

MEMORANDUM



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TO: Bill Balboa, Matagorda Bay Foundation;

CC: Bill Rodney and Tammy Brooks, Texas Parks and Wildlife Department; Woody Woodrow, U. S. Fish and Wildlife Service, and Tam Tran, Carl Sepulveda, Matt Salmon, and Tony Risko, Freese and Nichols, Inc.

FROM: David Buzan, Freese and Nichols, Inc.

SUBJECT: Schicke Point Field Visit Report, March 17, 2023

DATE: March 20, 2023

PROJECT: MBF21580

The condition of the living shoreline constructed in August and September 2022 on the Matagorda Bay shore of Schicke Point was observed by David Buzan, Freese and Nichols, Inc., on March 17, 2023. The purpose of the visit was to observe the living shoreline, bay shoreline and bay bottom during low water conditions to see as much as possible and understand how they had changed since installation of the living shoreline. This living shoreline is an extension of the living shoreline constructed by Hasty Johnson from April to June 2017.

Observations were made from about 15:00 until 18:00 Central Daylight Time (CDT).

Weather on March 17, 2023 (from the National Weather Service):

Time (CDT)	Wind Direction	Wind Velocity (miles per hour)	Air Temperature (°F)	Barometric Pressure (inches of mercury)
Port Lavaca (about 16 miles west of Schicke Point)				
15:15	NW	18	60	30.09
17:55	N	22	59	30.05

Preliminary Tides on March 17, 2023 (from NOAA Tides and Currents):

- Rising at 15:00 CDT at MLLW - 0.3 feet and continued rising to MLLW + 0.16 feet at 18:00 CDT at Port Lavaca (Gage #8773259)
- Rising at 15:00 CDT at MLLW + 0.84 feet and continued rising to MLLW + 1.08 feet at 18:00 CDT at Port O'Connor (Gage #8773701)

Methods

The living shoreline, consisting of four, 600-foot long, sections of rock breakwater constructed in August 2022, was observed from its eastern-most point to its junction with the living shoreline constructed in 2017 (Figure 1). The bay side and shore side of the eastern-most section were checked by walking on top of the length of that section of the living shoreline. The remaining three sections were checked by

wading along the shore side of the living shoreline. Depth to resistance of the bay bottom sediments was checked with a 1-inch diameter PVC pole at randomly selected points along the shore side of the living shoreline about 10-15 feet from the rocks.

The bay shoreline protected by the living shoreline constructed in 2022 was waded along its entire extent from west to east. Conditions were documented with photos.

