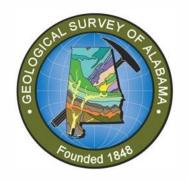
SOUTHEAST OFFSHORE STORAGE RESOURCE ASSESSMENT (SOSRA) PROJECT NUMBER: DE-FE0026086

EASTERN GULF OF MEXICO

Jack C. Pashin and Jenny Meng, Oklahoma State University Denise J. Hills, Guohai Jin, and Marcella R. Redden, Geological Survey of Alabama







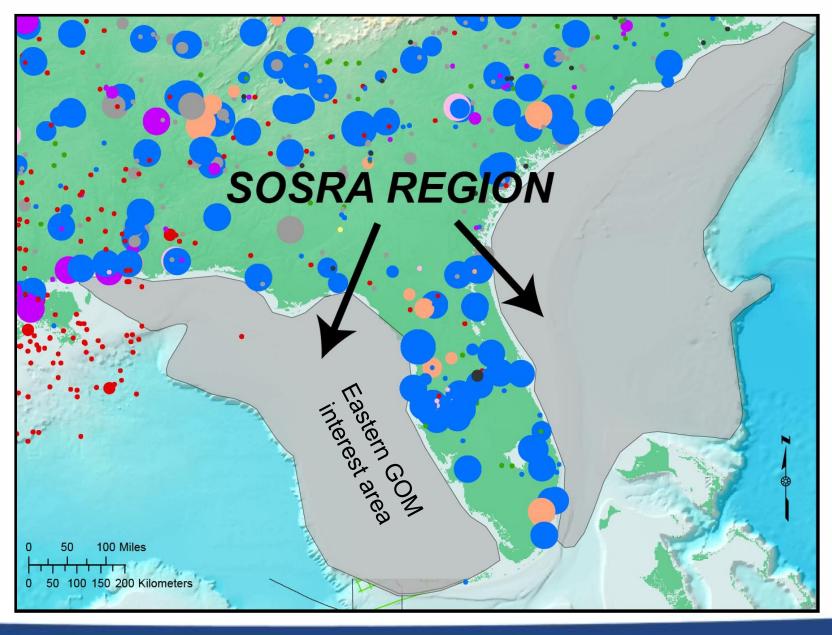




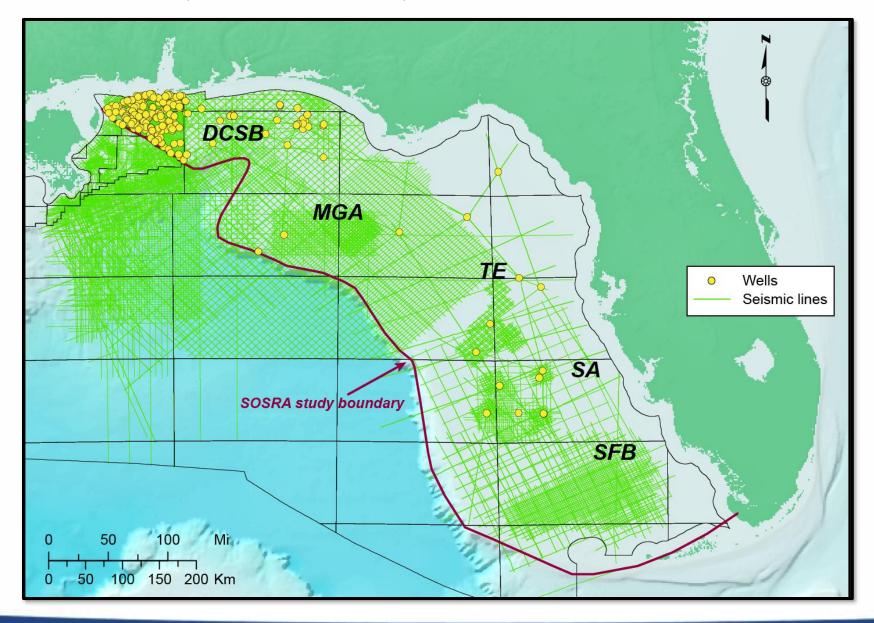


SECARB 12th Annual Stakeholders' Briefing Hyatt Regency, Atlanta, GA March 8-9, 2017

