

Texas High School Coastal Monitoring Program

Examination of Data Collected from Student Monitored Study Sites Along the Texas Coast

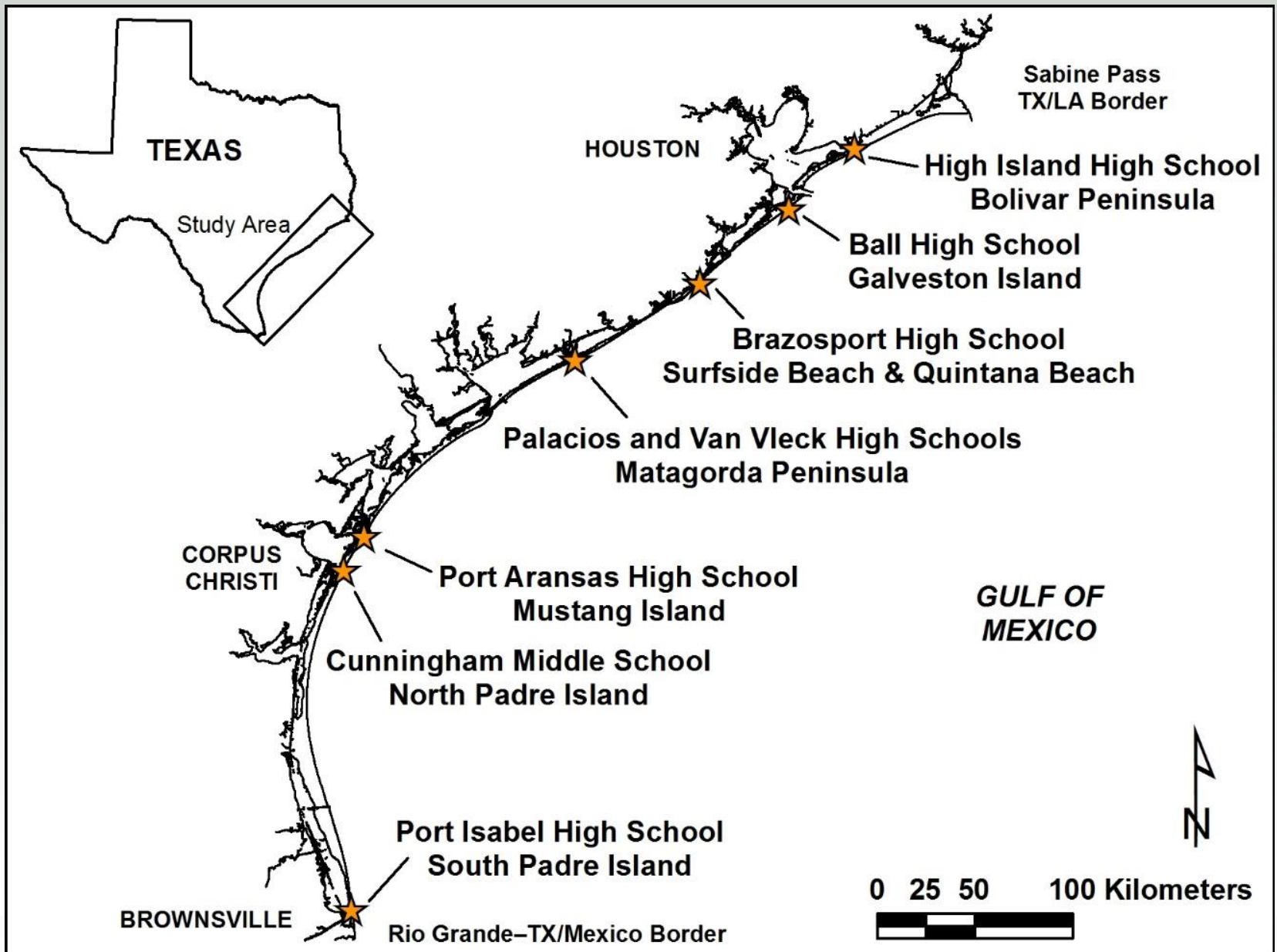


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ECONOMIC
GEOLOGY

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.



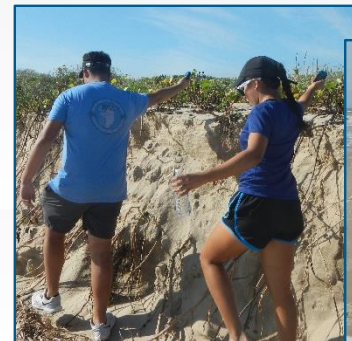


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GEOLOGY

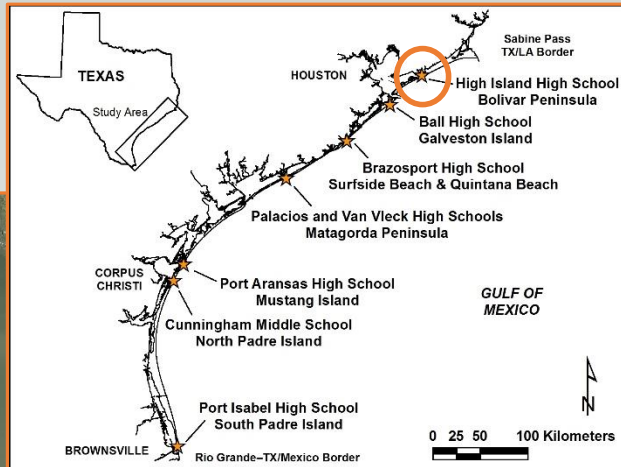
1997-2022: 369 field trips

Student Collected Data

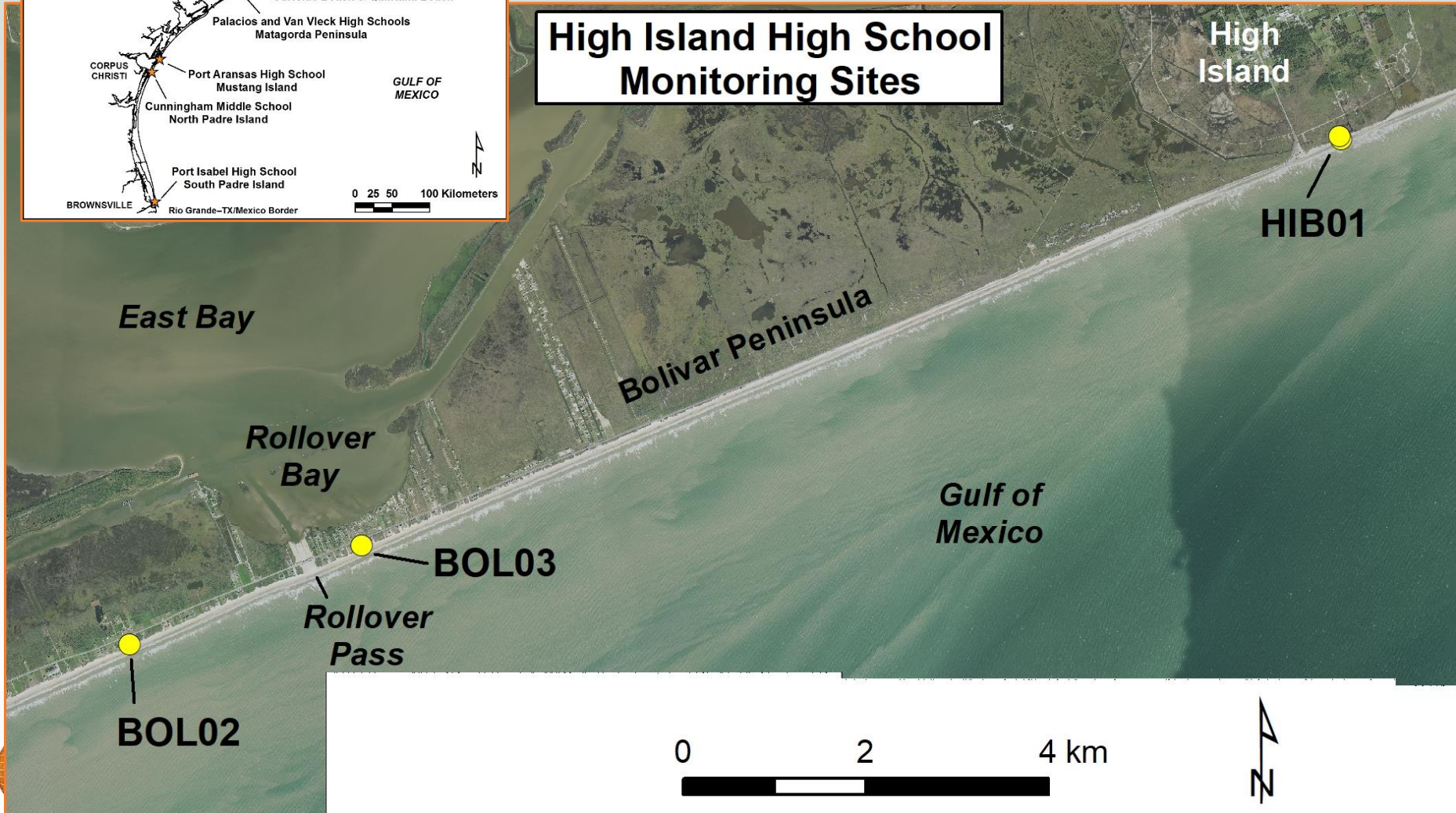
- Topographic transect oriented perpendicular to the shoreline
 - measured from the same starting point landward of the foredune and oriented in the same direction.
- Estimates of processes acting on the beach
 - wind direction and speed; wave direction, height, and period; and longshore current direction and speed
- GPS survey of the vegetation line and shoreline
 - quantitative data on the position of the shoreline and vegetation line



Bolivar Peninsula Study Sites



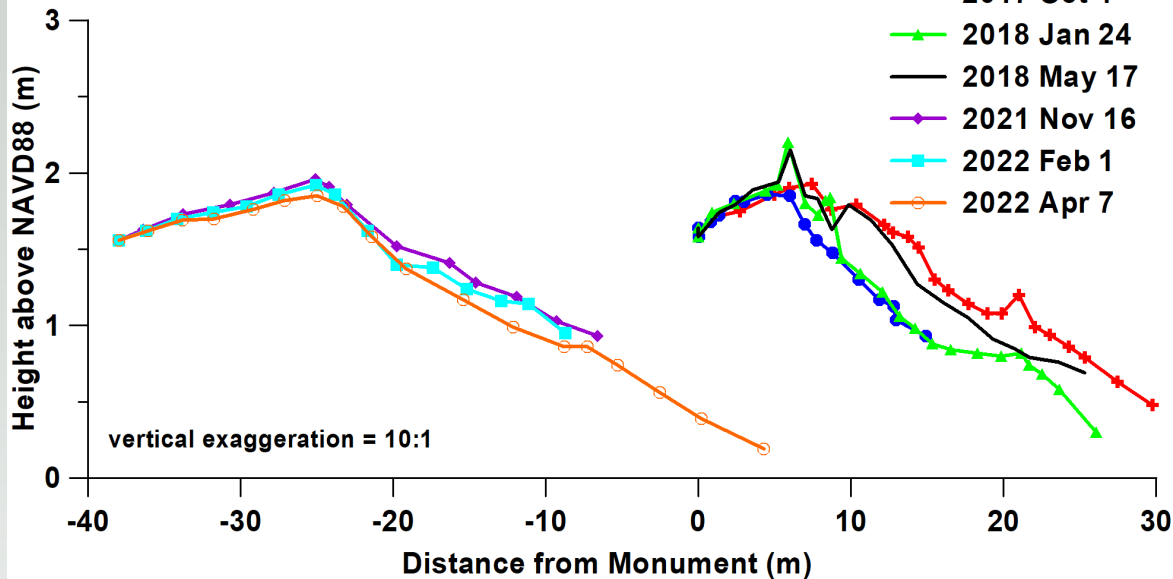
High Island High School Monitoring Sites



HIB01

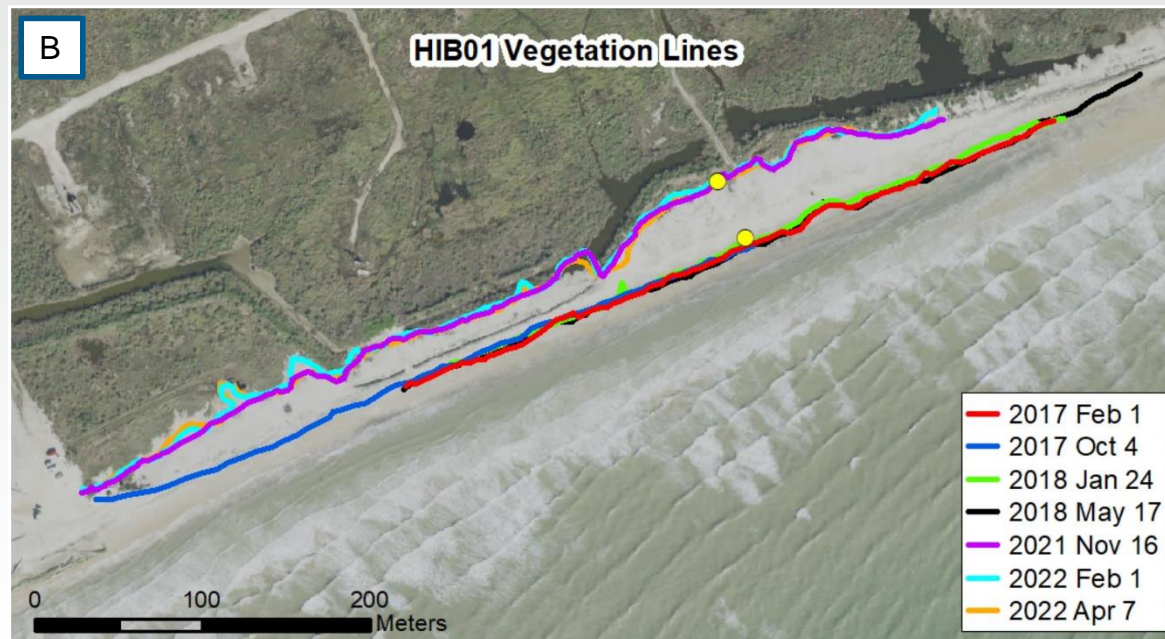
A

HIB01 & HIB01Reset (High Island Beach)



