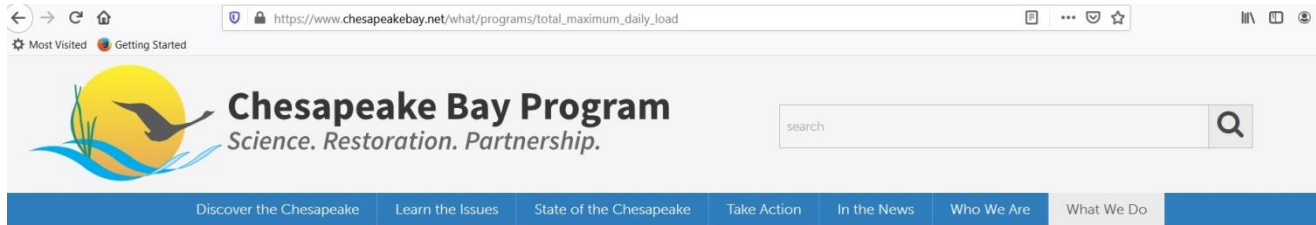


A photograph of a stream with smooth, rounded stones and a patch of bright green moss on the right bank. The water is clear and reflects the surrounding environment. The stones are of various shades of brown and grey, and the moss is a vibrant green. The overall scene is a natural, serene landscape.

**Aggregating Watershed Restoration
Efforts for Measurable Ecosystem
Improvements**

The World We Live In? Drivers for our Work?



WHAT WE DO > PROGRAMS & PROJECTS > CHESAPEAKE BAY TMDL

Chesapeake Bay TMDL

The Chesapeake Bay Total Maximum Daily Load (TMDL) is a federal "pollution diet" to restore the Chesapeake Bay and its vast network of streams, creeks and rivers.



Chesapeake Bay TMDL

Services News Government Local

Translate

Department of Environmental Conservation

Recreation Nature Prevent & Control Pollution Regulatory News & Learning Search

Home » Lands and Waters » Lakes and Rivers » Chesapeake Bay Watershed Program » Phase III Watershed Implementation Plan

Phase III Watershed Implementation Plan

New York's Final Phase III Watershed Implementation Plan

DEC released the Draft Phase III Watershed Implementation Plan (WIP) for New York's Chemung and Susquehanna River Basins for public comment on April 10, 2019. Below are DEC's response to EPA's Evaluation and response to public comments received.

Main Document: [Final Phase III Watershed Implementation Plan for New York's Chemung and Susquehanna River Basins \(PDF\)](#)

Appendices:

Appendix A: [Revisions to CAFO ECL and CWA General Permits \(PDF\)](#)

Appendix B: [Hydrogeomorphic Regions in New York \(PDF\)](#)

Appendix C: [Cover Crop Watershed Model Efficiencies \(PDF\)](#)

Appendix D: [Delivery Factors for Bay-Significant Wastewater Treatment Facilities \(PDF\)](#)

Appendix E: [Delivered and Discharged Loads from Non-Significant Wastewater Treatment Facilities \(PDF\)](#)

Appendix F: [Explanation of New York's Draft Phase III WIP Planning Targets \(PDF\)](#)

[DEC Response to Public Comments \(PDF\)](#)

[EPA Evaluation of New York Draft Phase III Watershed Implementation Plan \(PDF\)](#)

[DEC Response to EPA Evaluation \(PDF\)](#)

Find on this Page

Phase III WIP

Schedule

Upcoming Events

Links Leaving

DEC's Website

Upper Susquehanna

Watershed Forum

Registration

PDF Help

For help with PDFs on

this page, please call

518-402-8086.

Contact for this

Page

Division of Water

625 Broadway Albany,

NY 12233-3508

518-402-8086

Send us an email

This Page Covers



A photograph of a stream with smooth, rounded stones and a patch of green moss on the right bank. The water is clear and reflects the surrounding environment. The stones are of various shades of grey and brown, and the moss is a vibrant green. The overall scene is peaceful and natural.

What Are Your Goals?

How Do You Achieve Them?

What Are Your Goals?

- **Reduce:**
 - **Sediment**
 - **Pathogens**
 - **Nitrogen and Phosphorous Pollution**
 - **Flooding & Excessive Runoff**
 - **Temperature**
- **Removal of Impaired Status – Clean Water Act**
- **Wild Trout**

Wild Brook Trout?



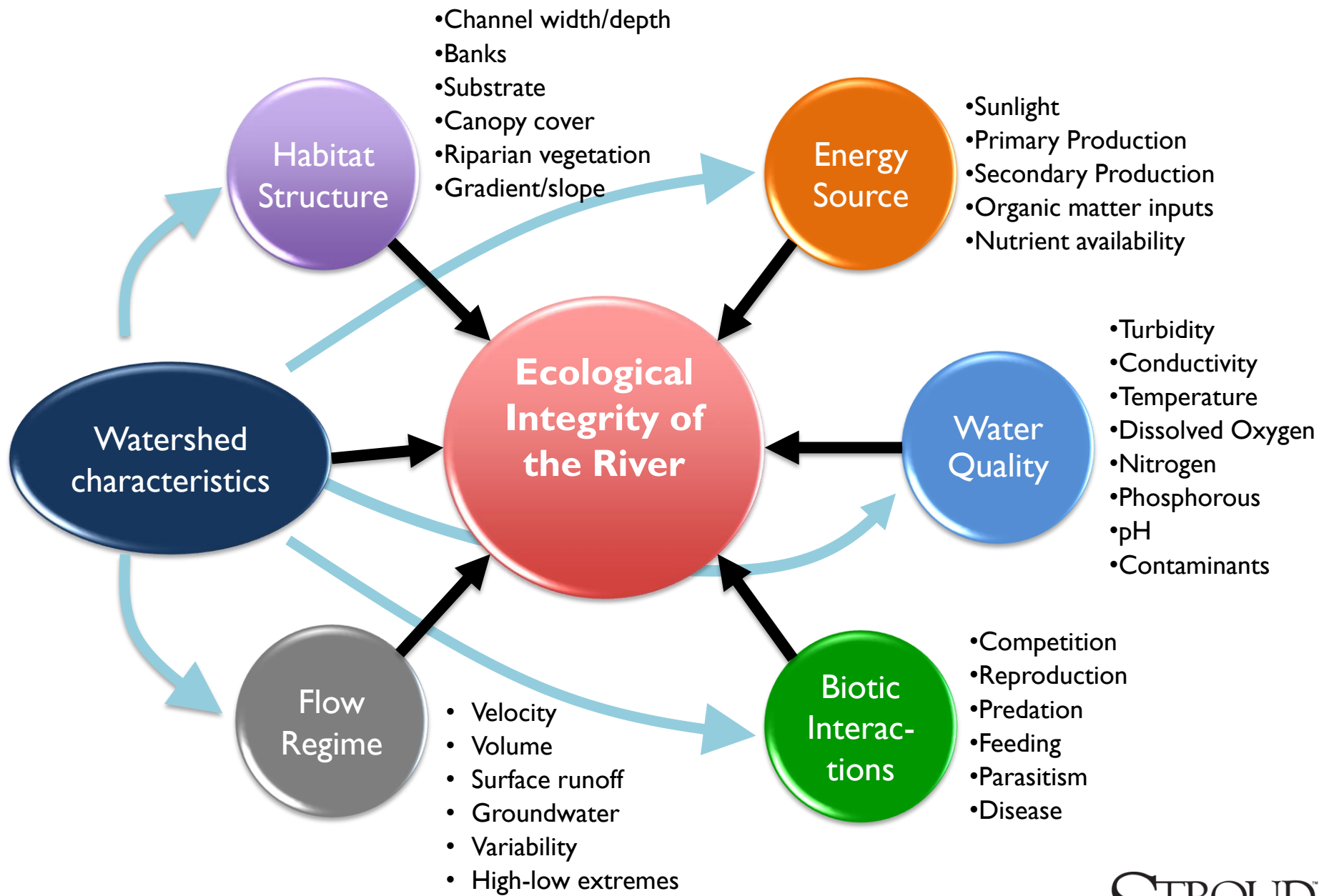


What Are Your Goals?

How Do You Achieve Them?

What will we do or change?





What will we do or change?