SUMMARY — SOSRA



STUDY AREA AND SUBREGIONS



DCSB DeSoto Canyon Salt Basin

MGA Middle Ground Arch

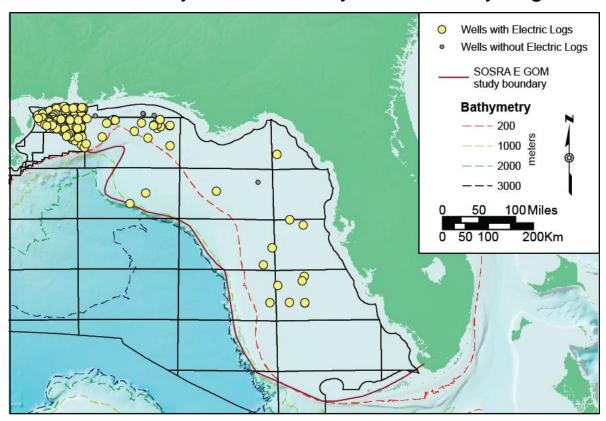
TE Tampa Embayment

SA Sarasota Arch

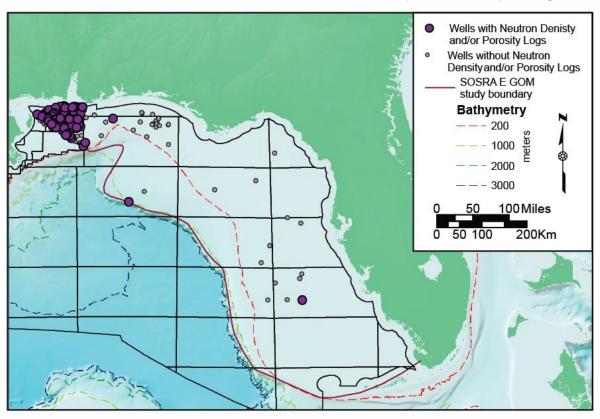
SFB South Florida
Basin

GEOPHYSICAL WELL LOGS

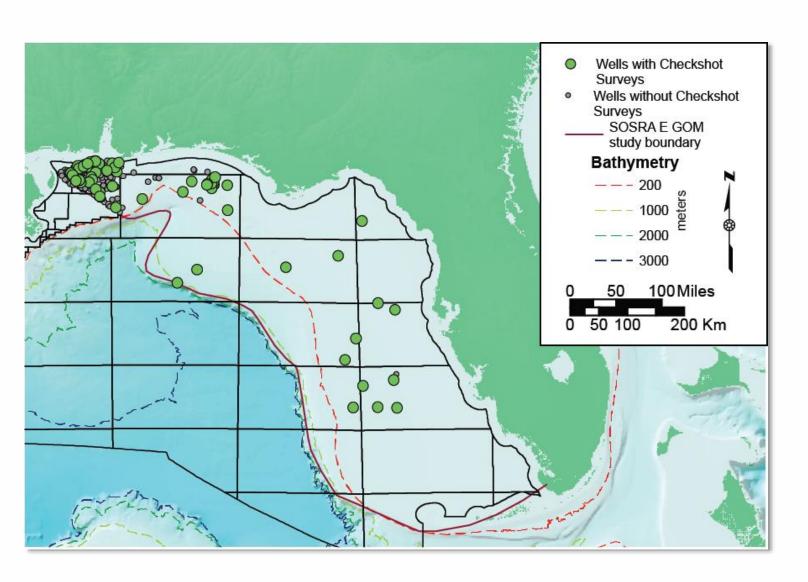
Gamma Ray, SP-Resistivity, Bulk Density Logs



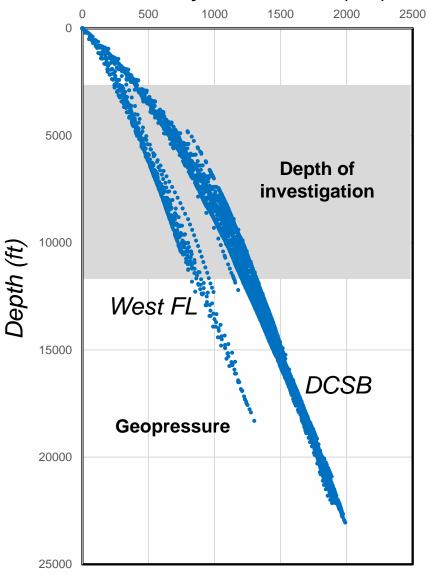
Compensated Neutron and Density Porosity Logs



