

Texas High School Coastal Monitoring Program at Brazosport High School: 2022-2023

December 2023

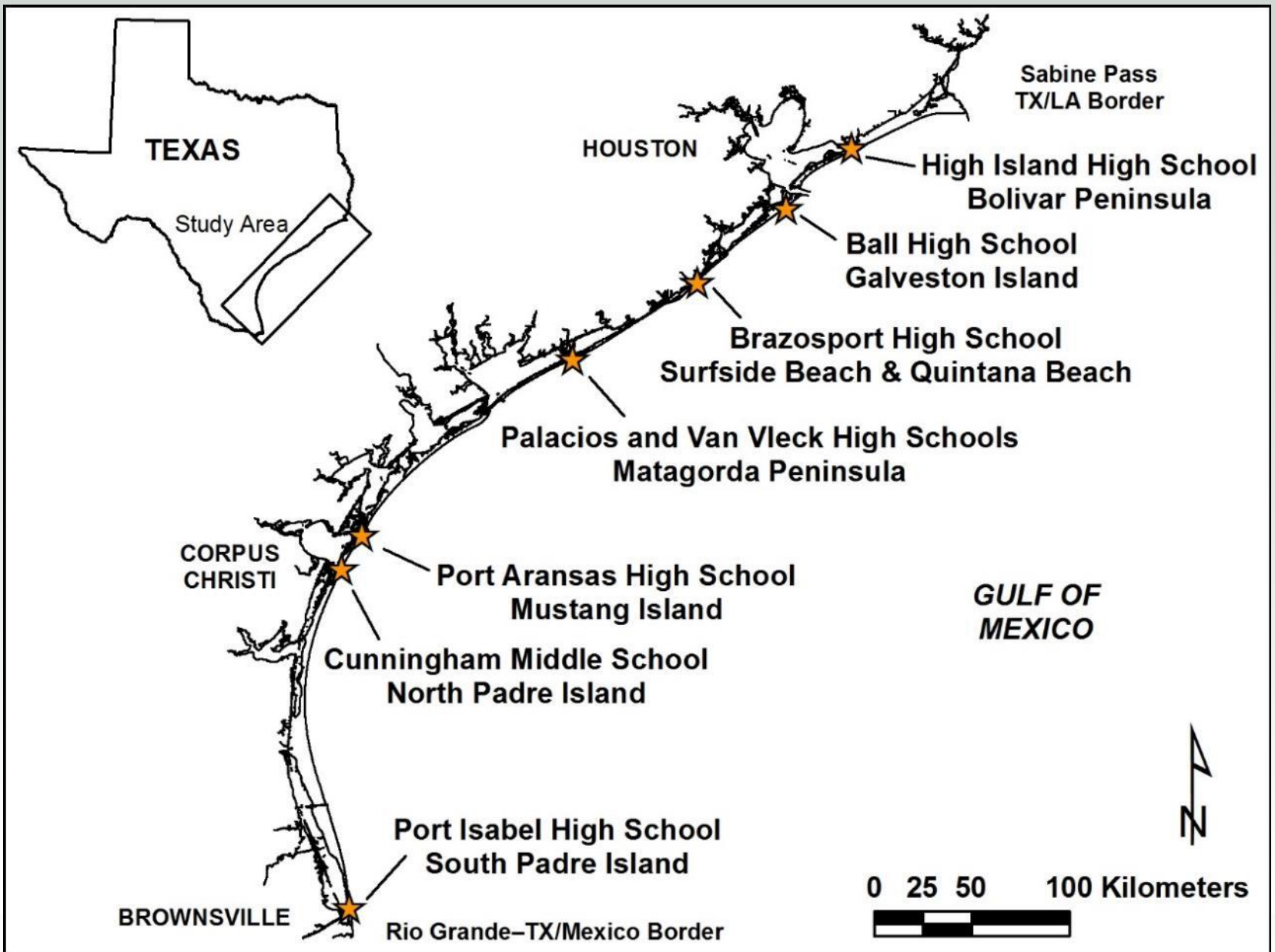


BUREAU OF
ECONOMIC
GEOLOGY

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 general public.



