



Middle Fork Holston River and Tributaries – Clean Up Study

Community Kick Off Meeting

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December 2, 2021



Agenda:

Intro to TMDLs

Why a study?

Our Watersheds

- **History**
- **Current Data**



Water Quality Standards

Water Quality Monitoring

- Physical (channel condition)
- Biological (fish tissue, benthic macroinvertebrates)
- Chemical (pH, temperature, dissolved oxygen, specific conductivity, toxics, metals)

TMDL Implementation

- Waste Load Allocation (permitted sources) thru permits (e.g. VPDES)
- Load Allocation (unpermitted/nonpoint sources) through Implementation Plans
- Public Participation

Assessment

- Integrated Report (IR), completed every 2 years, consists of:
- 305(b) Report: Status of Virginia's waters
 - 303(d) Waters: List of all impaired waters

TMDL Development

- Pollutant Diet: identify existing load and reductions needed to attain WQS
- Public Participation

What is a TMDL?

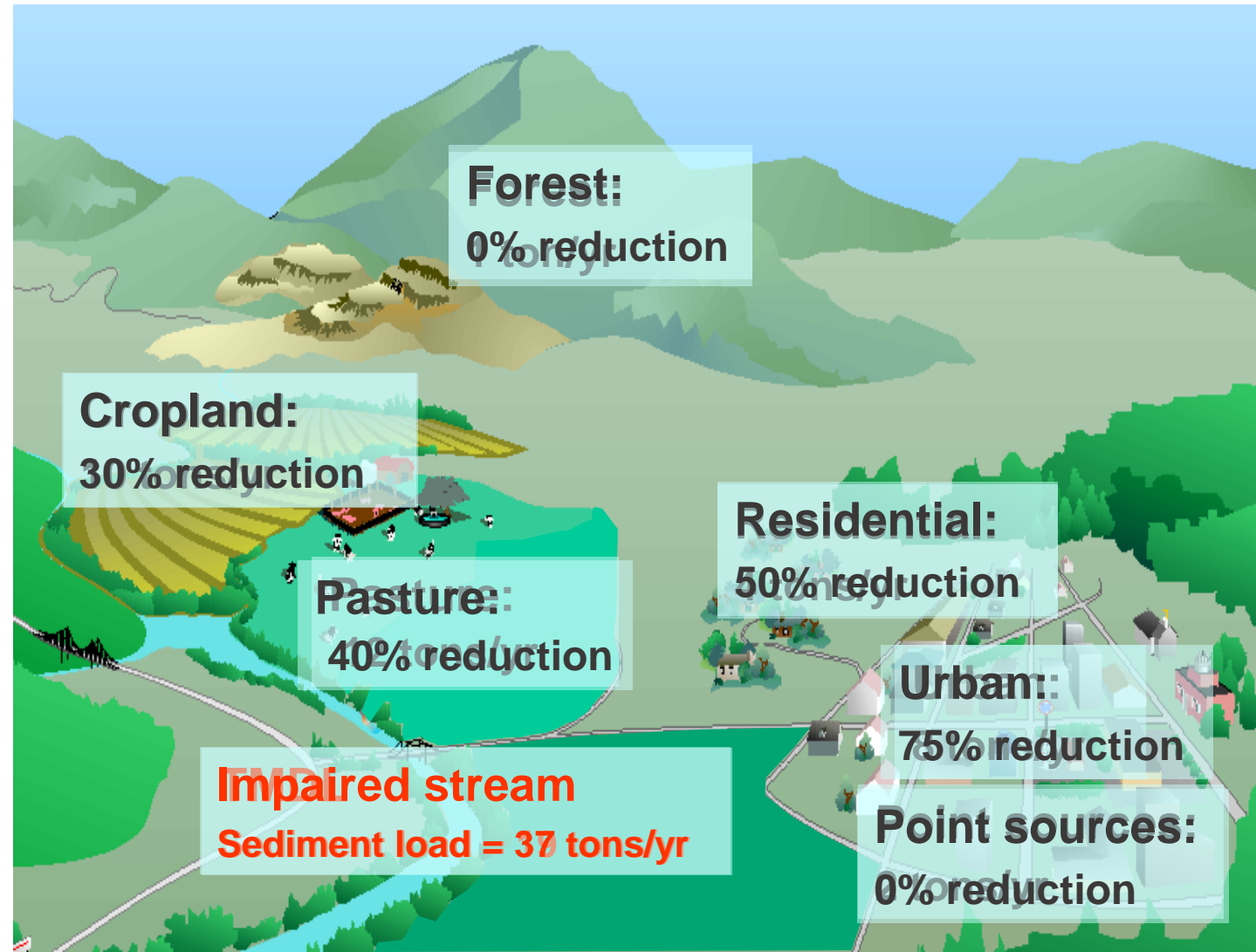


A Total Maximum Daily Load is the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards.

How do we develop a TMDL?

What's the magic number...

1. Identify sources of the pollutant
2. Model their path to the stream
3. Determine reductions needed from each source to meet standard