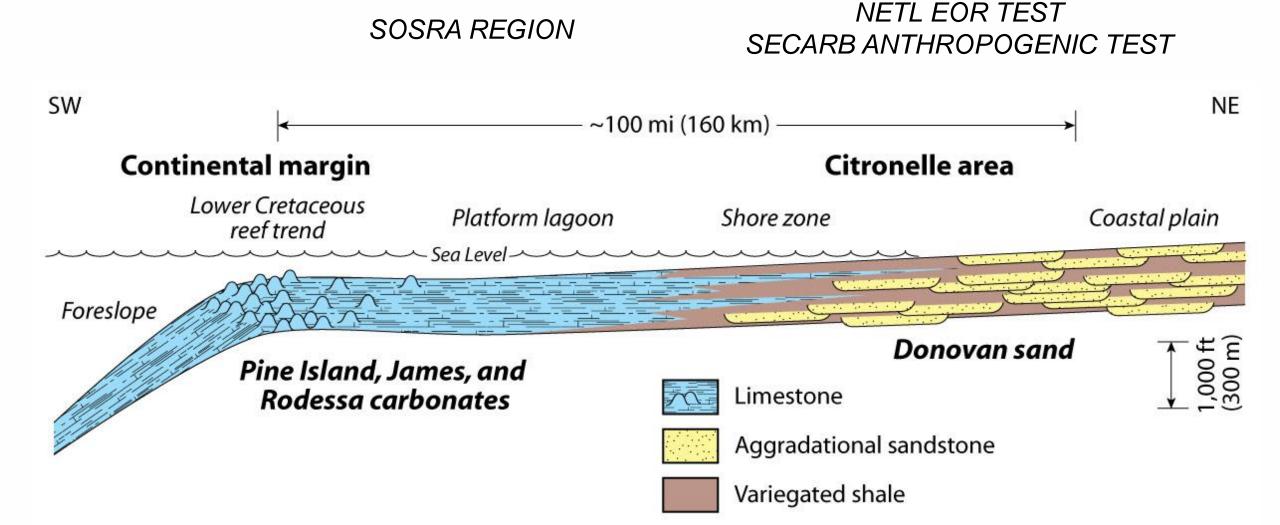
SEISMIC VELOCITY SURVEYS



One-Way Travel Time (ms)



CRETACEOUS FACIES



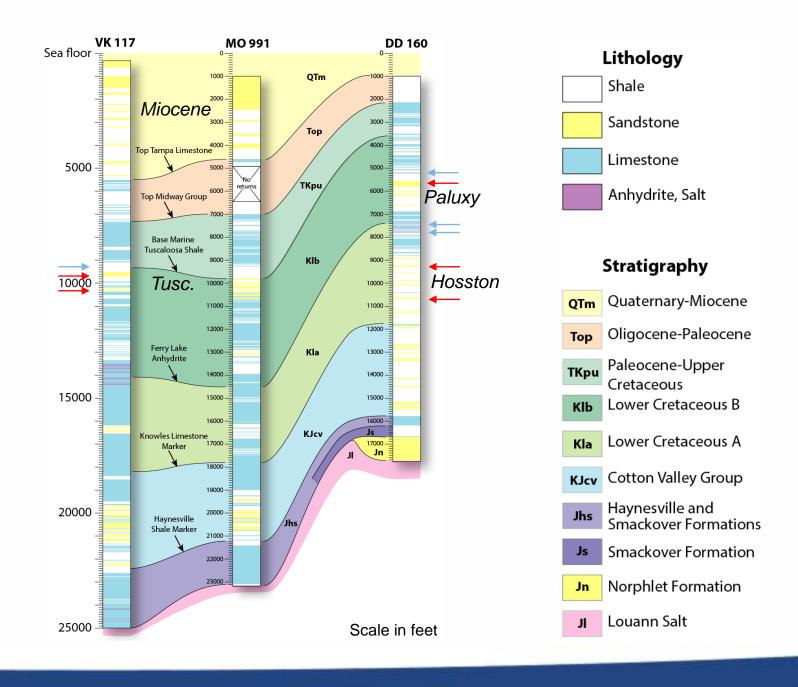
Pashin et al. (2014)

