Texas High School Coastal Monitoring Program at Brazosport High School: 2024-2025

Bureau of Economic Geology

Texas High School Coastal Monitoring Program

- Provide high school students with a real-world learning experience by monitoring the beach and dune environment.
- Obtain a better understanding of the relationship between coastal processes, beach morphology, and shoreline change
- Increase public awareness and understanding of coastal change, processes, and hazards by making data and findings available for coastal managers and scientists, students and teacher, and the public.

TEXAS Geosciences
Bureau of Economic Geology
Jackson School of Geosciences
The University of Texas at Austin

TEXAS A&M UNIVERSITY CORPUS CHRISTI | HARTE RESEARCH INSTITUTE FOR GULF OF MEXICO STUDIES

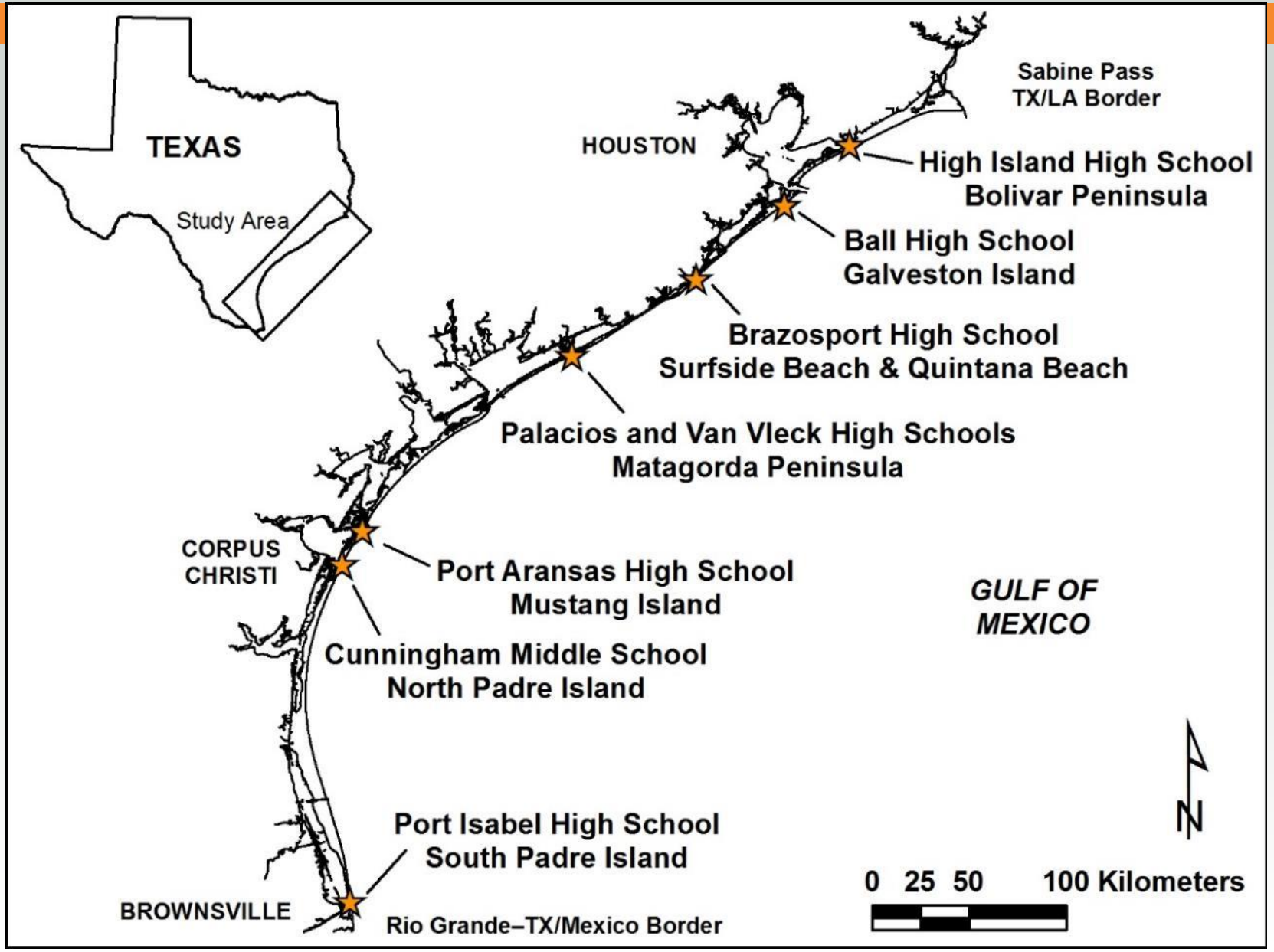
ED RACHAL FOUNDATION

THE MEADOWS FOUNDATION
ENRICHING THE LIVES OF THE PEOPLE OF TEXAS

BUREAU OF ECONOMIC GEOLOGY

SECO | STATE ENERGY CONSERVATION OFFICE

LCRA
ENERGY • WATER • COMMUNITY SERVICES



Bureau of Economic Geology

2024-2025: 23 field trips with ~220 students

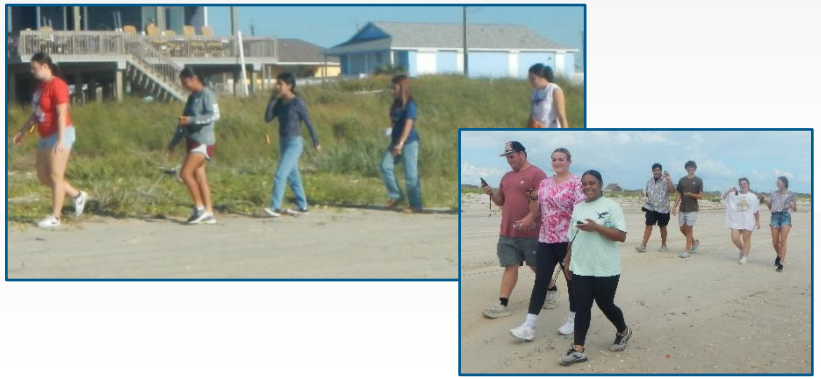
1997-2025 444 field trips

Student Collected Data

- Topographic transect oriented perpendicular to the shoreline
  - measured from the same starting point landward of the foredune and oriented in the same direction.