Improved Crop Field Management

Stabilize Roadway

Plant Forest Buffer

Improve Pasture Management

Exclude Livestock From Stream

Stop Barnyard Runoff

Manure Storage





What will we impact?:

- Bacteria
- Sediment
- Water Temp
- Infiltration/Hydrology
- Soil Carbon?
- Macroinvertebrates
- Fish
- Algae

Problem Barnyard



Improved Barnyard

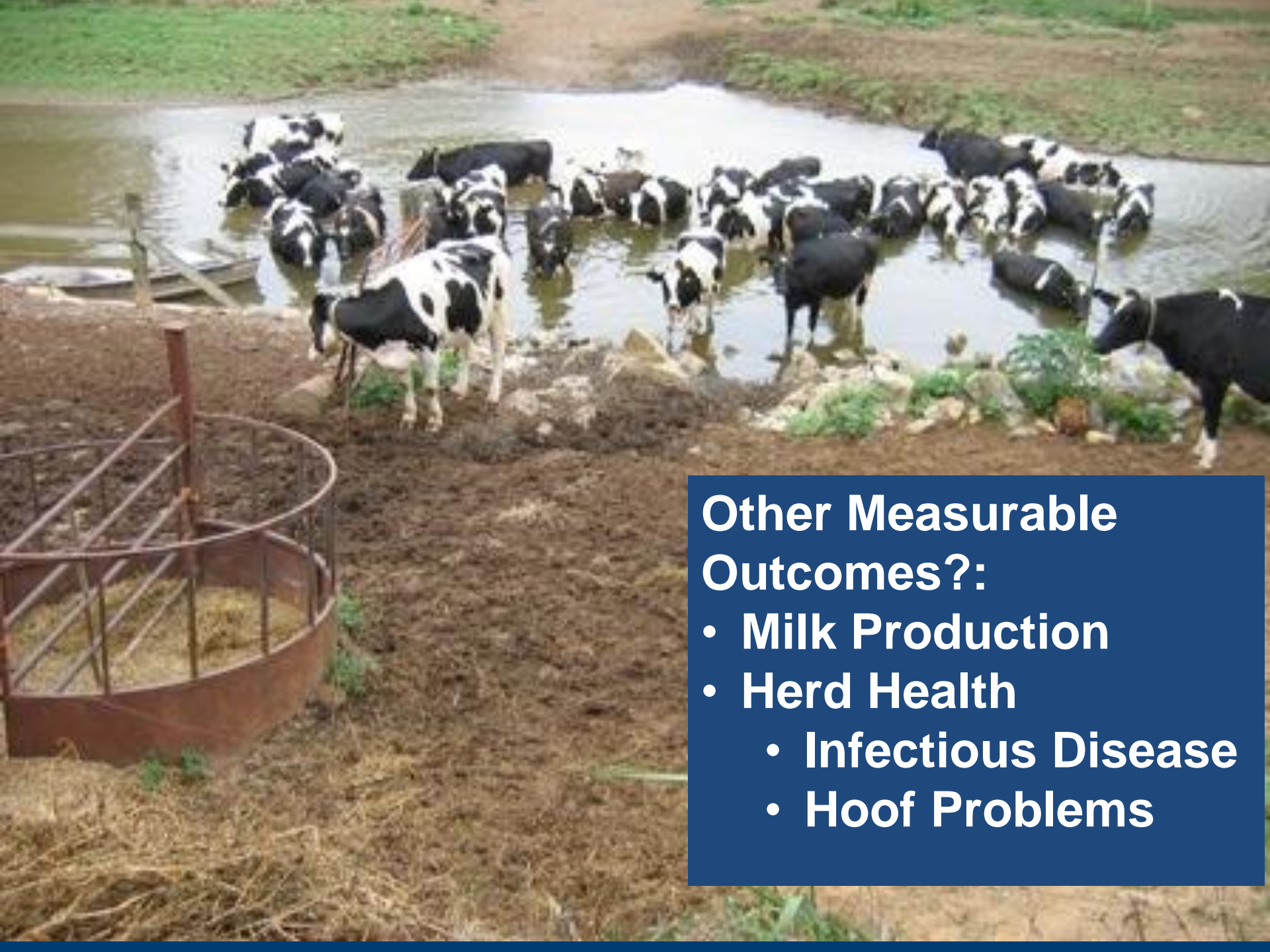


Lititz Run – Before Forest Buffer



Lititz Run - 18 Year Old Forest





Other Measurable Outcomes?:

- Milk Production**
- Herd Health**
 - Infectious Disease**
 - Hoof Problems**

Happy & Healthy Cows

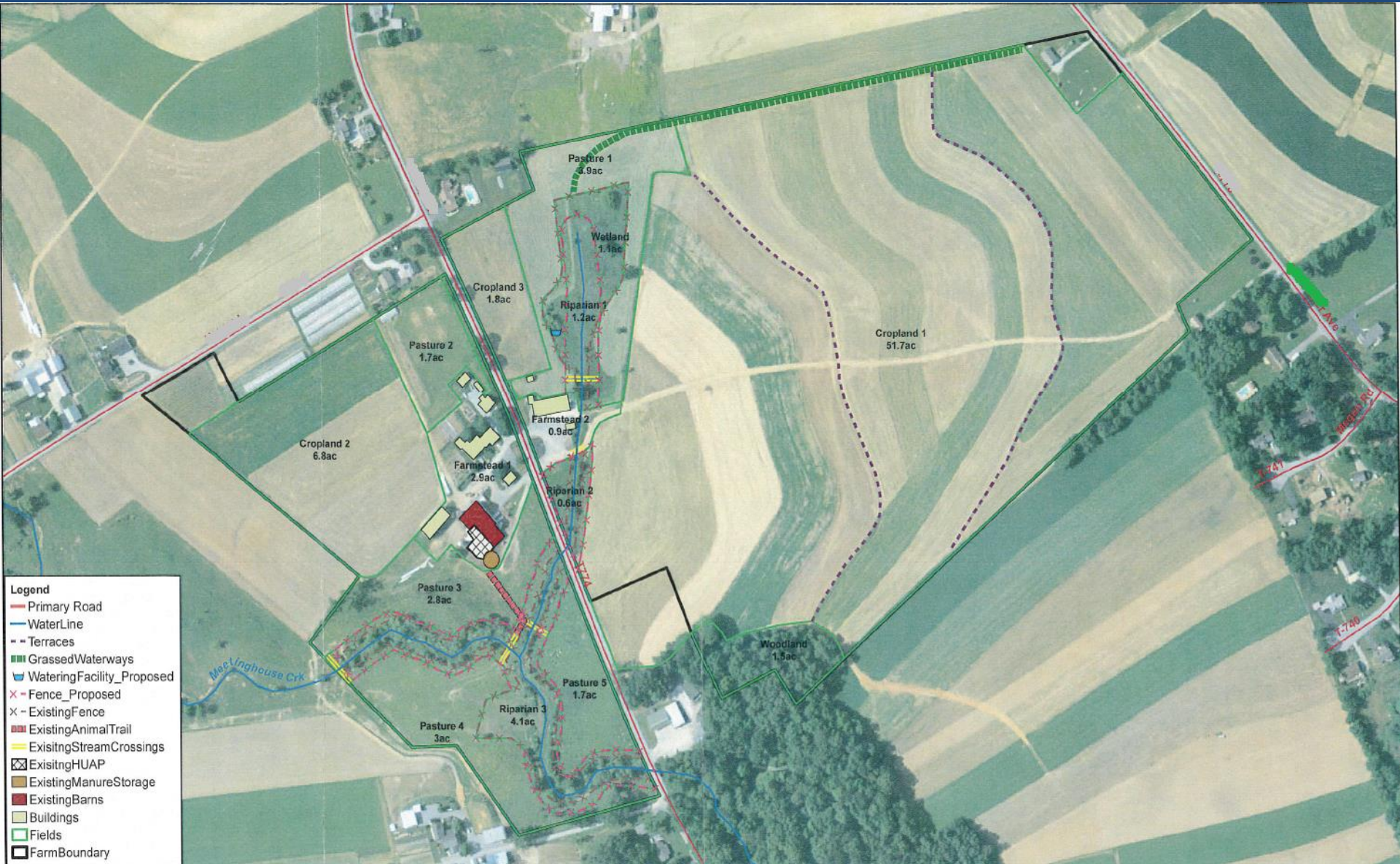


What Are Your Goals?

- **Reduce:**
 - **Sediment**
 - **Pathogens**
 - **Nitrogen and Phosphorous Pollution**
 - **Flooding & Excessive Runoff**
- **Removal of Impaired Status – Clean Water Act**
- **Wild Trout**

Typical Farm Project

How Much Change is Enough?



How Many Farms is Enough?



Lancaster Mill Creek Section 1



13 Parcels
11 farms

1,700 850 0 1,700 Feet



The Role of Modeling

The screenshot shows a web browser window with the address bar displaying https://www.chesapeakebay.net/documents/Phase_6_Modeling_Tools_1-page_factsheet_12-18-17.pdf. The page content includes the Chesapeake Progress logo, the title 'Phase 6 Modeling Tools', and the Chesapeake Bay Program logo. The main text reads: 'Phase 6 is the newest version of the Chesapeake Bay Watershed Model, now called the Chesapeake Bay Suite of Modeling Tools. Its simplified structure makes it easy to use and its data and information have been expanded and improved. But how is it different from the previous version?' Below this is a section titled 'What's New in the Phase 6 Watershed Model?' with a sub-header 'Highlights'. The highlights text is partially visible: 'The new model will be able to better pr account for the sediment build-up behir', 'Ten additional years of water quality mo more insight into how pollution loads h to control pollution entering the enviro', and 'High-resolution land cover data allow fo information than was previously availab'. At the bottom of the screenshot, a navigation menu includes 'HOME', 'PUBLIC REPORTS', 'LEARNING', 'ABOUT', and 'CONTACT US'. A prominent banner for the 'Chesapeake Assessment Scenario Tool' (CAST) is visible, featuring a sunset over water and the text: 'New to CAST? Rapidly develop scenarios for reducing nitrogen, phosphorus, and sediment with varying best management practices to streamline environmental planning. Register for increased functionality and to stay updated.' Below the banner are buttons for 'Register' and 'Where To Start'. A 'LOG IN' button is also present on the right side of the banner.

RESOURCES

DEVELOP A PLAN

Get answers to your questions about how to use CAST to develop a plan.

[Develop A Plan](#)

SOURCE DATA

Download data tables including information on load sources and agencies, BMPs, animals, geographic references and delivery factors.