B

HIB01 Vegetation Lines



C

2017 Feb 1



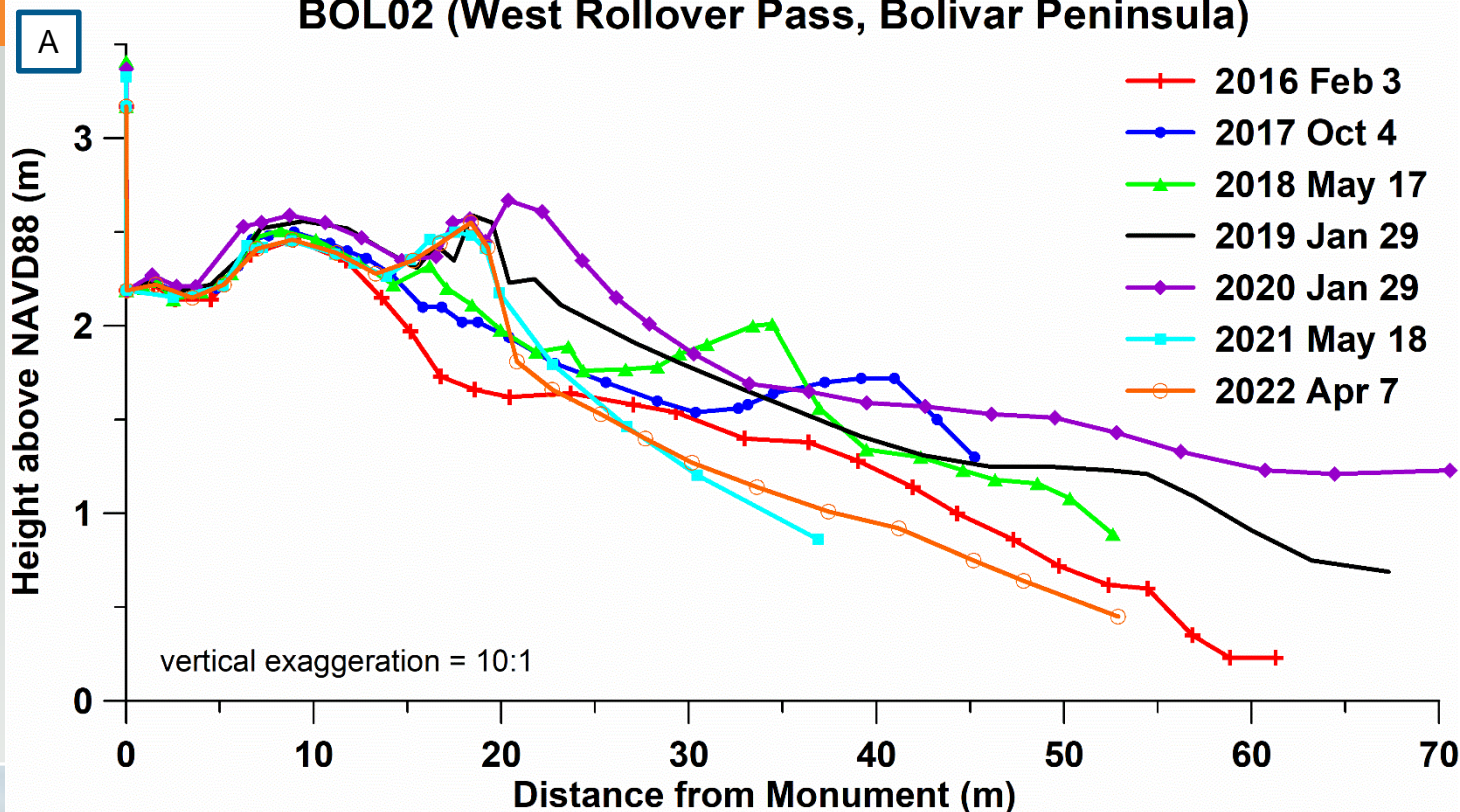
2017 Oct 4: Post Harvey



2022 Apr 7



BOL02 (West Rollover Pass, Bolivar Peninsula)



2020 Jan 29

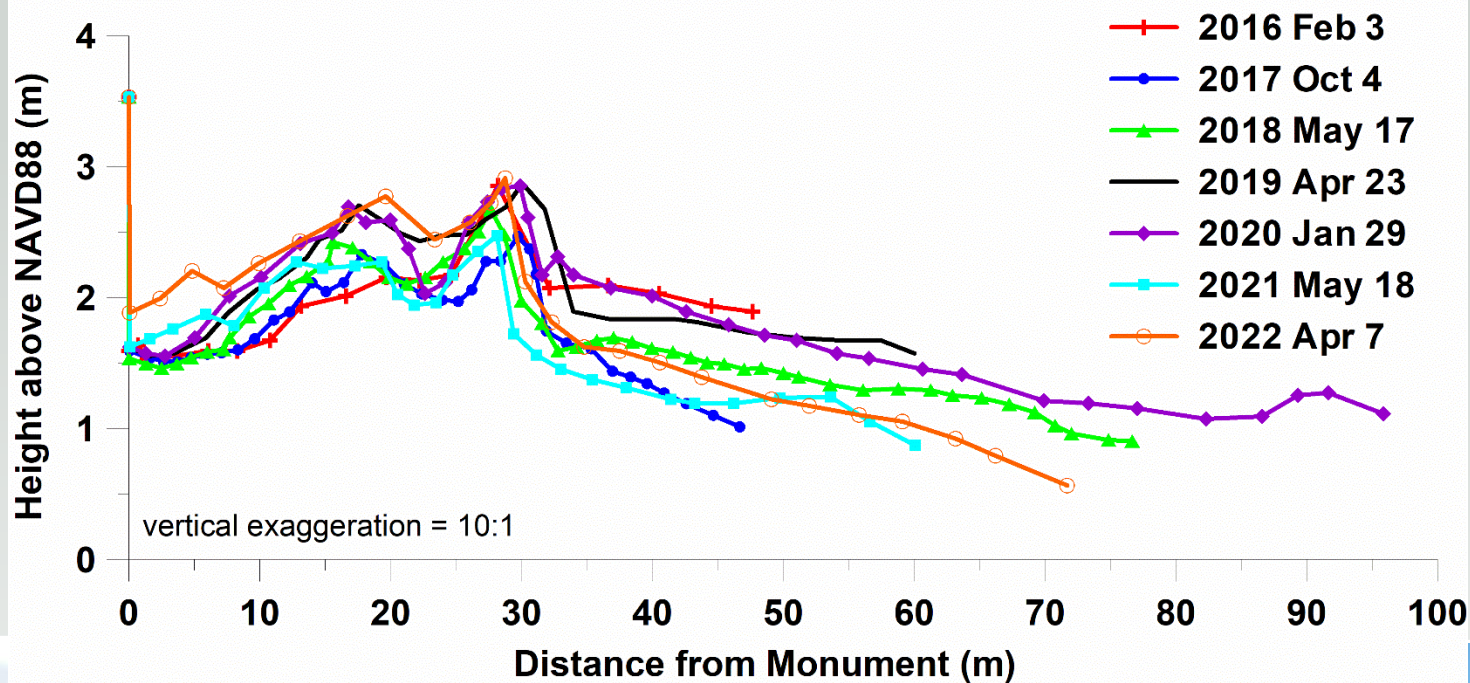
2022 Apr 7

B

C

A

BOL03 (East of Rollover Pass, Bolivar Peninsula)



2020 Jan 29

2022 Apr 7

B

C

Rollover Bay

Rollover Pass 2018

Bolivar Peninsula

Gulf of Mexico

Rollover Pass

Rollover Pass 2020

0 50 100 200 Meters



- 2021 Nov 16
- 2022 Feb 1
- 2022 Apr 7



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Galveston Island Study Sites