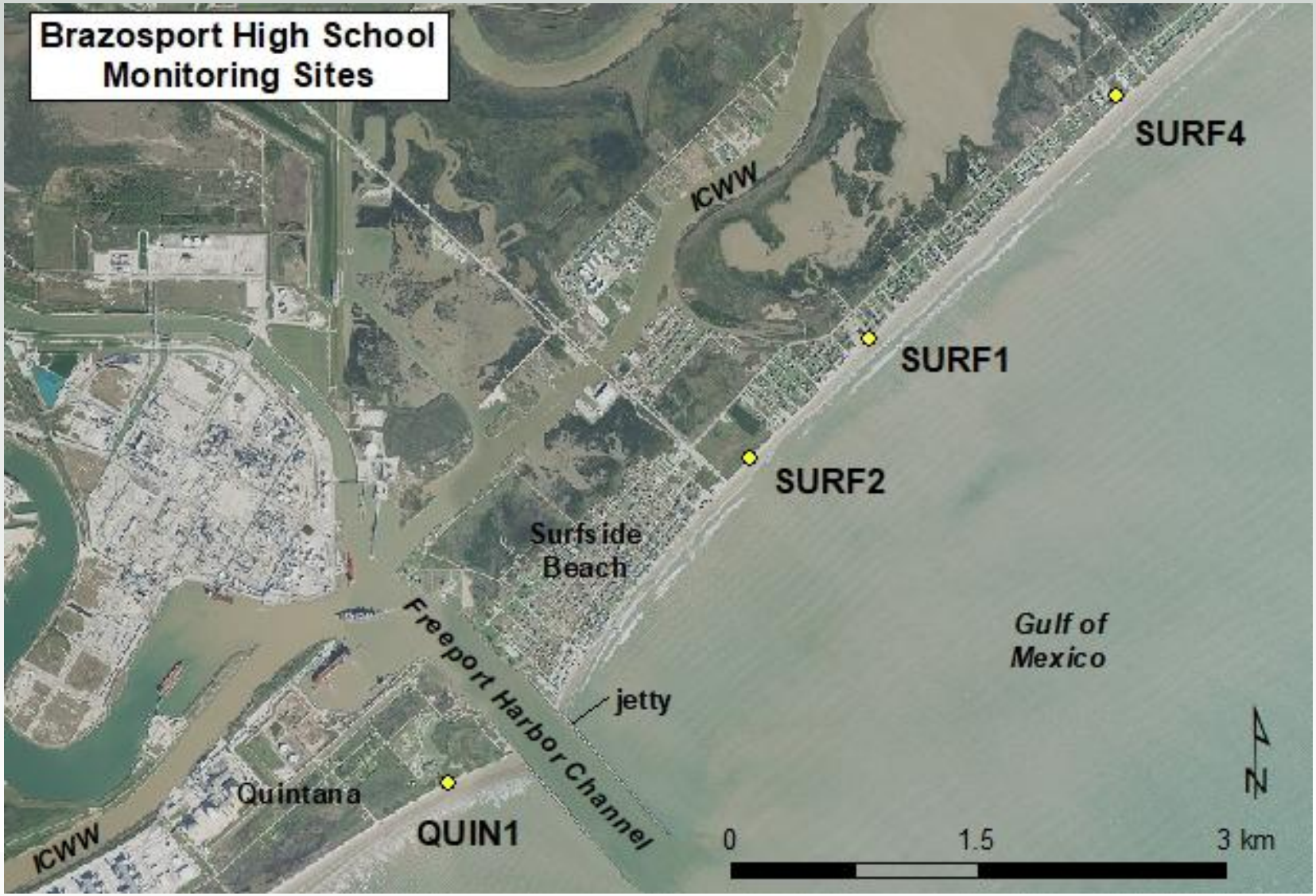
- Estimates of processes acting on the beach
  - wind direction and speed; wave direction, height, and period; and longshore current direction and speed

- GPS survey of the vegetation line and shoreline
  - quantitative data on the position of the shoreline and vegetation line