[View Source Data](#)

BMPS

View information on best management practices (BMPs) including calculations, a quick reference guide, and protocol and expert panel reports.

[Learn More](#)

MAP TOOLS & SPATIAL DATA

View geographical information and shapefiles.

COSTS

Download BMP costs data and view cost profiles for each state and Chesapeake Bay

TRACK TMDL PROGRESS

View helpful information on verification, river trends, how to submit progress data via

Model My Watershed

Select Area

Explore mapped layers, such as streams, land cover, soils, boundaries and observations, using the layer selector in the lower left of the map. See our [documentation on layers](#).

Select an **Area of Interest** in the continental United States, using the suite of tools below, to analyze the factors that impact water in your area and to begin to model different scenarios of human impacts. Different modeling options for using these tools are described in the [technical documentation](#).

Select boundary

Choose a predefined boundary from several types

Draw area

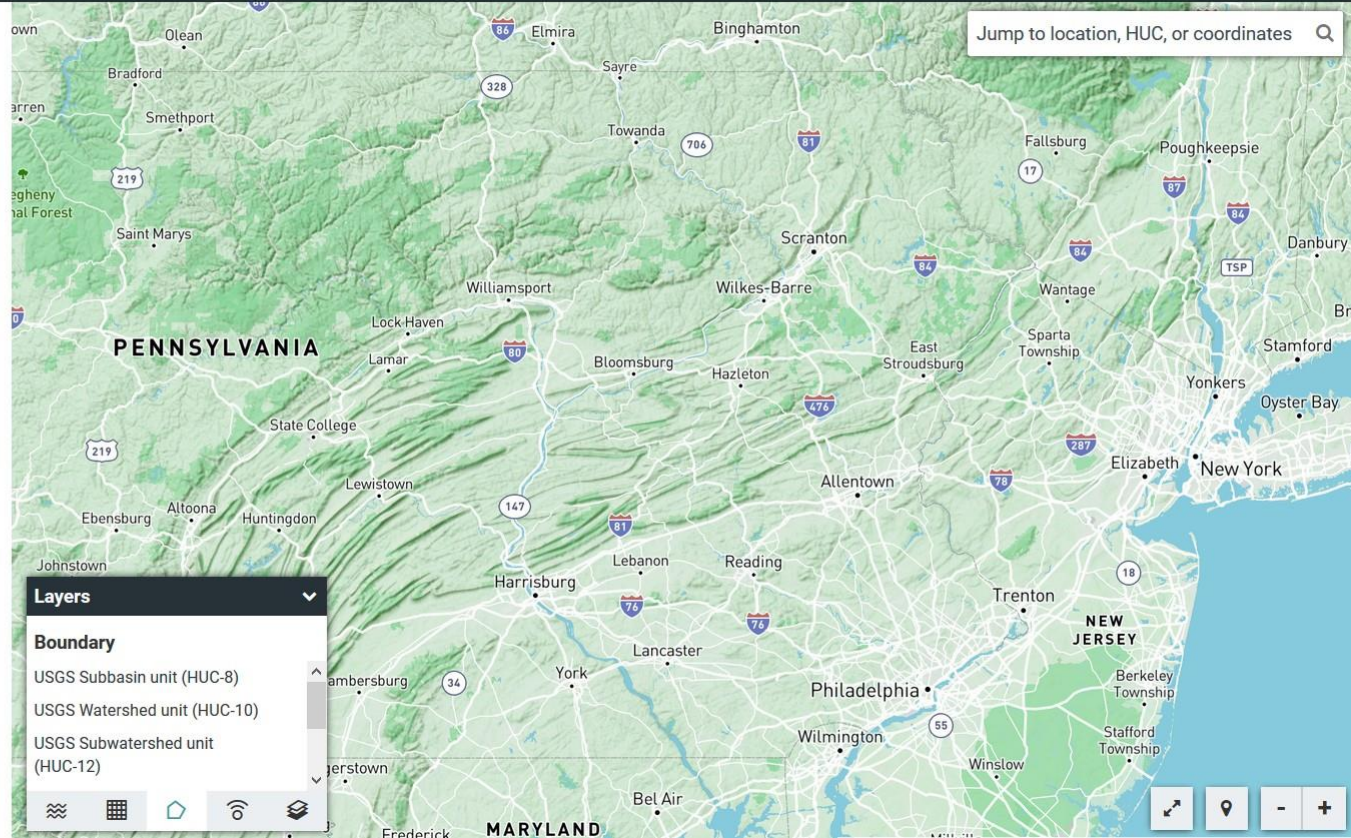
Free draw an area or place a square kilometer

Delineate watershed

Automatically delineate a watershed from any point

Upload file

Upload a polygon for your area

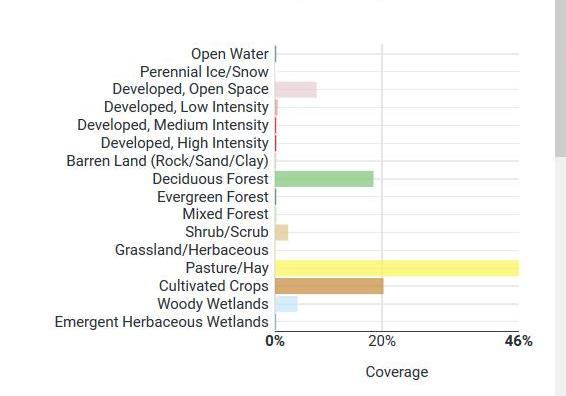


Delaware High Resolution 8 km²

Streams Land Soil Terrain Climate Pt Sources Animals Water Qual

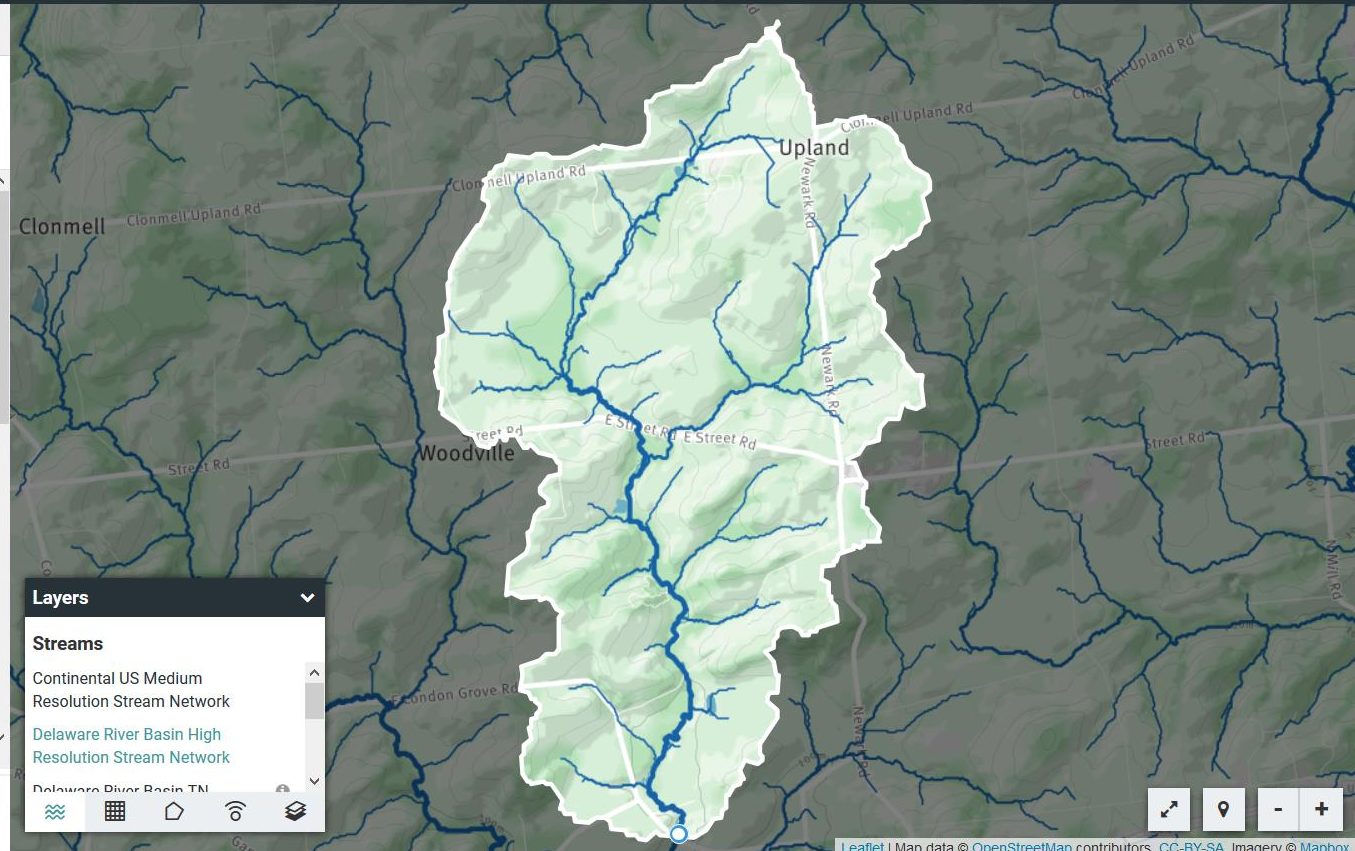
Land cover distribution

Related Layer: National Land Cover Database Turn on
 Source: National Land Cover Database (NLCD 2011)



