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Captain Sinclair Marsh-Sill Success

Maura K. Boswell

Navid Tahvildari

Captain Sinclair Marsh-Sill Success

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Sea Grant Virginia

Old Dominion University

Field Study Location

Image Sources: Virginia Institute of Marine Science and Virginia Base Mapping Program

Background

- Protect eroding marsh
- Recreational access
- Designed, permitted, and bid by VIMS
- Grant funding from MPPDC and NFWF

Image Source: Virginia Institute of Marine Science

Background

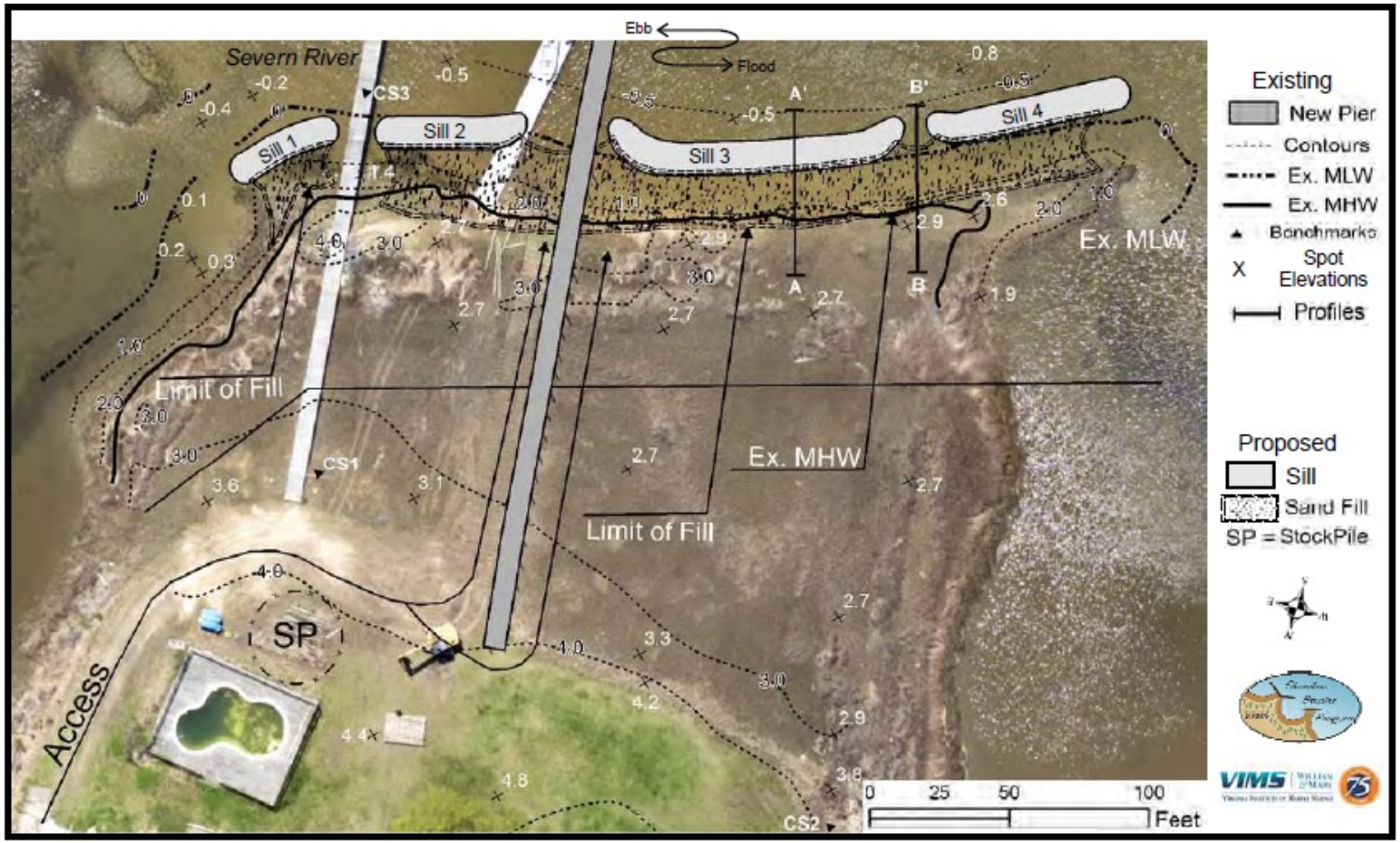


Image Source: Virginia Institute of Marine Science

Background

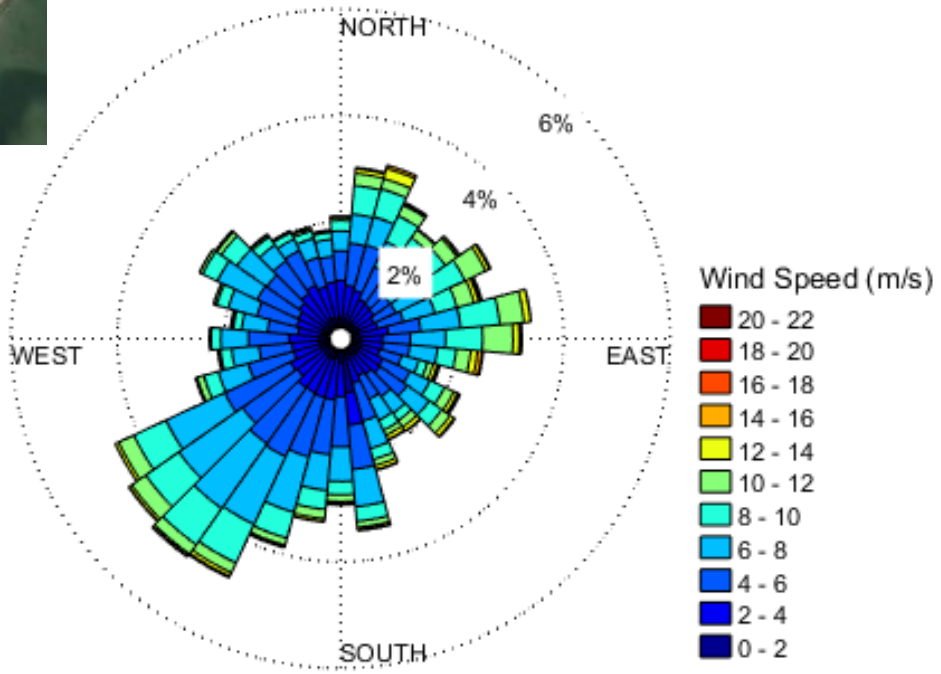
February 2016

June 2016

Image Source: Virginia Institute of Marine Science

Captain Sinclair Marsh Sill

Fetch:
2 miles SW
1 mile S
1.5 miles SE



Captain Sinclair Marsh Sill