field trip dates

Surfside & Quintana Study Sites



Bureau of Economic Geology

SURF4

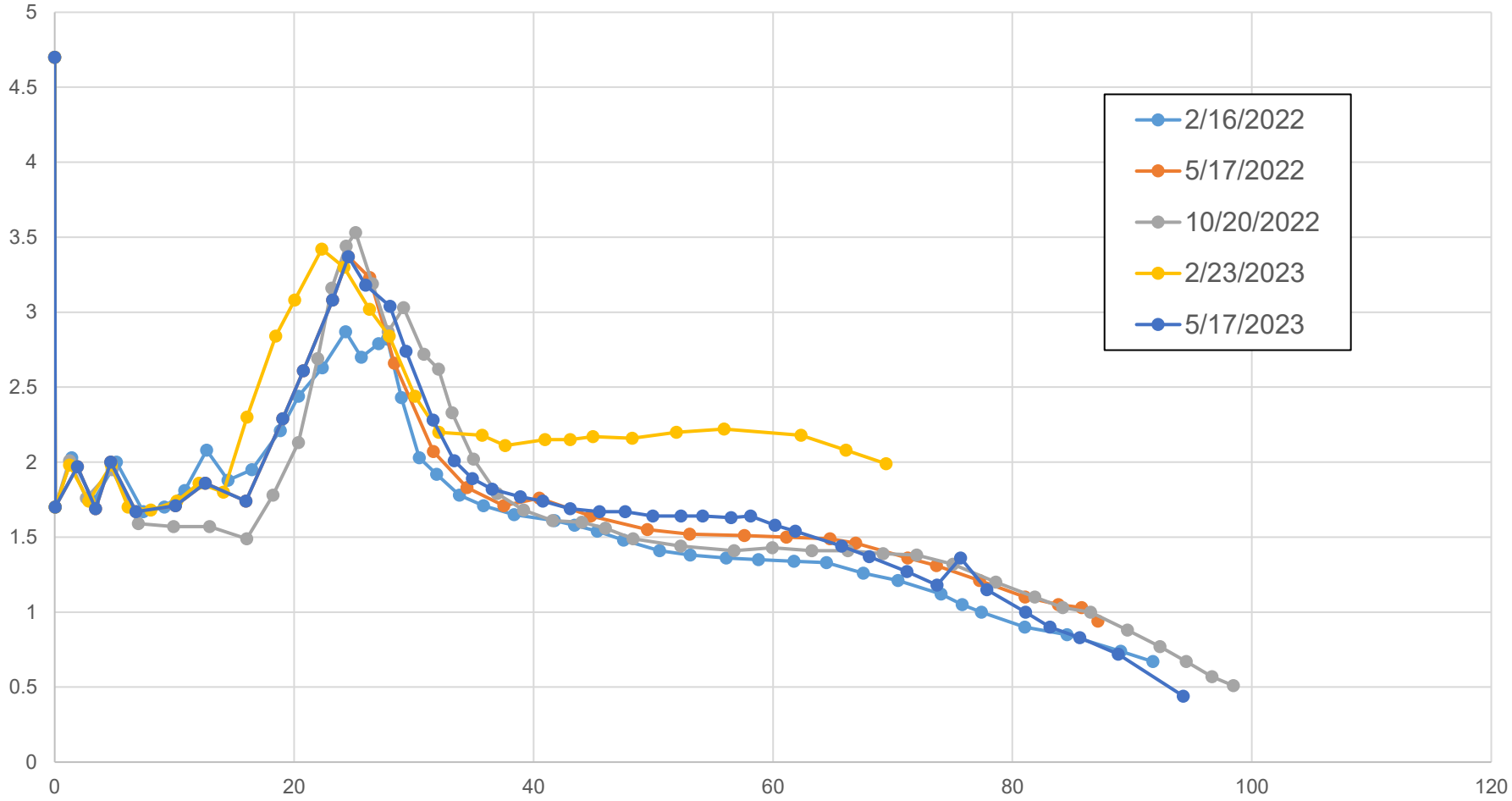

October 23, 2024
Vegetation line NE


February 5, 2025
View from waterline


May 1, 2025
Wet/dry & debris line NE

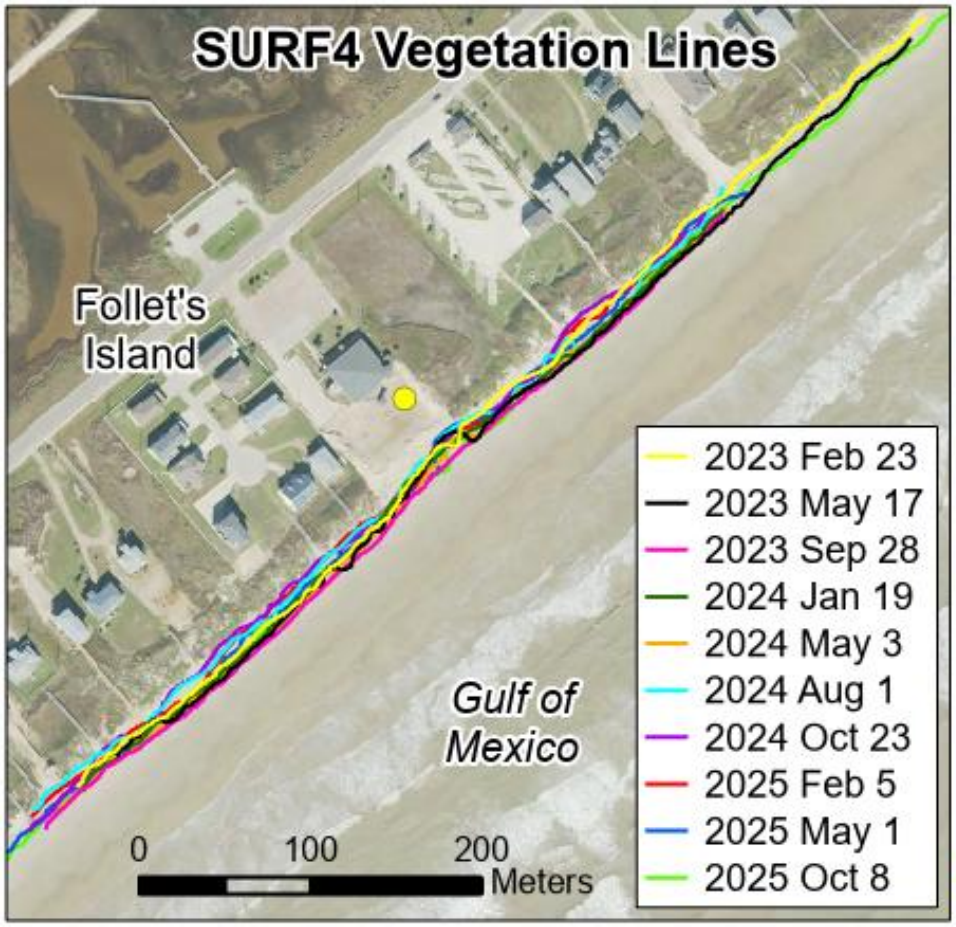

October 8, 2025
Dunes NE

