Modifications to the Expert Panel on Shoreline Management Practices

Presented to the
Water Quality Technical Work Group

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Chesapeake Bay Program
Science. Restoration. Partnership.

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Expert Panel Definition

"Shoreline management" is defined as any tidal shoreline practice that prevents and/or reduces tidal sediments to the Bay.

Living Shorelines

Structural practices

low structure ◄——————————————————————————► high structure

Non-structural living shorelines: Projects that include natural habitat elements only, such as vegetation, oyster reef, coarse woody debris, and sand.

Non-structural living shoreline

Hybrid living shorelines: Projects that include natural habitat elements such as vegetation, oyster reef, and sand, as well as some hard structures such as stone sills or breakwaters

Low-structure hybrid living shoreline

Medium-structure hybrid living shoreline

Projects that include the following practices without a natural habitat component:

- Bulkheads/Seawalls
- Revetments
- Breakwaters
- Groins/jetties

Structural erosion control practice

Table 1. Summary of shoreline management pollutant load reduction for individual projects.

Protocol	Name	Units	Pollutants	Reduction Rate
1	Prevented Sediment	Pounds per year	Sediment TN, TP	• Measured TSS, TN and TP content in sediment prevented. • Calculated based on shoreline erosion with reductions for sand content and bank instability
2	Denitrification	Pounds per year	TN	• Measured TN removal for denitrification rate associated with vegetated area. • 85 lbs TN/acre/yr
3	Sedimentation	Pounds per year	Sediment and TP	• Measured TSS and TP removal rates associated with vegetated area. • 6,959 lbs TSS/acre/yr • 5.289 lbs TP/acre/yr
4	Marsh Redfield Ratio	Pounds	TN, TP	• Measured TN and TP removal rates associated with vegetated area. • 6.83 lbs TN/acre/yr • 0.3 lbs TP/acre/yr
5	Non-conforming/Existing Practices	Linear Feet	Sediment, TN and TP	• 137 lbs TSS/lf/yr (MD) • 84 lbs TSS/lf/yr (VA) • 0.075 lbs TN/lf/yr • 0.068 lbs TP/lf/yr

Concerns raised by WTWG at August 28th meeting

- Concerns raised about the availability/reactivity of TP and TN associated with shoreline sediments and the impact that nutrient crediting might have on TMDL accounting at the river segment.
- VA asked for an analysis on areas eligible for eroding. Look at applying the protocols individually across the domain to compare reductions and possible caps on load reductions.
- The Modeling workgroup agreed to test the WQSTM with the shoreline erosion loads to determine the impact and report back to WTWG.

Modifications to the report

- Protocol 1 will be approved for TSS only at this time pending an evaluation of the availability/reactivity of TP and TN associated with shoreline sediments and the impact that nutrient crediting might have on TMDL accounting at the river segment.

- After this evaluation, the WTWG may be asked to approve a revised nutrient reduction credit for this practice.

- The WTWG recommends that sediment reductions from all shoreline management practices within a river segment should not exceed the total fine sediment shoreline erosion load estimated to enter adjacent Water Quality Sediment Transport Model (WQSTM) tidal water cells.

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Protocol	Name	Units	Pollutants	Reduction Rate
1	Prevented Sediment	Pounds per year	Sediment TN and TP to be determined	• Measured TSS, ~~TN and TP~~ content in sediment prevented. • Calculated based on shoreline erosion with reductions for sand content and bank instability
2	Denitrification	Pounds per year	TN	• Measured TN removal for denitrification rate associated with vegetated area. • 85 lbs TN/acre/yr
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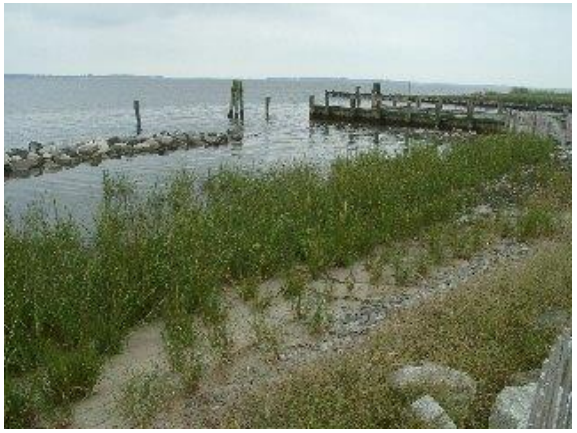
5	Non-conforming/Existing Practices	Linear Feet	Sediment. TN and TP to be determined	• 137 lbs TSS/lf/yr (MD) • 84 lbs TSS/lf/yr (VA)



Questions/Comments

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