DESOTO CANYON SALT BASIN LITHOLOGIC COLUMNS

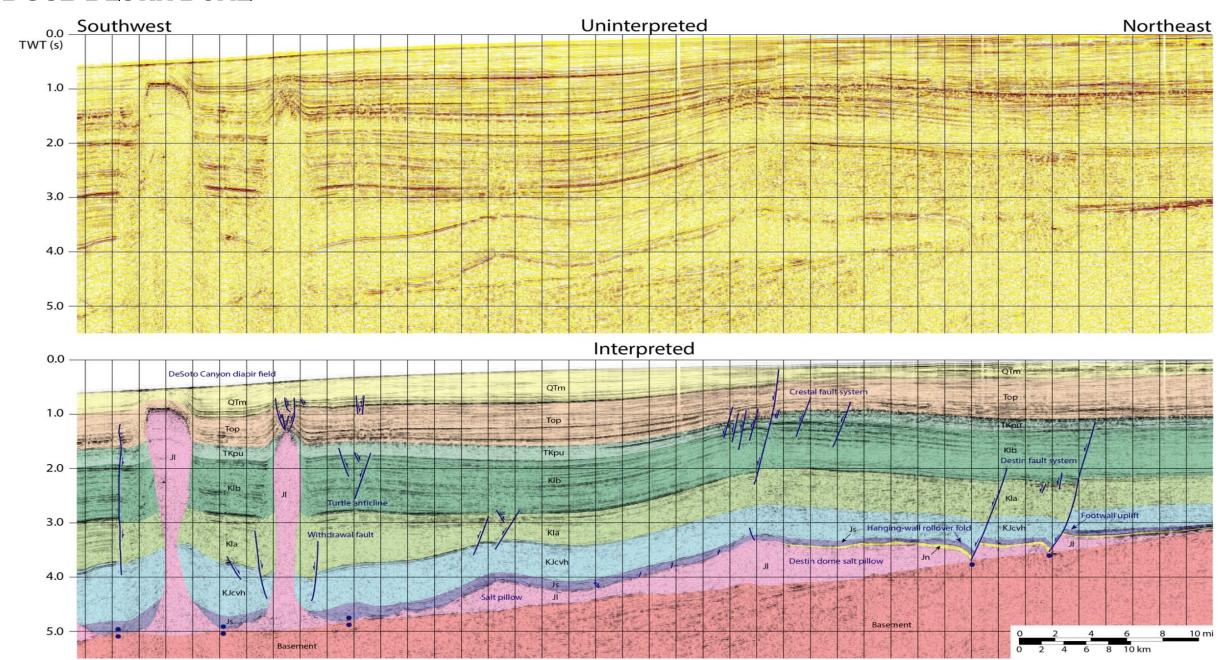
Major objectives in Miocene sandstone, Tuscaloosa Group, Paluxy Formation, Hosston Formation