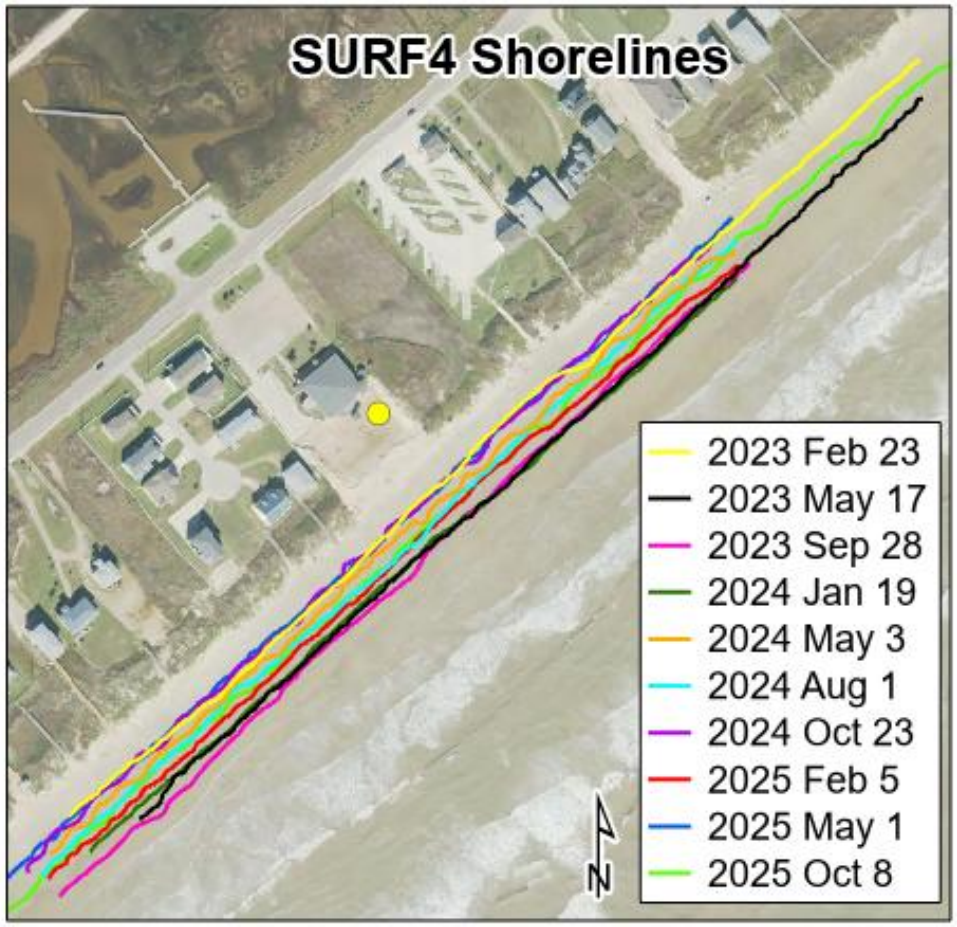
SURF4: winter 2022-spring 2023



Bureau of Economic Geology

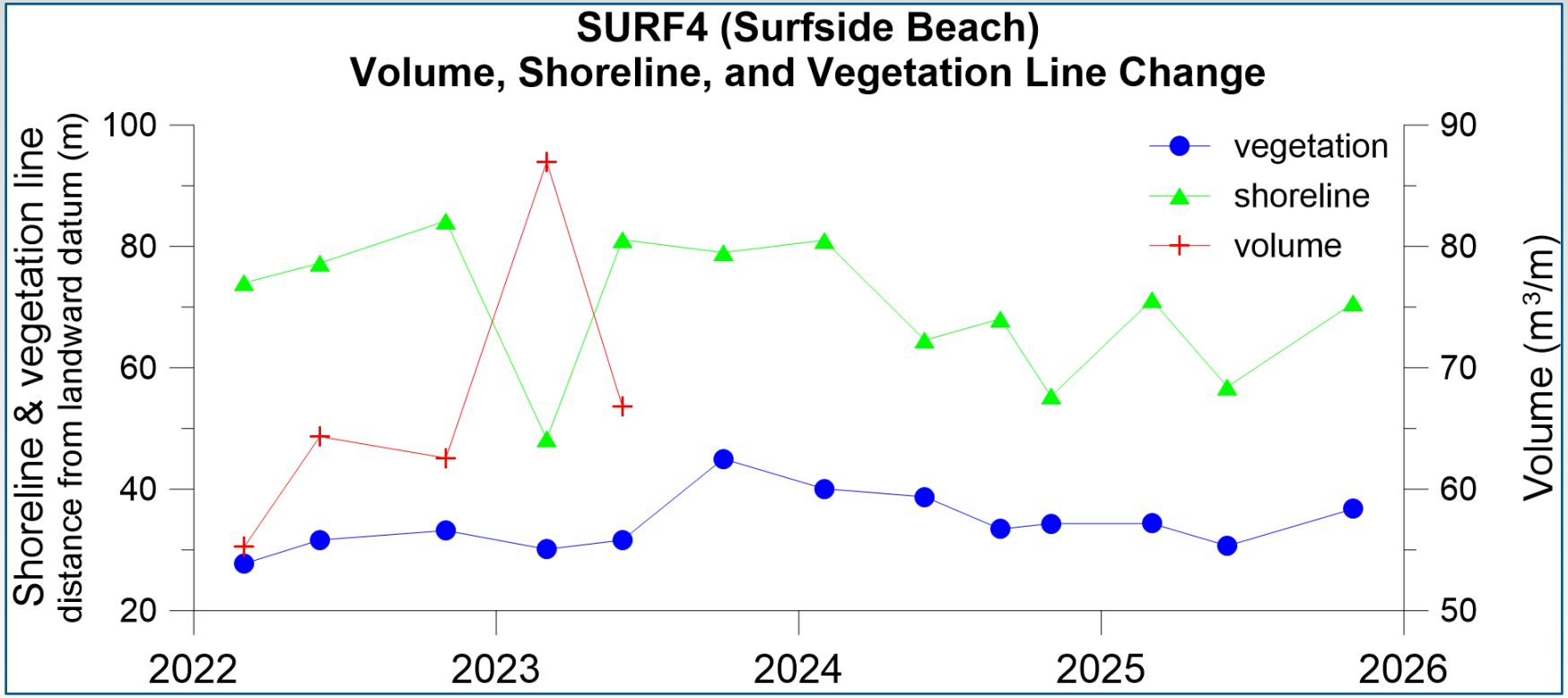
SURF4 shore and vegetation line positions





Bureau of Economic Geology

SURF4: shoreline, vegetation line, and volume changes



Sediment volume was calculated above 1 meter NAVD88.