Type	Area (km ²)	Coverage (%)
Open Water	0.00	0.0

Change area



Layers

- Streams
 - Continental US Medium Resolution Stream Network
 - Delaware River Basin High Resolution Stream Network
 - Delaware River Basin TM



E London Grove Rd

Spencer Rd

Spencer Rd

McCue Rd

McCue Rd

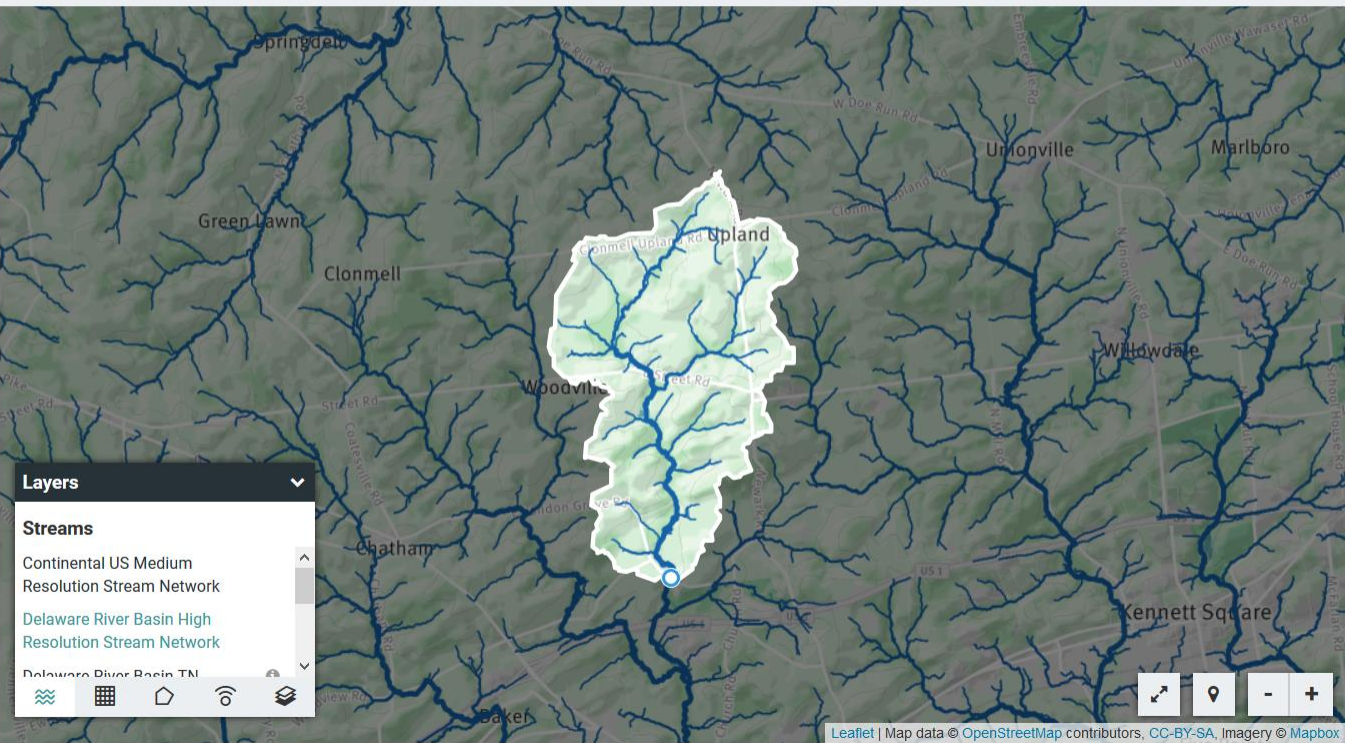
East Br...

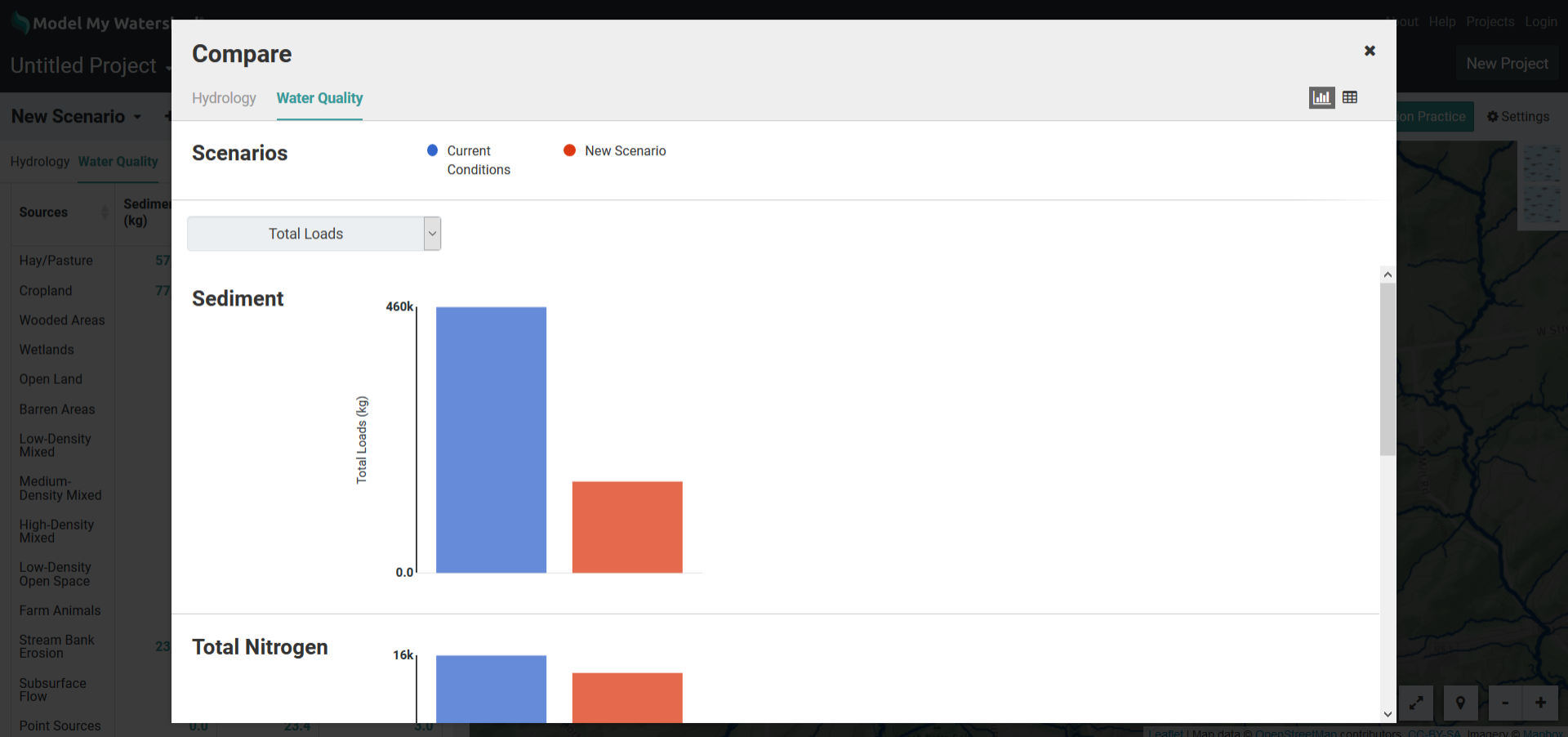
Google



Hydrology **Water Quality**

Sources	Sediment (kg)	Total Nitrogen (kg)	Total Phosphorus (kg)
Hay/Pasture	57,209.4	252.2	98.1
Cropland	369,987.6	1,285.0	429.5
Wooded Areas	558.7	8.1	0.9
Wetlands	150.1	13.4	0.8
Open Land	101.3	1.5	0.1
Barren Areas	0.0	0.0	0.0
Low-Density Mixed	45.3	1.0	0.1
Medium-Density Mixed	14.7	0.2	0.0
High-Density Mixed	0.0	0.0	0.0
Low-Density Open Space	729.3	15.5	1.7
Farm Animals	0.0	966.6	220.9
Stream Bank Erosion	33,401.0	21.0	9.0
Subsurface Flow	0.0	13,049.1	116.9
Point Sources	0.0	23.4	3.0







