

# Hunting Success – Where Next? Offshore Pliocene Interval, Gulf of Mexico Basin

**Ismail Halim Faruqi**

**Alexander P. Bump (alex.bump@beg.utexas.edu)**

**Susan D. Hovorka (susan.hovorka@beg.utexas.edu)**

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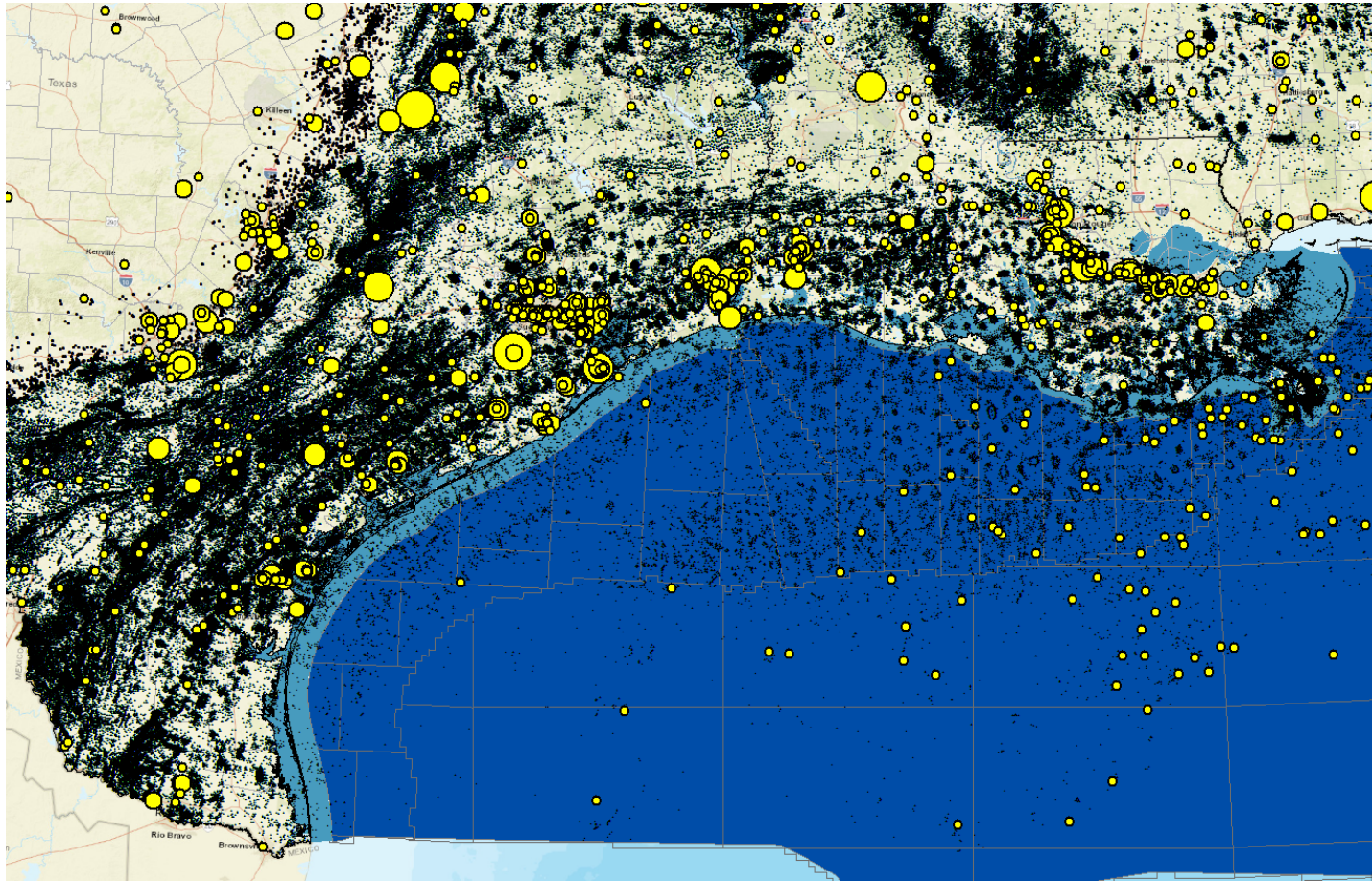