SURF2

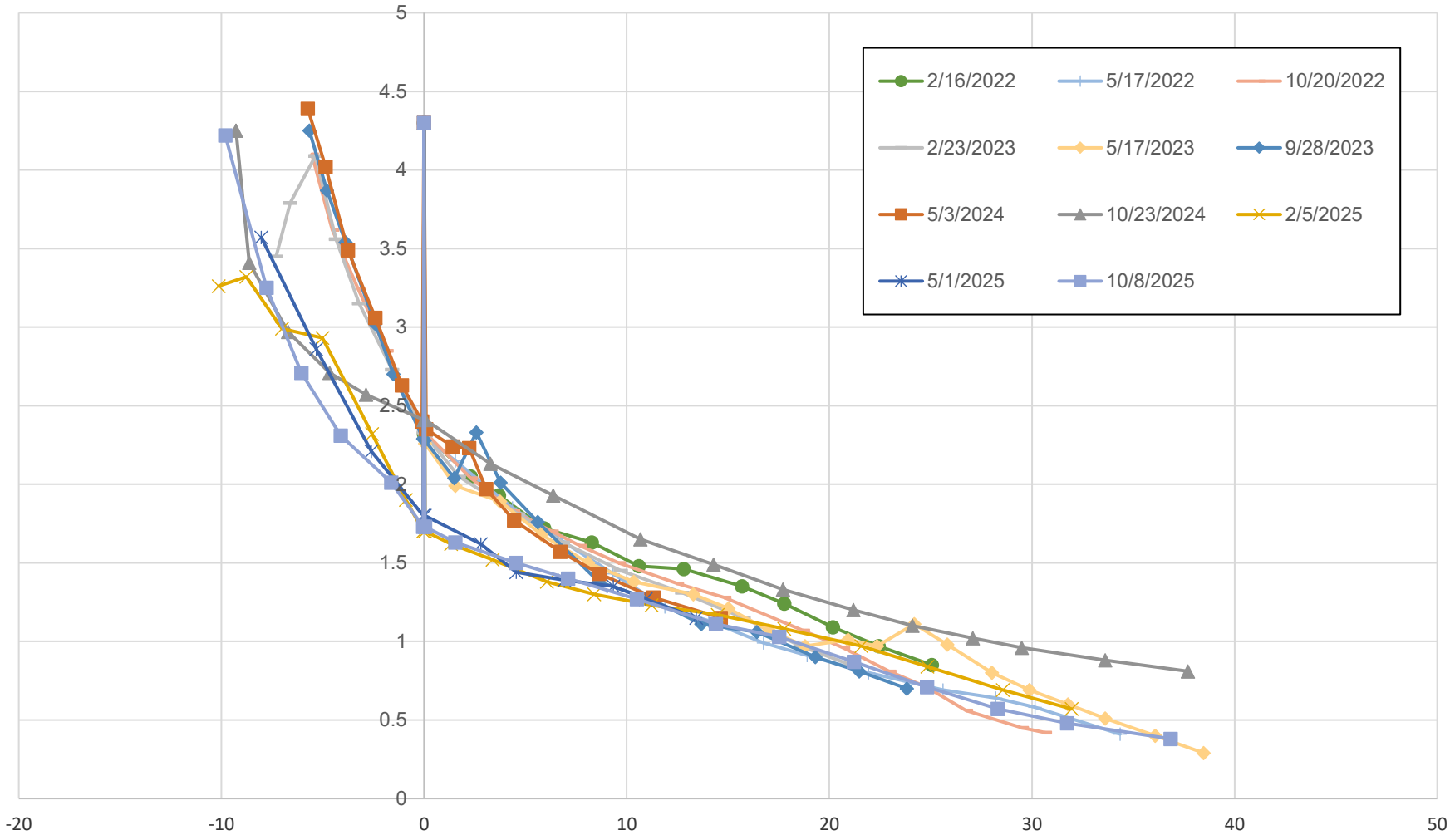

October 23, 2024
View from waterline


February 5, 2025
Backbeach NE


May 1, 2025
Wet/dry & debris line NE

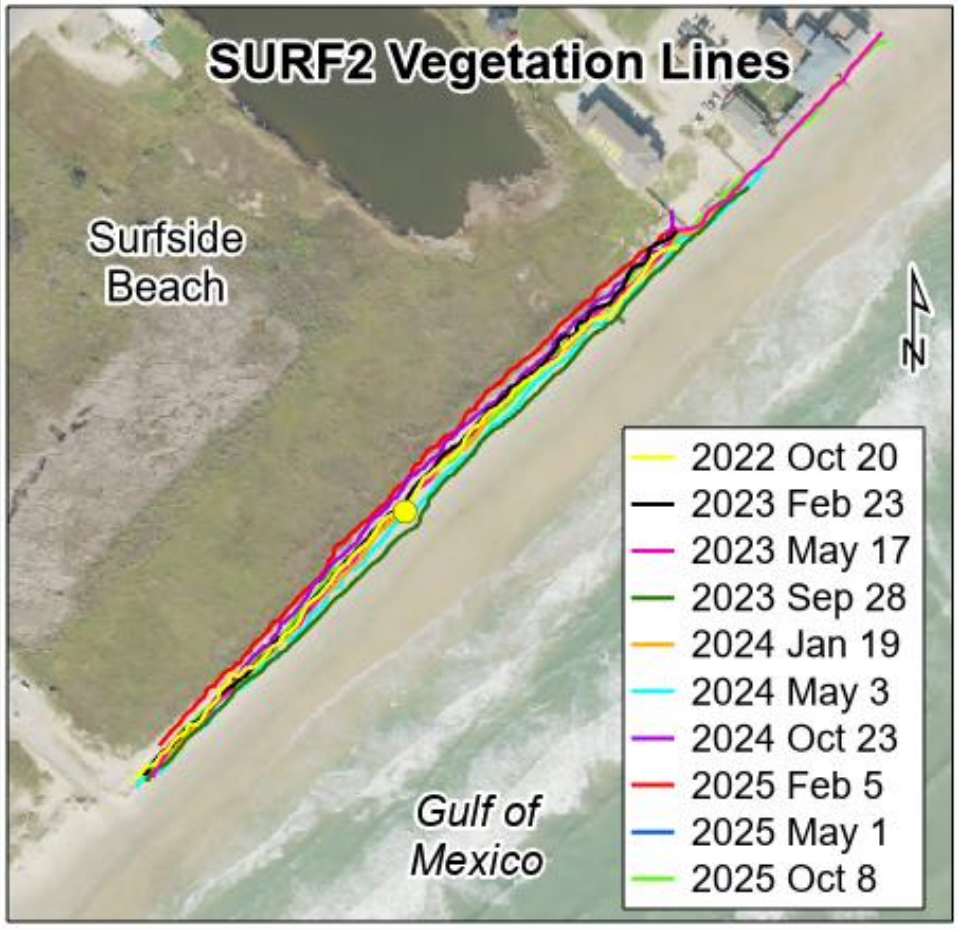

October 8, 2025
Veg line NE

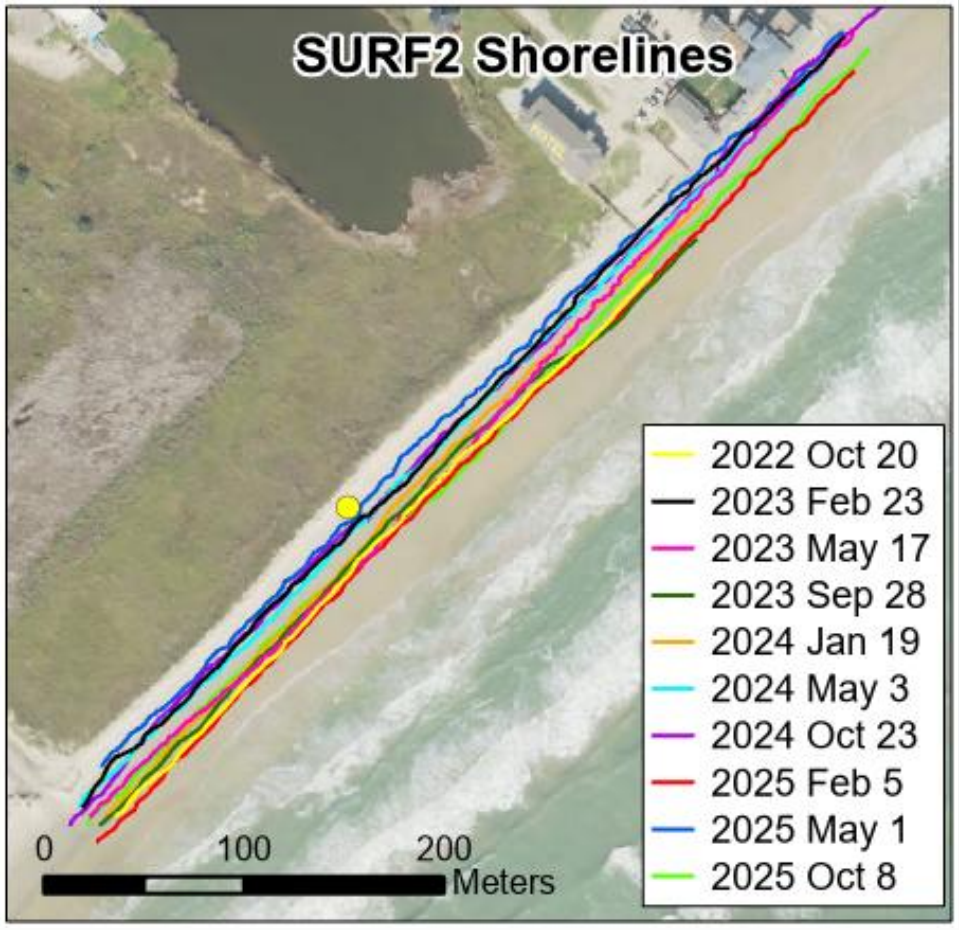
SURF2: winter 2022-fall 2025



