



Horsepen Creek, Little Roanoke Creek, and unnamed tributary to Spencer Creek TMDL Study

A water quality study for watersheds in Charlotte County

Aerin Doughty

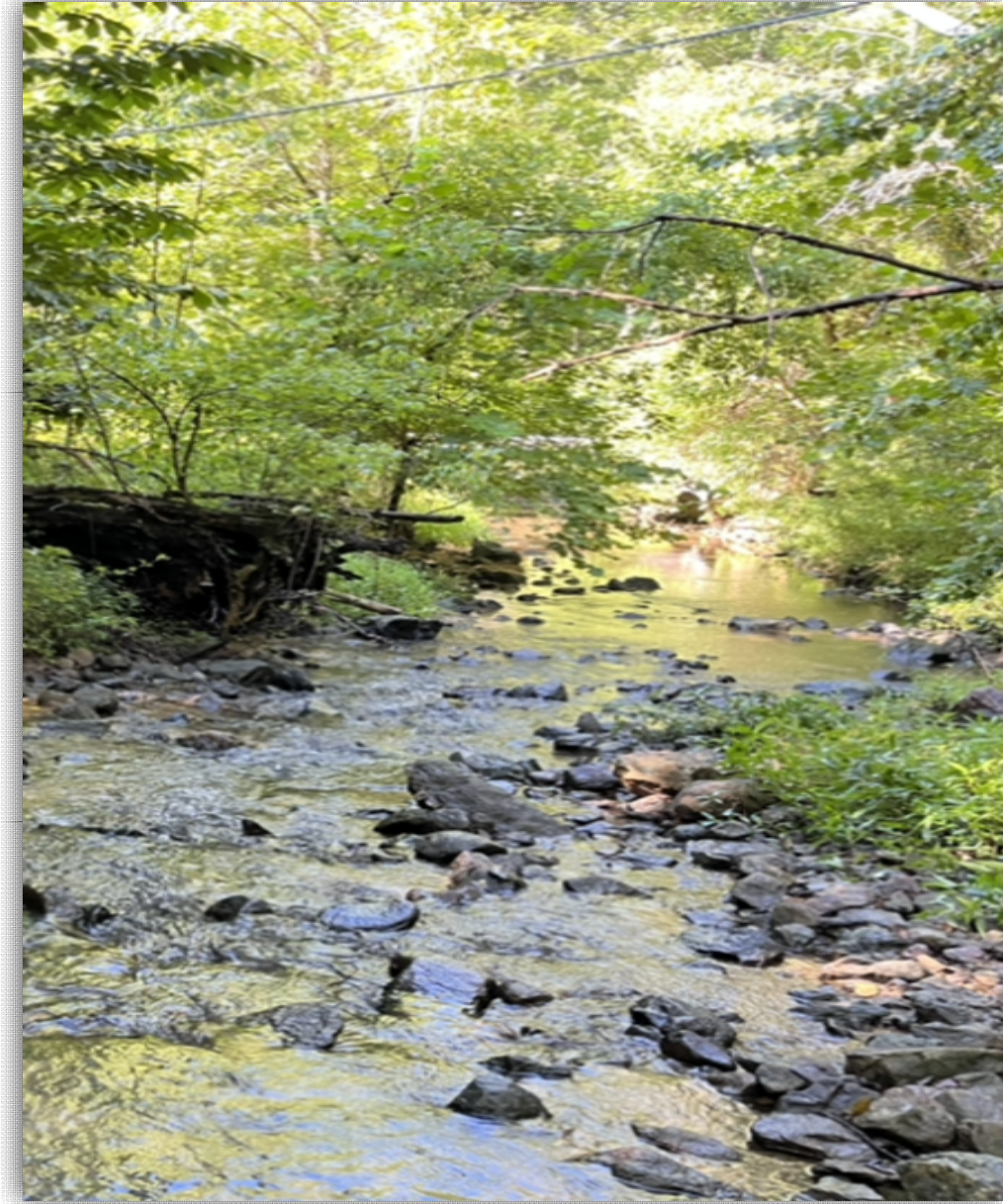
TMDL Coordinator

Virginia Department of Environmental Quality

March 5, 2025

Our goals for today...