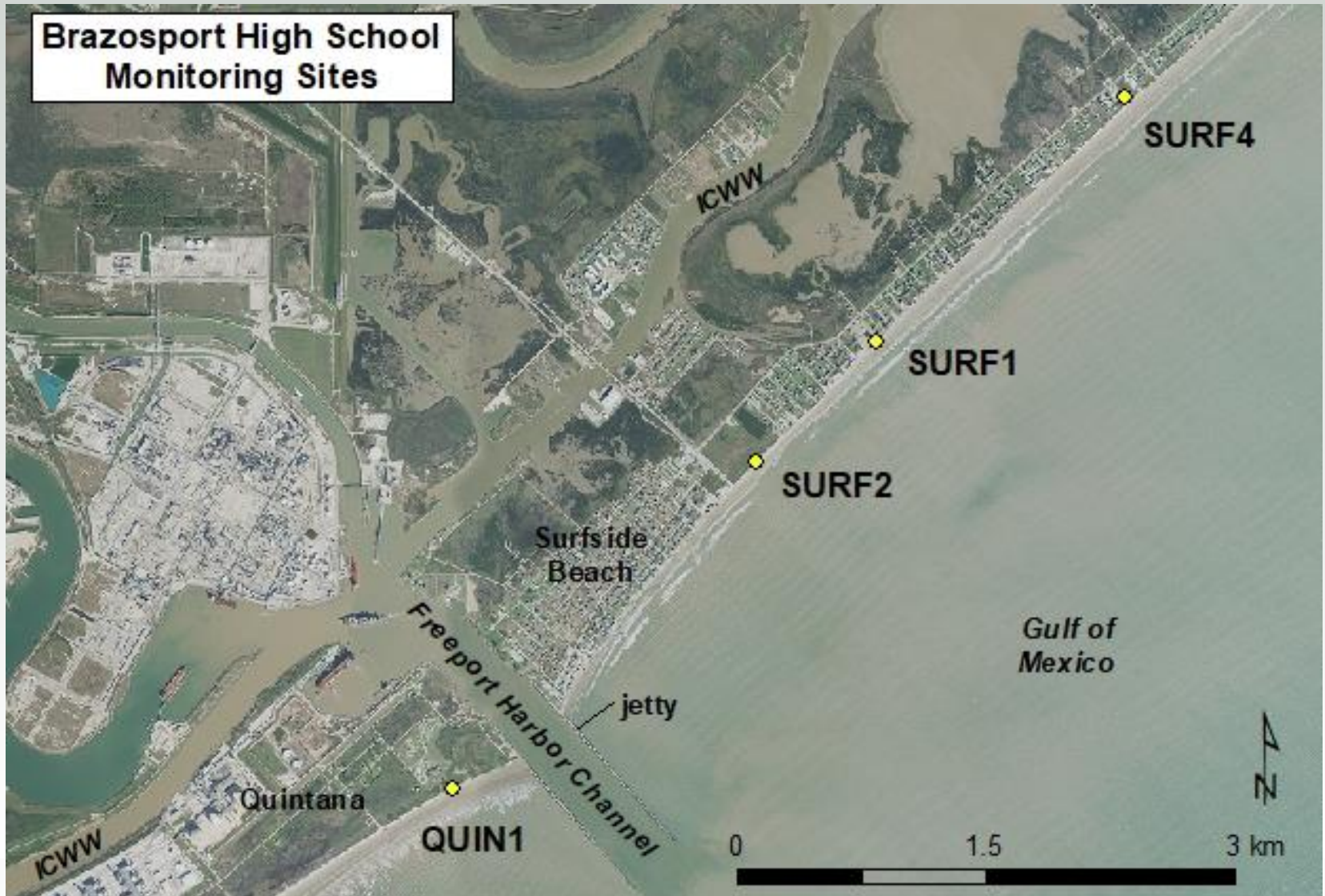


Student Collected Data

- 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



Surfside & Quintana Study Sites



2022-2023 field trips