Ball High School Monitoring Sites

DEL01

Galveston Island

Gulf of Mexico

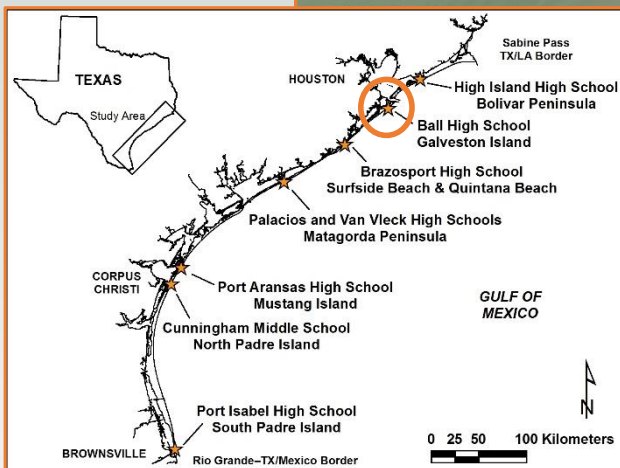
Galveston Island
State Park

BEG02

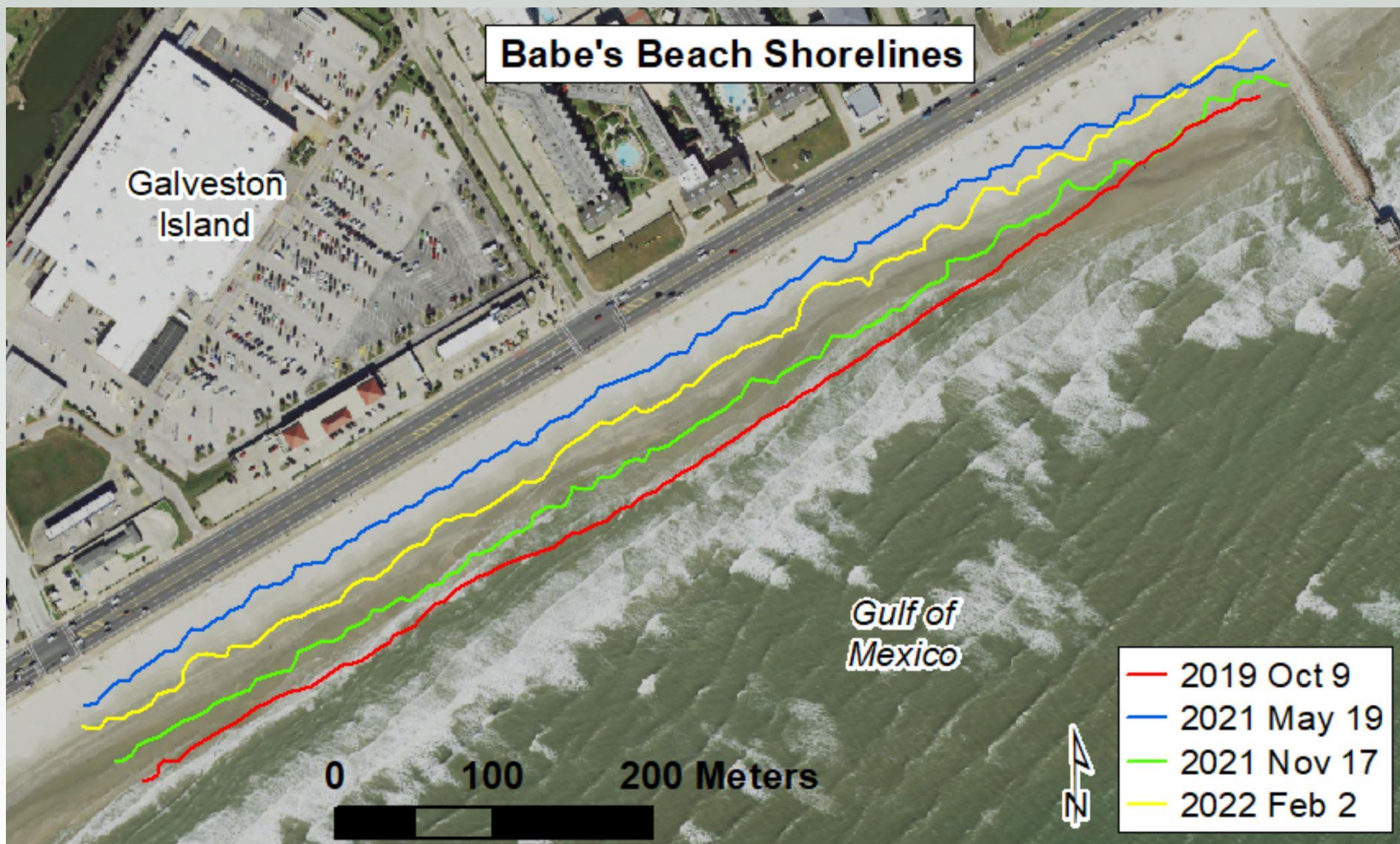
GLO06

JAM02

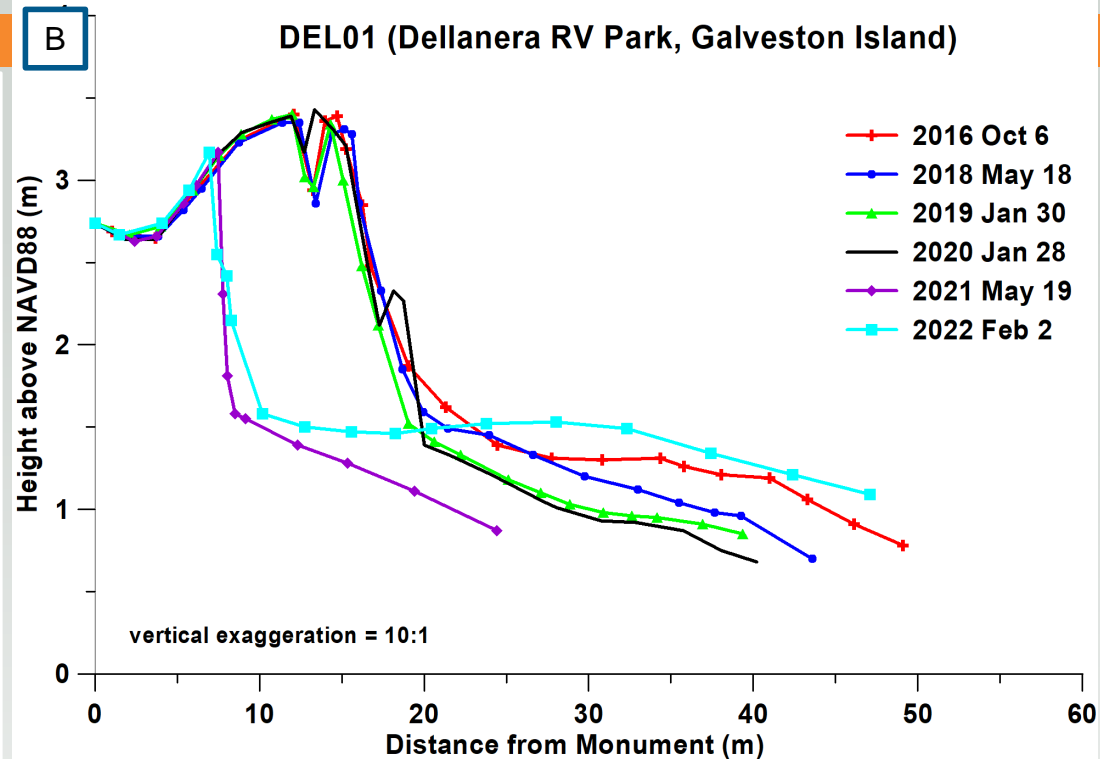
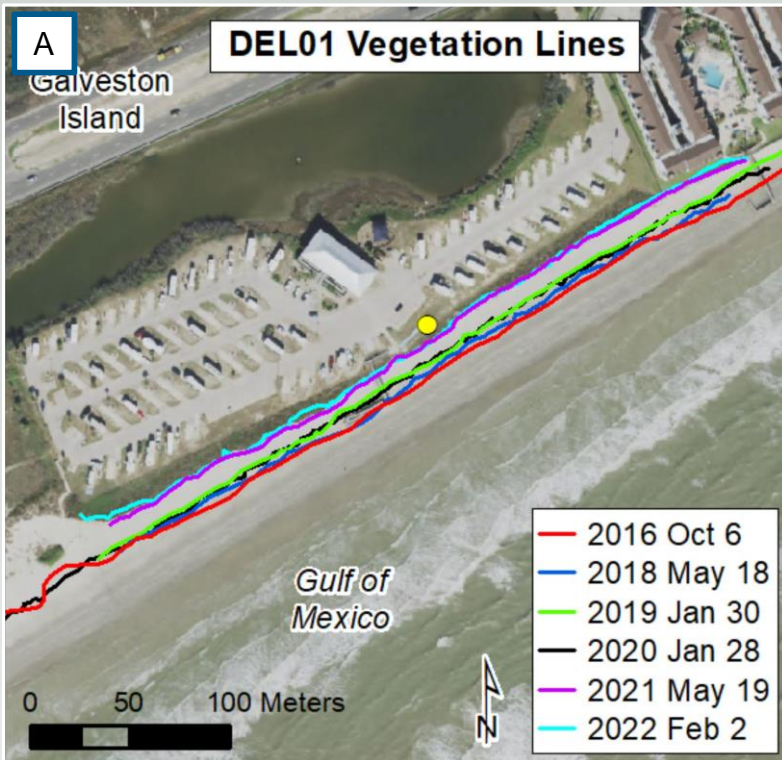
0 2 4 km



Babe's Beach

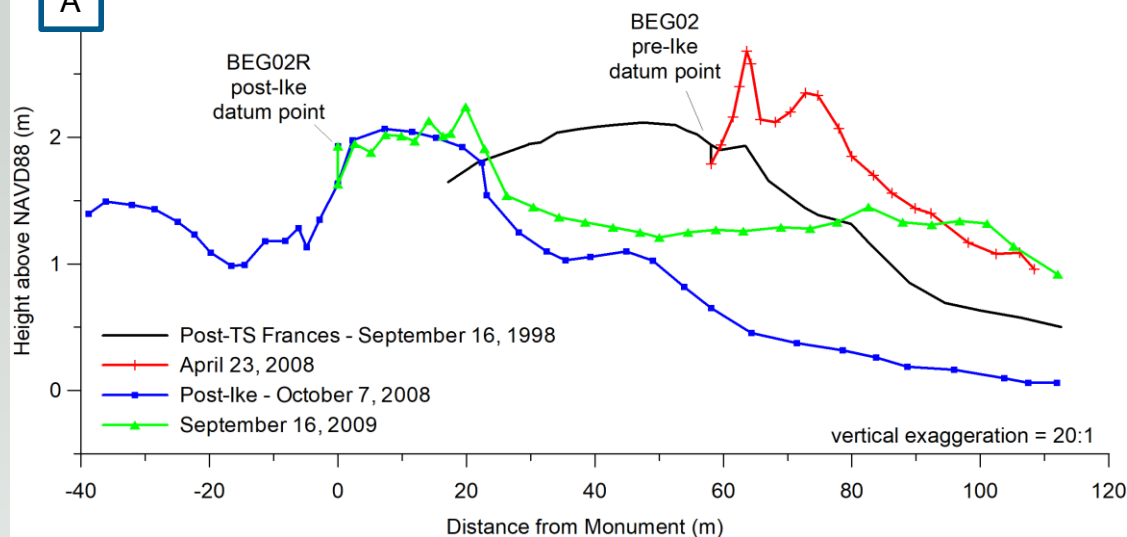


DEL01



A

BEG02 Galveston Island State Park

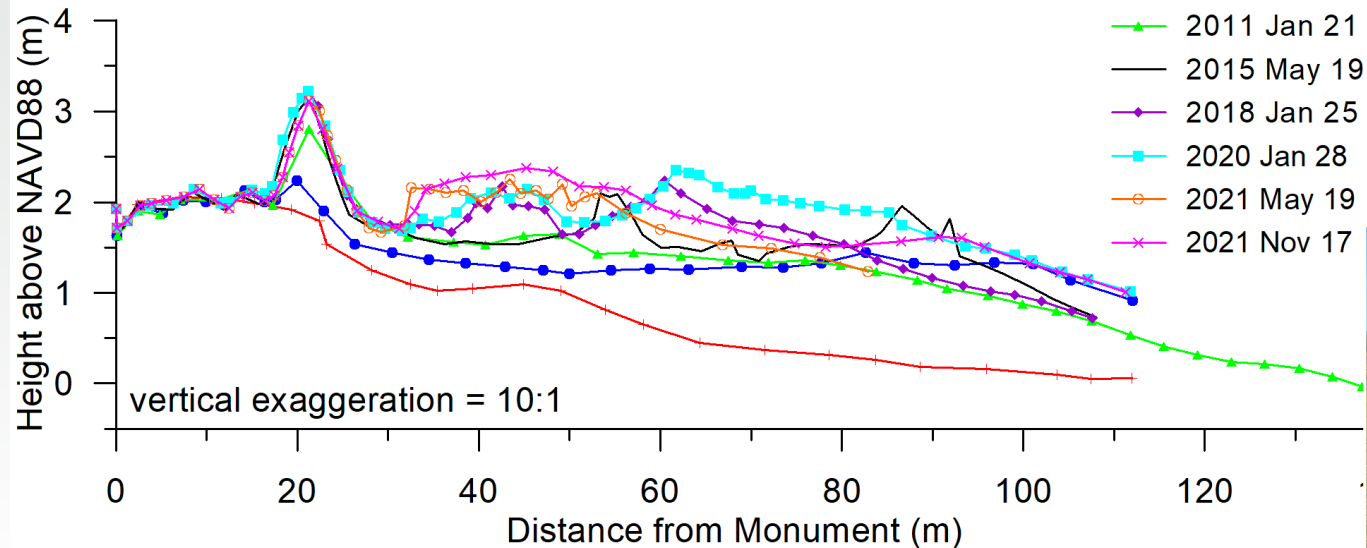


B



BEG02 Galveston Island State Park

C



D

11/17/2021



JAM02

JAM02 Vegetation Lines

A

Jamaica Beach

Gulf of Mexico



0 50 100 Meters

- 2015 Oct 7
- 2016 Oct 6
- 2018 Jan 25
- 2019 Apr 25
- 2020 Jan 28
- 2021 May 19
- 2021 Nov 17

JAM02 (Jamaica Beach, Galveston Island)

B

Height above NAVD88 (m)

vertical exaggeration = 10:1

Distance from Monument (m)

- 2015 Oct 7
- 2016 Oct 6
- 2018 Jan 25
- 2019 Apr 25
- 2020 Jan 28
- 2021 May 19
- 2021 Nov 17

2015 Oct 7

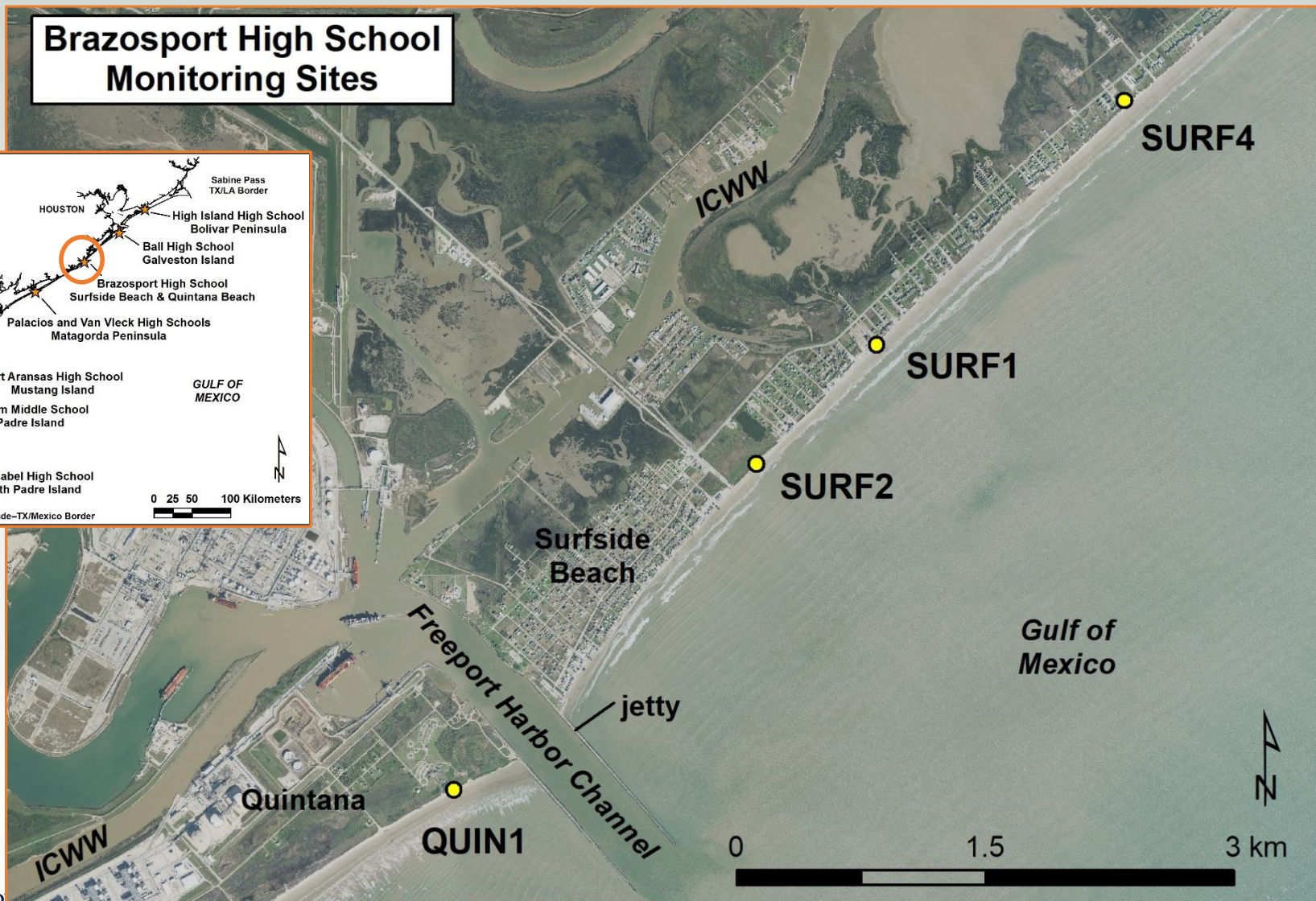
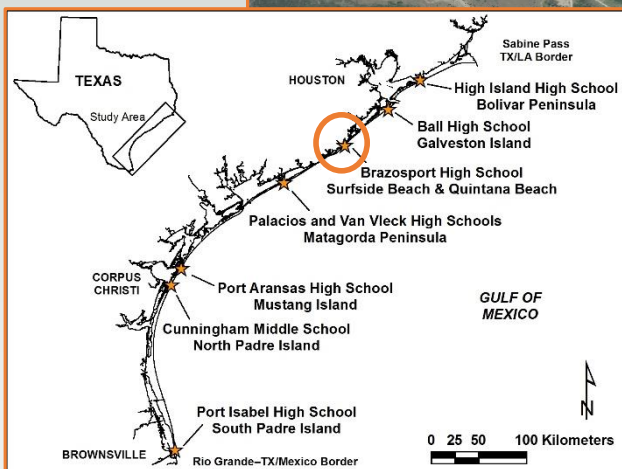
C

2021 Nov 17



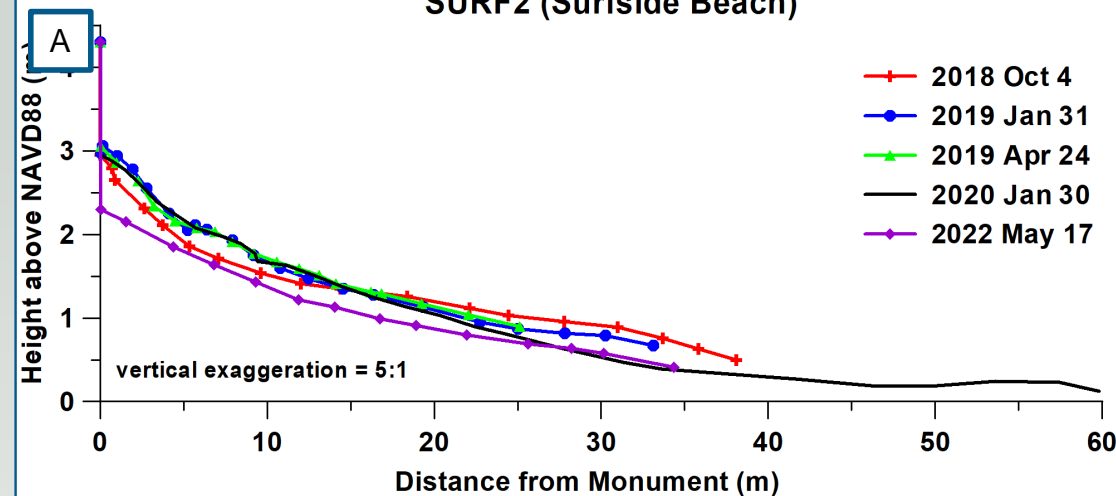
Surfside & Quintana Study Sites

Brazosport High School Monitoring Sites



SURF2, SURF4, Jetty

SURF2 (Surfside Beach)