- Discuss the next step in the water quality improvement process
 - Provide background information and recaption of the first public meeting
 - Introduce land use data
 - Discuss possible sources
 - Introduce best management practices
- Receive community feedback – I want to hear from you about where we should take this project!



Agenda

- Welcome and Introductions given by A. Portner
 - Opening Remarks / Introductions
 - Meeting Objectives
- Brief Background and Recap of Previous Meeting
 - Impairments & TMDL
 - Benthic Stressor Analysis
 - Reduction Goals
- Sources and Land Use
 - Comparison of Assumptions and Ground Truth
 - Community Preferences
 - Best Management Practices
- Wrap-up and Next Steps by DEQ Staff
 - Modeling
- Questions

Virginia's Water Quality Process



Background: Clean Water Act

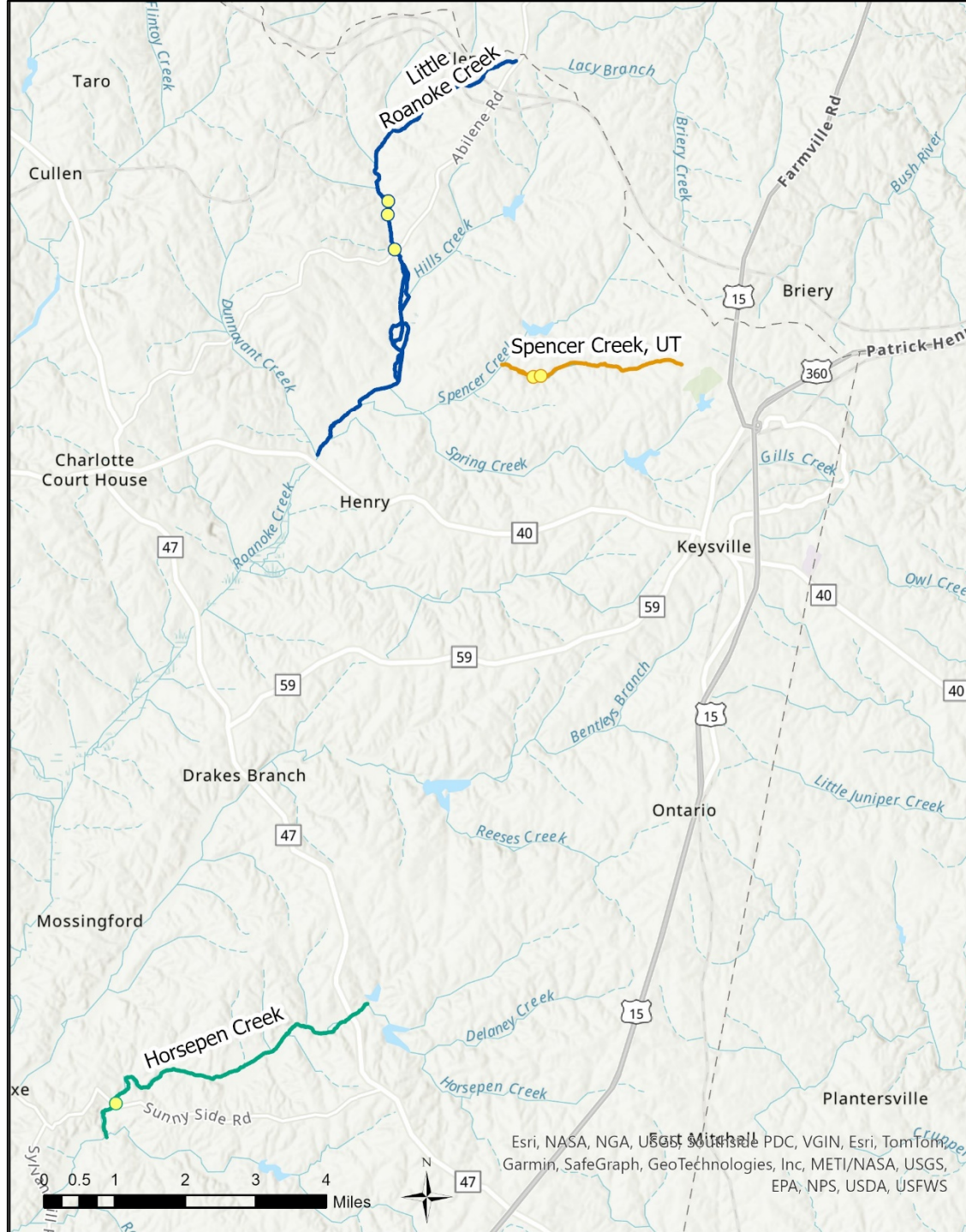
- The Clean Water Act requires that all waters meet water quality standards that promote healthy water use.
- To meet the goals of the Clean Water Act, Virginia established water quality standards.
 - **aquatic life**
 - wildlife
 - fishing
 - shellfish
 - swimming
 - drinking water





