Captain Sinclair's Recreational Area Living Shoreline and Oyster Restoration

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Captain Sinclair’s Recreational Area
Living Shoreline and Oyster Restoration

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Marsh Sills
2014, December: Received design and construction funding for the living shoreline demonstration project from the National Fish & Wildlife Foundation (NFWF)
2015, November: Permits received
2015, December: Construction contract awarded
2016, January: Construction started – Finished in February
2016, May: Marsh grasses planted

Oyster Bay Sills
2016, October: Received design and construction funding for oyster bag sills from NFWF
2017, August: Volunteers installed oyster bags

2023: ASBPA Best Restored Shore Award!
Location

37° 19' 28.35" N
76° 25' 40.67" W

Captain Sinclair’s Recreational Area
Marsh Sills
Oyster Bay Sills
Severn River
Four sills with three windows and sand fill which were built to protect the existing eroding marsh as well as provide recreational access.

The upper elevation of sand fill was set at +3.0 ft MLW and extends on a 10:1 slope to about mean tide level at the back of the proposed stone sills.
As-Built, Pre-Planting

February 2016
Gloucester High School Crew Team volunteered to plant grasses under the direction of Walter Priest, Wetland Design, LLC. May 2016
Pre-Installation (April 2015)

8 years post-installation (August 2023)

2 Months Post Planting (July 2016)
Marsh Sills after Nearly 8 Years
4 intertidal oyster bag sills were planned along the east-facing shoreline. These were the 6-bag design.

4 additional intertidal sills were planned along the southwest-facing shoreline. These were the 3-bag design.

Goal: Determine effectiveness of intertidal reefs for shore protection.
Typical Cross-Sections

**Typical 6 Oyster Bag Sill**
- 18"x8"x6" mesh bags filled with oyster shells
- +2.4 ft (MHW)
- 0 MLW

**Typical 3 Oyster Bag Sill**
- 18"x8"x6" mesh bags filled with oyster shells
- +2.4 ft (MHW)
- 0 MLW
Installation

6,000 oyster bags delivered on pallets

Wooden slide constructed to load boat

Volunteers handed the bags to the stackers.

Bags were stacked along the shoreline

Two boats ran concurrently

Placement became harder as tide rose.
Installation

Volunteers: VIMS, DCR, & high schoolers
8 sills were constructed, however their layout was slightly different. One sill on the eastern side was omitted and the longer sill on the end of southwest side was split into 2 sections. In addition, sill 3 was made to wrap around the point to provide it protection.
Oyster Growth

AFTER 1.5 years (March 2019) After 5 years (Aug 2022)
In 2020, the marsh has eroded behind the sills, but sediment has filled in behind the sills. That process has continued into 2022. The gap in the marsh is wider than in 2020, but the whole section of marsh still remains intact.
The 3-bag sill did not hold up as well as the 6-bag sill. The marsh has continued to erode, but the sediment is flattening the coastal profile and grasses are starting to expand channelward.

After 5 years (Aug 2022)
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