E London Grove Rd

Spencer Rd

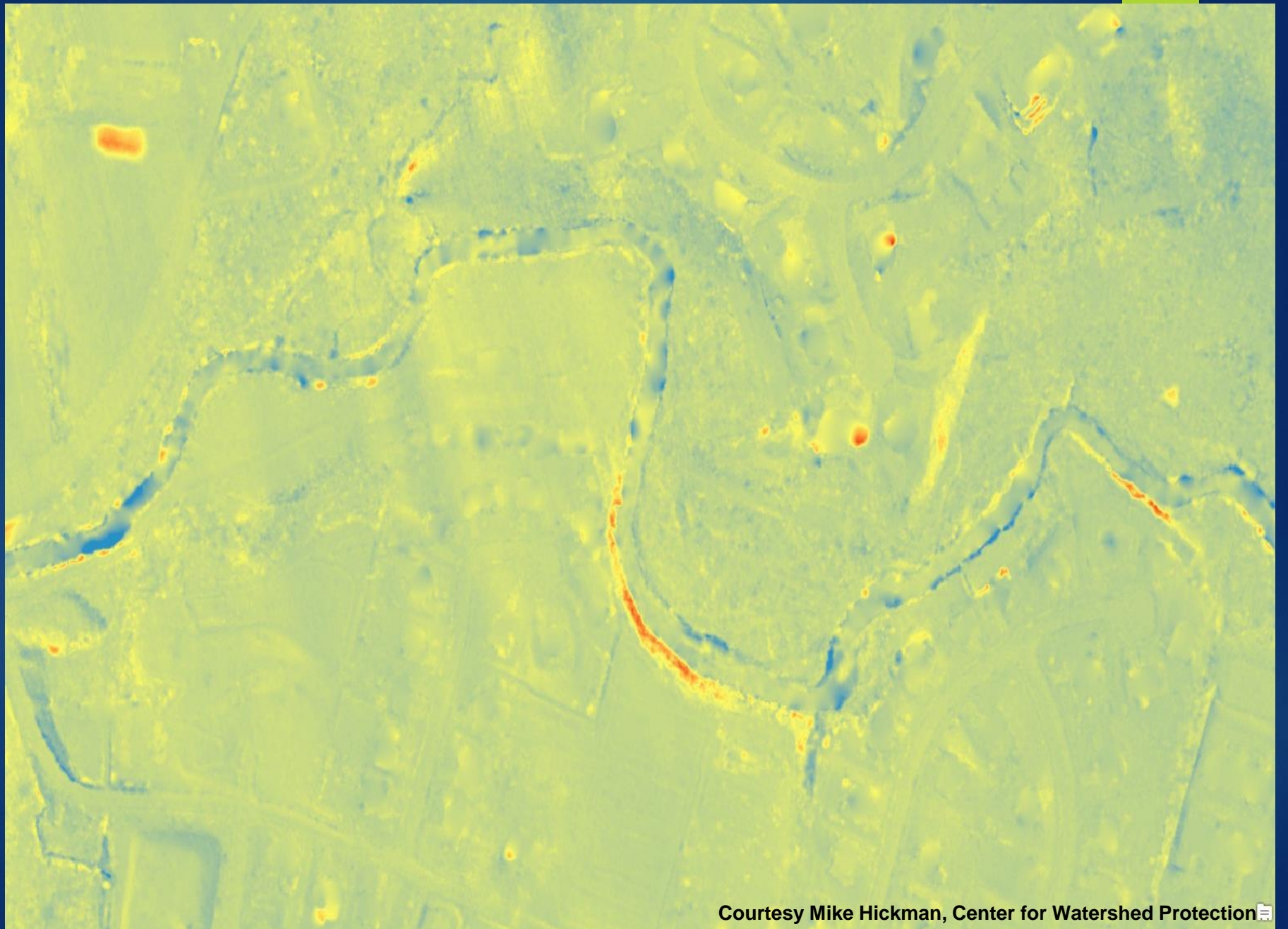
Spencer Rd

McCue Rd

McCue Rd

East Br...

Google

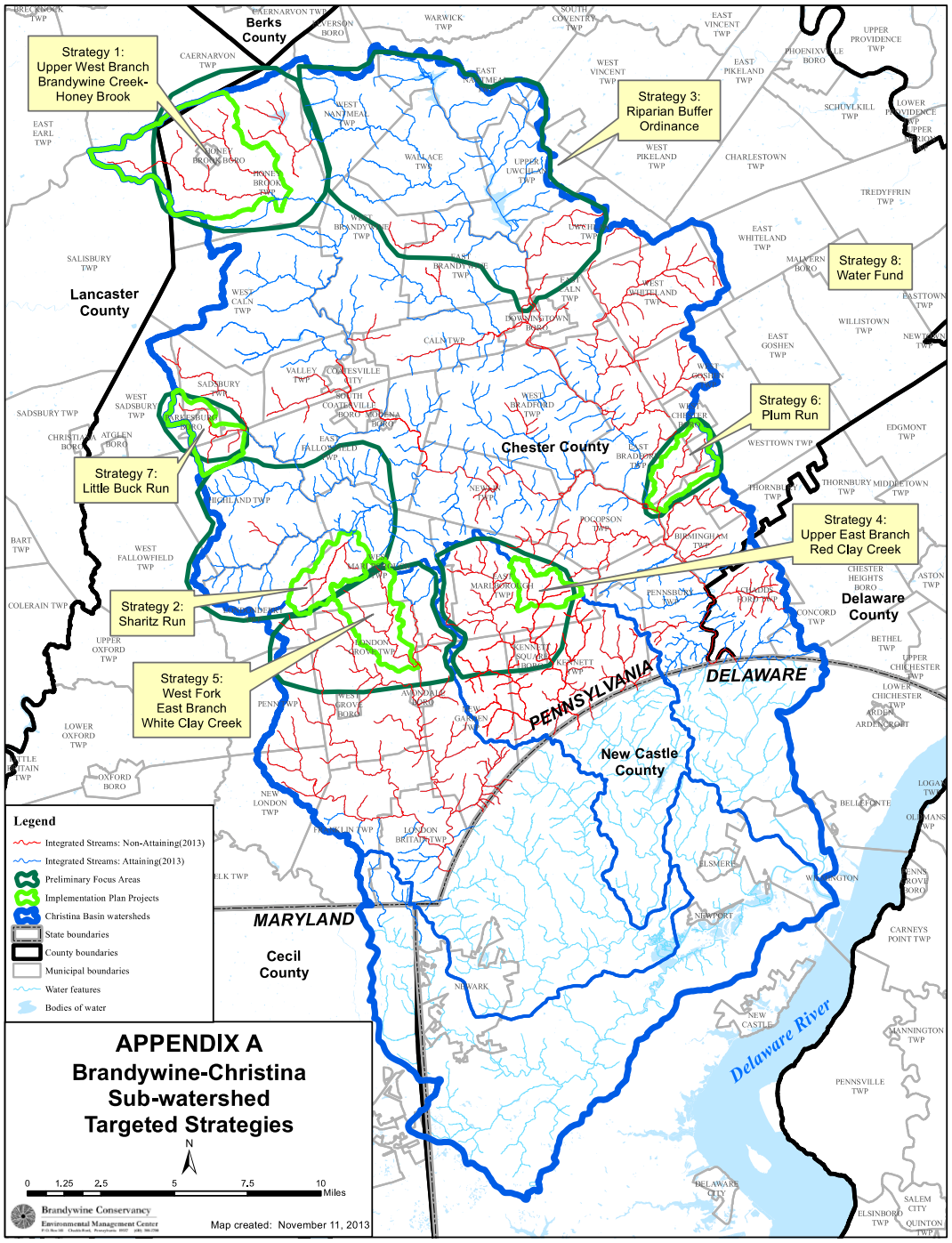


Courtesy Mike Hickman, Center for Watershed Protection

MapShed PRP Default Rate, BANCS Results, and DEM Differencing

BMP Number	Default Rate Estimated in TMDL Plan at 115 lb/ft (tons/yr)	BANCS Method (tons/yr)	Watershed DEM Differencing Erosion \pm Error (tons/yr)	Watershed DEM Differencing Erosion Error Percentage (%)
4	57.5	18.6	6.1 \pm 2.4	39.4%
5	66.1	68.9	9.5 \pm 2.0	20.8%
9	193.7	206.9	33.4 \pm 12.6	37.8%
10	115.0	62.7	-72.2 \pm - 13.9*	-19.3%*
12	103.5	25.8	10.2 \pm 2.8	27.2%