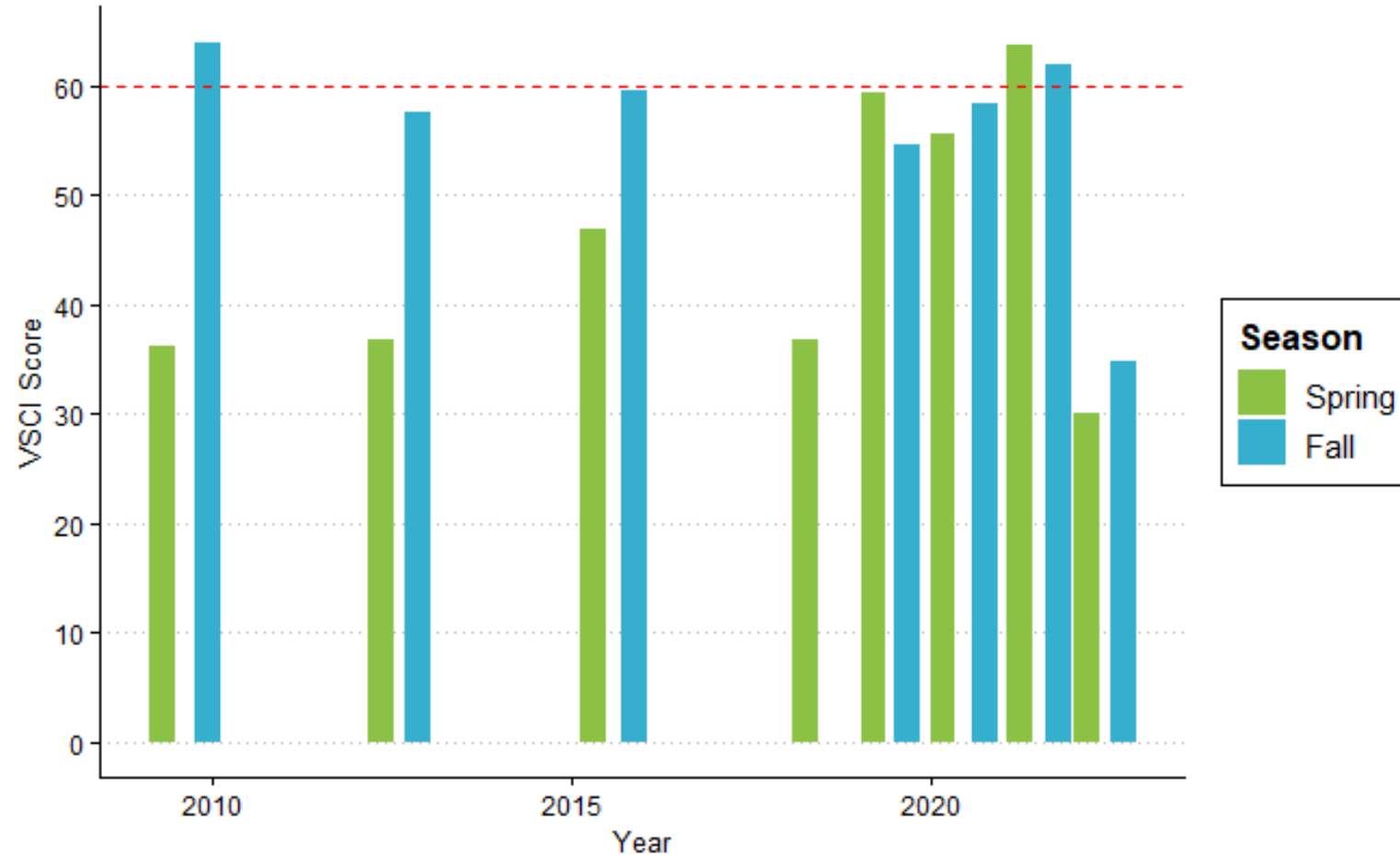
Why Benthic Macroinvertebrates?