B

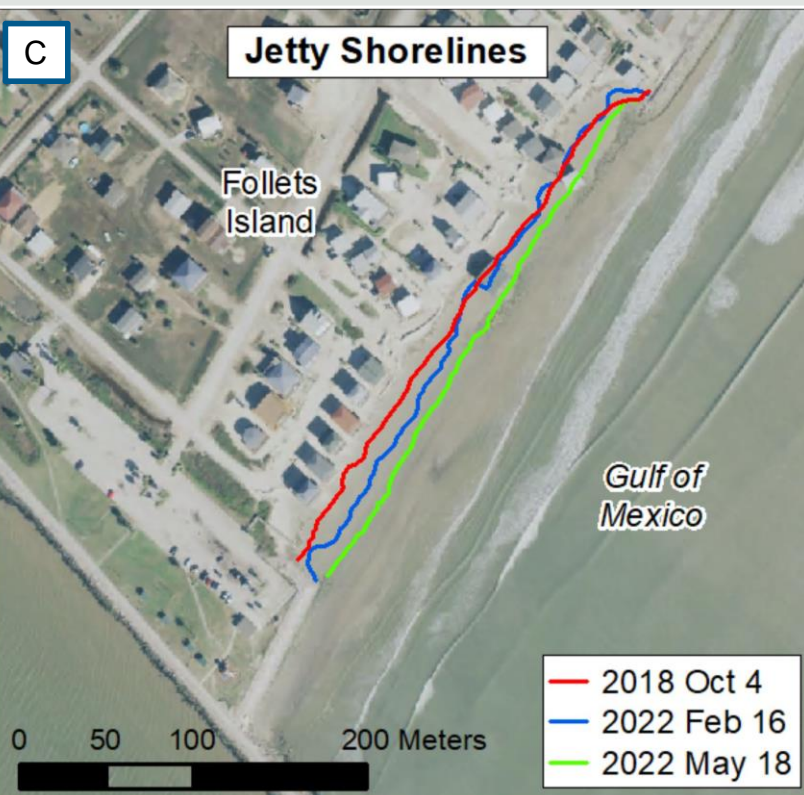
2022 May 17



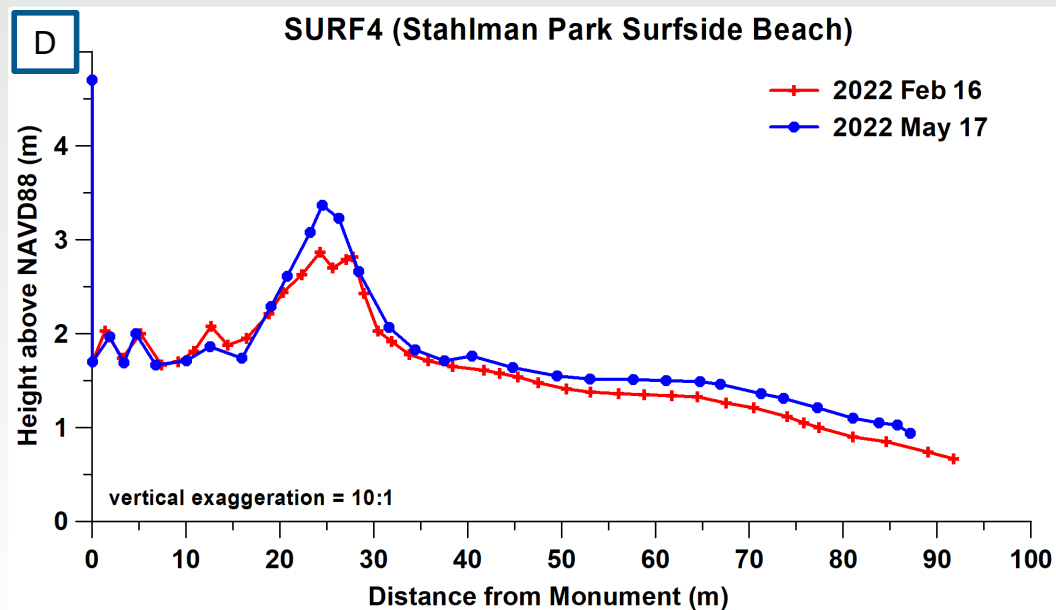
Jetty Shorelines

Follets Island

Gulf of Mexico

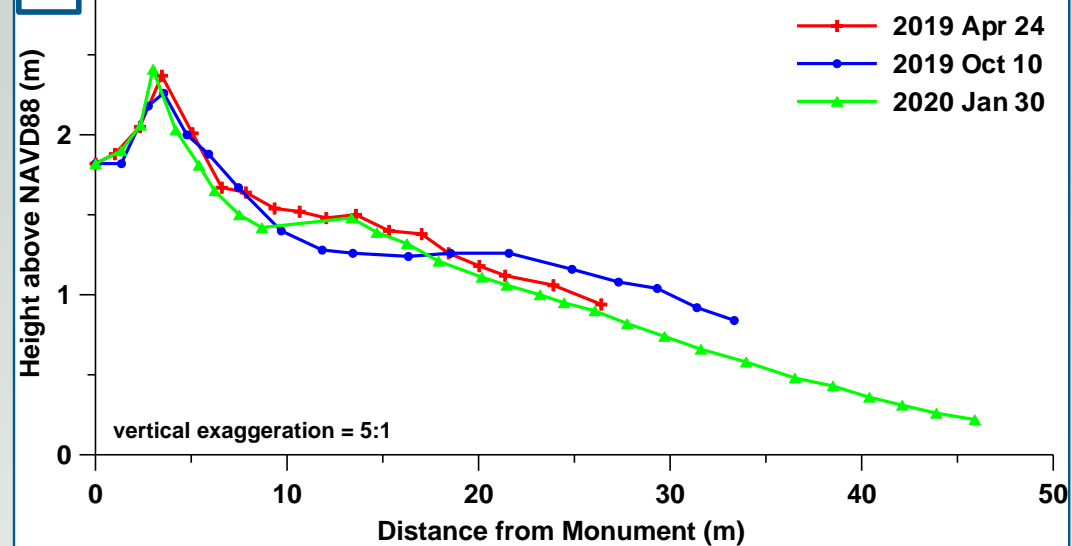


SURF4 (Stahlman Park Surfside Beach)



QUIN1 (Quintana Beach County Park)

A



C

2020 Jan 30



B

QUIN1 Vegetation Lines

Quintana Beach

Gulf of Mexico

0 50 100 Meters

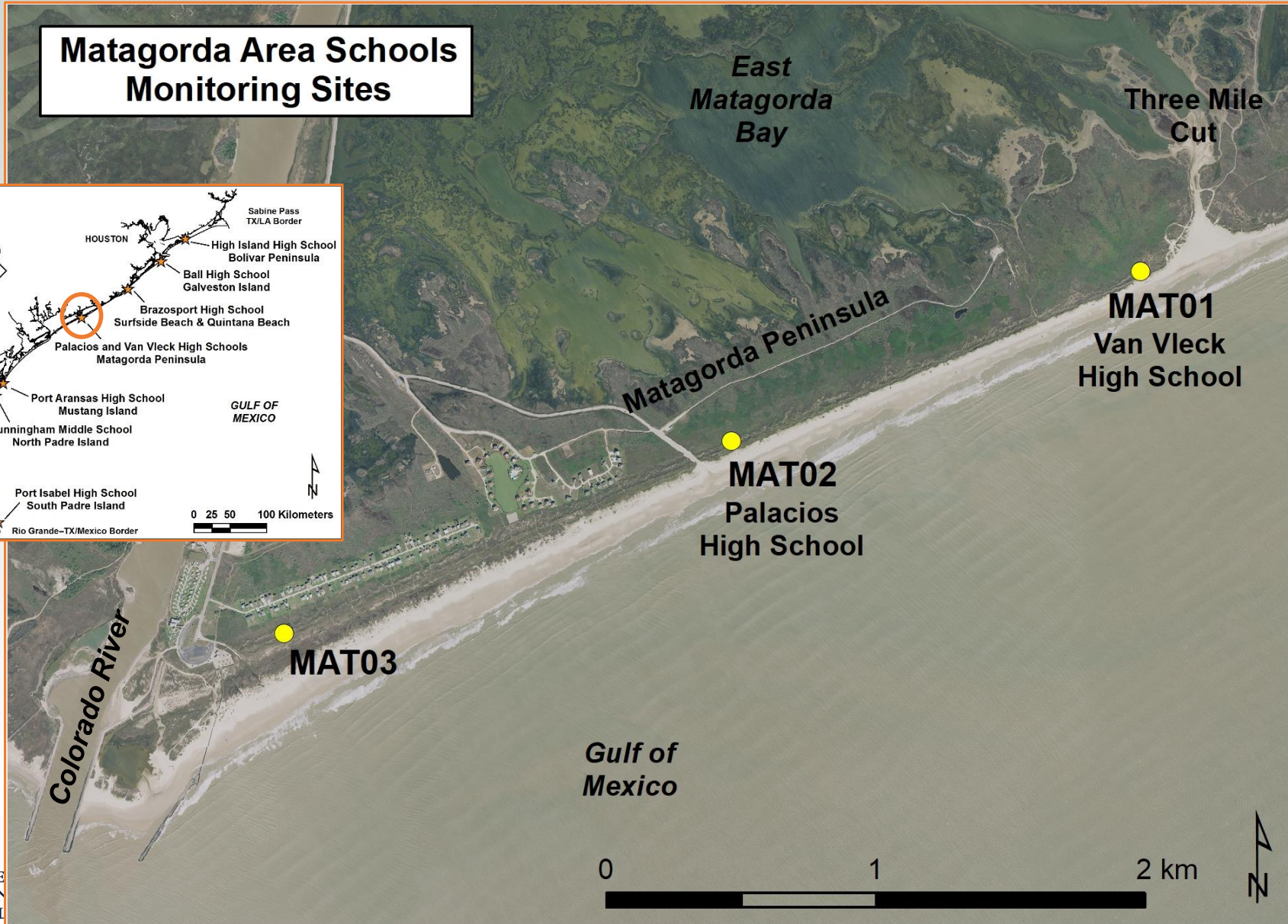
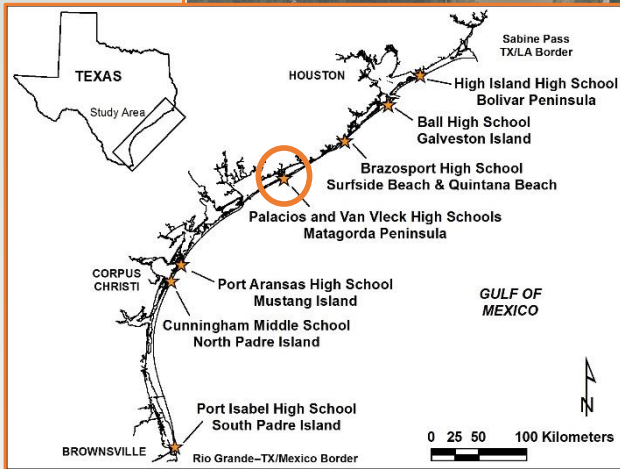