*Net Deposition



Strategy 1:
Upper West Branch
Brandywine Creek-
Honey Brook

Strategy 3:
Riparian Buffer
Ordinance

Strategy 8:
Water Fund

Strategy 6:
Plum Run

Strategy 4:
Upper East Branch
Red Clay Creek

Strategy 7:
Little Buck Run

Strategy 2:
Sharitz Run

Strategy 5:
West Fork
East Branch
White Clay Creek

Legend

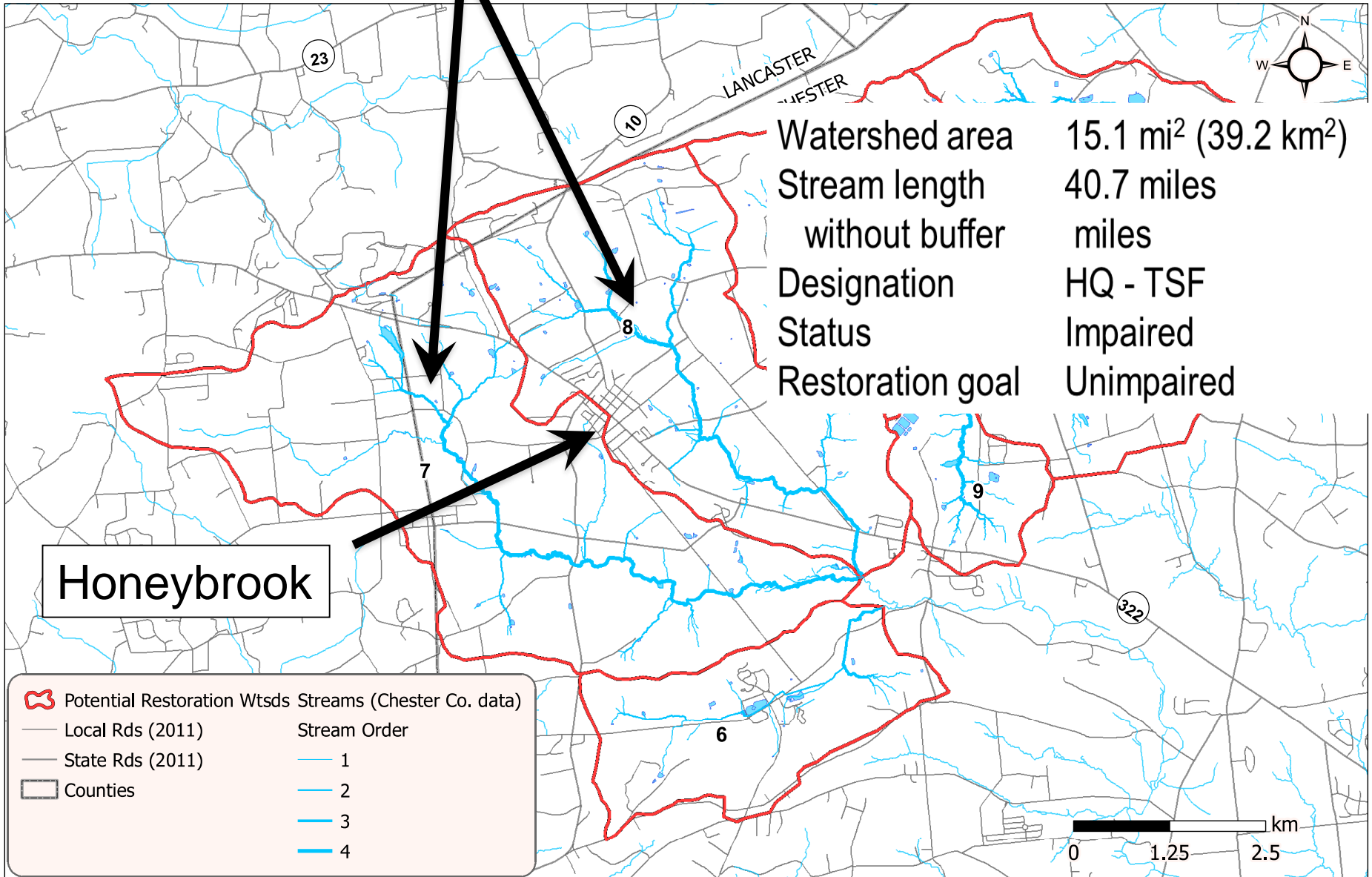
- Integrated Streams: Non-Attaining(2013)
- Integrated Streams: Attaining(2013)
- Preliminary Focus Areas
- Implementation Plan Projects
- Christina Basin watersheds
- State boundaries
- County boundaries
- Municipal boundaries
- Water features
- Bodies of water

APPENDIX A
Brandywine-Christina
Sub-watershed
Targeted Strategies

0 1.25 2.5 5 7.5 10 Miles

Brandywine Conservancy
 Environmental Management Center
 1000 Locust Street, Philadelphia, PA 19107
 Map created: November 11, 2013

West Branch Brandywine Creek - Honeybrook



Agricultural Conservation Easement Projects

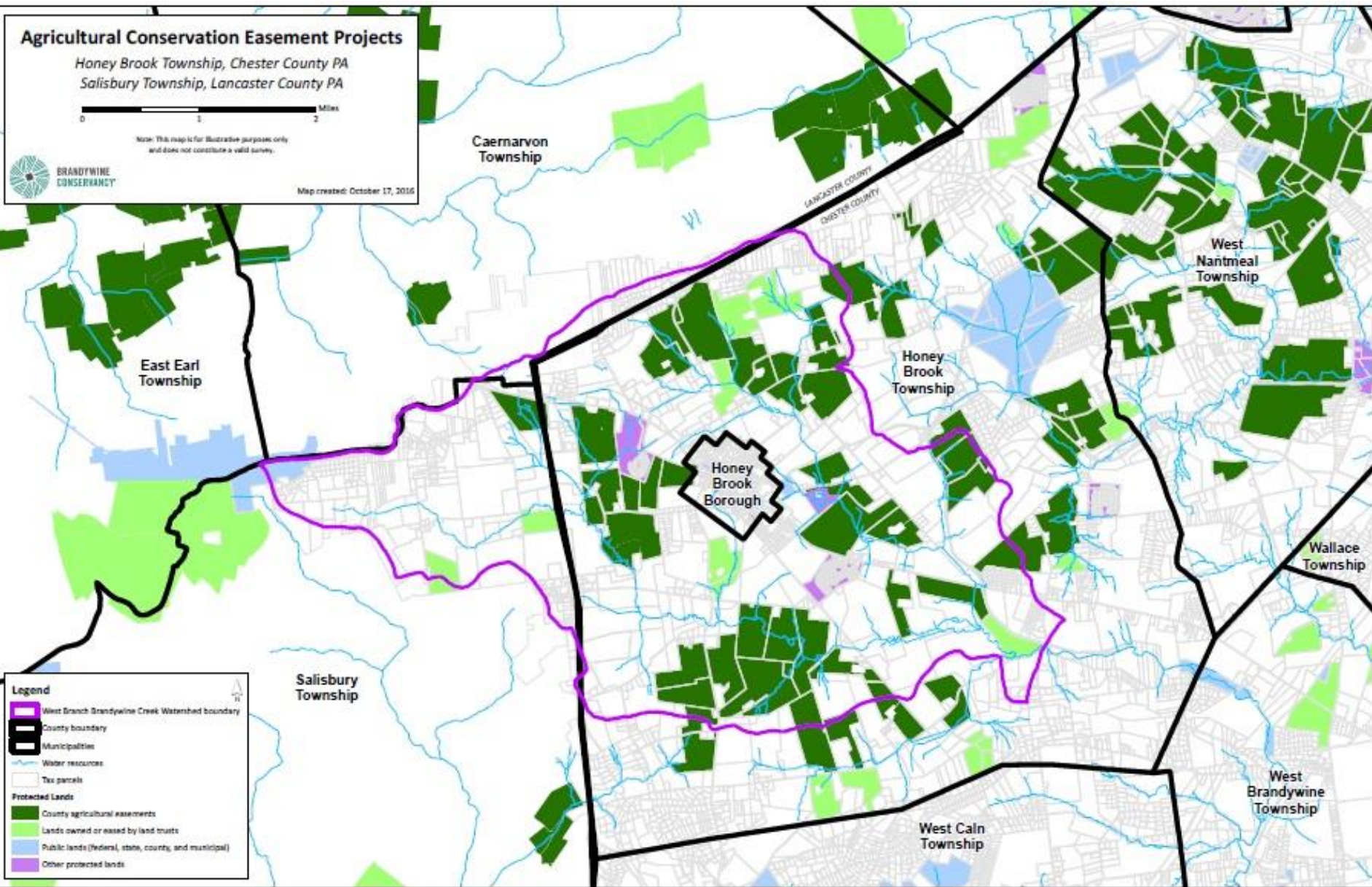
Honey Brook Township, Chester County PA
Salisbury Township, Lancaster County PA

0 1 2 Miles

Note: This map is for illustrative purposes only
and does not constitute a valid survey.