- Biological Indicators
- Vary in their sensitivity to or tolerance of pollution
 - Known pollution tolerance values (0-10)
 - Respond to changes in water quality
- Widespread, found in all aquatic environments
- Limited mobility; spend 1-3 years in the water as larvae or nymphs
- Biological monitoring gives a longer-term picture of water quality
- Accurately can be quantified and scored
 - Virginia Stream Condition Index (VSCI) score
 - Score of 60 out of 100



Horsepen Creek Biomonitoring Data

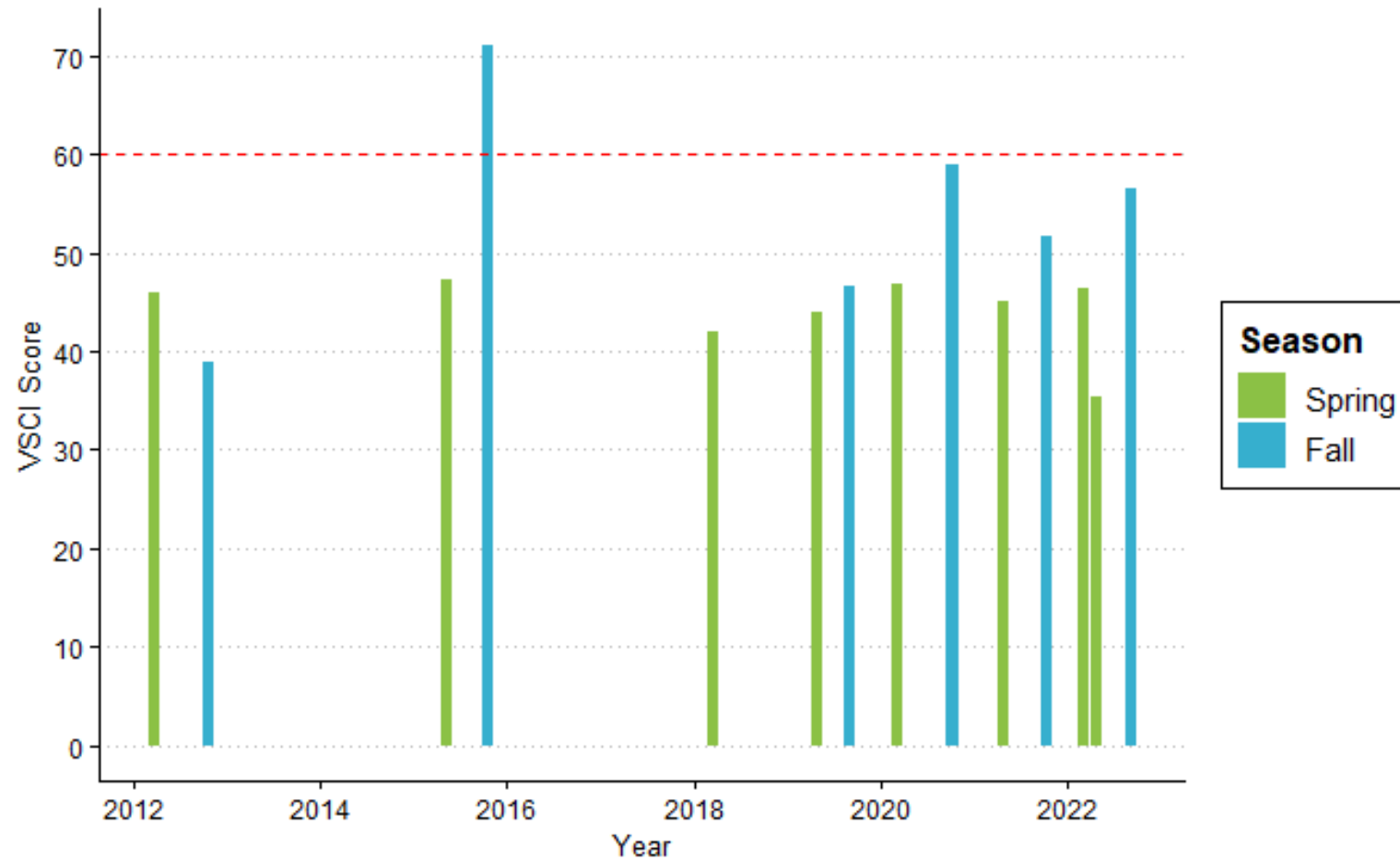
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Low VSCI scores are driven by % Mayflies, % Stoneflies and Caddisflies, and % Scrapers