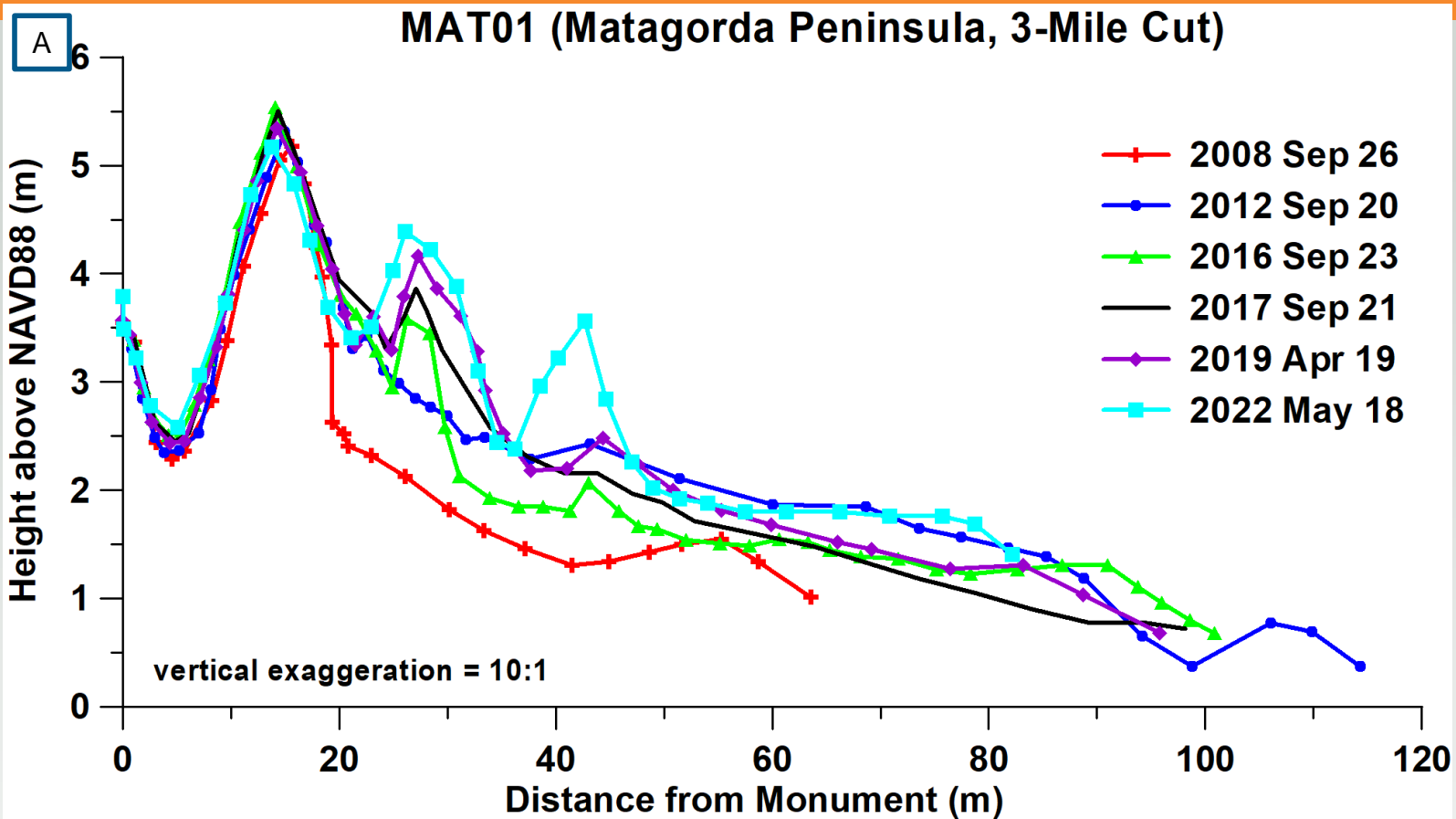
2022 May 18



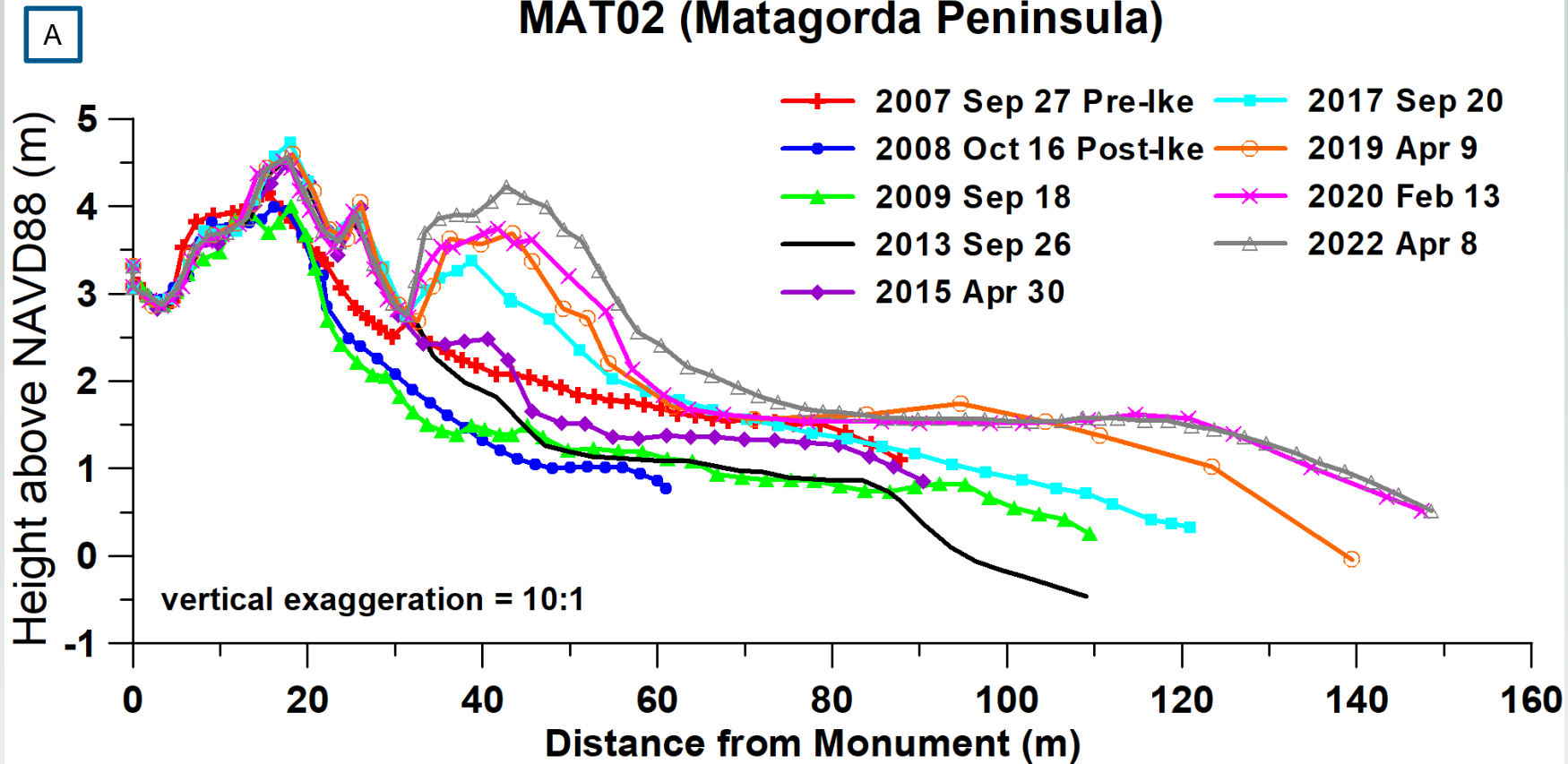
Matagorda Peninsula Study Sites

Matagorda Area Schools Monitoring Sites





MAT02 (Matagorda Peninsula)



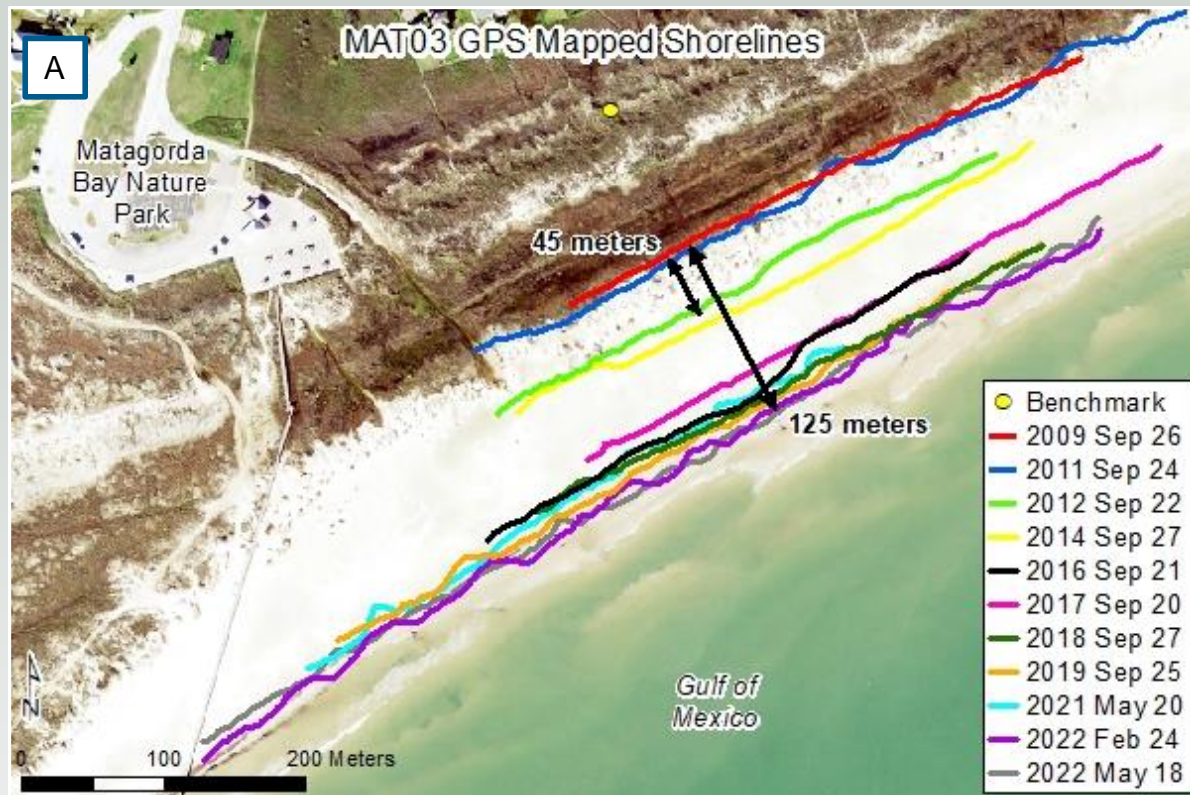
B 2009 Sep 18

2017 Sep 20

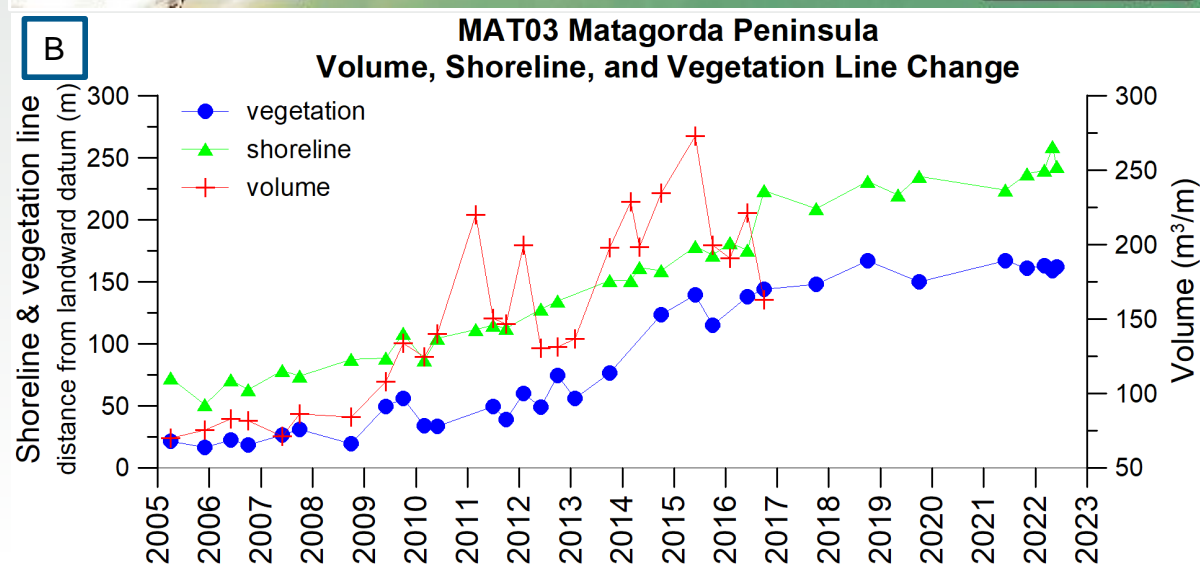
2022 Apr 8



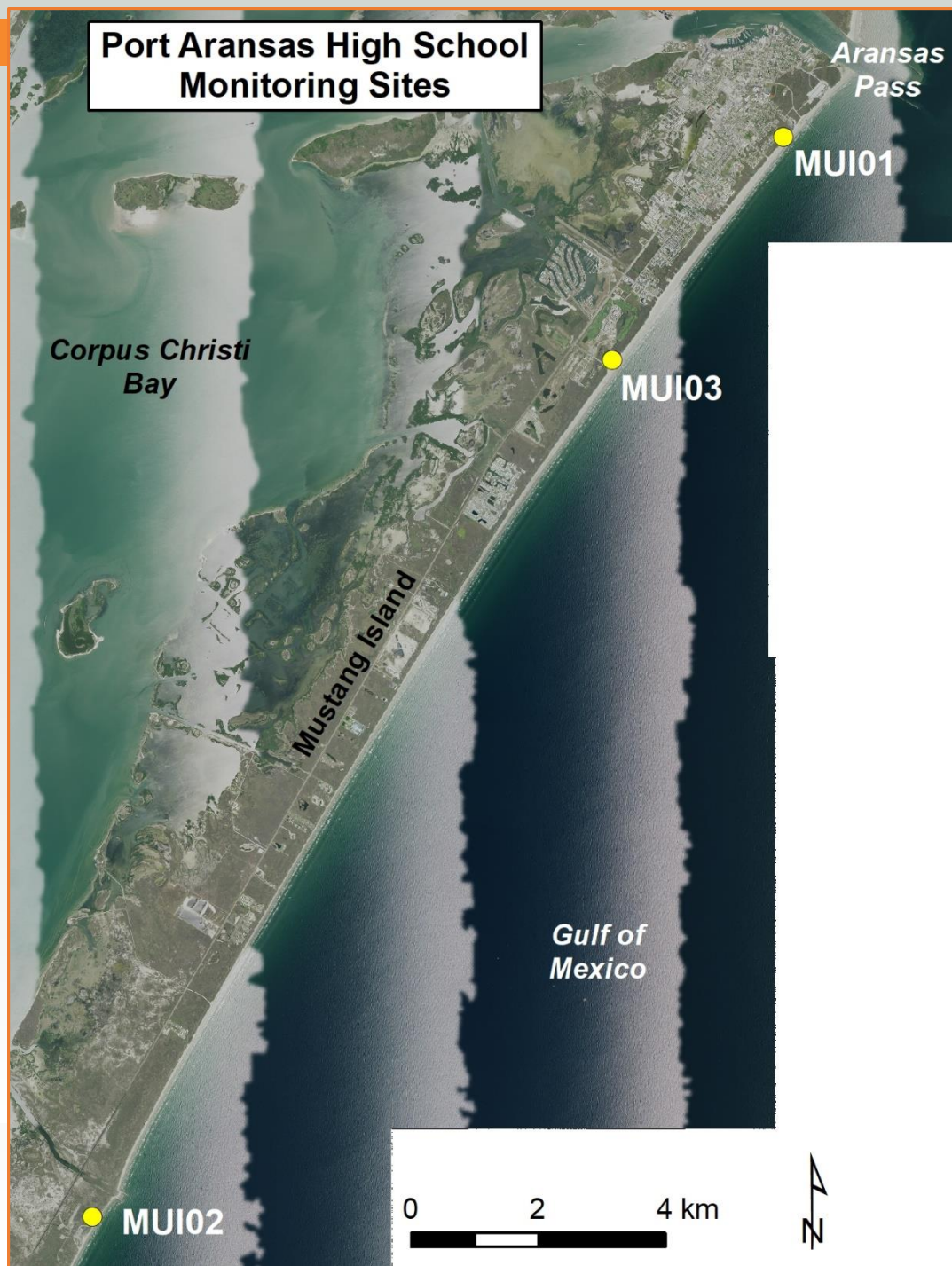
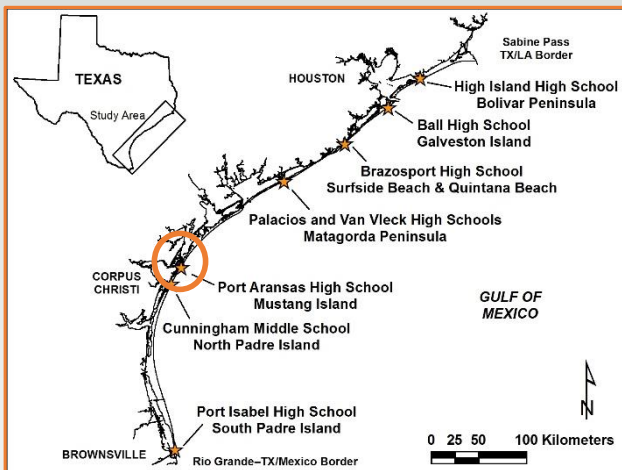
MAT03