October 18, 2022



February 23, 2023



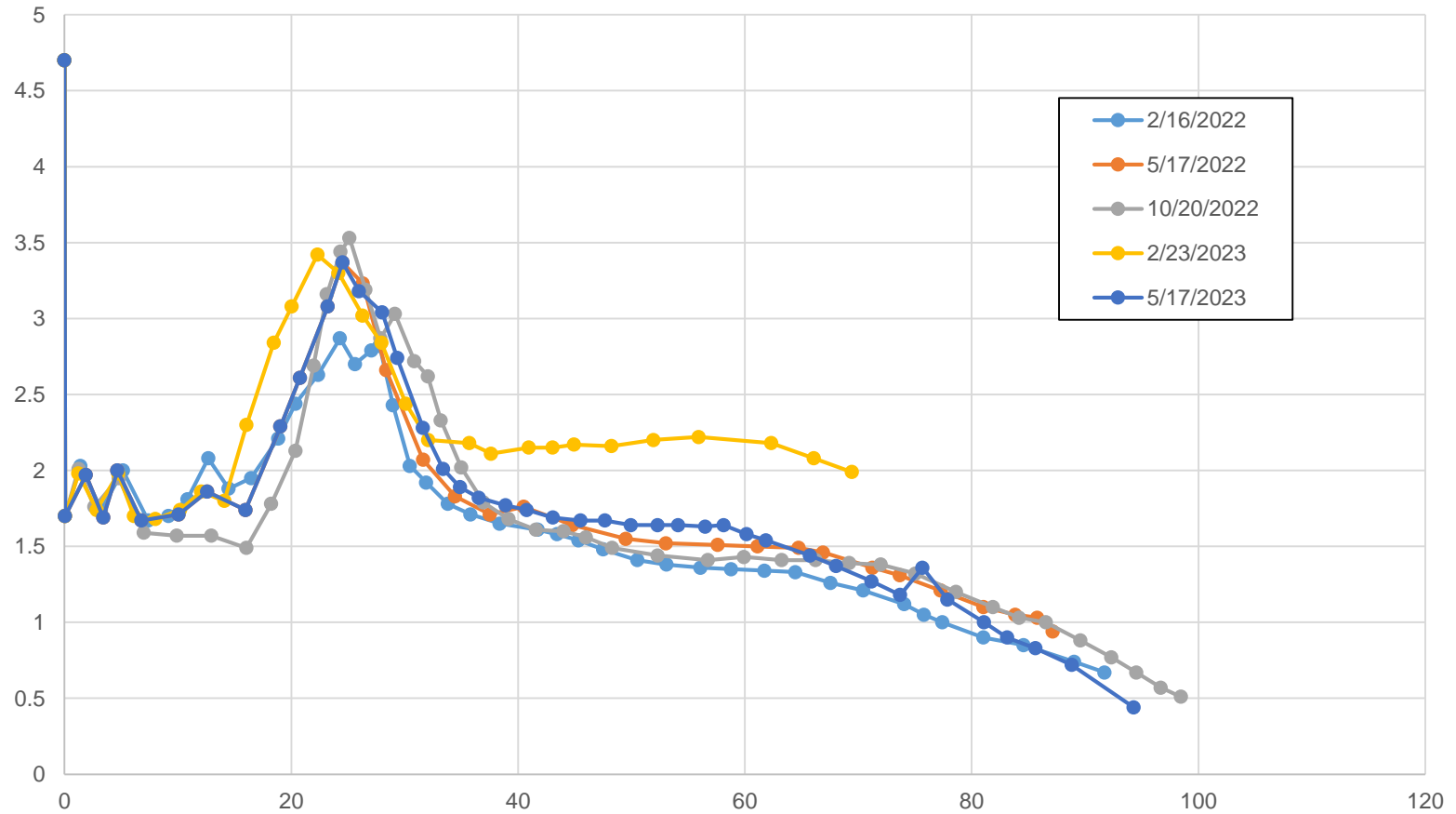
May 17, 2023



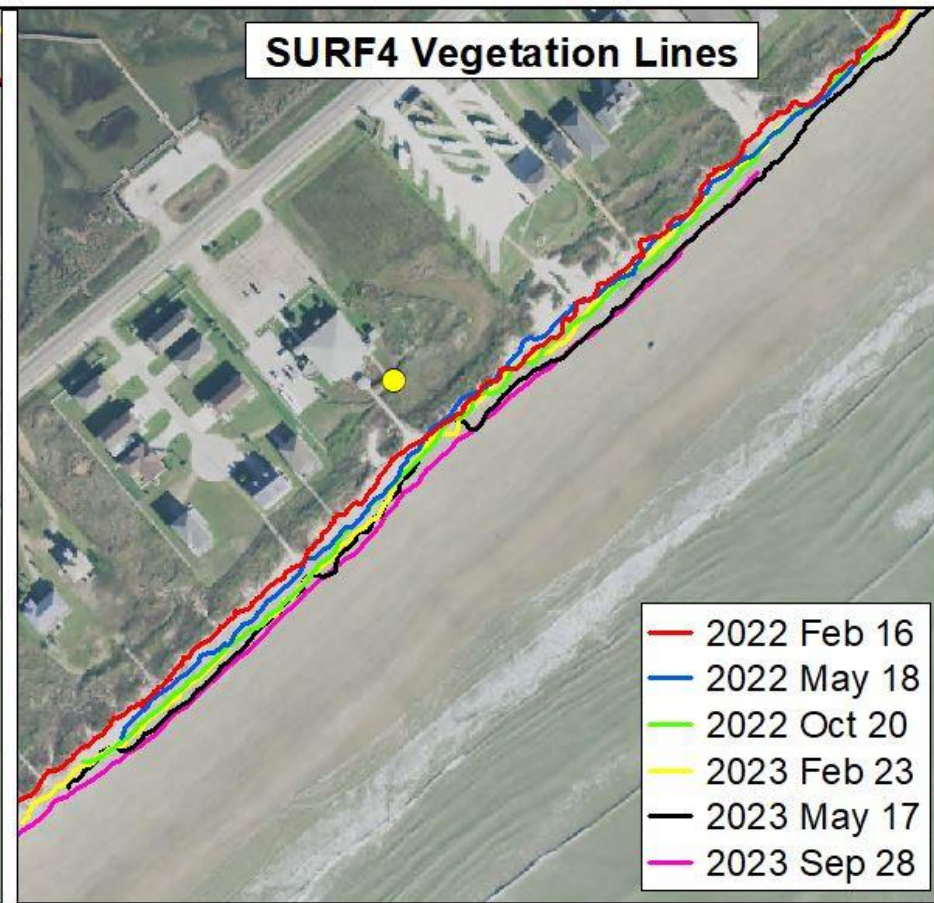
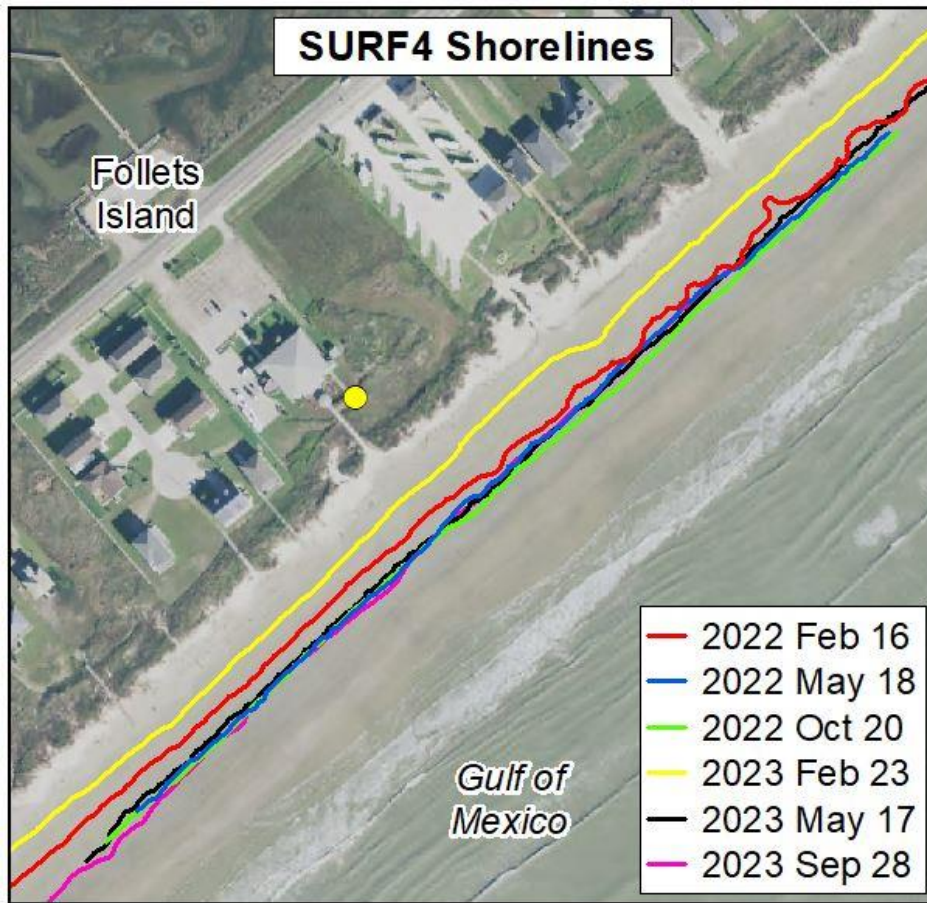
September 28, 2023