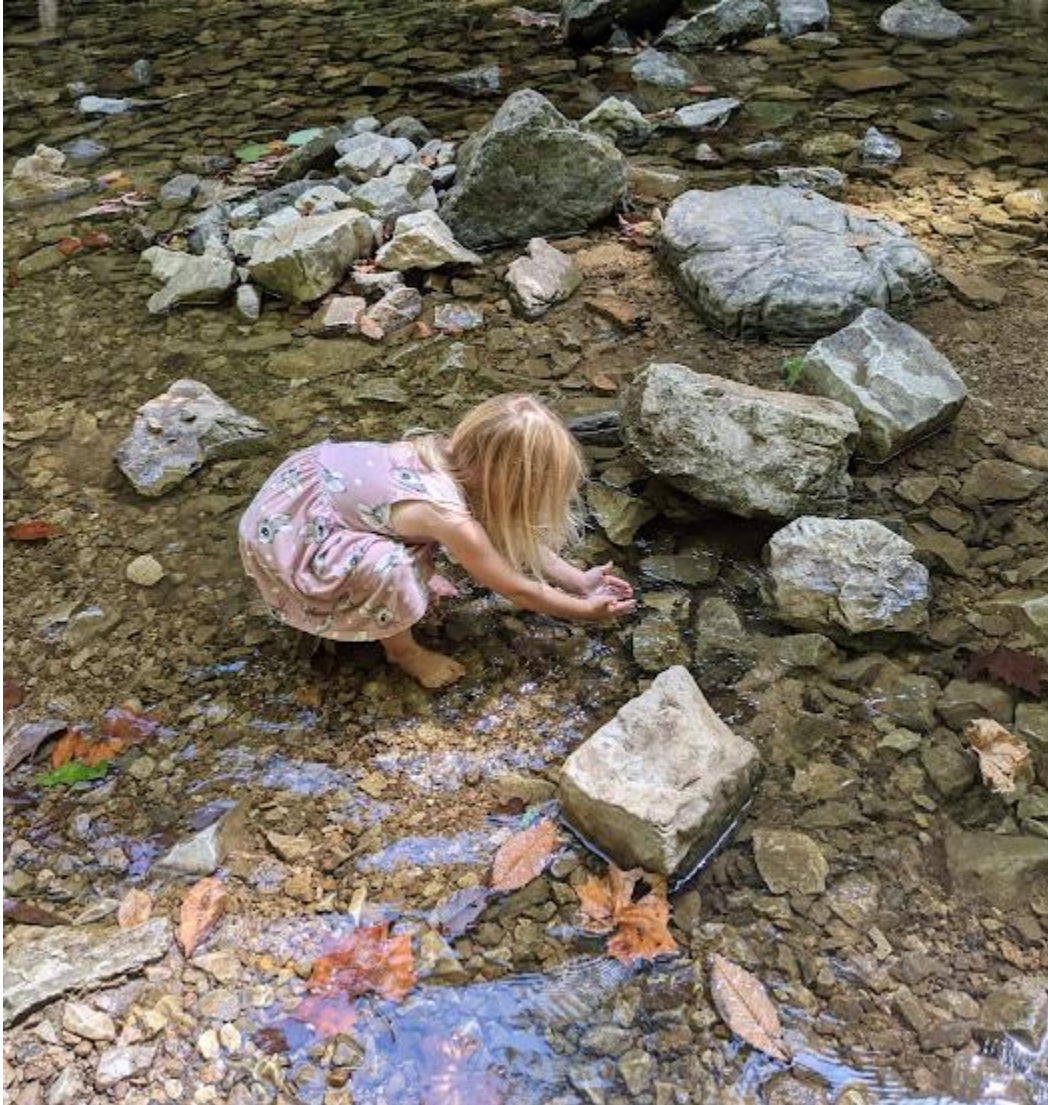


Why a study?

- Aquatic life designated use
 - All waters should support “*the propagation and growth of a balanced, indigenous population of aquatic life*”
- What does this **mean**?
 - Waters should be free of substances harmful to aquatic life
- Monitor aquatic macroinvertebrates (the bugs) to determine if the standard is met



Why should we care about bugs?



- Consume algae and organic matter → nutrient cycling
- Aquatic food chain
- Our “canary in the coal mine”

Sensitive to pollution: Stoneflies