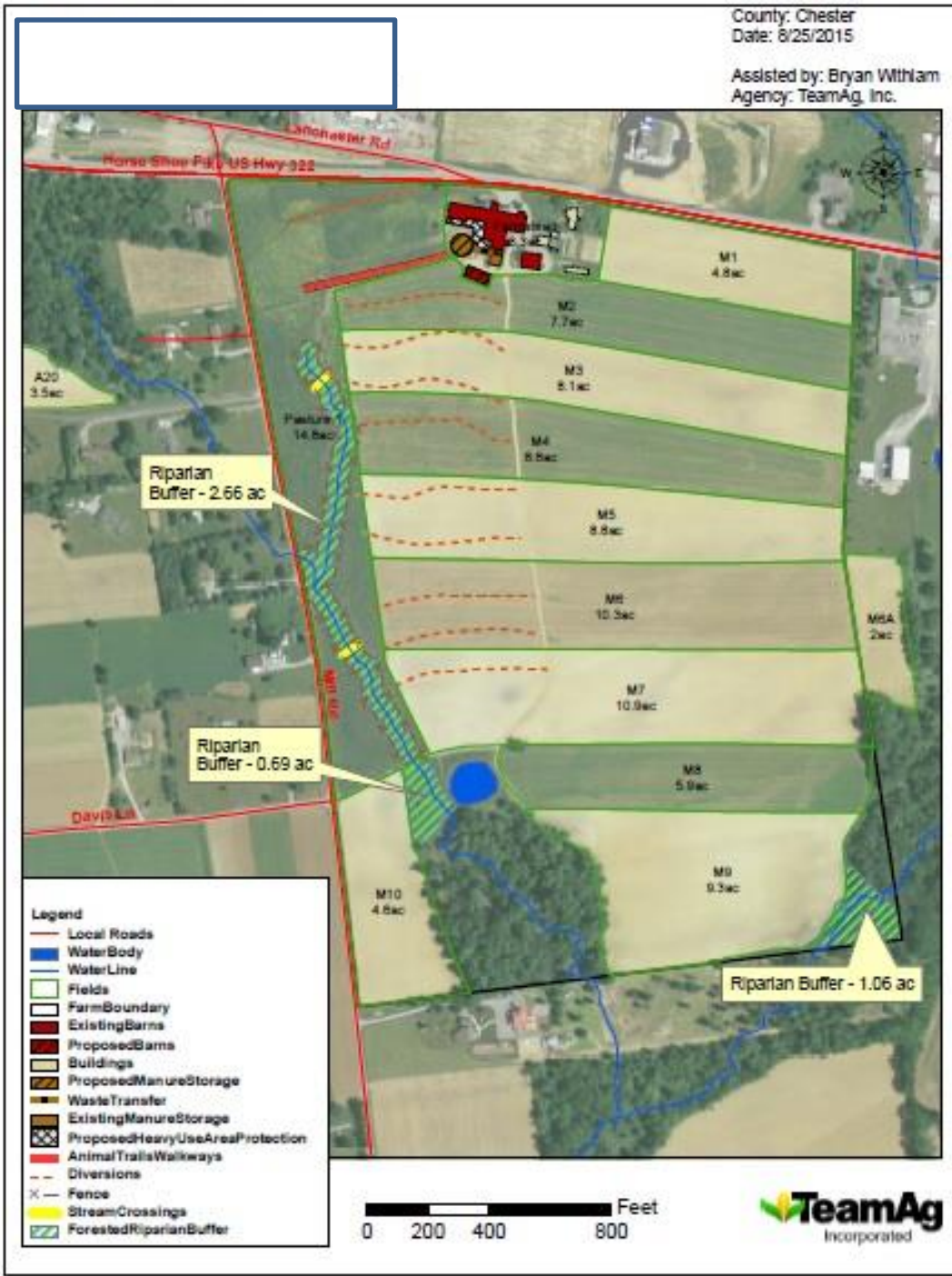
Map created: October 17, 2016



Legend

- West Branch Brandywine Creek Watershed boundary
- County boundary
- Municipalities
- Water resources
- Tax parcels
- Protected Lands**
 - County agricultural easements
 - Lands owned or eased by land trusts
 - Public lands (federal, state, county, and municipal)
 - Other protected lands

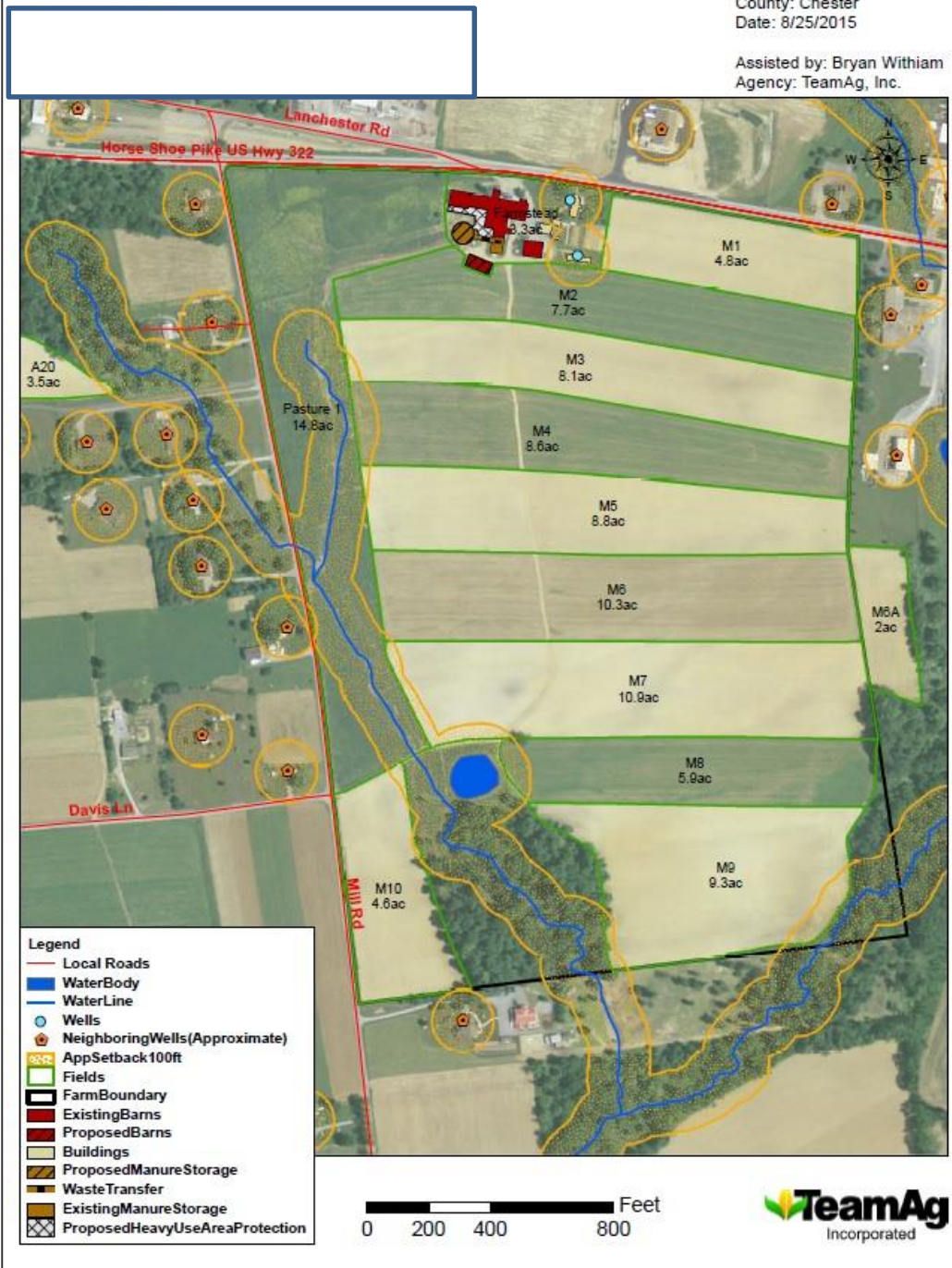
Conservation Plan

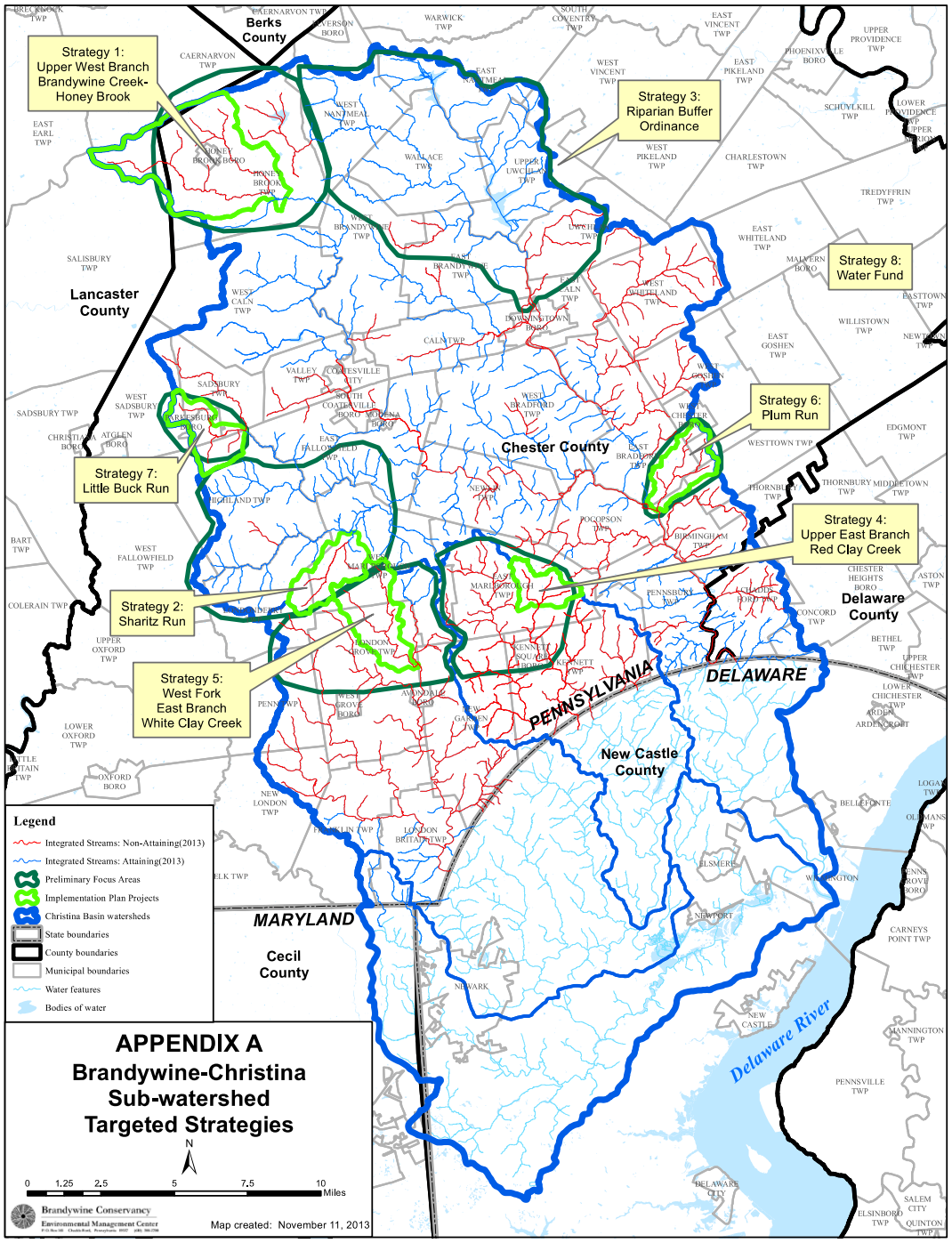


Manure Management Plan

County: Chester
Date: 8/25/2015

Assisted by: Bryan Withiam
Agency: TeamAg, Inc.