Abundant regional seals

→ Seal → Sink



DCSB DESTIN DOME

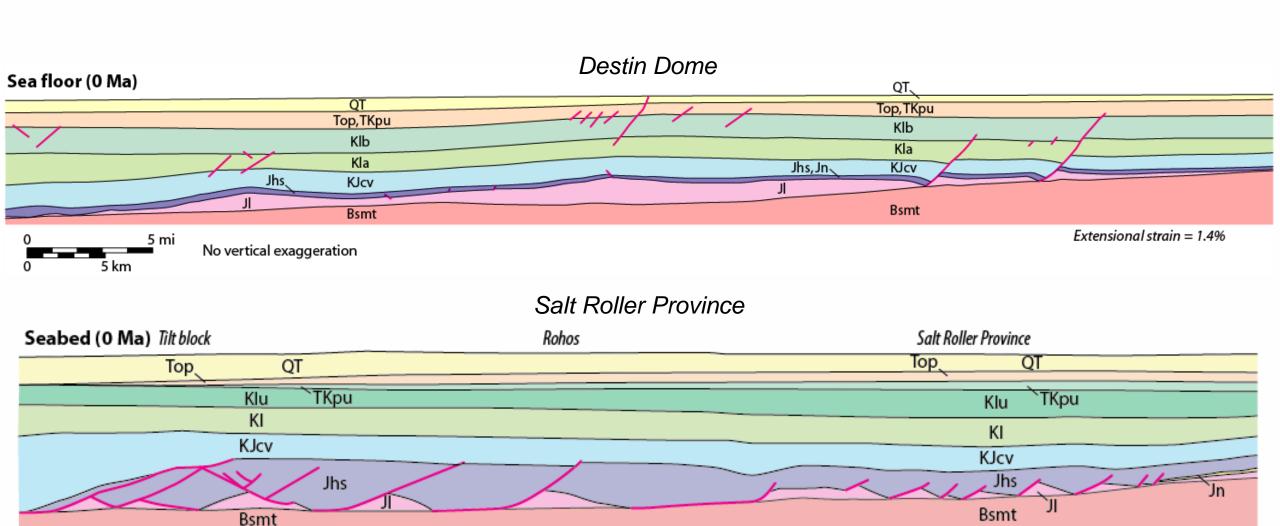


DEPTH CONVERTED STRUCTURAL CROSS SECTIONS, DESOTO CANYON SALT BASIN

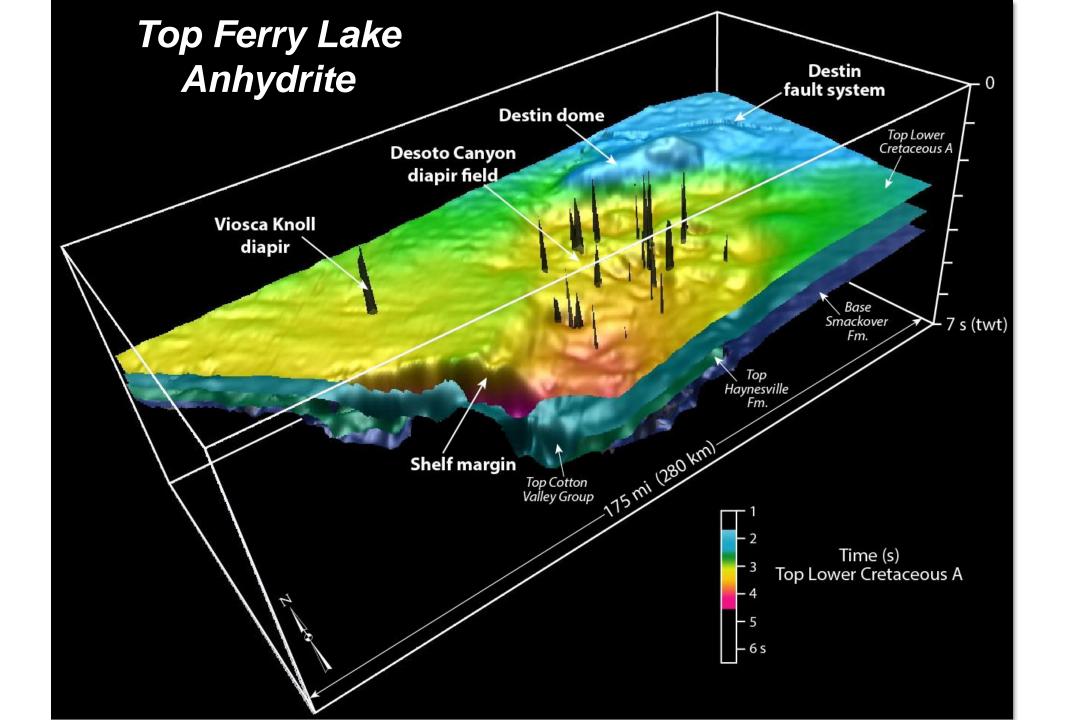
5 mi

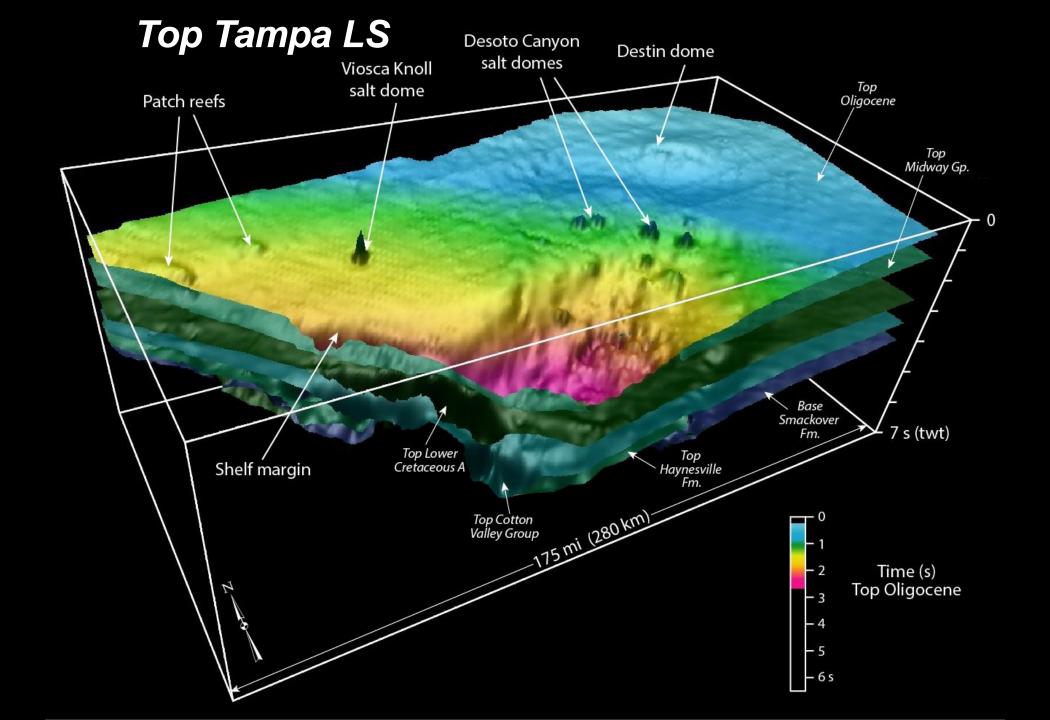
5 km