Tide Range: 0.73 m

Captain Sinclair Marsh Sill

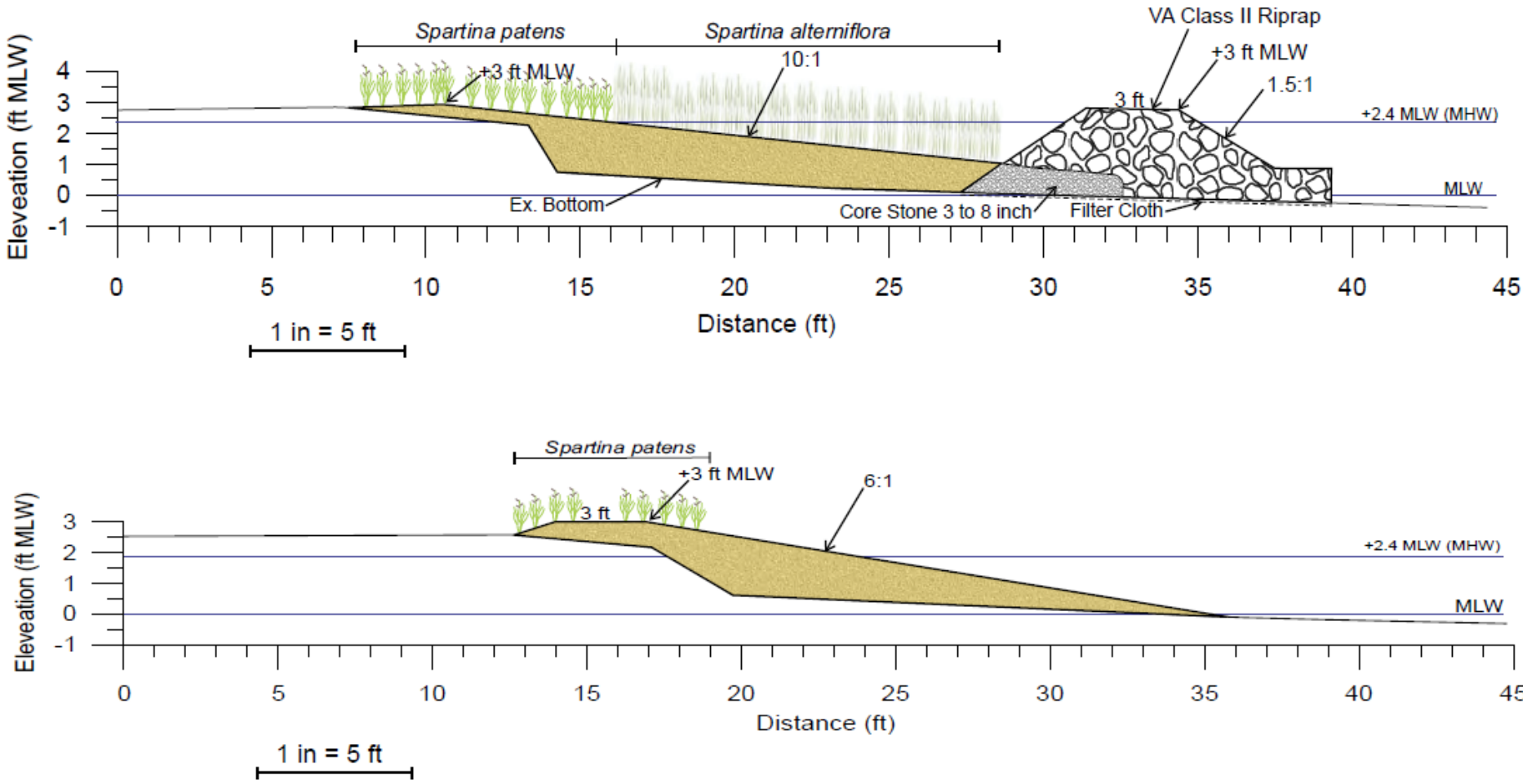


Image Source: Virginia Institute of Marine Science

Economics

- Reduce annual storm damage by more than 20%[1]
- Maintain habitat – commercial, recreational, environmental benefits
- Project cost reduction

[1]Narayan et al. 2016

Data Collection Methods

- Acoustic Doppler Current Profiler
- Pressure gauges
- Surveying

Field Results

Deployment:
November 21, 2018 to
December 22, 2018

Dissipation Across Sill
35% - 52%

Dissipation Across Gap
22% - 57%

Ongoing Research

- Post-process Field Data
- Calibrate NHWAVE model with field results
- Collaborate to include module for site specific flexible vegetation
- Analyze scenarios to determine potential areas for design optimization

Acknowledgments

Virginia Sea Grant

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