BUREAU OF  
ECONOMIC  
GEOLOGY



# Problem Statement and Research Motivation

Extend the understanding of CO<sub>2</sub> storage evaluation in state waters further offshore federal waters Gulf of Mexico



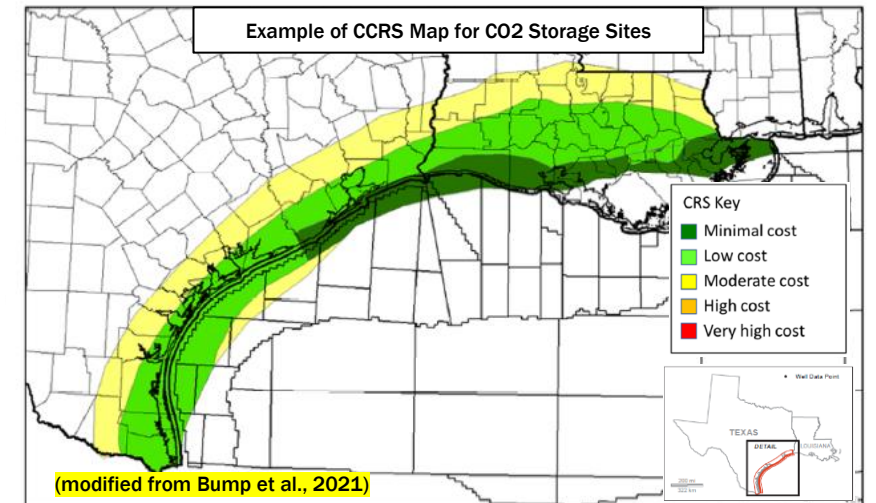
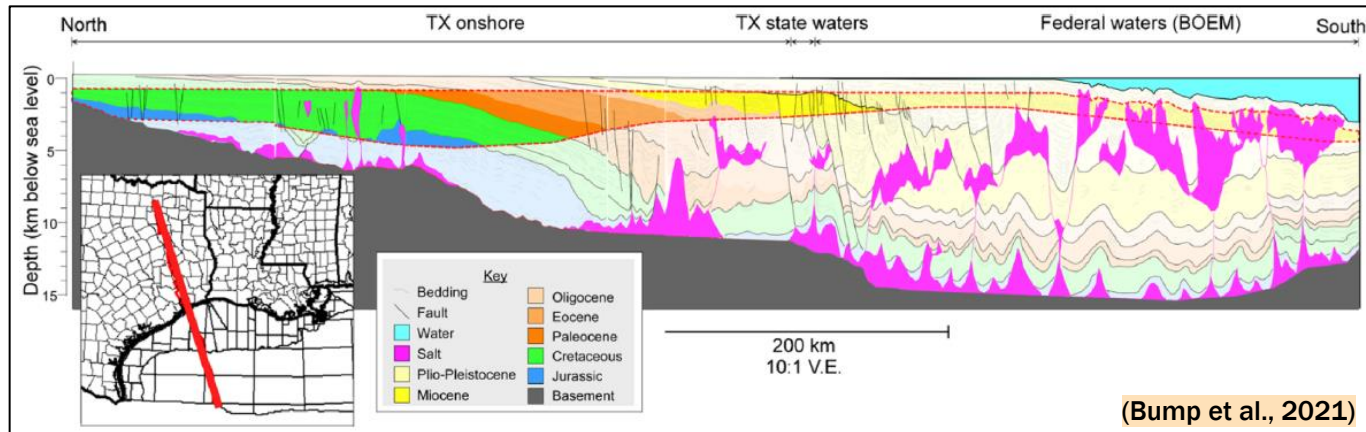
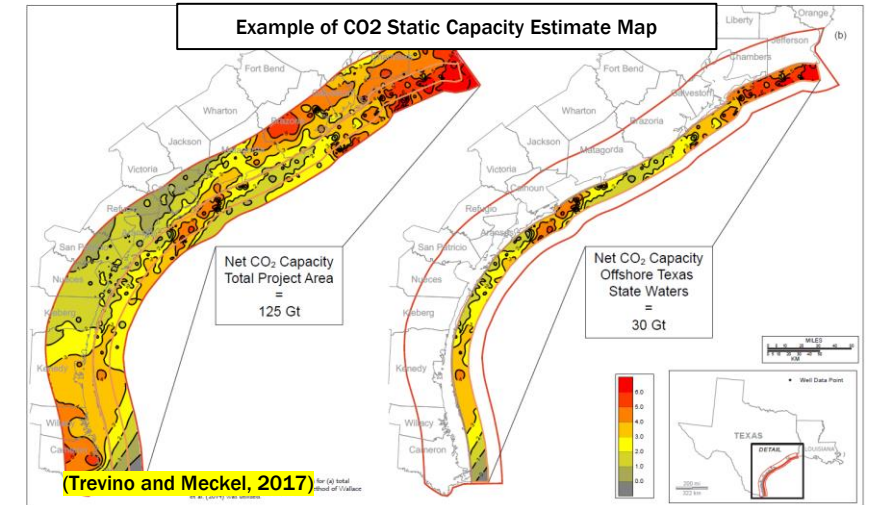
- Gulf Coast has high potential for CCS
- Interest to date has focused on onshore and state waters
- BOEM is expected to announce regulations for CCUS in federal waters
- What is the storage potential of Federal waters?