Little Roanoke Creek

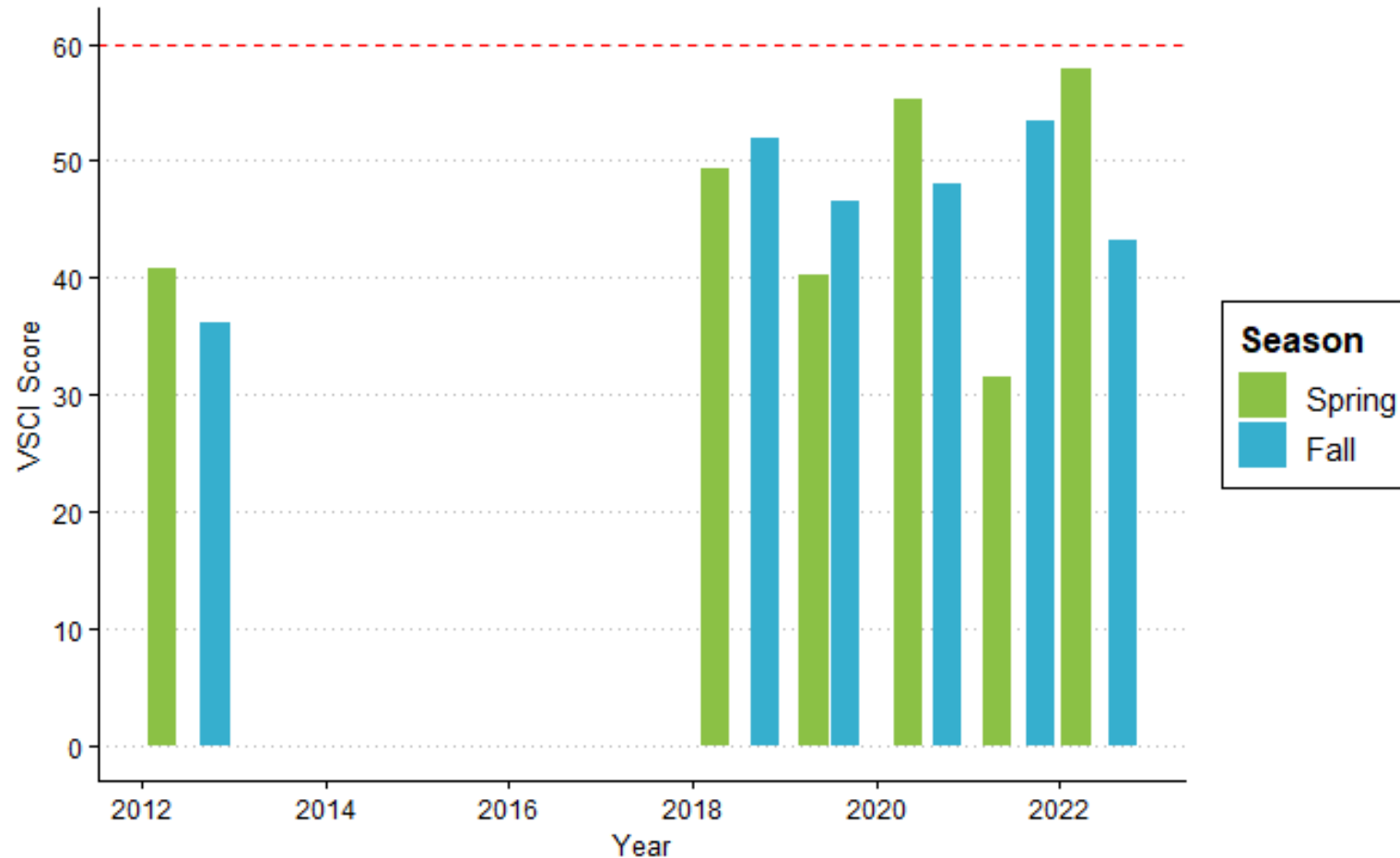
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Low VSCI scores are driven by % Mayflies, % Stoneflies and Caddisflies, and % Scrapers