Bureau of Economic Geology

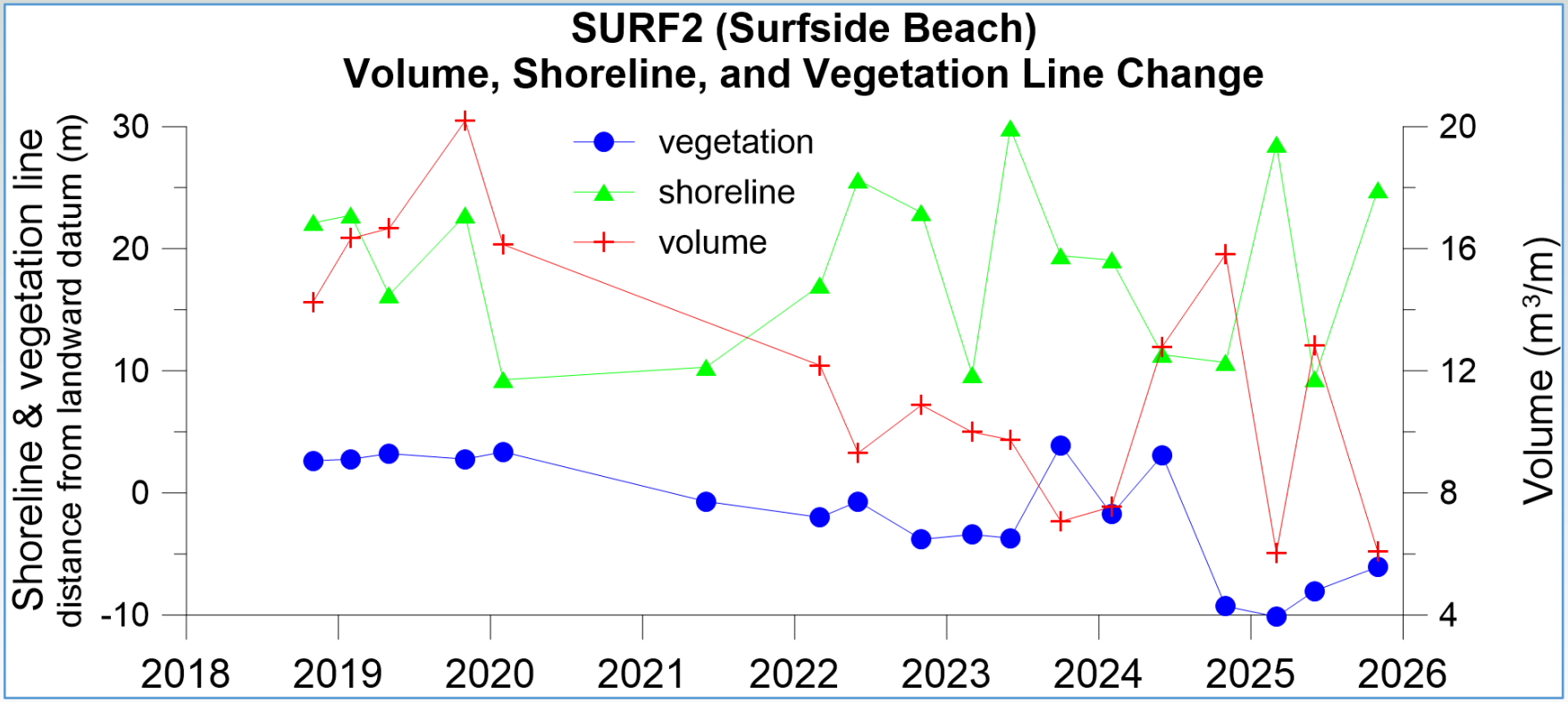
SURF2 shore and vegetation line positions





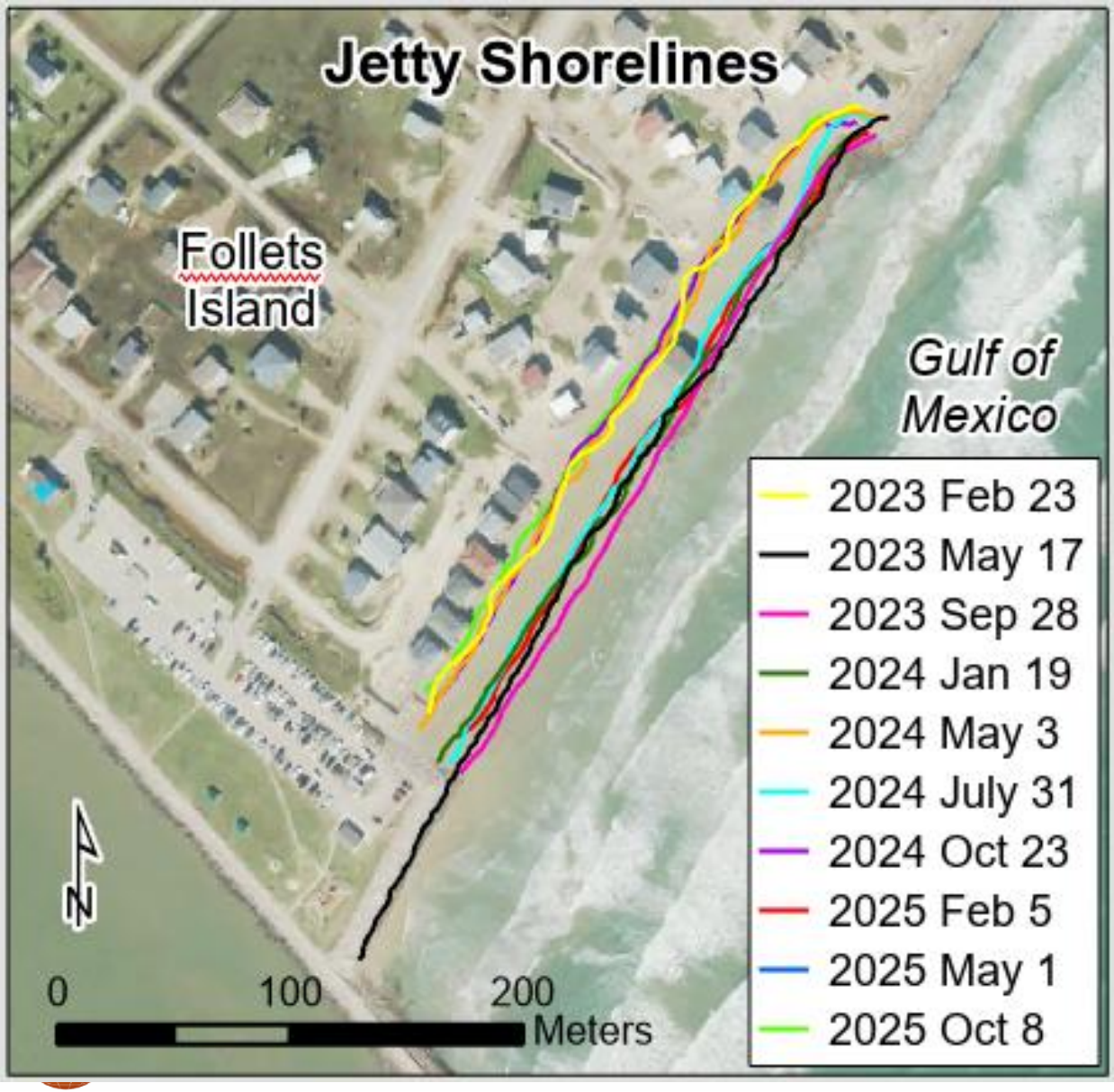
Bureau of Economic Geology

SURF2: shoreline, vegetation line, and volume changes



Sediment volume was calculated above 1 meter NAVD88.