2009-2019
shoreline change rate:
+12.5 m/yr

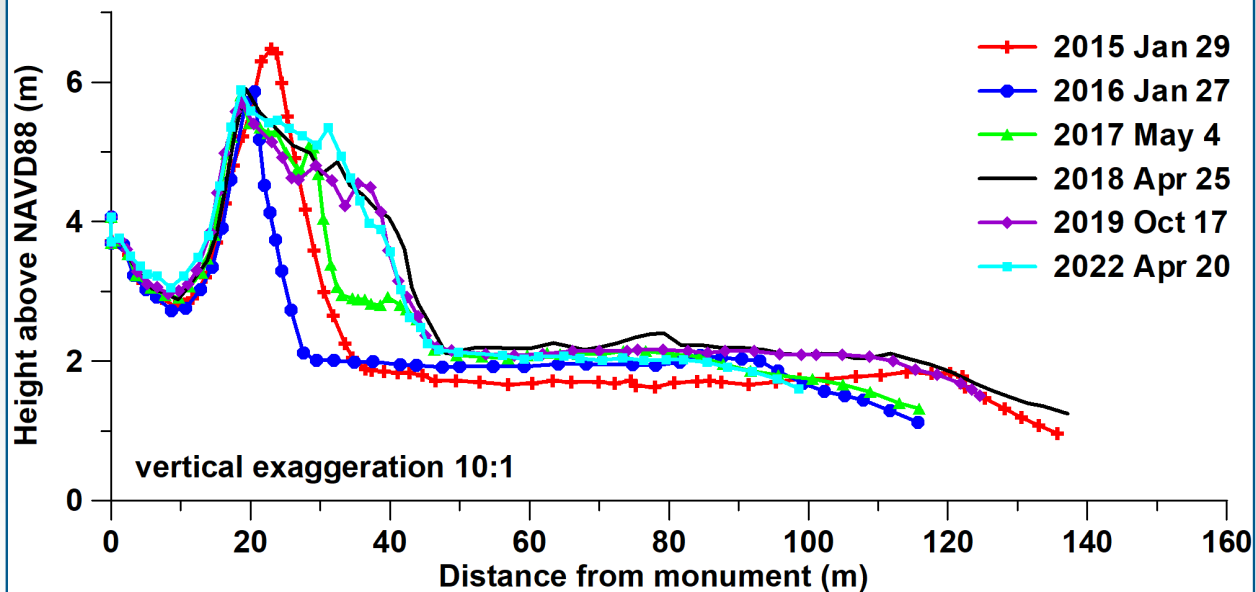
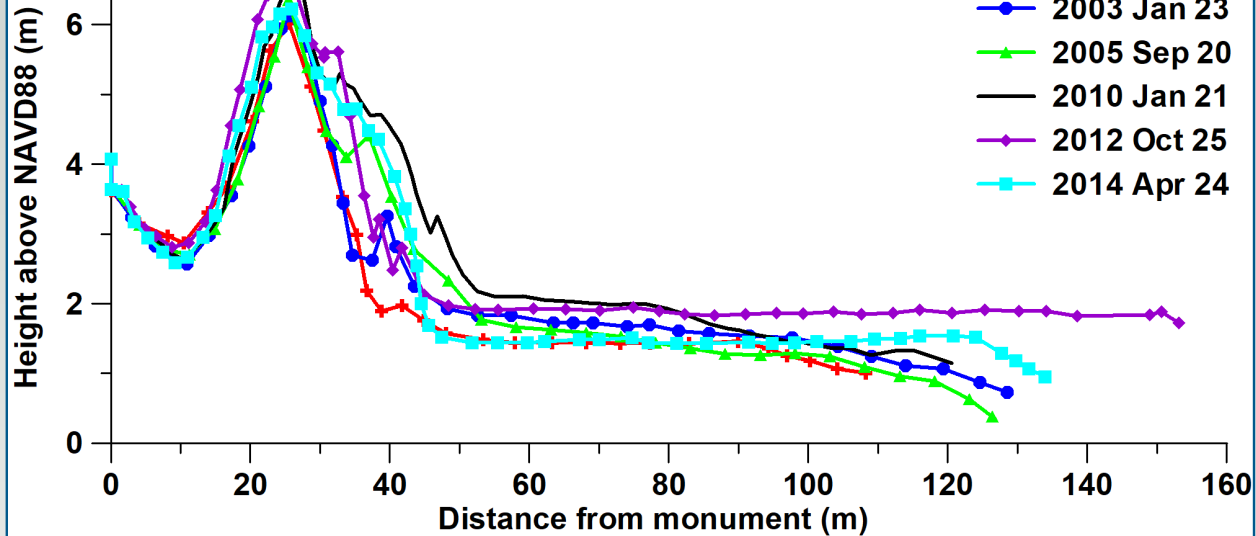


Mustang Island Study Sites



MUI01 Mustang Island

A



B

2005 Sep 20

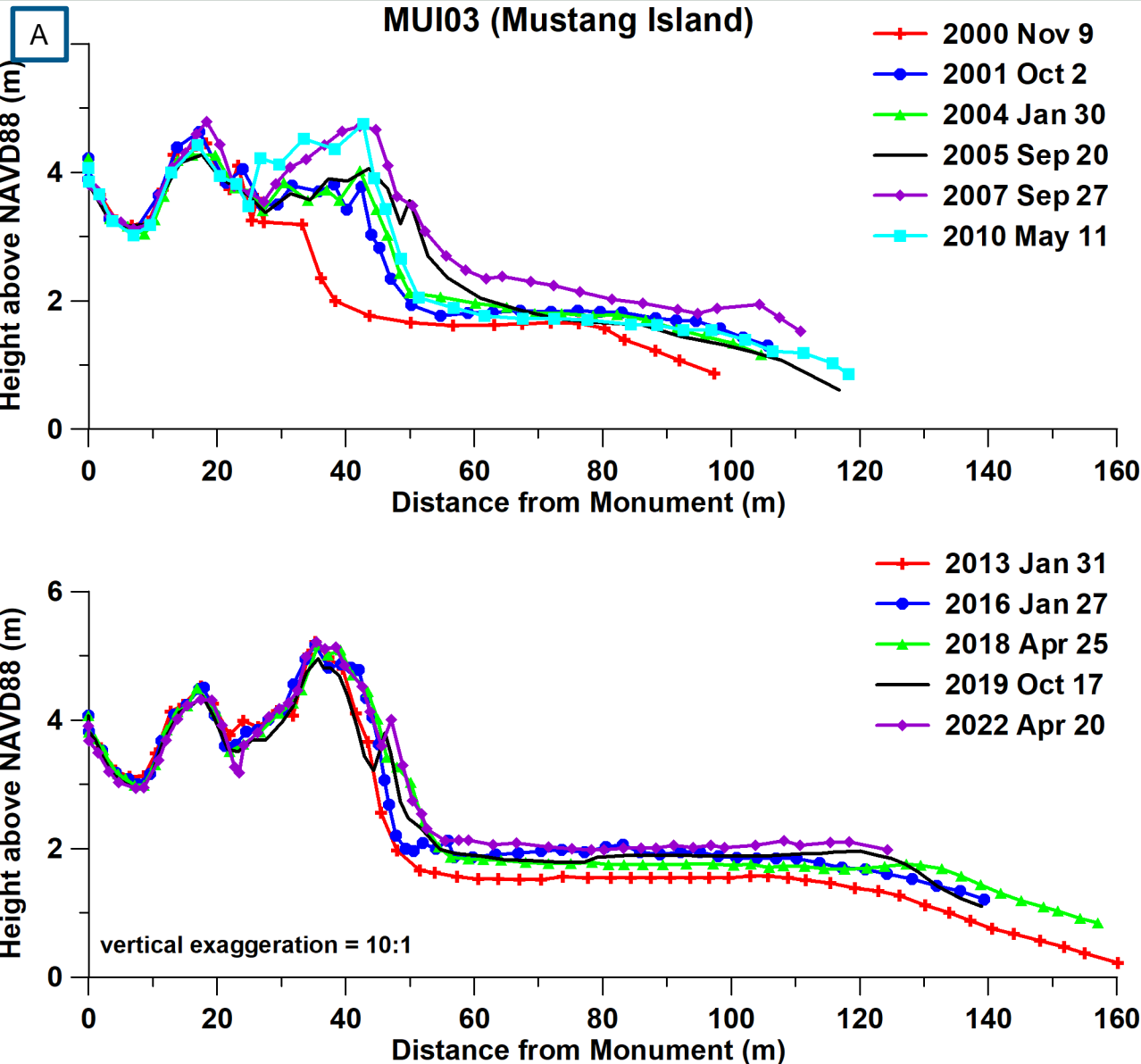


2012 Oct 25

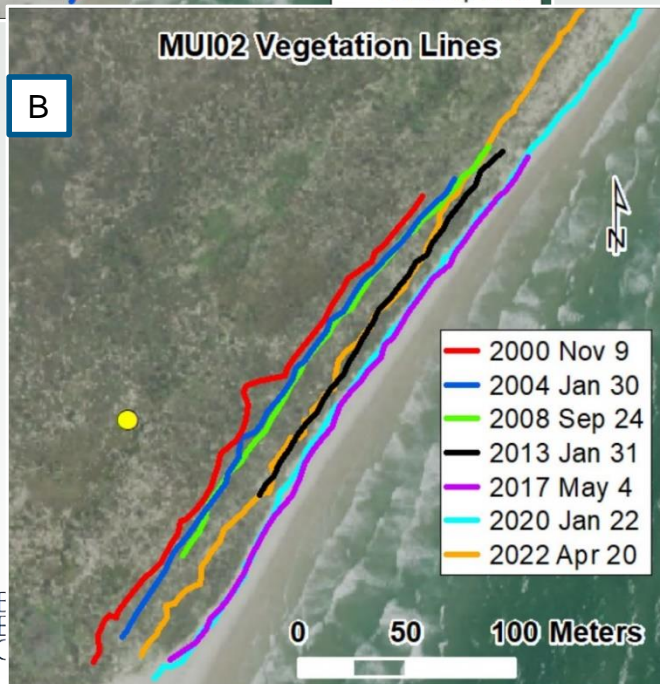
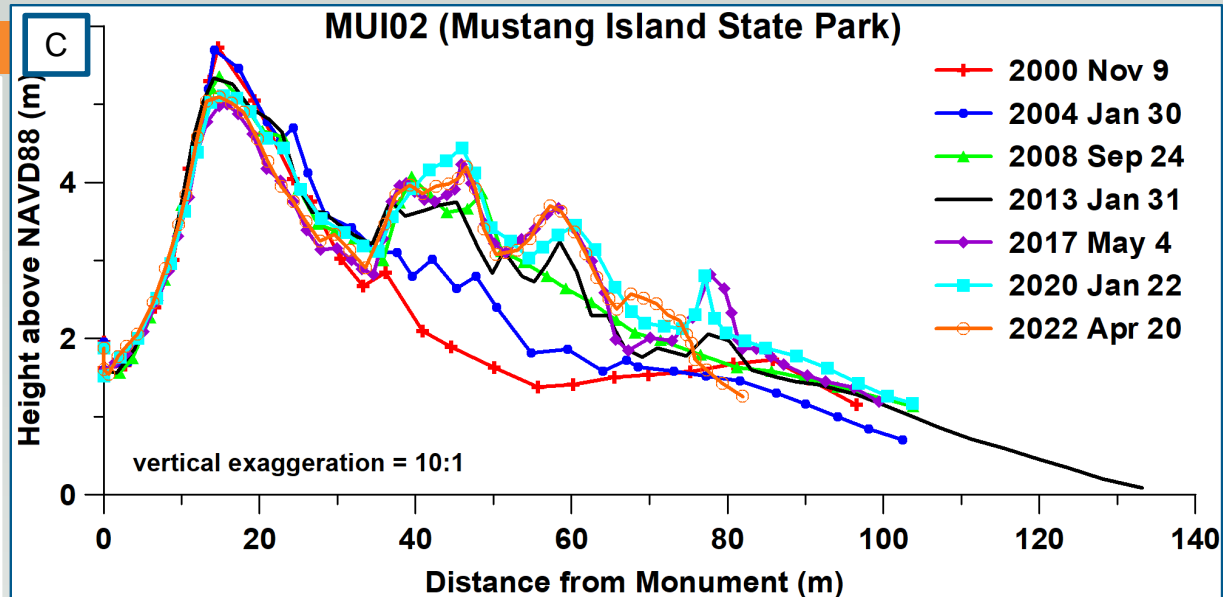
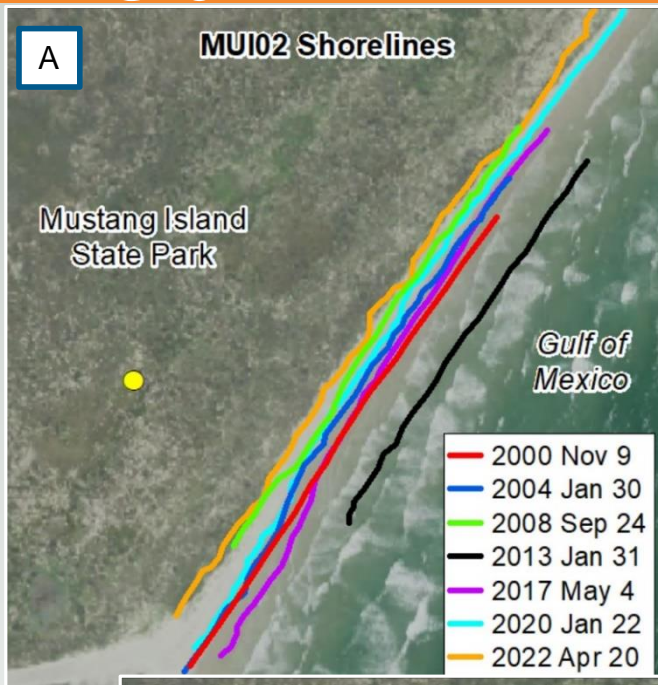