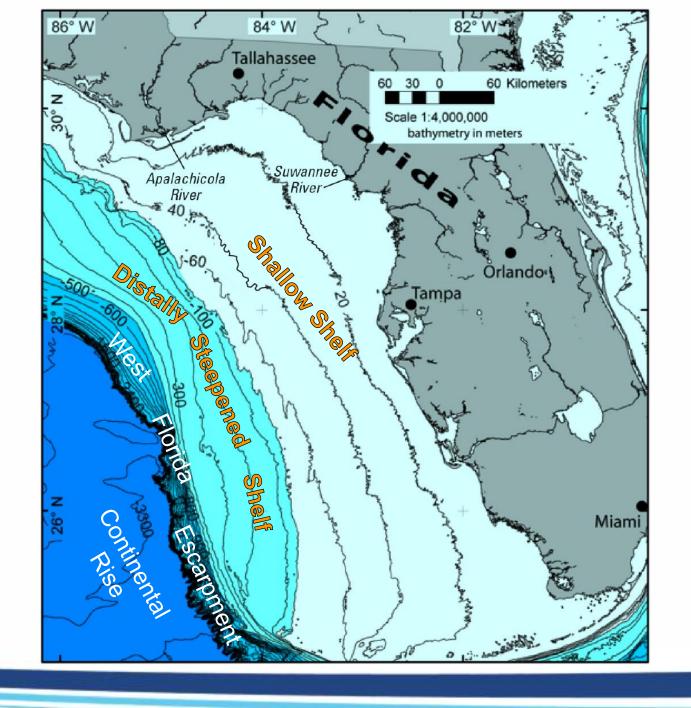
No vertical exaggeration



Extensional strain = 52.0%





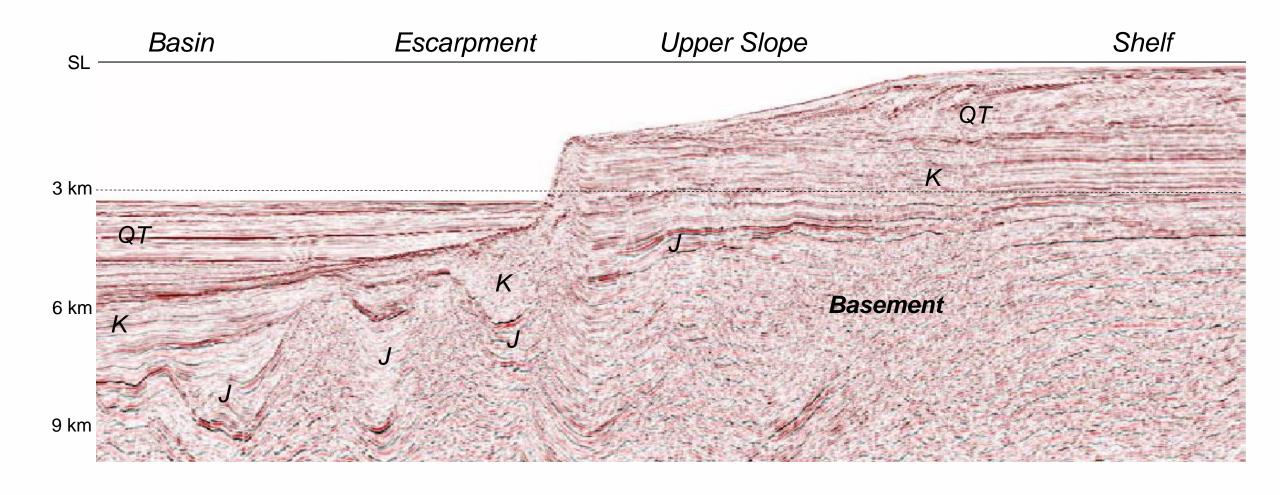


WEST FLORIDA SHELF BATHYMETRY

- Broad, shallow, region near shore (NE of 80 m contour).
- Distally steepening outer shelf leading to West Florida Escarpment.