# Research Output

## Understanding of Gulf of Mexico Shelf Potential and Systematic approach for CO<sub>2</sub> storage basin-scale evaluation

### The Prize?

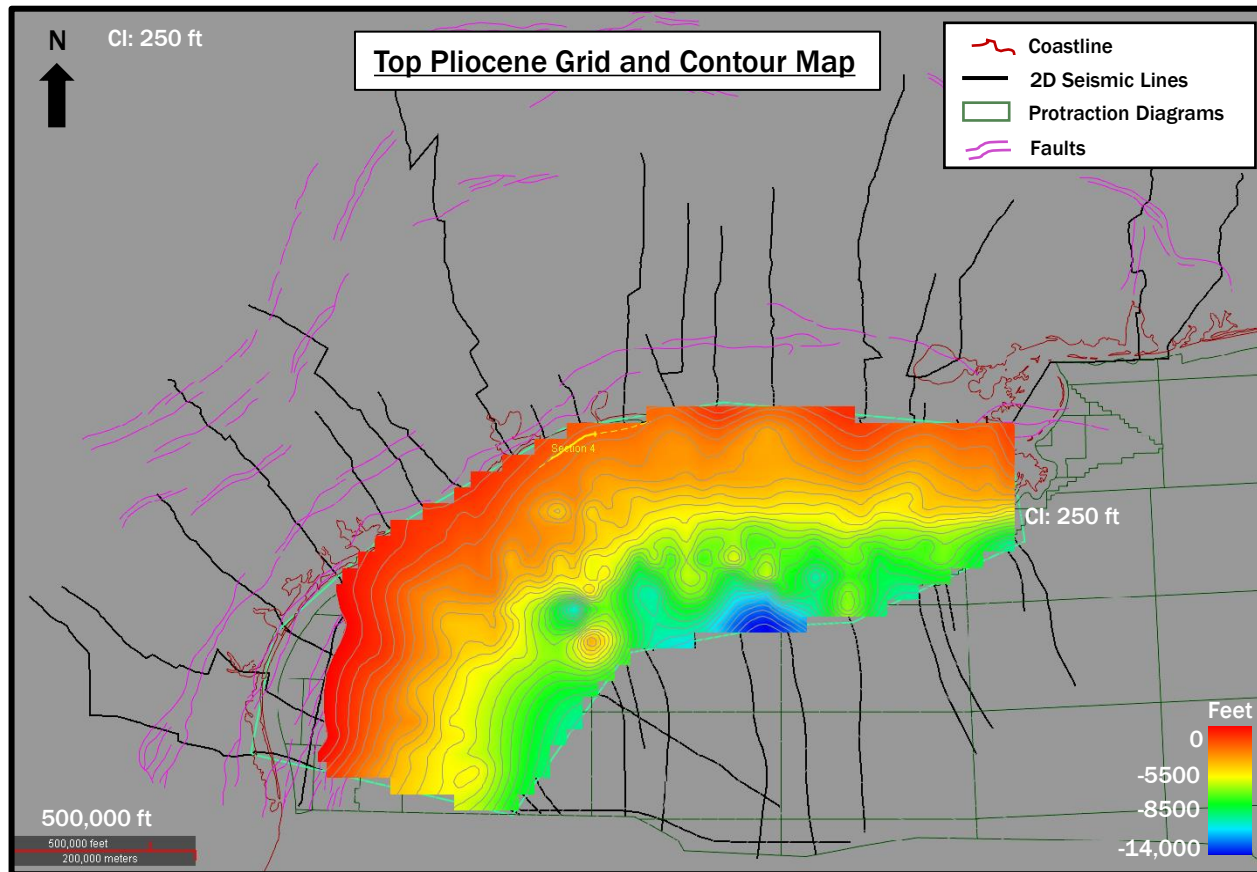
- Operator – Baseline potential and regional variation
- Investor – Assurance
- Regulator – permitting, project spacing
- Land owner – Resource assessment and value
- Policymakers – Pipeline routes and strategic planning