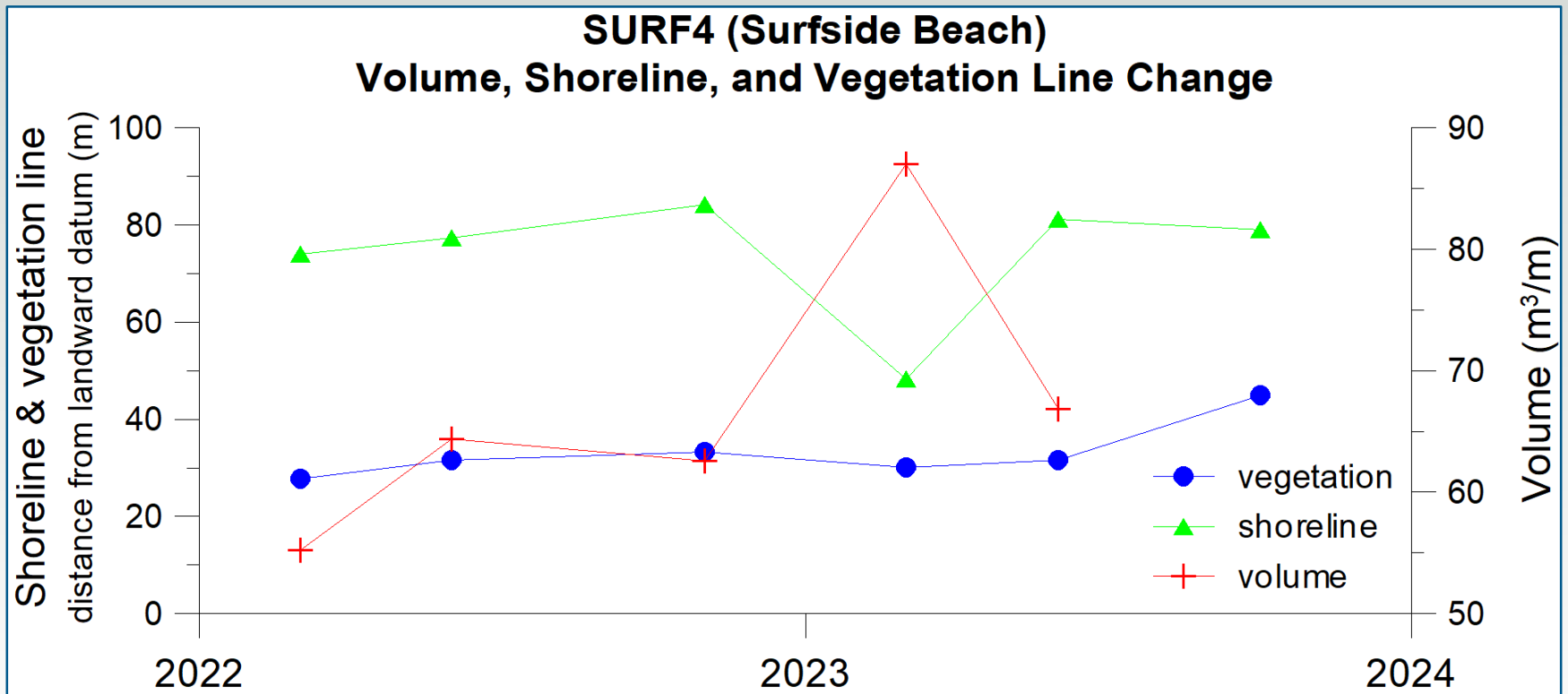
SURF4: winter 2022-spring 2023



SURF4 shore and vegetation line positions

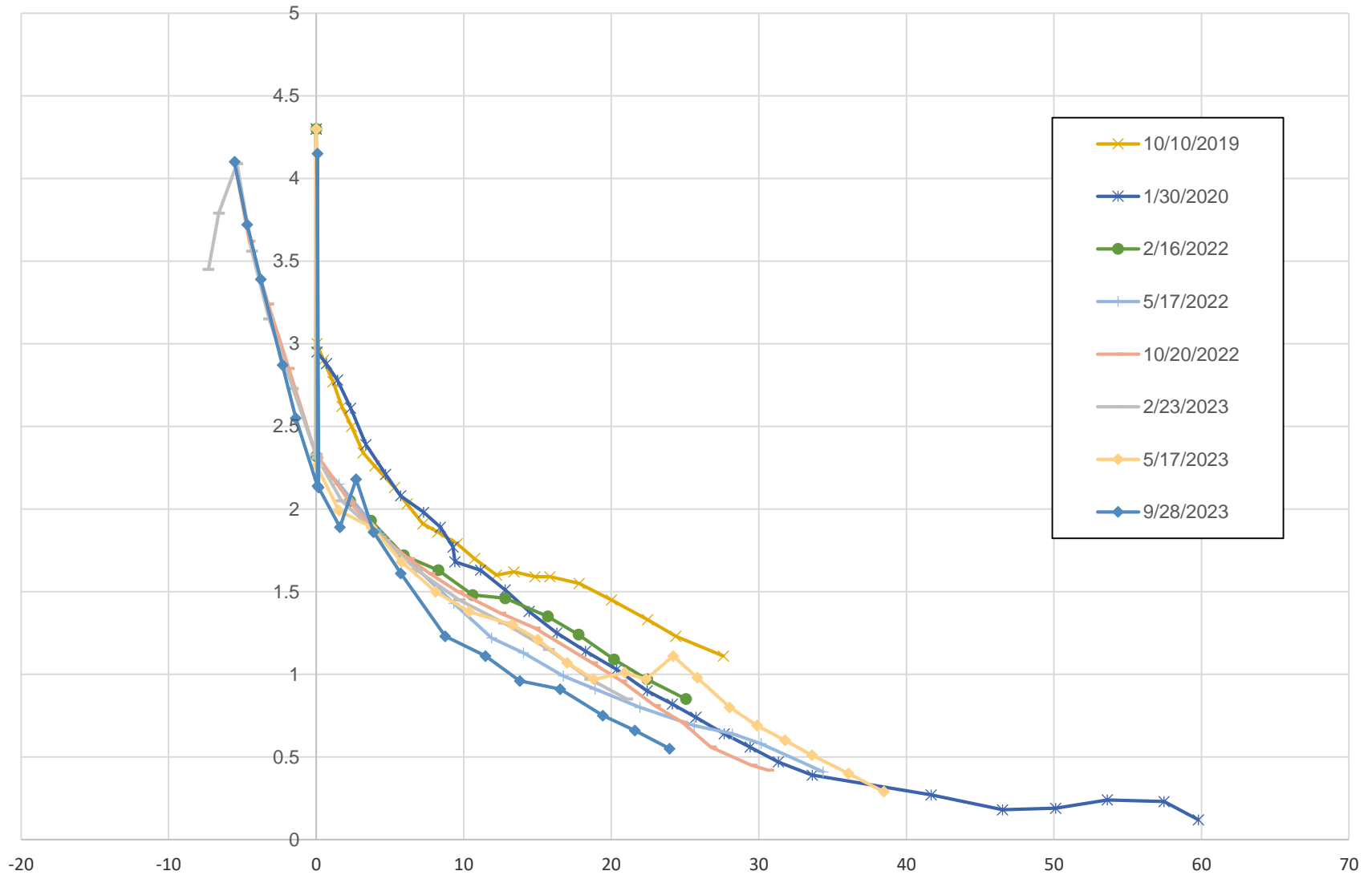


SURF4: shoreline, vegetation line, and volume changes



Sediment volume was calculated above 1 meter NAVD88.

SURF2: fall 2019-fall 2023