Photo: Jan Hamrsky: lifeinfreshwater.net

Sensitive to pollution: **Mayflies**



Sensitive to pollution: **Caddisflies**



Moderately Sensitive: Dragonflies



Innsensitive to Pollution: **Blackflies**



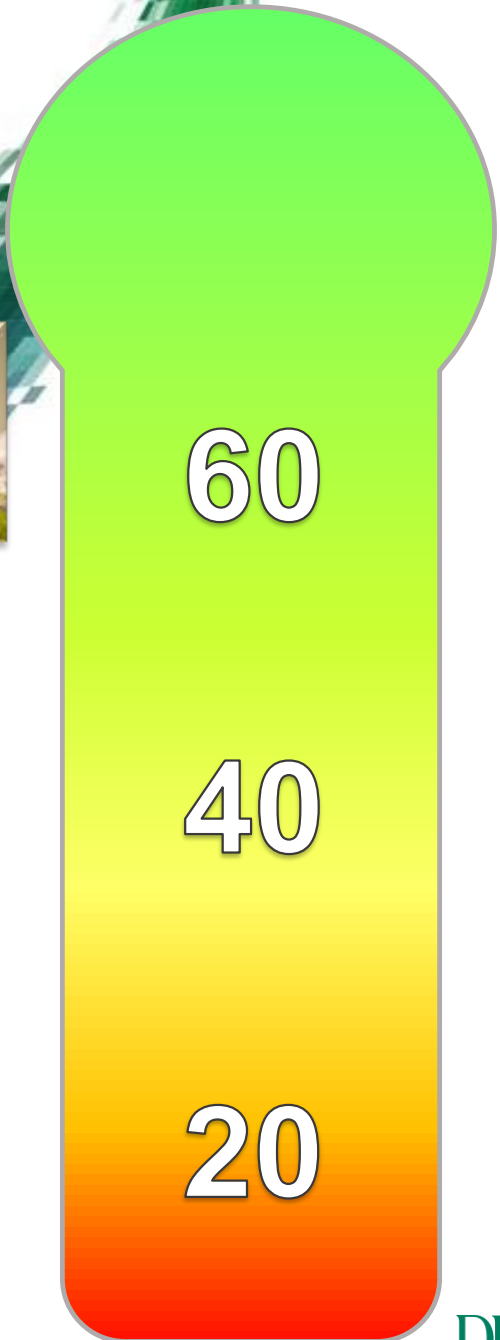
Determining a “biological impairment”

- DEQ biological monitoring data (spring and fall)
- VA Stream Condition Index is our barometer
 - Diversity, pollution tolerance, feeding group
 - Target score of ≥ 60



Photo: Jan Hamrsky: lifeinfreshwater.net

Virginia Stream Condition Index



History of the Watersheds

Previously completed TMDLs...