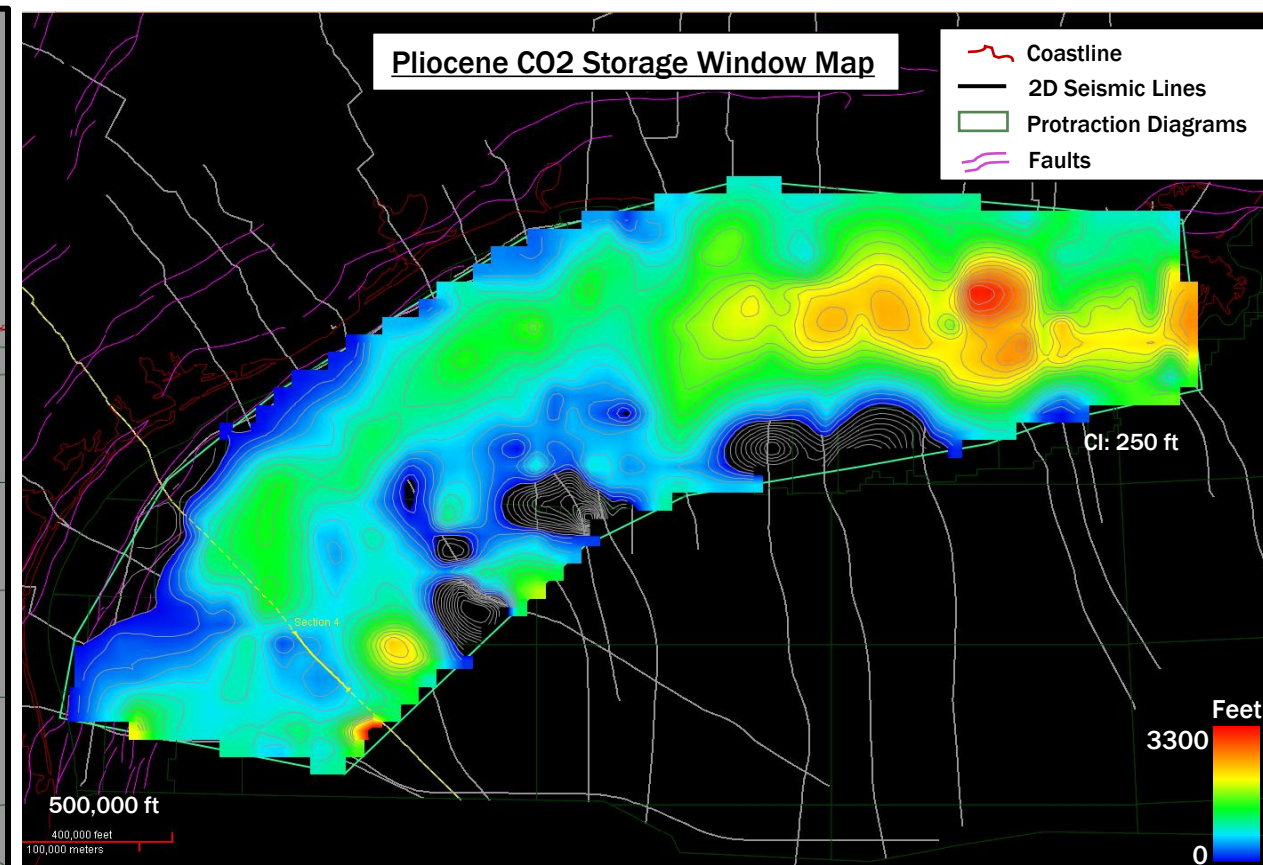


# Pliocene Interval Seismic Mapping Results

Top Pliocene grid, contour, and isopach map – observable paleoshelf trend, CO<sub>2</sub> storage window