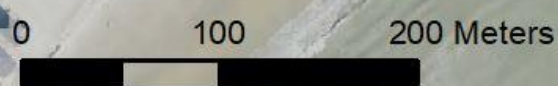
SURF2 shore and vegetation line positions

SURF2 Shorelines

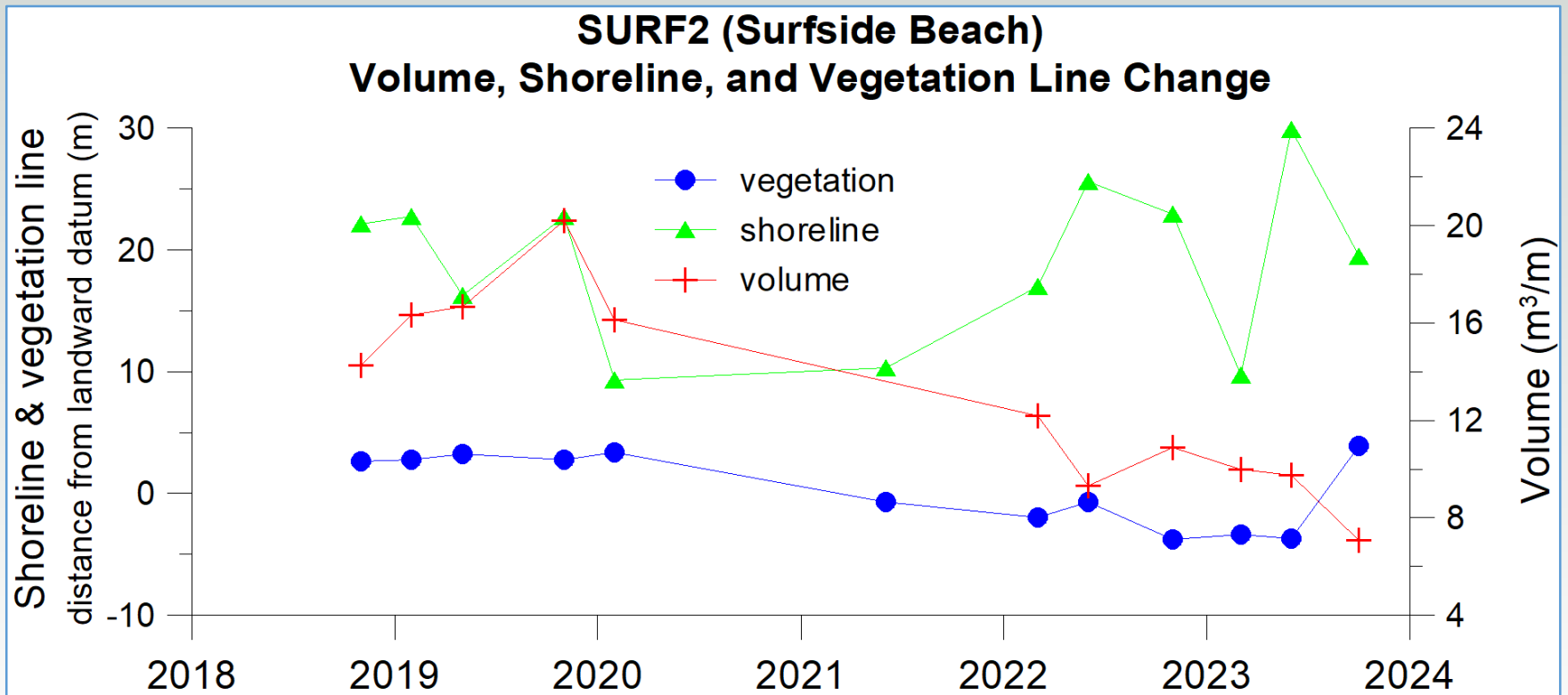
SURF2 Vegetation Lines

- 2019 Oct 10
- 2020 Jan 30
- 2021 May 19
- 2022 Feb 16
- 2022 May 18
- 2022 Oct 20
- 2023 Feb 23
- 2023 May 17
- 2023 Sep 28