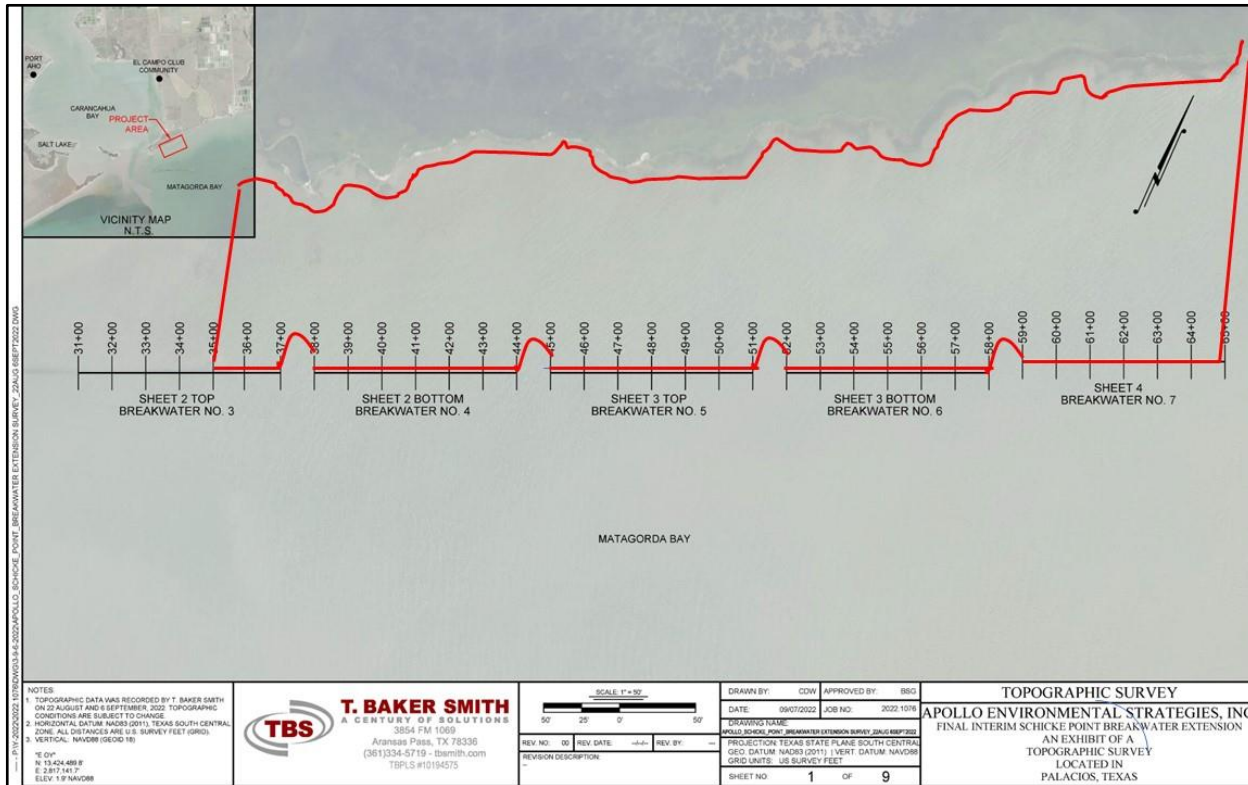


Figure 1. Schicke Point. Red line represents route waded for observations on March 17, 2023.

Living Shoreline Condition:

There were no visible obvious changes in the shape of the living shoreline. The green alga, *Ulva flexuosa*, covered much of the tops of the top rocks. High densities of acorn barnacles were colonizing the bay side of the living shoreline. Eastern oysters, up to 1.5 inches long, were abundant on vertical and near vertical surfaces of rocks along the shore side of the living shoreline (Figure 2). Oysters were also colonizing the undersides of rocks. Each rock that was turned over had one to three oysters living on the bottom of the rock (Figure 3). Oysters had colonized surfaces near the top of the living shoreline. Serpulid worms were also colonizing part of the living shoreline.

Oysters were also colonizing the bay side of the living shoreline but in a much lower density than on the shore side. One blue crab was observed on the living shoreline.

Sediment had accumulated along the shore side of the living shoreline up to a depth of a foot or more around the center of each section of living shoreline. There was no soft sediment around the gaps between each section of living shoreline.

The marsh shoreline was not mapped. Parts of the shoreline were observed which, during previous visits, had appeared to be experiencing high wave energy and erosion. There were no obvious areas experiencing recent substantial erosion or high energy during the March 17, 2023 observations. It may be too early to draw observation-based conclusions about effects of the living shoreline on the adjacent marsh.

Figures 2 through 6 illustrate the new living shoreline. Figure 7 shows the continuing accumulation of shell hash around the terminal groin of the Schicke Point living shoreline constructed in April 2017.

Conclusions:

Based on field observations on March 17, 2023:

- The Schicke Point living shoreline constructed in August and September 2022 remains in place and does not appear to have changed shape.
- Oysters have been colonizing the living shoreline. Oysters are distributed in highest numbers and concentrations on the shore side. Oysters are also colonizing rocks near the top of the living shoreline and the bottoms of rocks in the living shoreline.
- Sediment appears to be accumulating behind the middle of each of the four sections of living shoreline and accumulated sediment is up to one foot deep in areas.
- There were no signs of recent erosion along the marsh shoreline behind the living shoreline.



Figure 2. Shore-facing rocks of Schicke Point living shoreline constructed in August 2022 demonstrating oyster colonization. Photo taken by FNI on March 17, 2023.



Figure 3. Shore-facing rocks of Schicke Point living shoreline constructed in August 2022 demonstrating oysters colonizing the bottom of a rock in the living shoreline. Photo taken by FNI on March 17, 2023.



Figure 4. Schicke Point living shoreline where the portion constructed in August 2022 (above the red line) connects to the portion constructed in June 2017 (below the red line). Note oysters colonizing the older reach of living shoreline. Photo taken March 17, 2023 by FNI.



Figure 5. Schicke Point living shoreline where the portion constructed in August 2022 (above the red line) connects to the portion constructed in June 2017 (below the red line). Note sediment accumulated behind the older reach of living shoreline. Photo taken March 17, 2023 by FNI.



Figure 6. Schicke Point living shoreline where the portion constructed in August 2022 (above the red line) connects to the portion constructed in June 2017 (below the red line). Note sediment accumulated behind the older reach of living shoreline. Photo taken March 17, 2023 by FNI.



Figure 7. Terminal groin of Schicke Point living shoreline constructed in April 2017. Image on left taken on January 11, 2022. Image on right taken March 17, 2023. Red circles include rocks visible in both photos. Water level at Port Lavaca on January 2022 was 0.58 feet higher than on March 17, 2023. Water level at Port O'Connor was 0.15 feet higher on March 17, 2023 than when the photo was taken on January 11, 2022.