- Observable paleoshelf edge with NE – SW trend
- Continental shelf toward shelf break, there are several salt diapirs
- Depocenter located in SE part of research area

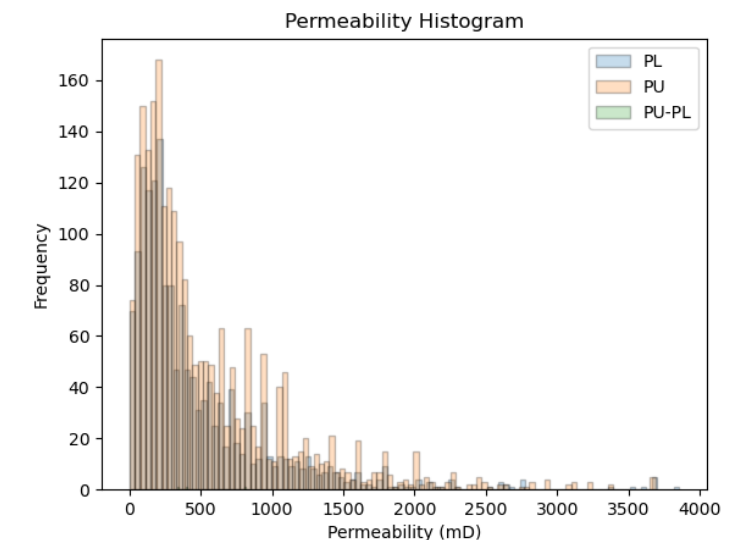
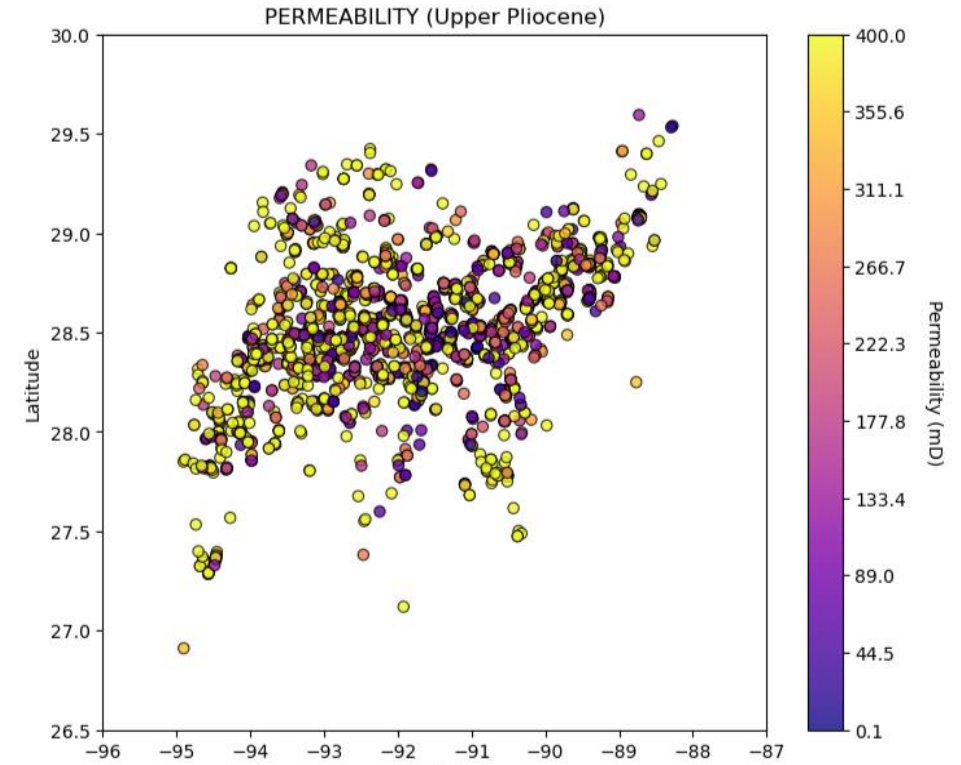
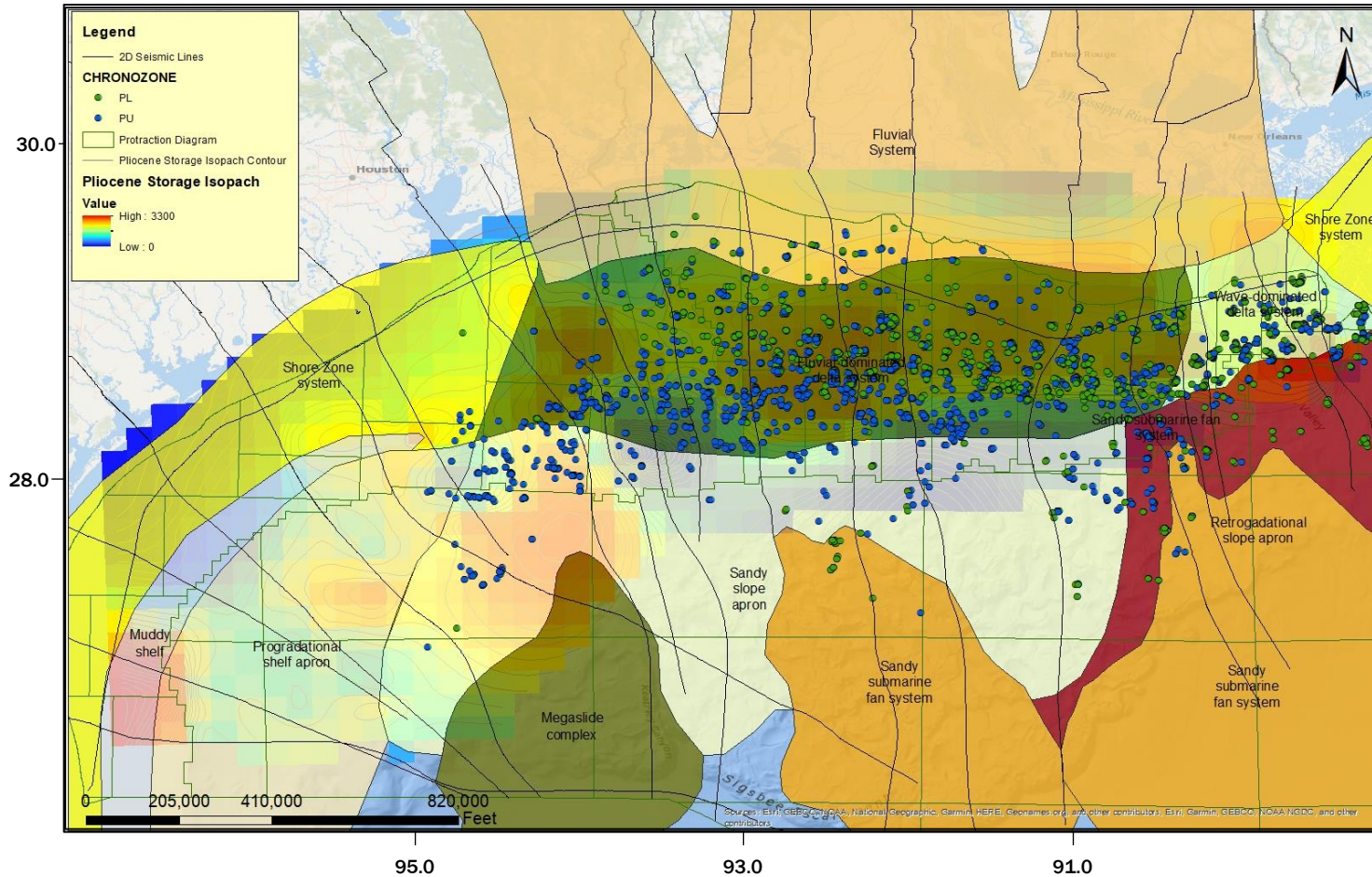