- 2019 Oct 10
- 2020 Jan 30
- 2021 May 19
- 2022 Feb 16
- 2022 May 18
- 2022 Oct 20
- 2023 Feb 23
- 2023 May 17
- 2023 Sep 28

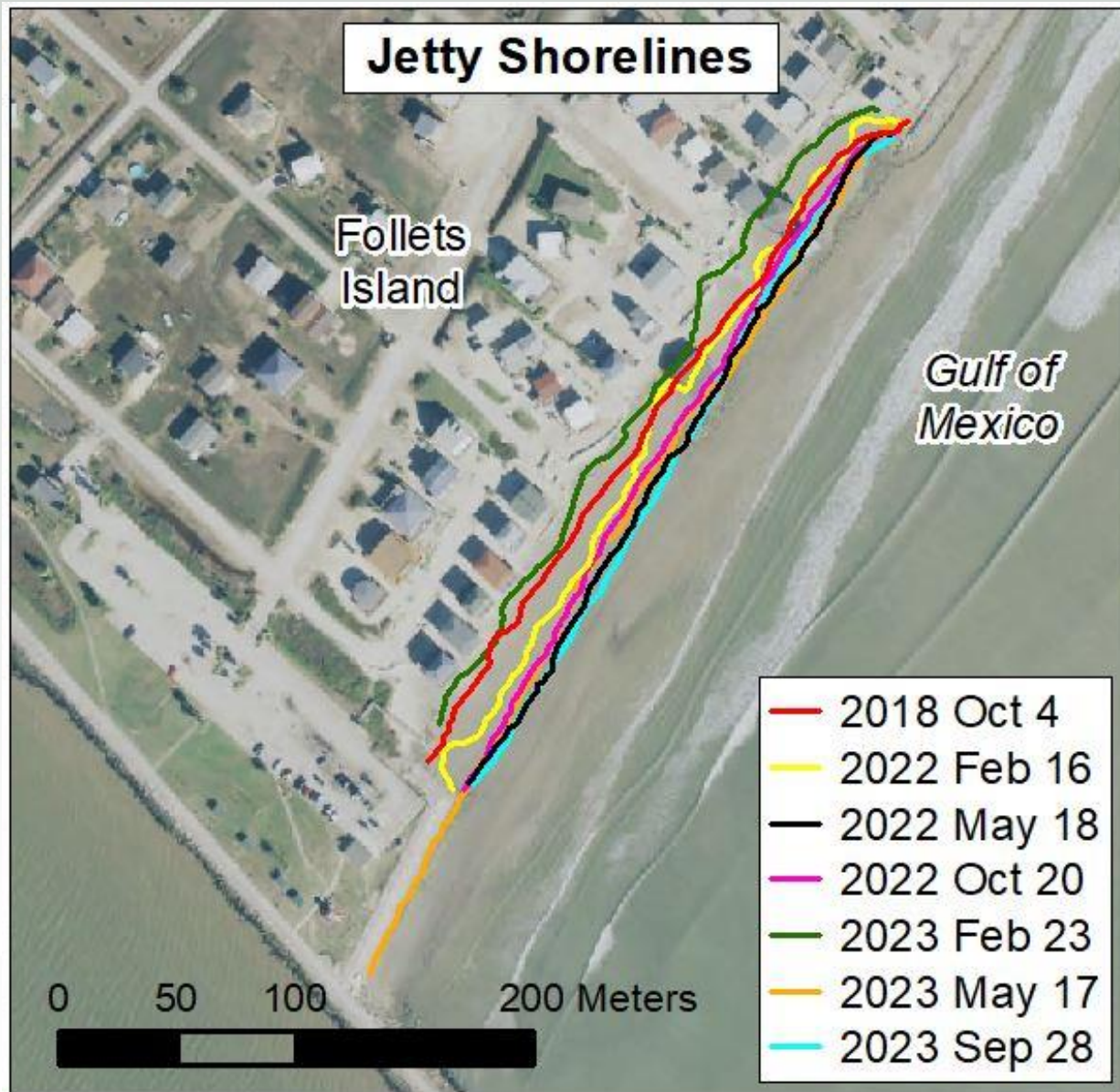


SURF2: shoreline, vegetation line, and volume changes