Subsystem/Series/Stage Lithology Stratigraphic Unit FLORIDA – LITHOLOGIC COLUMN Suwannee Limestone Vicksburgian Jacksonian Ocala Limestone Cedar Keys Formation Avon Park Formation Lawson Upper member Formation Lower member Rebecca Shoal Dolomite Claibornian Oldsmar Formation Sabinian Cedar Keys Formation Formation Midwayan Dollar Bay Big Cypress Group Navarroan Formation Tayloran Formation Pine Key Gordon Pass Formation Austinian Card Sound Formation Eaglefordian Atkinson Formation Marco Junction Woodbinian Formation Corkscrew Swamp Rattlesnake Hammock Formation Rookery Bay Formation Lake Trafford Washitan-Formation Fredericks-Dollar Bay **Sunniland Formation** Formation Gordon Pass Formation Rattlesnake Hammock Formation Lake Trafford Formation Punta Gorda Anhydrite Sunniland Formation Trinitian Punta Gorda Anhydrite Glades Group Able Member Lehigh Acres Formation Seal Able Member Twelve Mile Sink Twelve Mile Member Member West Felda Shale Member West Felda Shale Membe Pumpkin Bay Formation ■ Nuevoleonian Pumpkin Bay Formation Bone Island Formation Durangoan Bone Island Formation Lacastian Wood River Formation Unnamed volcanic complex Wood River Formation Zuloagan Limestone Dolostone Anhydrite Roberts-Ashby et al. (2015)

