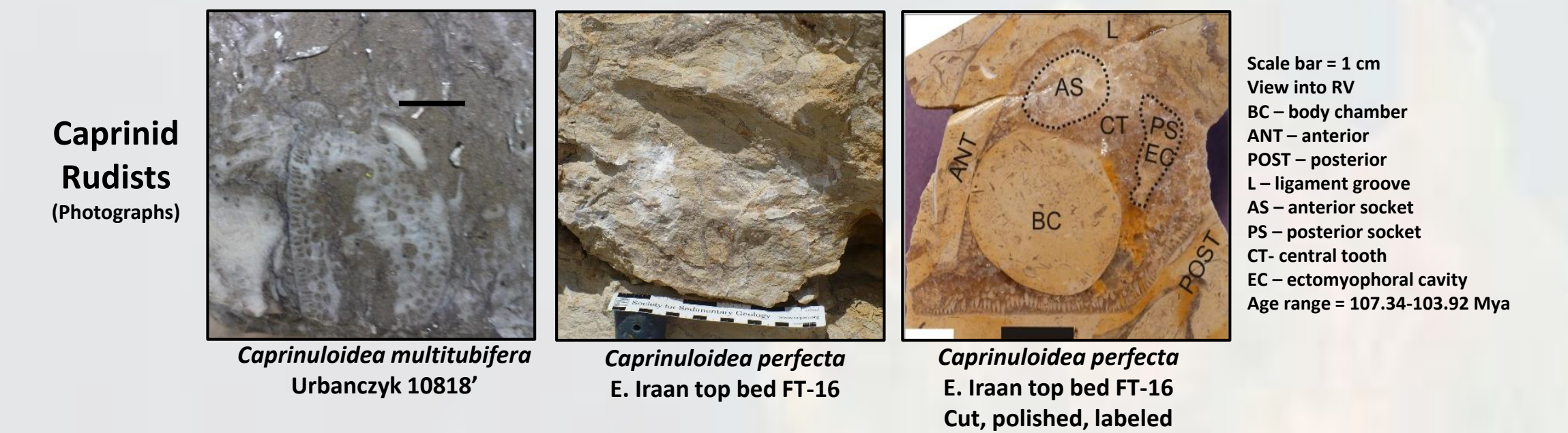
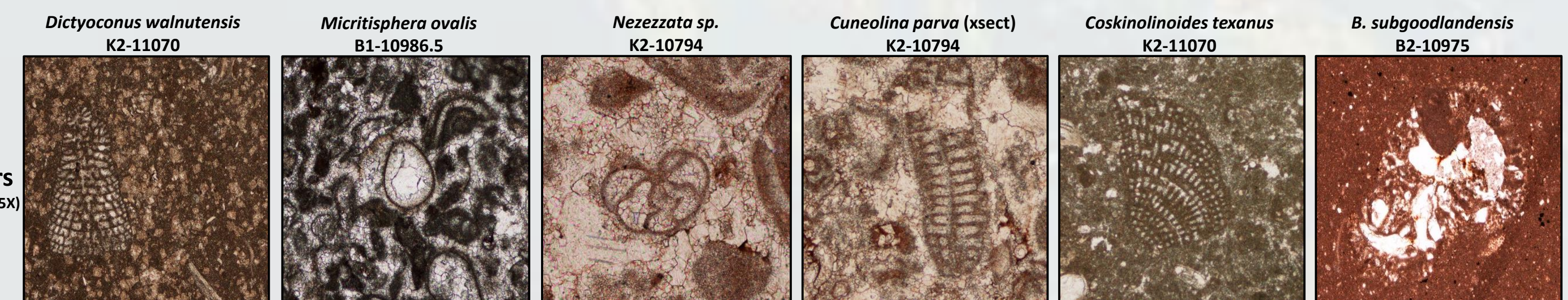
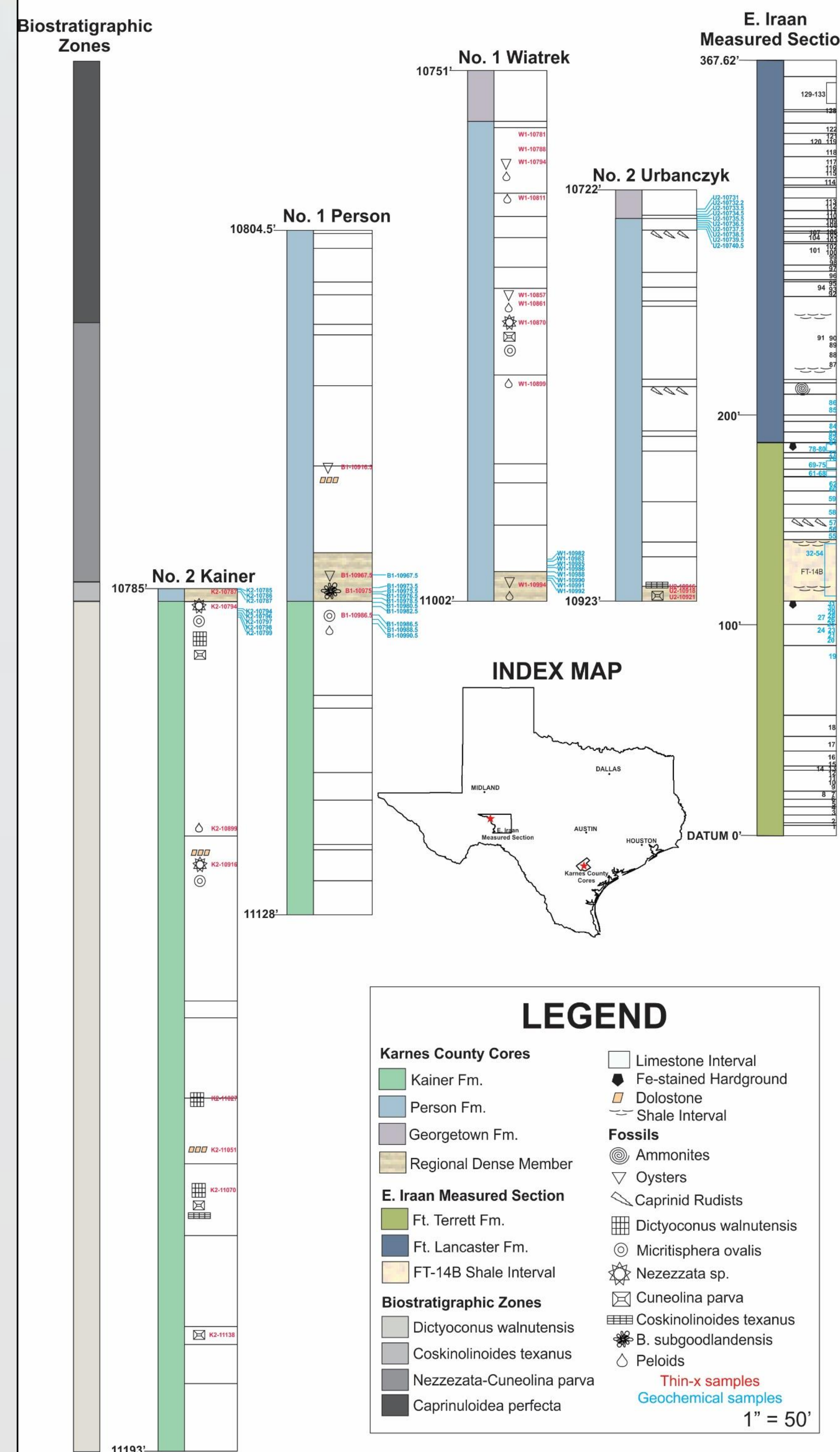
Results and Conclusions

Foraminifera in thin sections support the correlation of the Kainer Formation with the Edwards Formation and its equivalent units. *Dictyoconus walnutensis*, a benthic foraminifer found in the Kainer well, is diagnostic of the Edwards Formation and its lateral equivalent units north and west of Karnes County. The longer ranging *Buccirenata subgoodlandensis* is also in the RDMB and the upper part of the Person Formation. Caprinid rudists in the Person Formation cores are diagnostic of Fredericksburg Group formations. *Caprinuloidea perfecta* is the nominal species of the zone in the Shell No. 2 L. Urbanczyk core from 10,738 ft to 10,818.5 ft 2.5 ft below the top of the Person in the cyclic and marine members. *C. perfecta* and *C. multitubifera* are also found in the Schroeder core of the Stuart City Formation overlapping with *Dictyoconus walnutensis* confirming their significance as indicators of Fredericksburg formations. Future isotopic evidence at these contacts will initiate further interpretation of subaerial exposure surfaces.

Study Area



Albian Fredericksburg-Washita Sequences



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