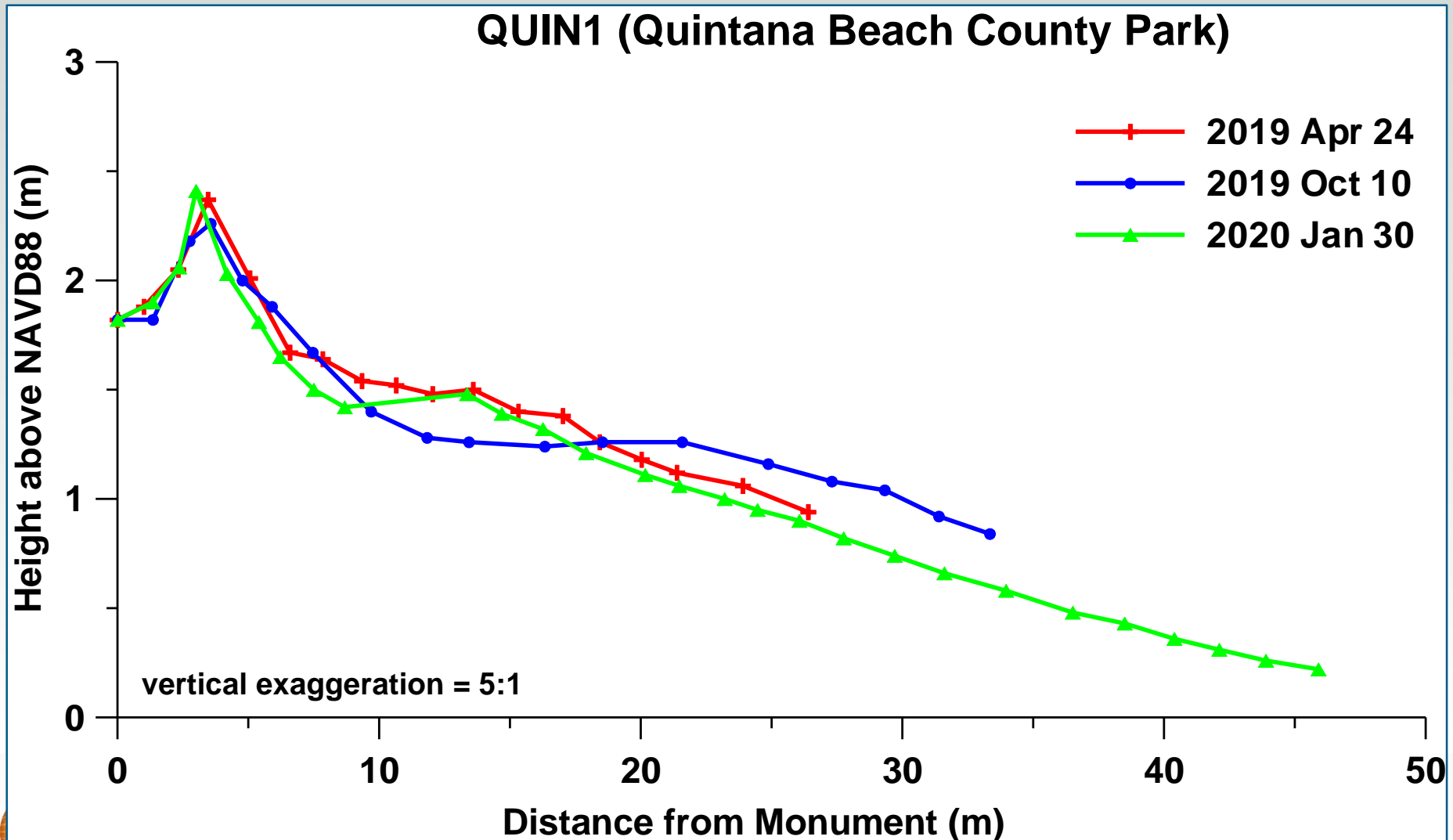


Sediment volume was calculated above 1 meter NAVD88.

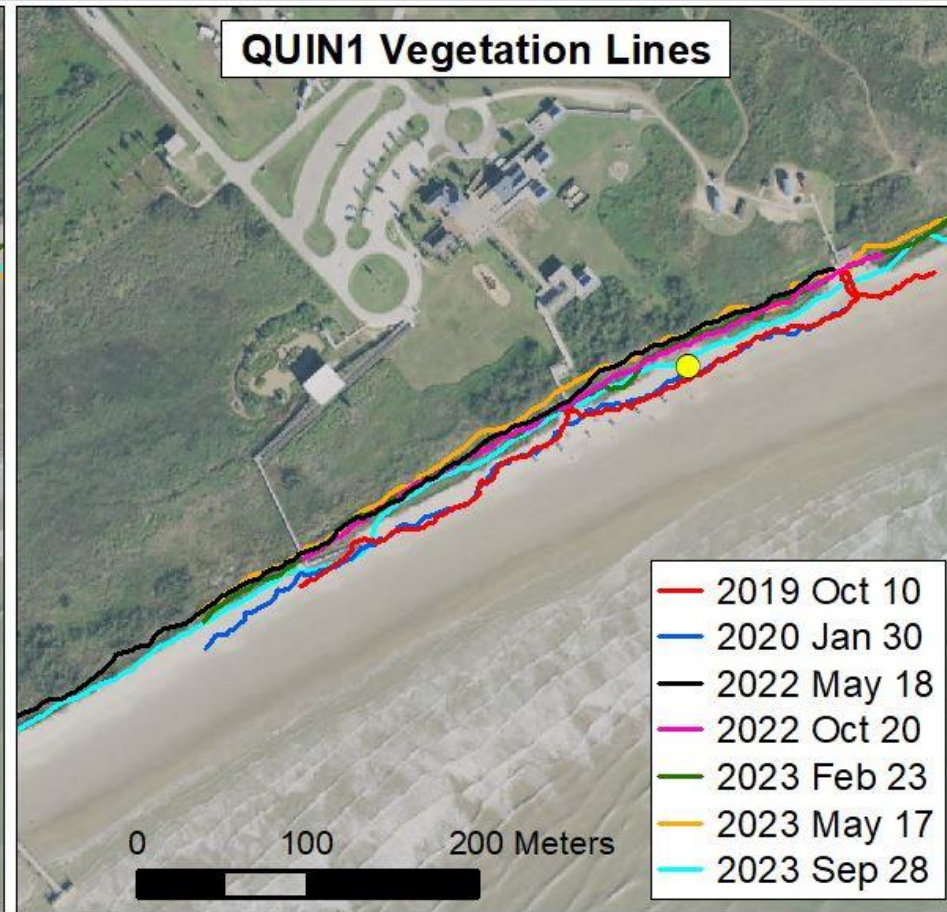
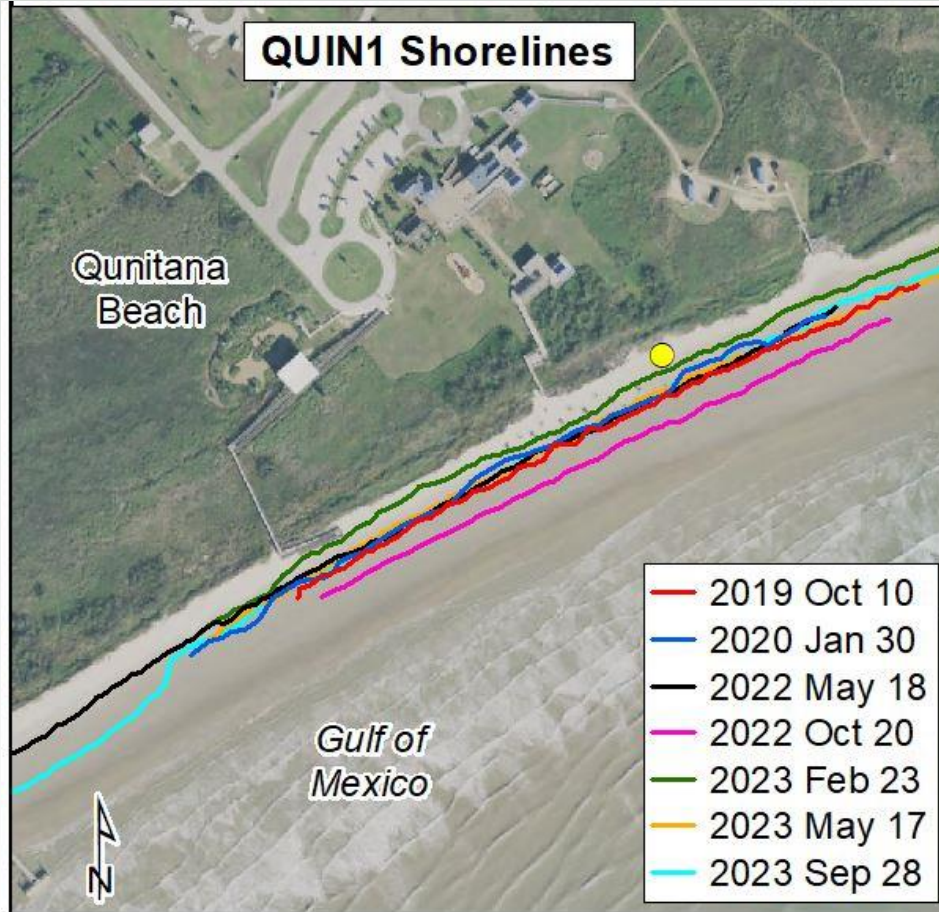
Jetty shoreline positions