- Pliocene strata thicken toward basinal axis.
- Thickest Pliocene sedimentary interval lies in the southern part of Offshore Louisiana and Southeastern part of offshore Texas.



# Reservoir Properties Distributions

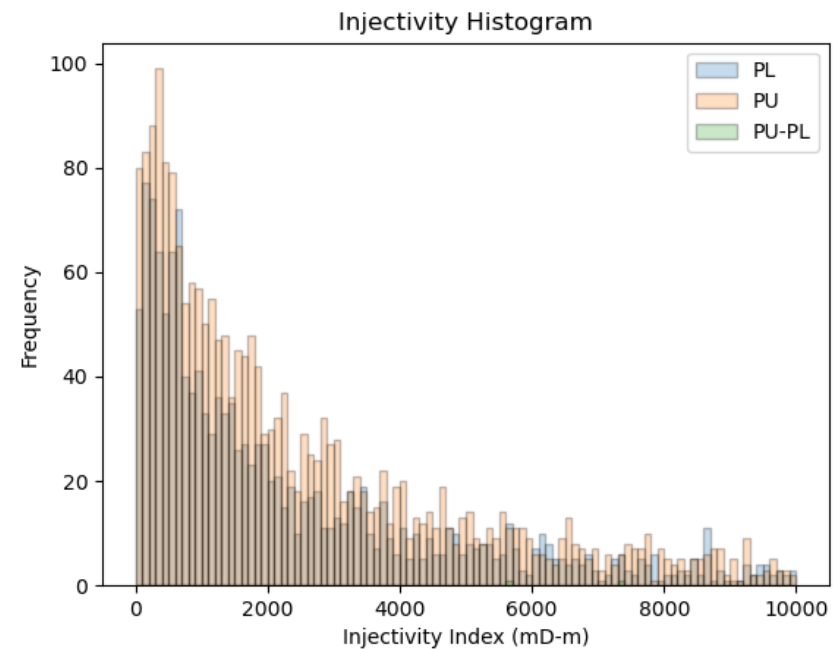
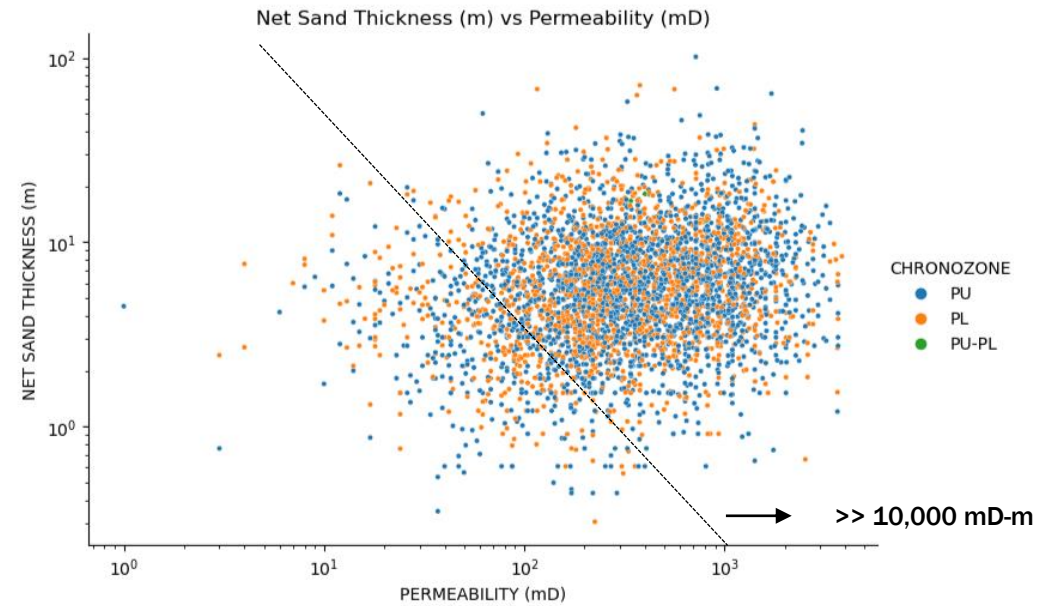
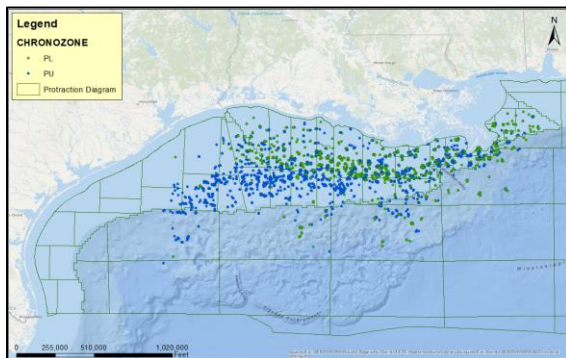
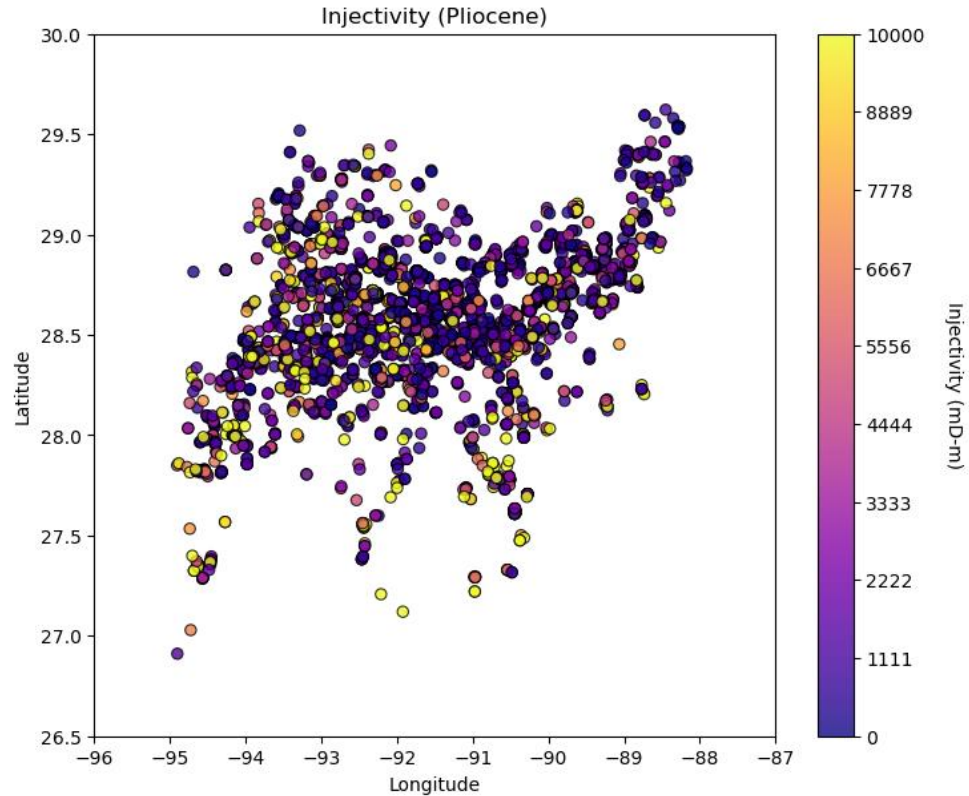
## Pliocene permeability distributions map



