Texas High School Coastal Monitoring Program at High Island High School: 2023-2024

January 2025



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

FOLOGY

 quantitative data on the position of the shoreline and vegetation line







2023-2024 field trips





October 24, 2024





Bolivar Peninsula Study Sites





October 24, 2024







BOL02: fall 2021-fall 2024





BOL02 shore and vegetation line positions











BOL03: fall 2021-spring 2024





BOL03 shore and vegetation line positions









October 24, 2024





HIB01: fall 2021-fall 2024





HIB01 shore and vegetation line positions





http://www.beg.utexas.edu/thscmp/

FINAL REPORT

Texas High School Coastal Monitoring Program: 2022–2023 Tilfany L. Caudle



Bureau of Economic Geology Scott W. Tinker, Director Jackan School of Gosciencos he University of Toxas at Austin, Austin, Toxas 78713-8924 September 2023



- THSCMP delivers valuable data to the State of Texas for use by students and teachers, scientists, coastal managers, and the general public.
- Data collected by THSCMP students can be viewed at our website.
- Each school has a website with photo gallery, presentation of most recent data collection, and a summary of scientific interpretation for their monitoring sites.
- The website contains a 3D model of coastal environments and explores the impact of Hurricanes Ike and Harvey.
- The public can also participate in THSCMP by submitting beach reports and photos.

https://maps.beg.utexas.edu/thscmp/bea ch-reports/submit.

THSCMP Data Analysis

- Storm impacts and recovery-Hurricanes Ike (2008) and Harvey (2017)
- Beach nourishment projects on South Padre, northern Padre, and Galveston Island
- Dune restoration projects and beach maintenance practices
- Impacts of jetty construction on adjacent beaches
- Verification of shoreline position for Bureau projects (THSCMP GPS mapped wet-beach/dry-beach boundary compared to shoreline proxy positions extracted from lidar data)