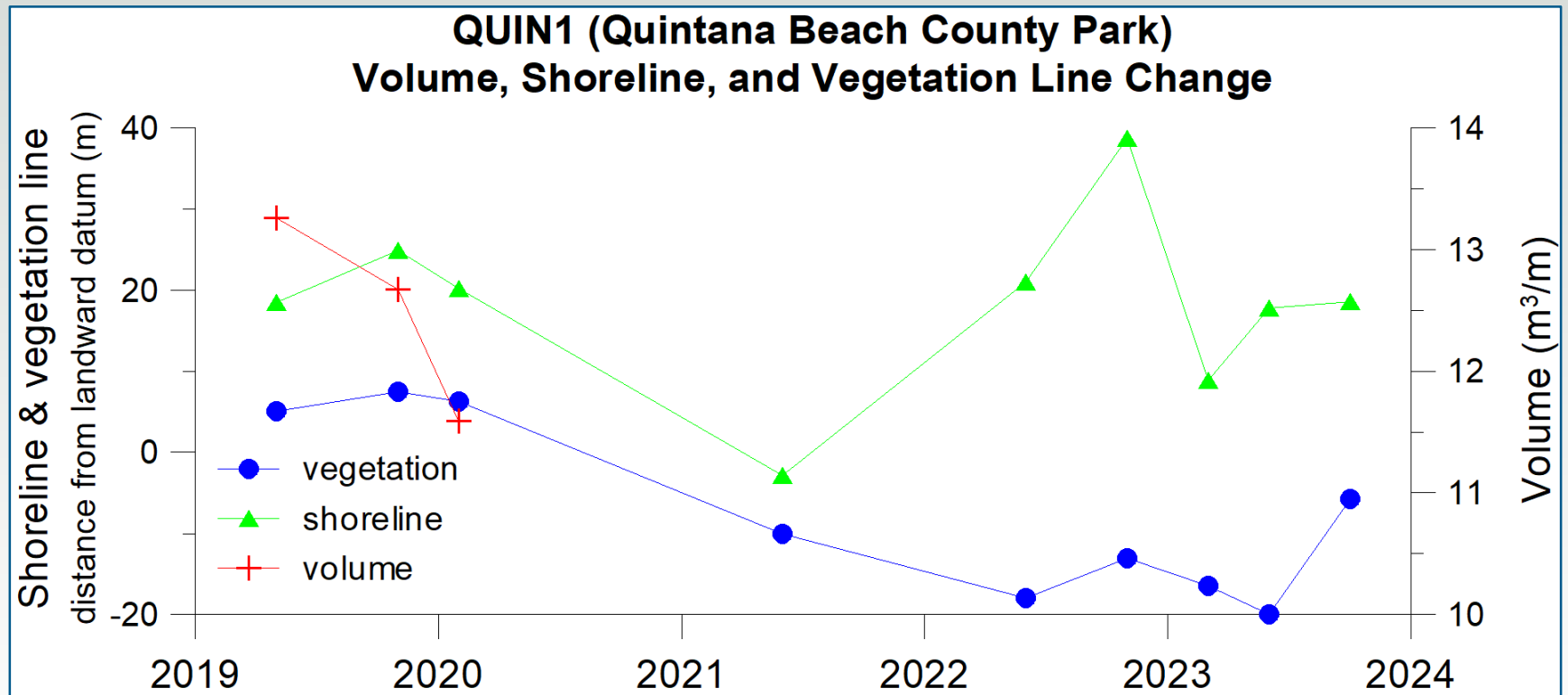
QUIN1: spring 2019-winter 2020



QUIN1 shore and vegetation line positions



QUIN1: shoreline, vegetation line, and volume changes



Sediment volume was calculated above 1 meter NAVD88.