Bacteria and Benthic Total Maximum Daily Load Development for Middle Fork Holston River



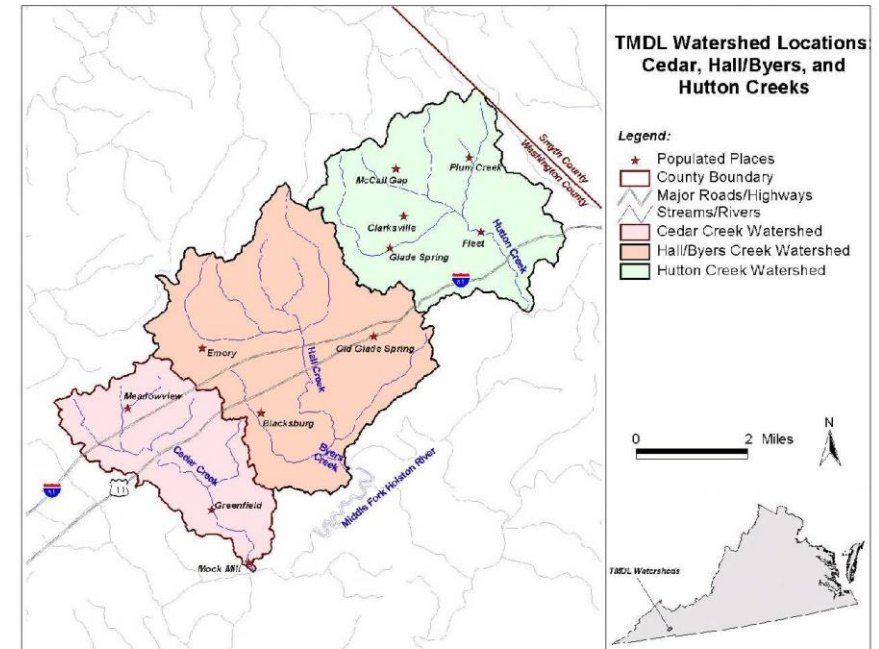
Submitted by: Virginia Department of Environmental Quality

Prepared by: Engineering Concepts, Inc.

Submitted: October 2009

Total Maximum Daily Load (TMDL) Development for Cedar Creek, Hall/Byers Creek, and Hutton Creek

Aquatic Life Use (Benthic) Impairment



Prepared by:

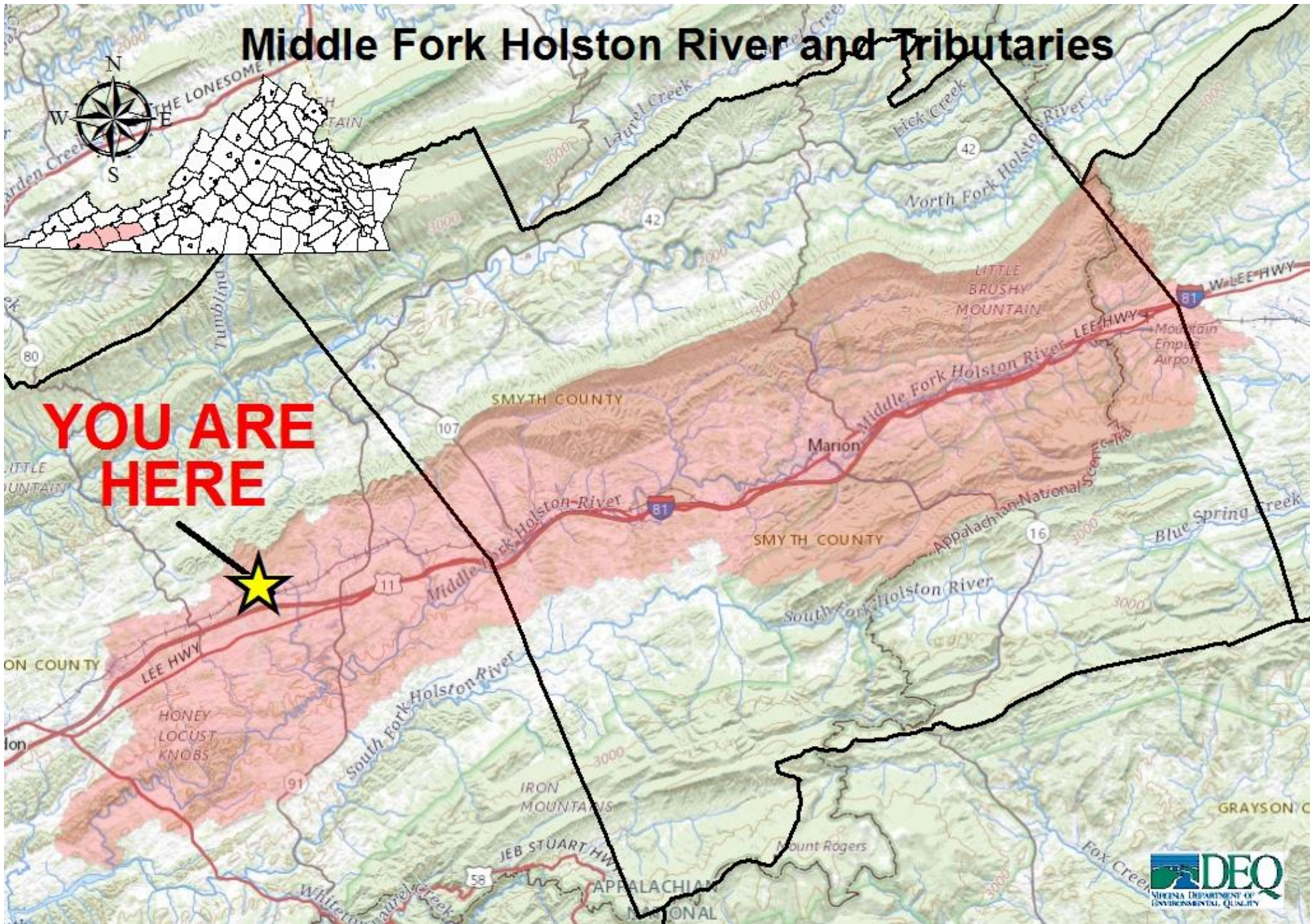
Tetra Tech, Inc. Fairfax, Virginia

Prepared for:

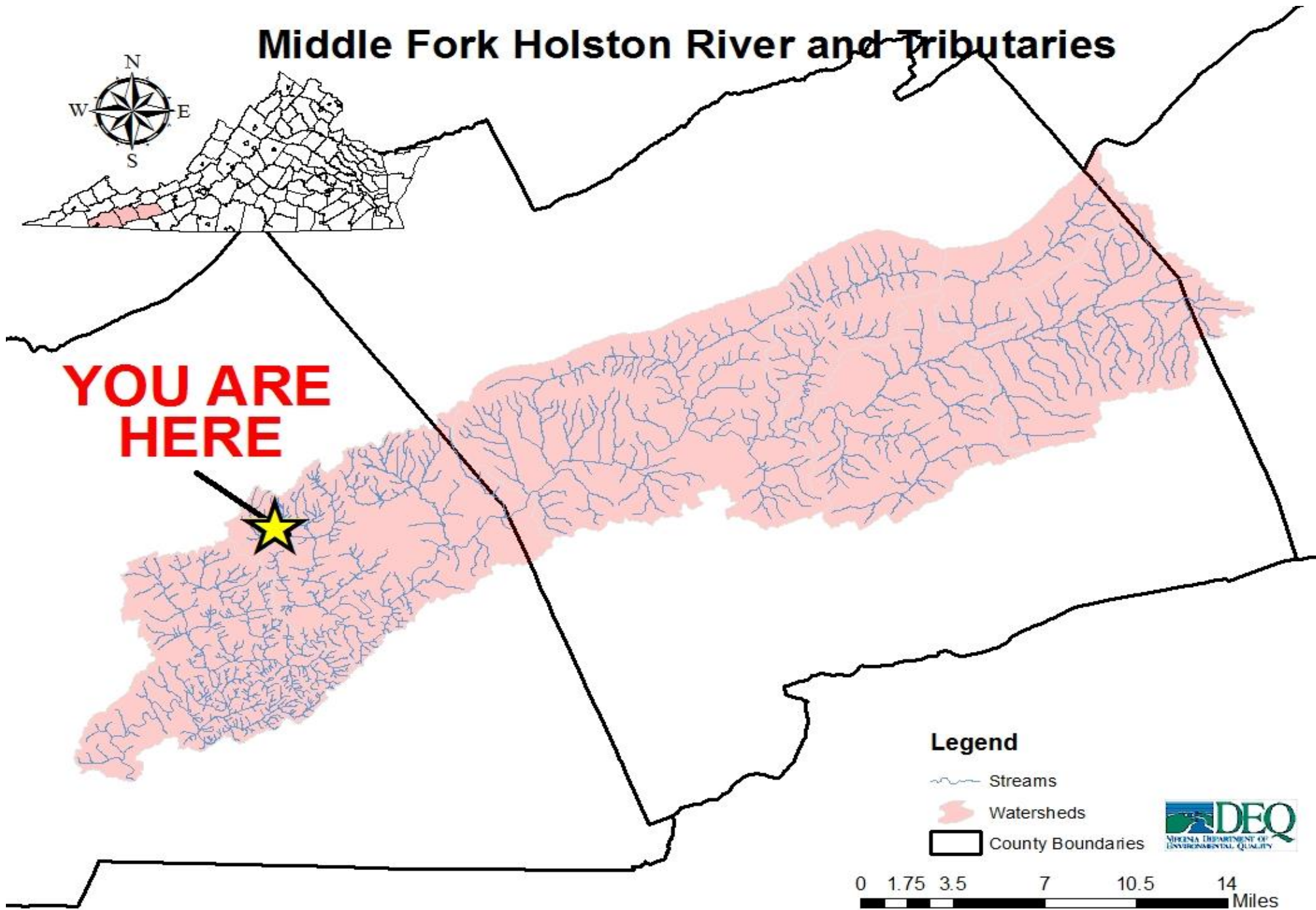
U.S. Environmental Protection Agency, Region III
Virginia Department of Environmental Quality