2022 Apr 20





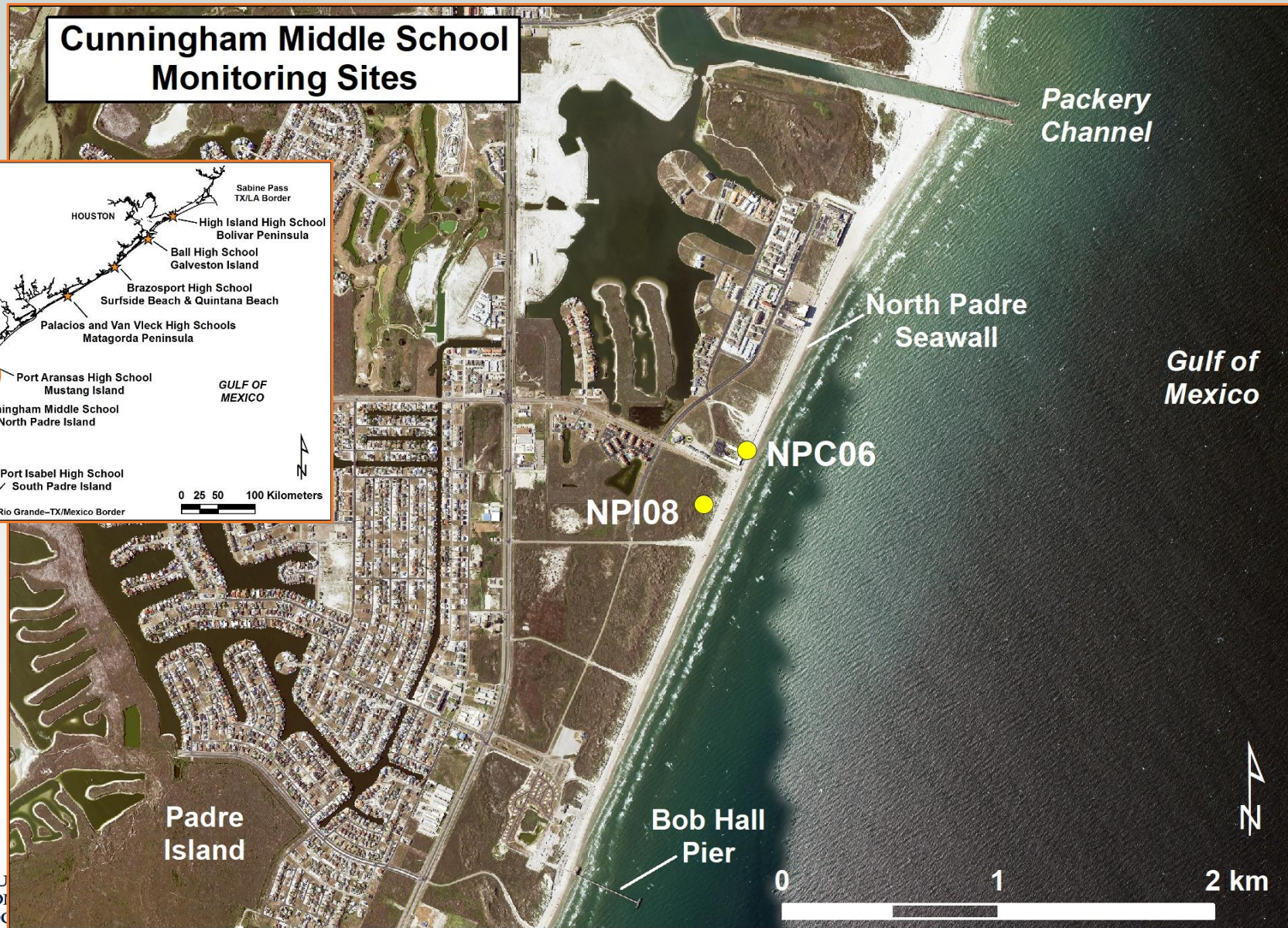
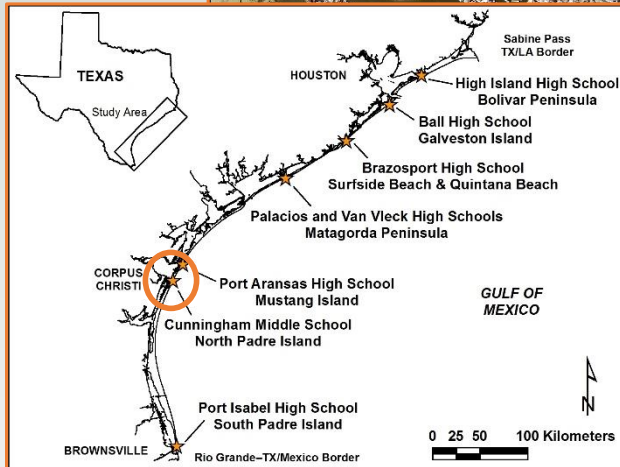
MUI02