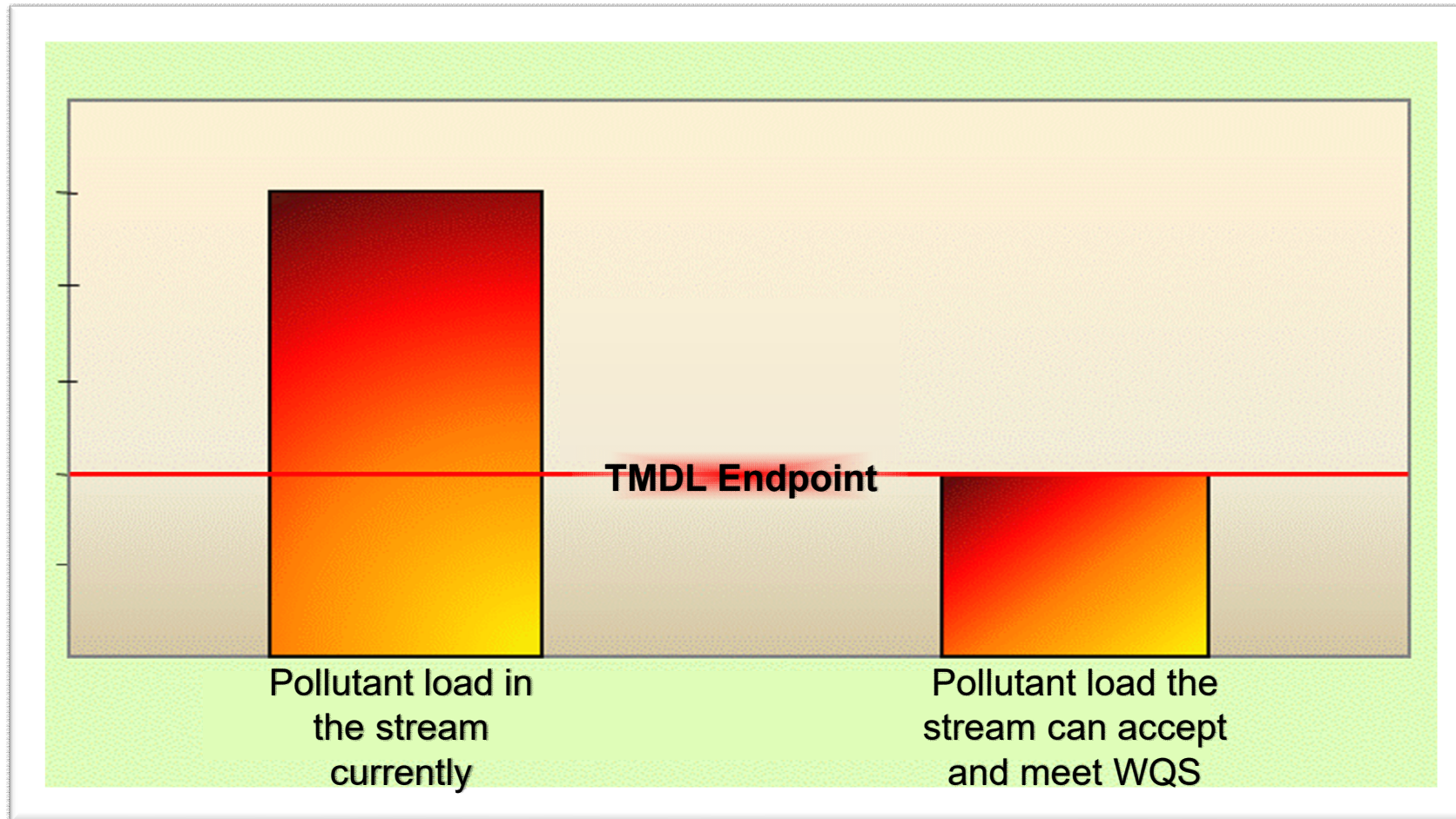
Unnamed tributary to Spencer Creek

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Low VSCI scores are driven by % Mayflies, % Stoneflies and Caddisflies, and % Scrapers

What is a TMDL?



Stressor Analysis Results of Likely Stressors

Horsepen Creek:

- Most Probable: Phosphorus
- Possible Contributors: Sediment, Dissolved Oxygen, Physical Habitat

Little Roanoke Creek:

- Most Probable: Sediment and Dissolved Oxygen
- Possible Contributors: Phosphorus

Unnamed Tributary to Spencer Creek:

- Most Probable: Sediment
- Possible Contributors: Physical Habitat and Phosphorus



What happens next...

Access all materials on our website
<https://www.deq.virginia.gov/our-programs/water/water-quality/tmdl-development/tmdls-under-development>



Benthic Stressor Analysis for Horsepen, Little Roanoke, and a UT to Spencer Creek in Charlotte County, Virginia



March 5, 2025

Completed Benthic Stressor Analysis

First Public Meeting

January 15, 2025

Public Comment Period

TMDL Development/
Community Engagement Meetings


Final Public Meeting

Public Comment Period

EPA and SWCB Approval

Opportunity for **you** to participate

Comments, Thoughts, & Questions



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Cleanup studies – also called TMDLs and TMDL alternatives – are best developed in collaboration with watershed residents, permittees and other interested stakeholders. Among many possible benefits, stakeholder input helps to ensure that cleanup plans are reasonable, realistic and reflect local insight. Public meetings and other advisory group meetings provide an opportunity for stakeholders to learn about the process and provide their input.

For information on PCB TMDLs under development, visit the PCB TMDLs [page](#).

Below are the current TMDL and TMDL alternative development projects underway. Meeting materials associated with each project are also included below.

Resources

[Data and GIS Portal](#)

Contacts

[Mark Richards](#)
TMDL Team Lead
(804) 659-1126

To learn more about TMDLs,
visit DEQ’s website:
<https://www.deq.virginia.gov/our-programs/water/water-quality/tmdl-development>

THANK YOU FOR YOUR
ATTENDANCE!!!