Jetty shoreline positions



QUIN1

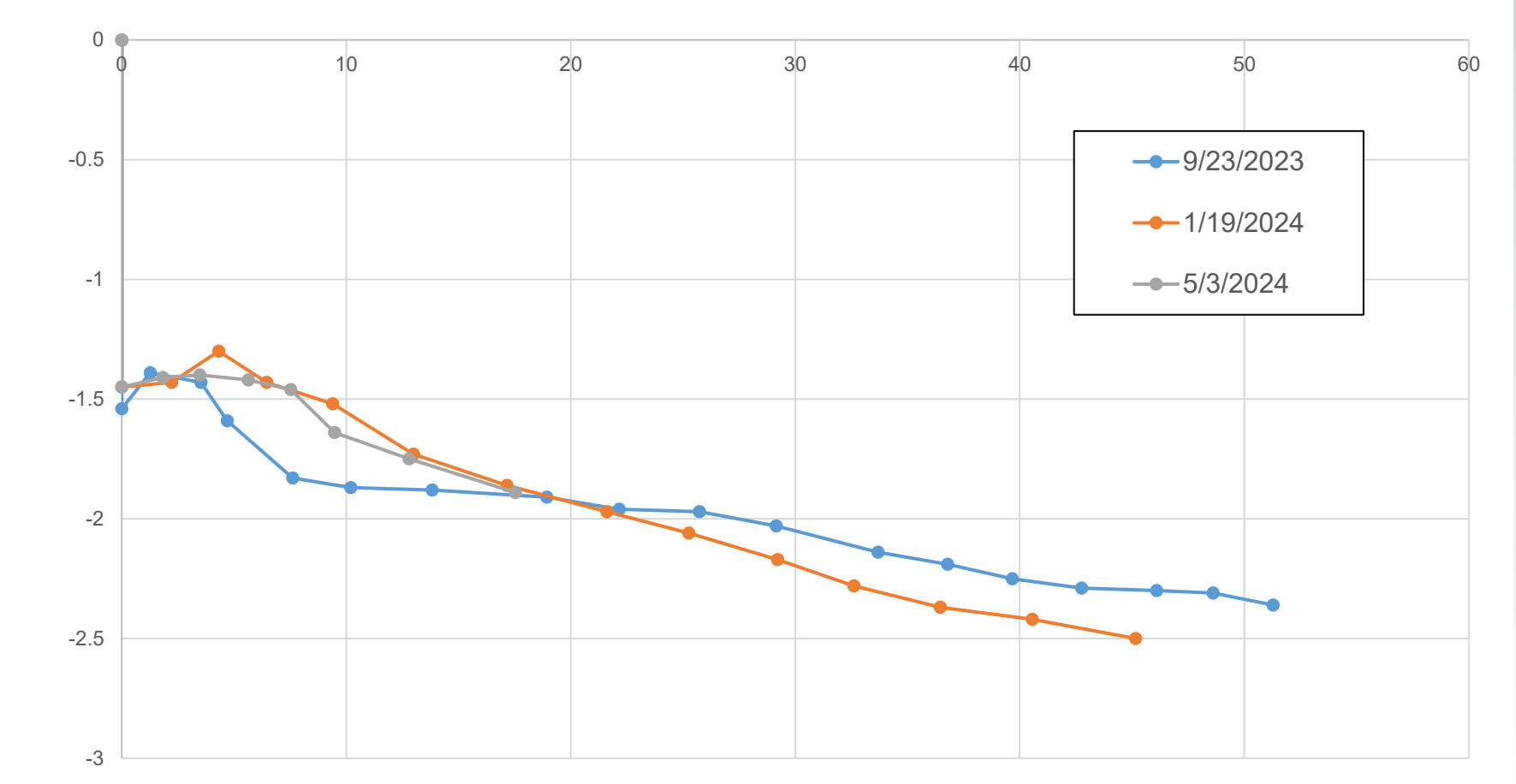

October 23, 2024
View from waterline


October 23, 2024
Wet/dry line NE

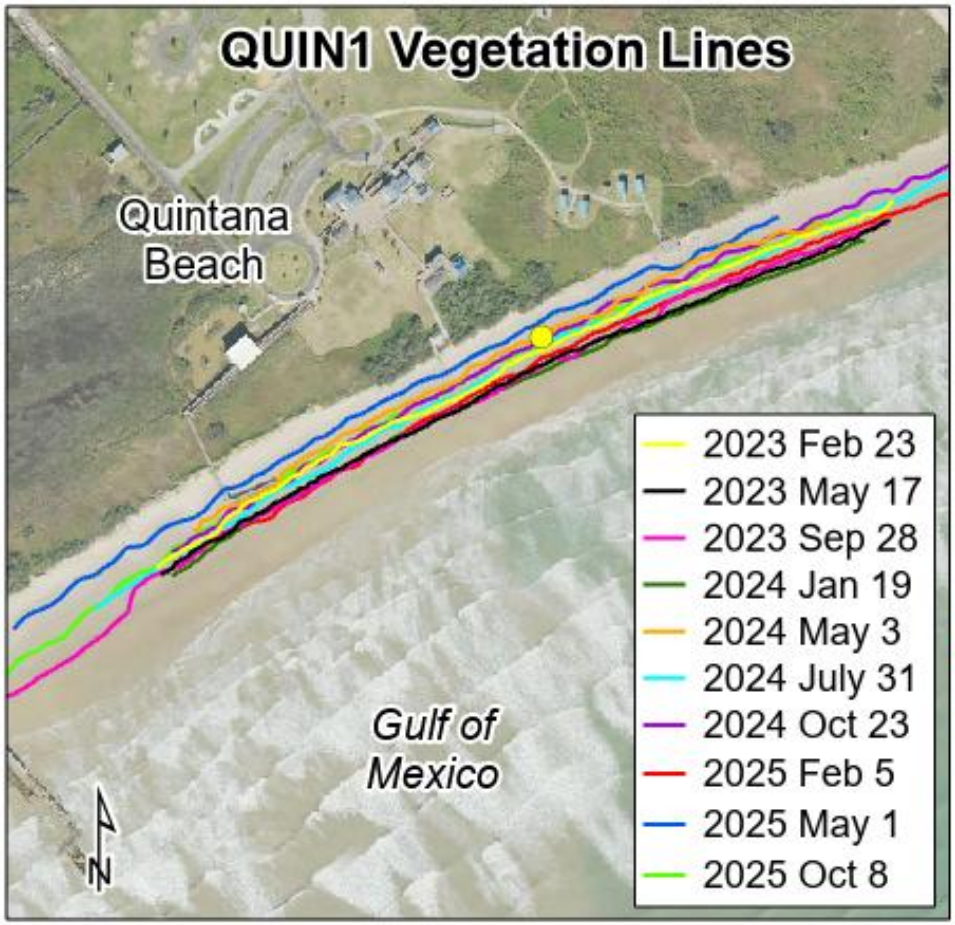

May 1, 2025
Wet/dry & debris line NE

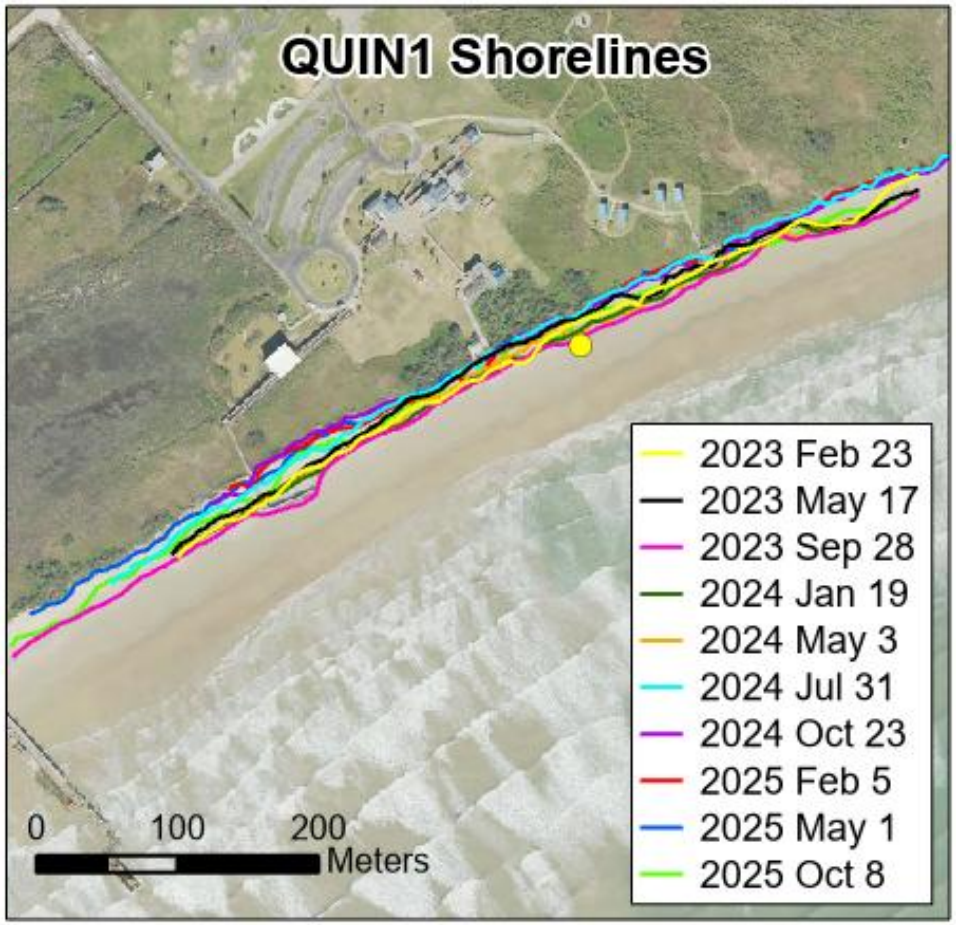