There is no strong correlation between facies and reservoir properties.

# Injectivity

## Pliocene injectivity and pressure capacity

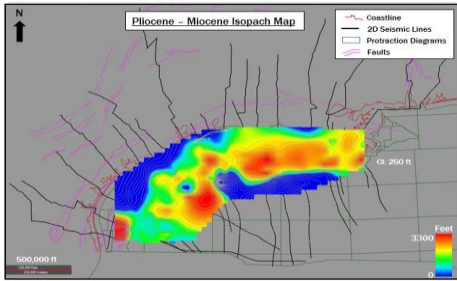




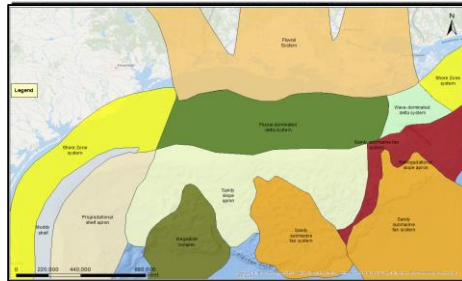
# Way Forward

### Geologic Map

Reservoir Presence ✓



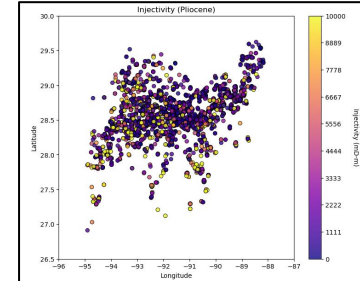
Reservoir Quality ✓



Seal Capacity



Injectivity ✓



Pressure Based Capacity



### CRS Map



1. Define and characterize confining zones for seal play element,
2. Applying pressure space calculation to offshore Pliocene dataset, and
3. To turn geologic maps into CRS and CCRS Maps.

### CCRS Map