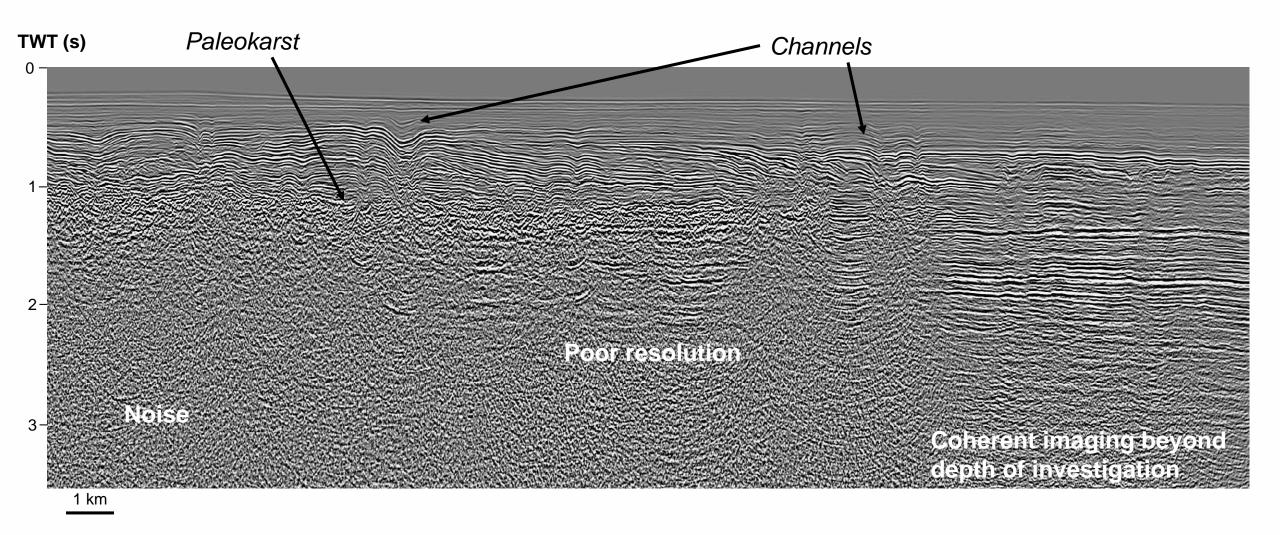
WEST FLORIDA SHELF-ESCARPMENT



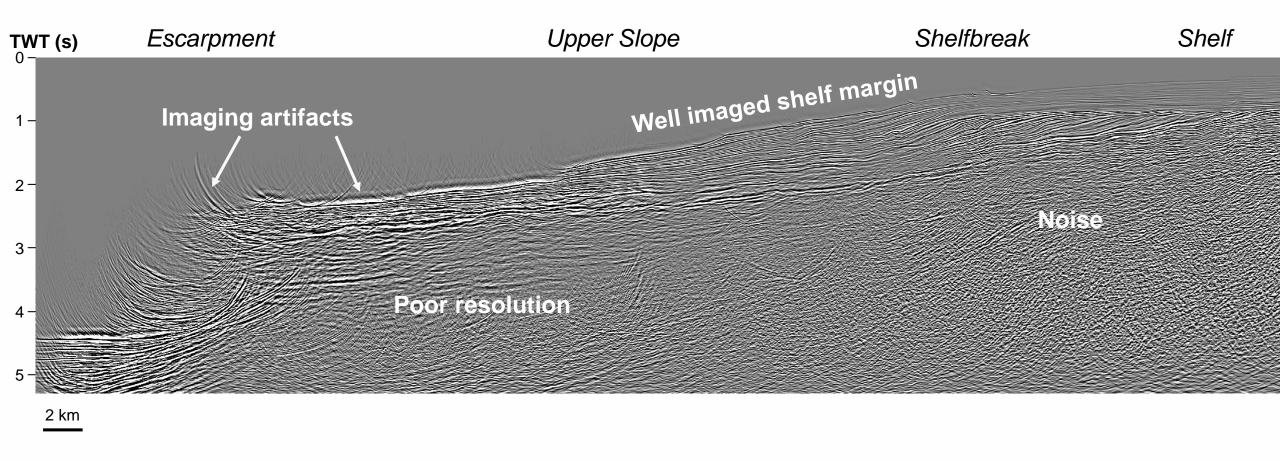
VE ~4x

Roberts and Erickson (2009)

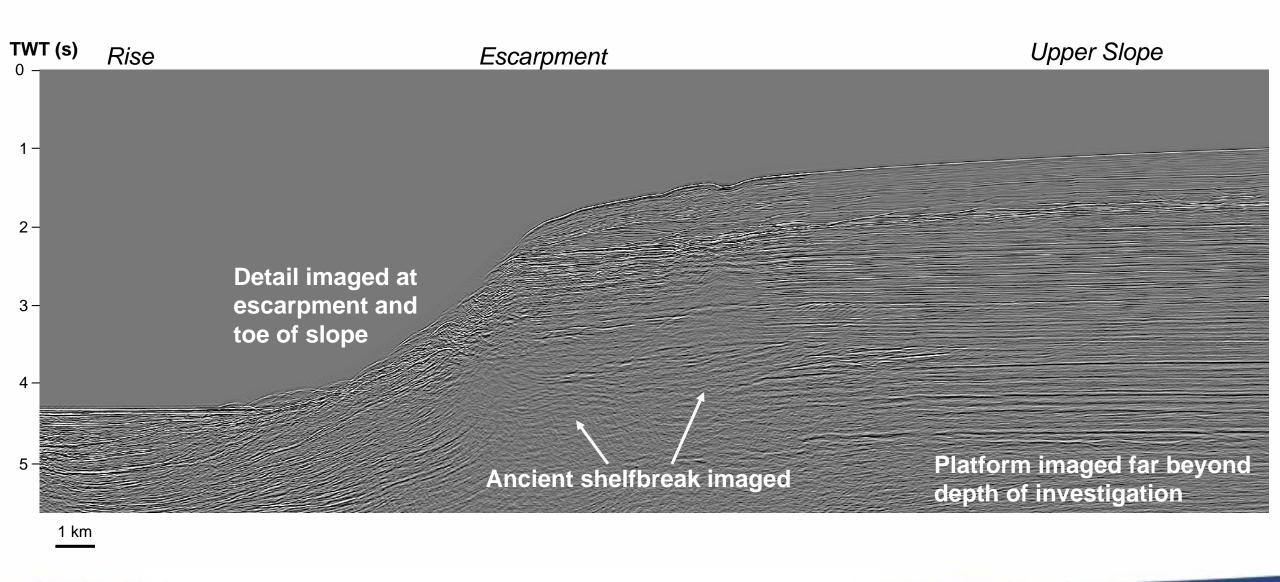
DATA QUALITY — WEST FLORIDA



DATA QUALITY — WEST FLORIDA



DATA QUALITY — WEST FLORIDA



OBSERVATIONS AND ISSUES

- Large portfolio of potential sinks and seals in eastern Gulf of Mexico region.
- Seismic and well data being interpeted.
- Geopressure >12,000 ft; main storage prospects in Cretaceous-Miocene section.
- Compensated density and neutron porosity data limited.
- Multiple sandstone formations prospective in DeSoto Canyon Salt Basin; abundant mudrock and carbonate seals, including chalk.
- Relatively simple Cretaceous carbonate platform and distally steepened Cenozoic shelf in West Florida.
- Variable seismic quality in West Florida.
- Porous dolomite below anhydrite seals.