Final - December 2003

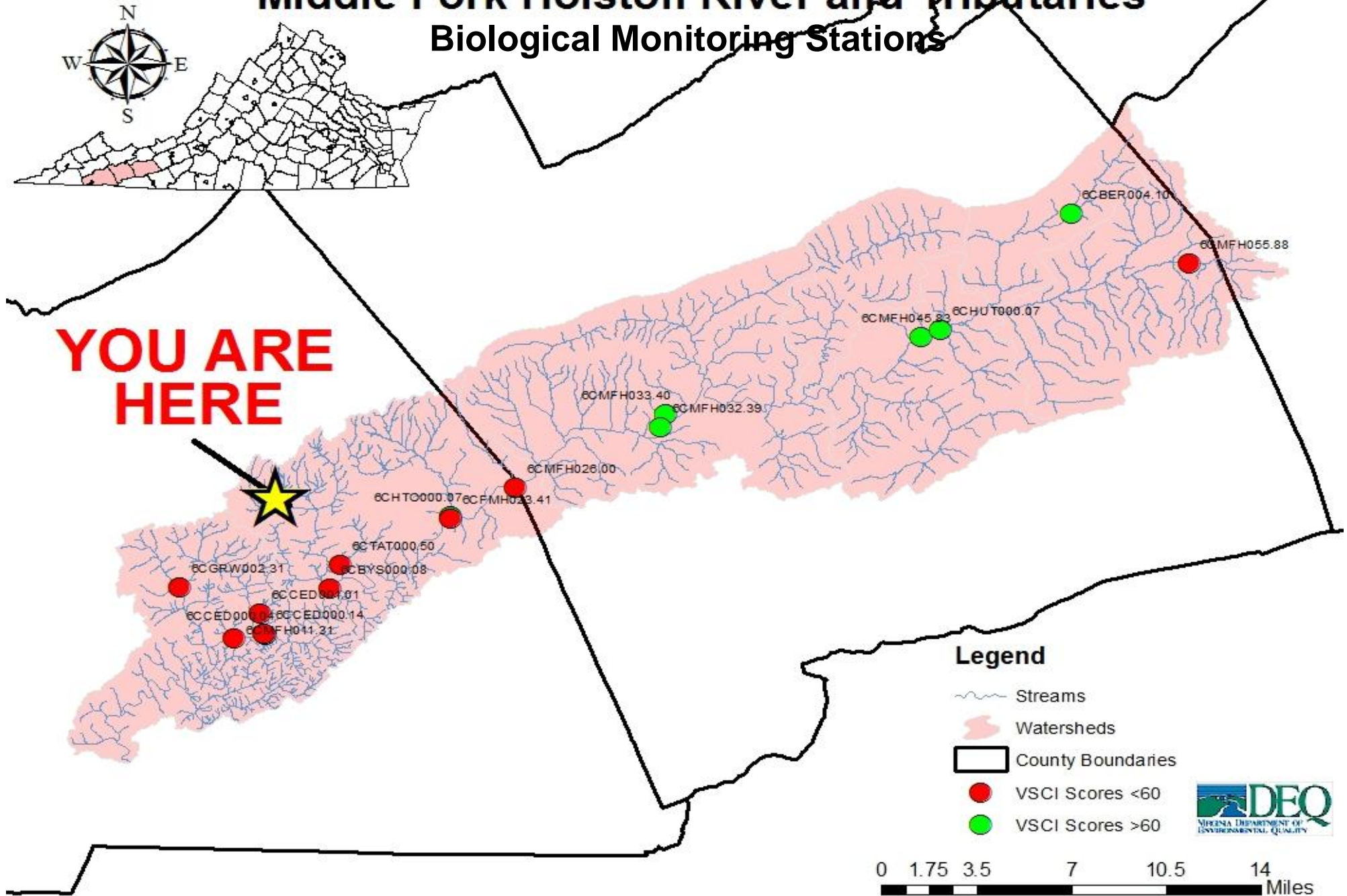
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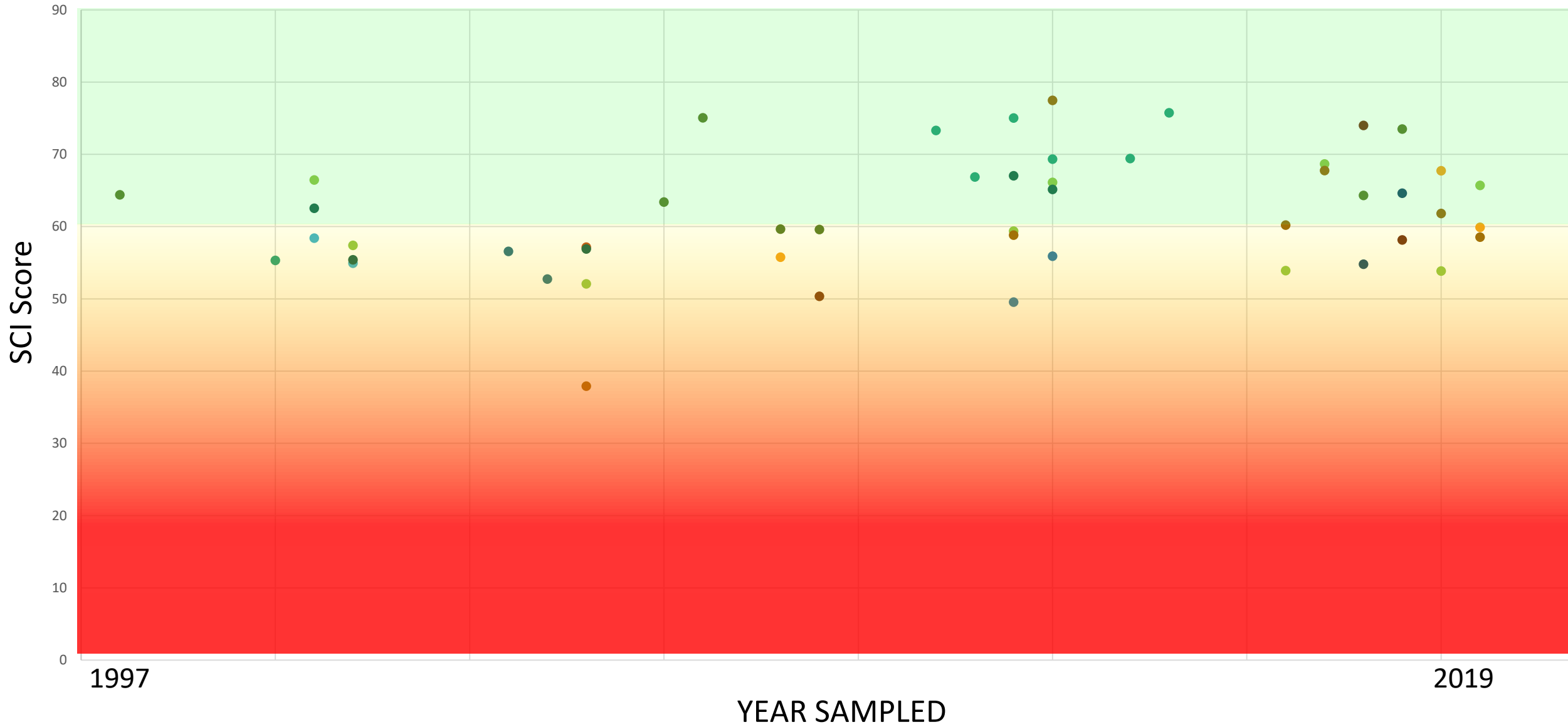
Middle Fork Holston River and Tributaries



Middle Fork Holston River and Tributaries Biological Monitoring Stations



6CBER004.10 6CBYS000.08 6CCED000.04 6CCED000.14 6CCED001.01 6CGRW002.31 6CHTO000.07 6CMFH011.31 6CMFH023.41 6CMFH026.00 6CMFH055.88 6CTAT000.50



Biological Impairments:

Determining the cause...

- Benthic stressor analysis
 - Evaluation of monitoring data
 - Comparison with reference watershed data
 - Weight of evidence approach
 - Identification of most likely stressor(s)
- TMDL development for most likely stressor(s)



How can you get involved?

We need to hear from you!!!



- Join the Technical Advisory Committee
 - Represents the local community
 - Provides feedback on
 - Stressors to the benthic community
 - Land use
 - Pollutant sources
 - Key stakeholders and community meetings
- Stay Informed
 - Provide contact information to be notified of future public meetings and documents available for public comment

Questions & Comments

*30-day public comment period
(Dec. 2, 2021 – Jan. 3, 2022)*

Send comments to:

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