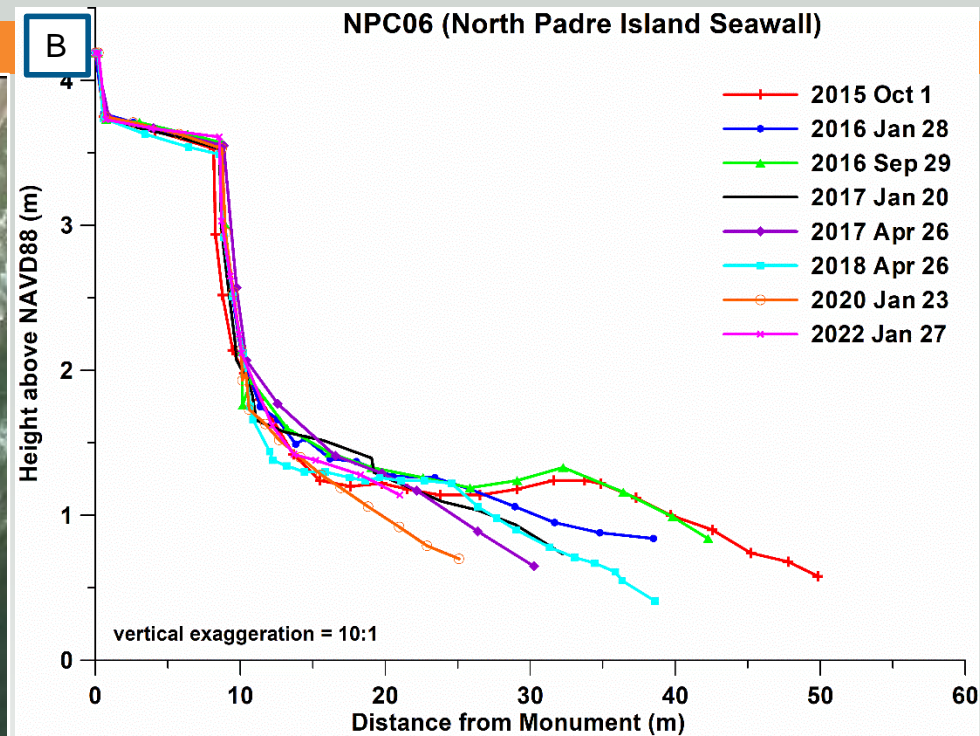
EEEC

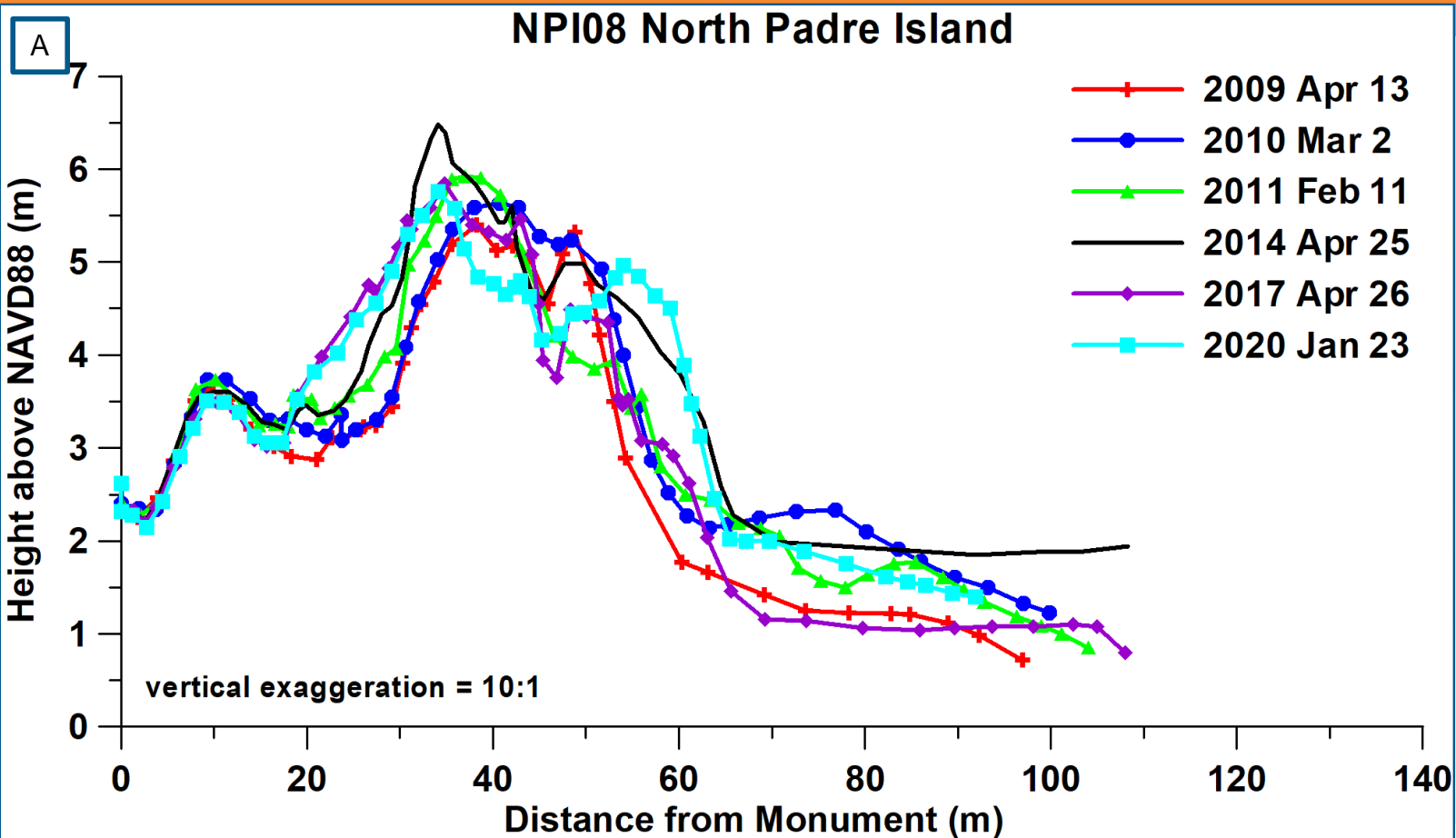
Northern Padre Island Study Sites

Cunningham Middle School Monitoring Sites

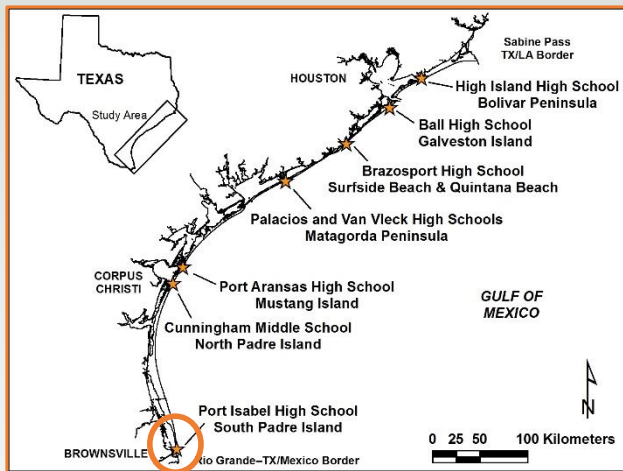


NPC06

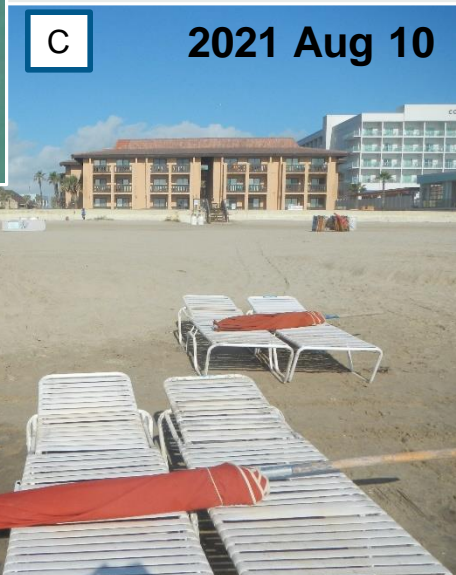
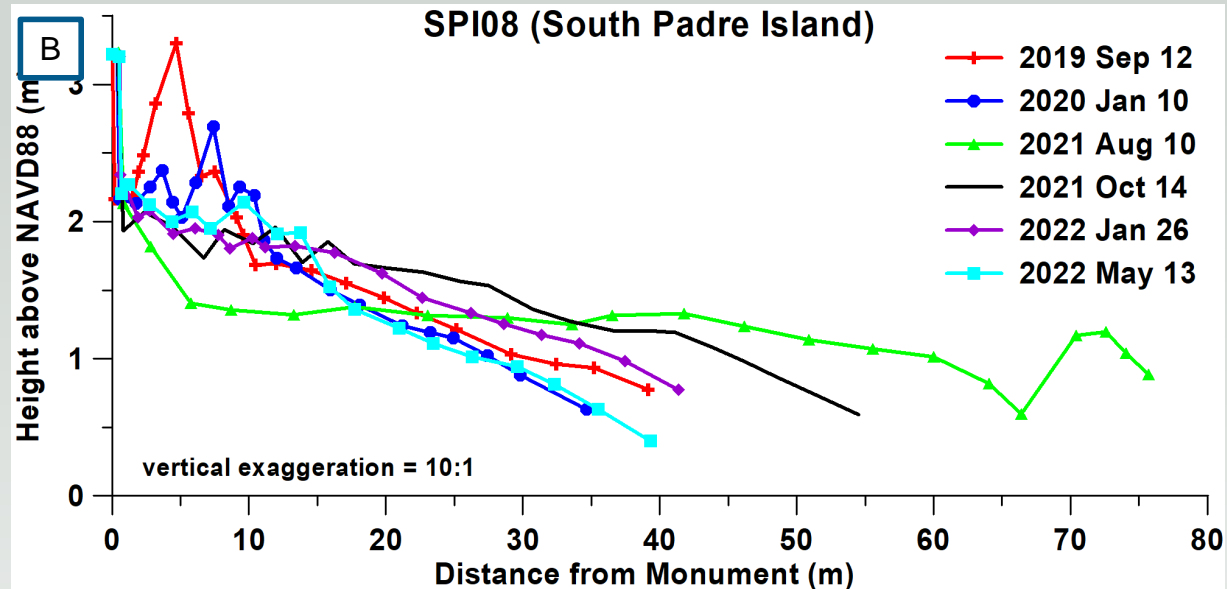
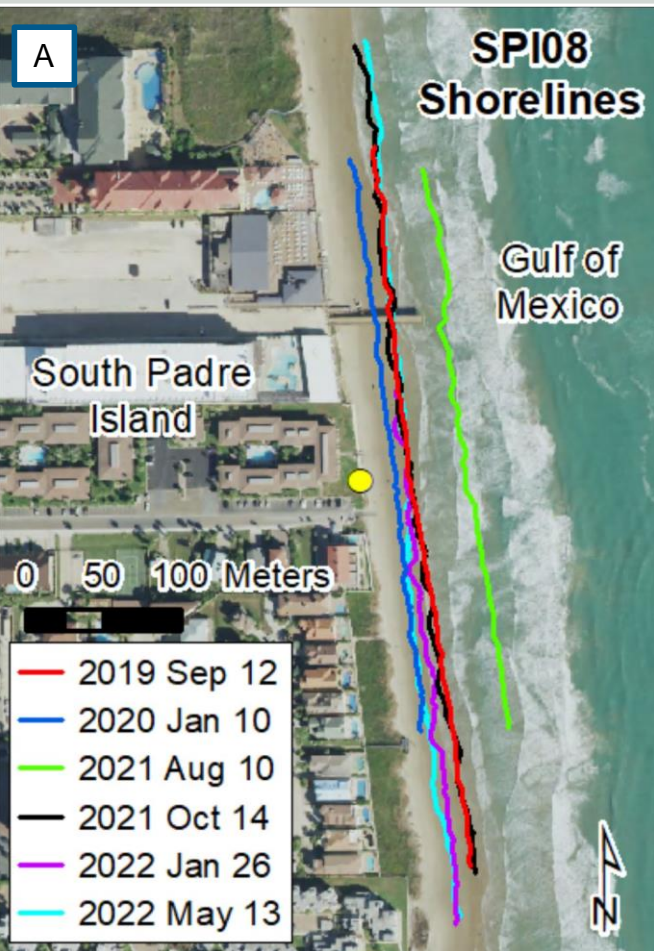


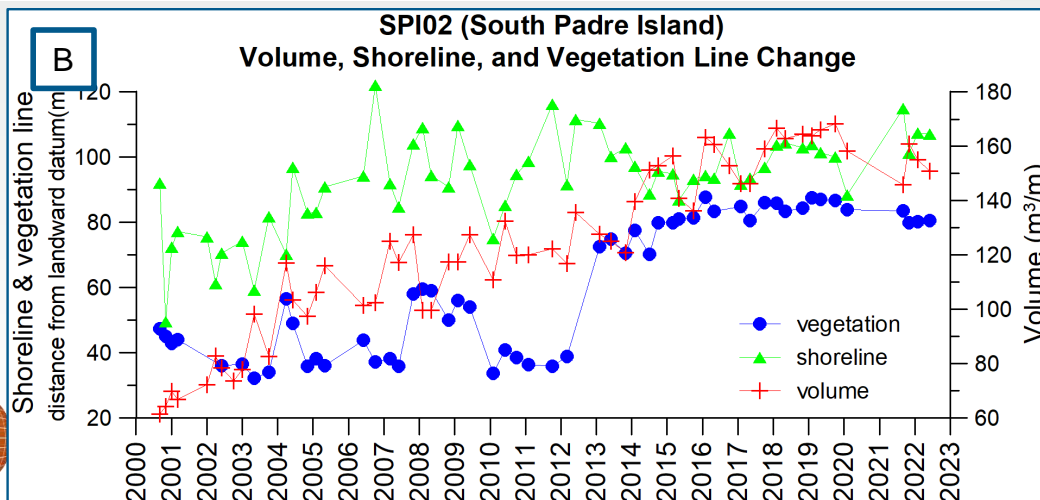
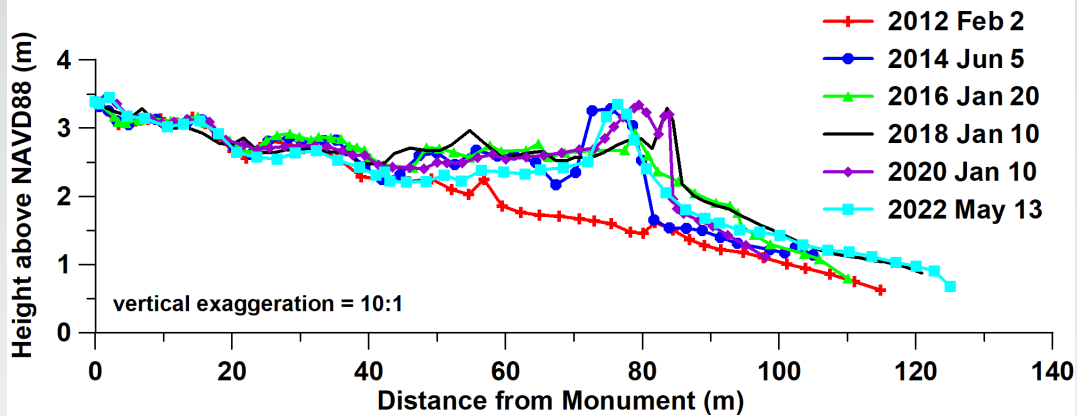
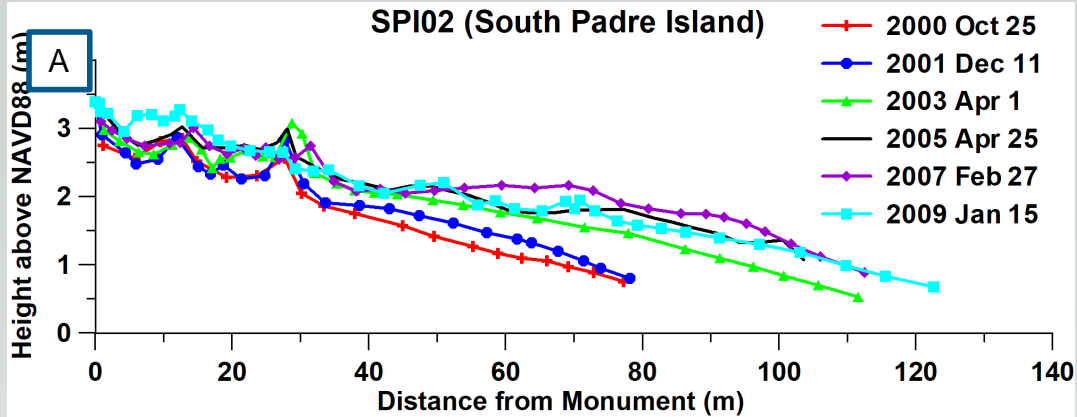


South Padre Island Study Sites

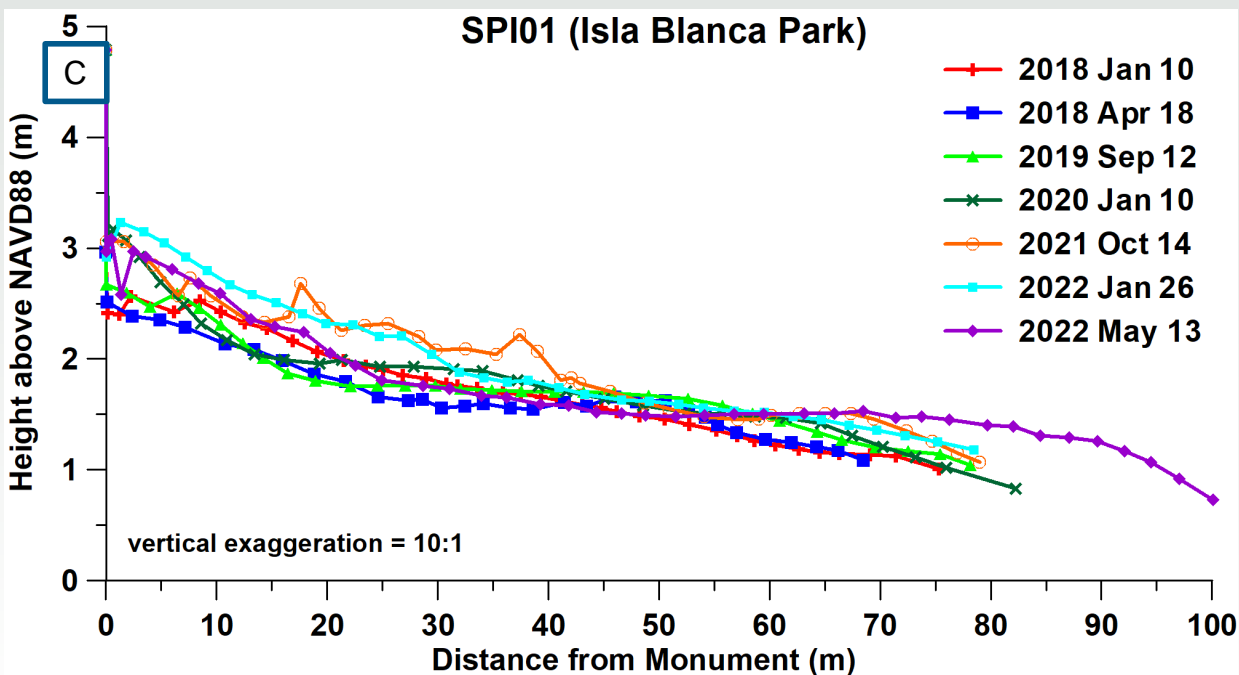
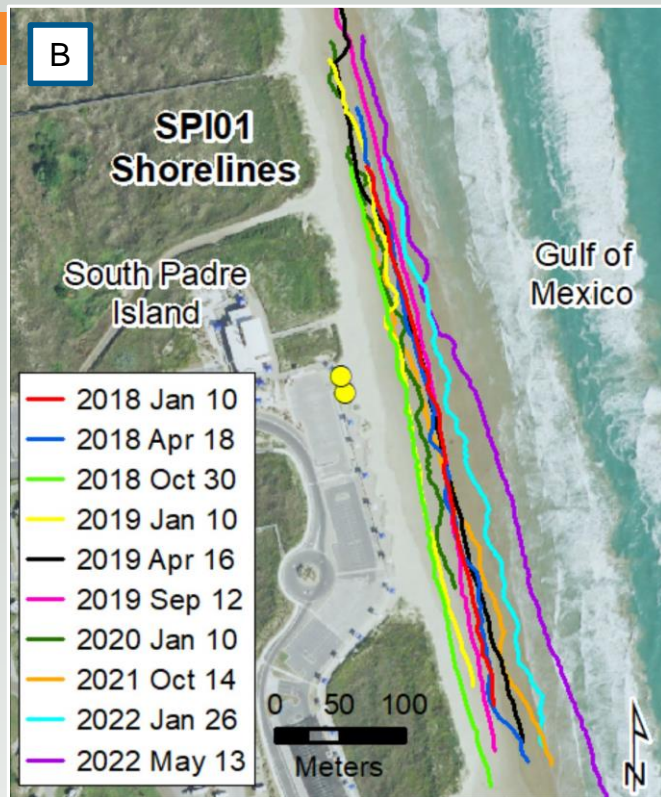
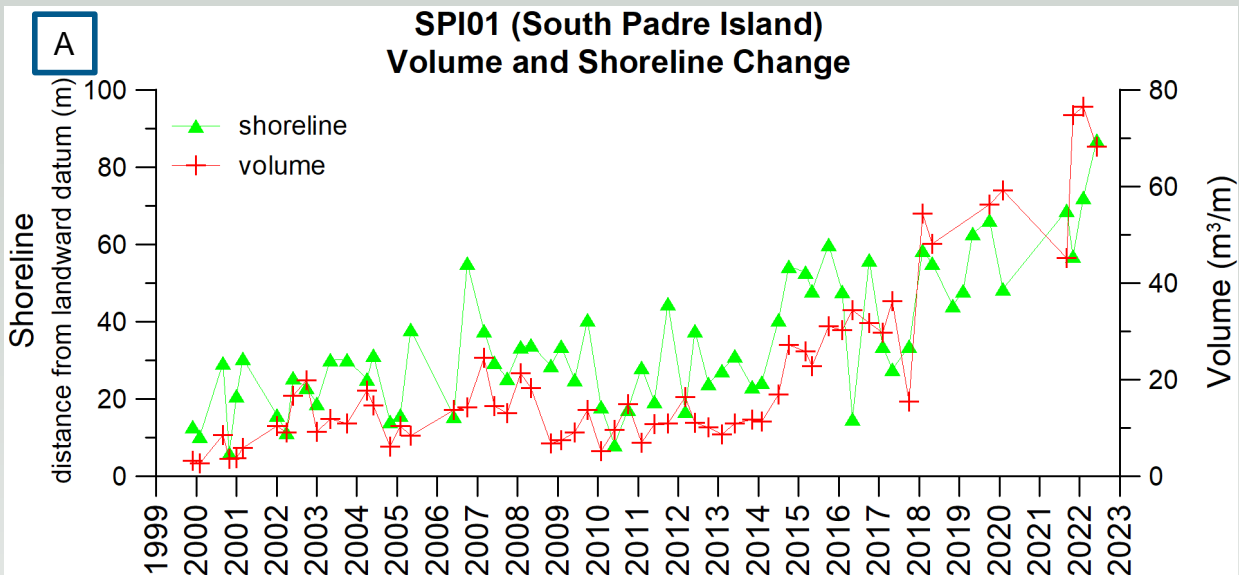


SPI08





SPI01



THSCMP Website <http://www.beg.utexas.edu/thscmp/>

THSCMP delivers valuable data to the State of Texas for use by students and teachers, scientists, coastal managers, and the general public.