October 8, 2025
Veg line NE

QUIN1: fall 2023-spring 2024



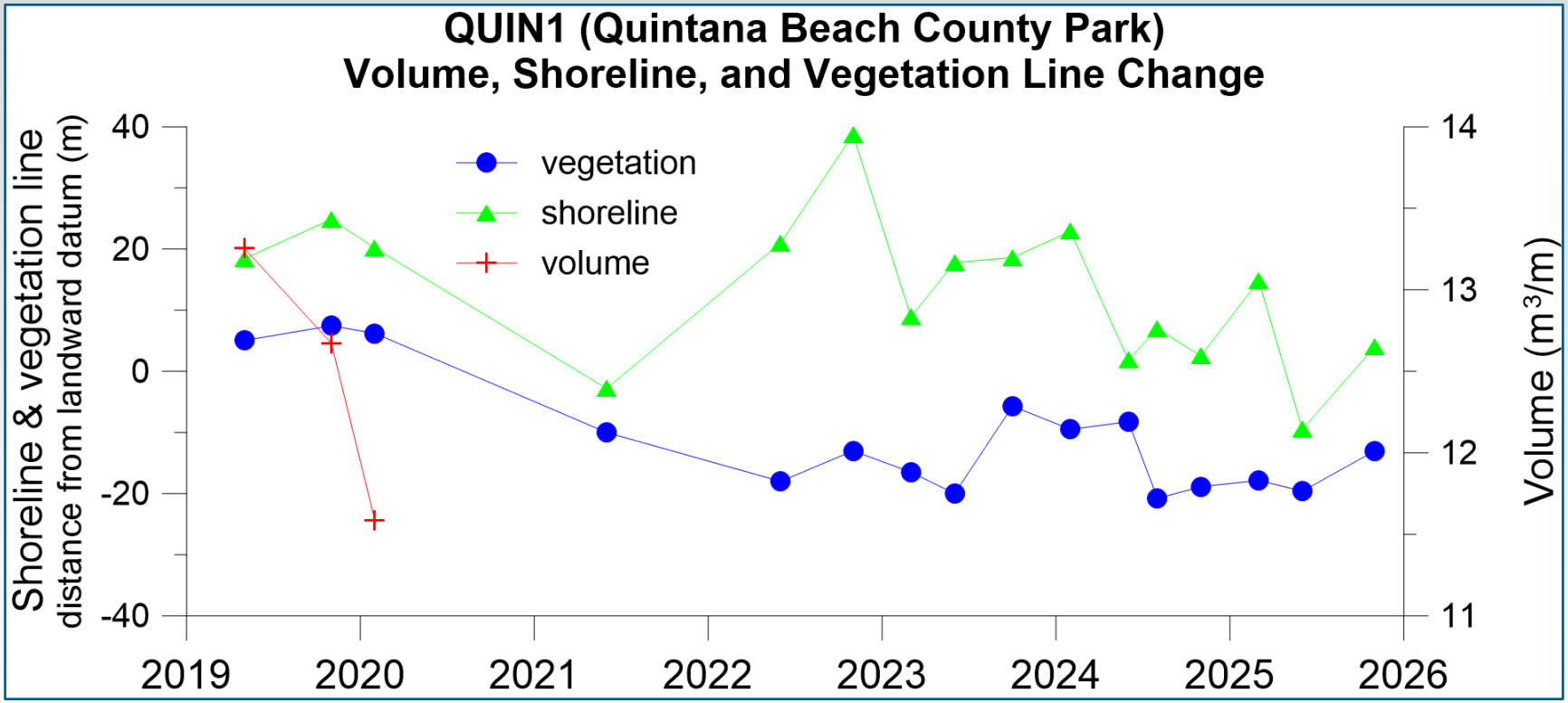
QUIN1 shore and vegetation line positions





Bureau of Economic Geology

QUIN1: shoreline, vegetation line, and volume changes



Sediment volume was calculated above 1 meter NAVD88.