Strategy 1:
Upper West Branch
Brandywine Creek-
Honey Brook

Strategy 3:
Riparian Buffer
Ordinance

Strategy 8:
Water Fund

Strategy 6:
Plum Run

Strategy 7:
Little Buck Run

Strategy 4:
Upper East Branch
Red Clay Creek

Strategy 2:
Sharitz Run

Strategy 5:
West Fork
East Branch
White Clay Creek

Legend

- Integrated Streams: Non-Attaining(2013)
- Integrated Streams: Attaining(2013)
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- Water features
- Bodies of water

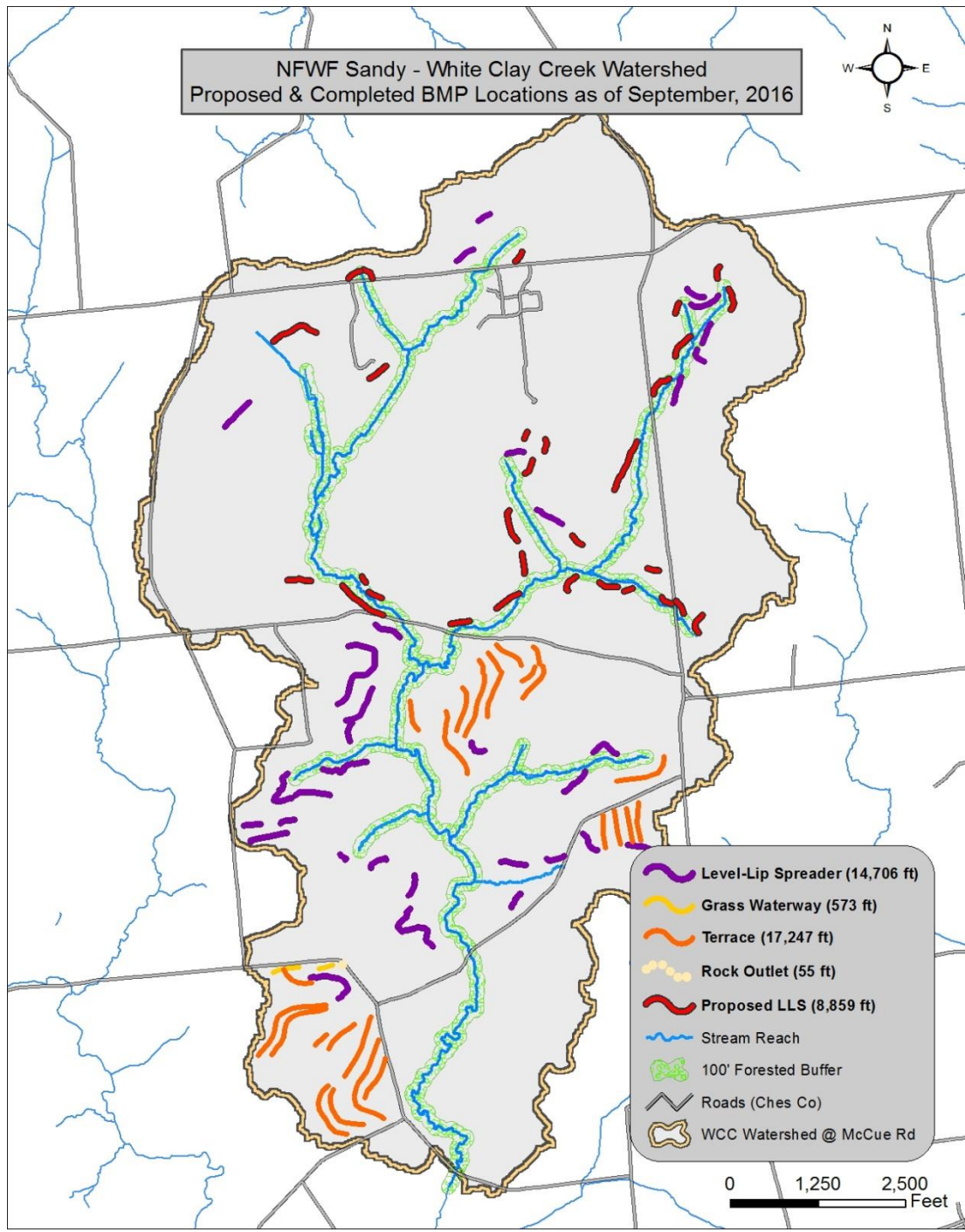
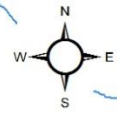
APPENDIX A
Brandywine-Christina
Sub-watershed
Targeted Strategies

0 1.25 2.5 5 7.5 10 Miles

Brandywine Conservancy
Environmental Management Center
1000 N. Brandywine Road, P.O. Box 1000, Brandywine, PA 19302

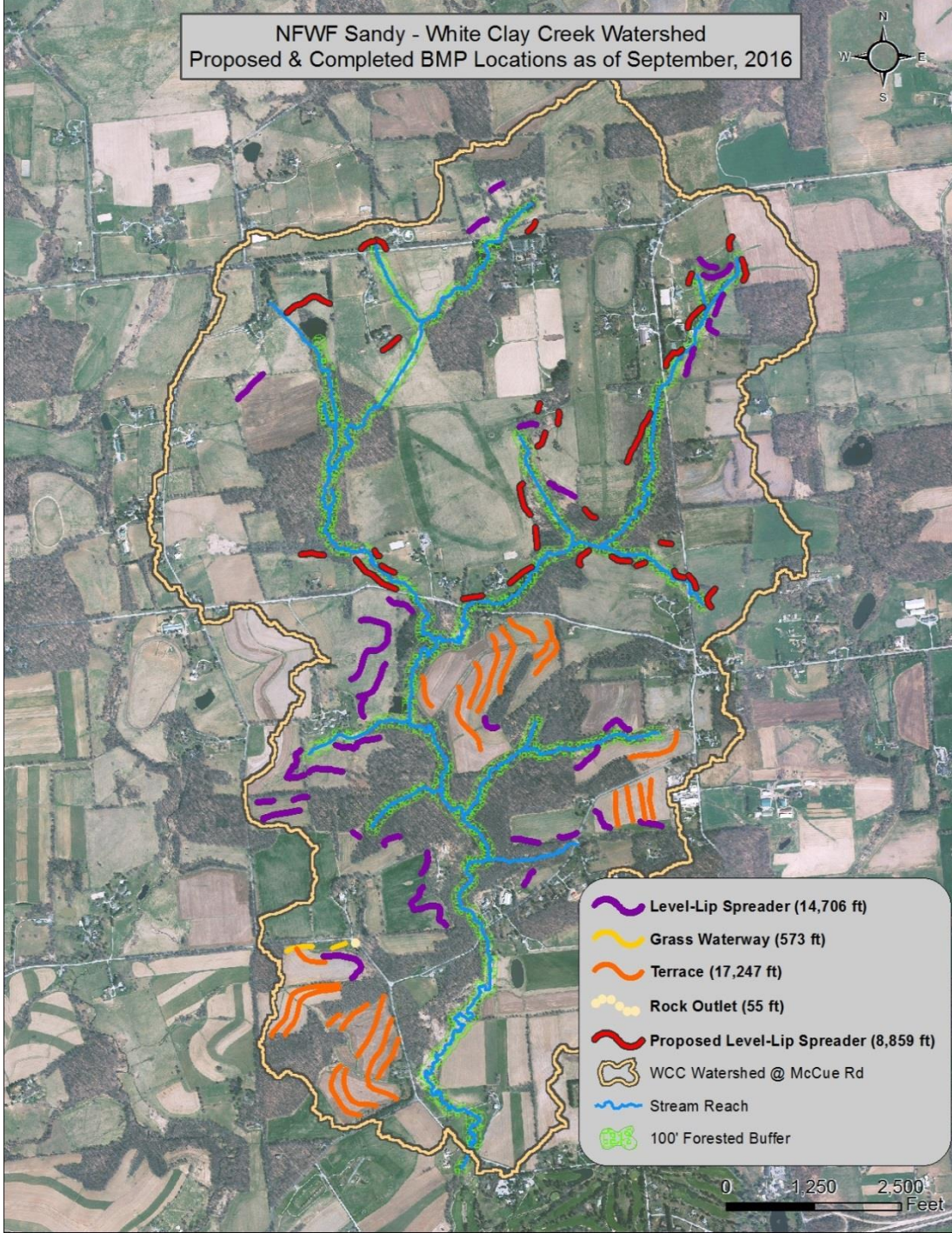
Map created: November 11, 2013

NFWF Sandy - White Clay Creek Watershed
Proposed & Completed BMP Locations as of September, 2016



- Level-Lip Spreader (14,706 ft)
- Grass Waterway (573 ft)
- Terrace (17,247 ft)
- Rock Outlet (55 ft)
- Proposed LLS (8,859 ft)
- Stream Reach
- 100' Forested Buffer
- Roads (Ches Co)
- WCC Watershed @ McCue Rd

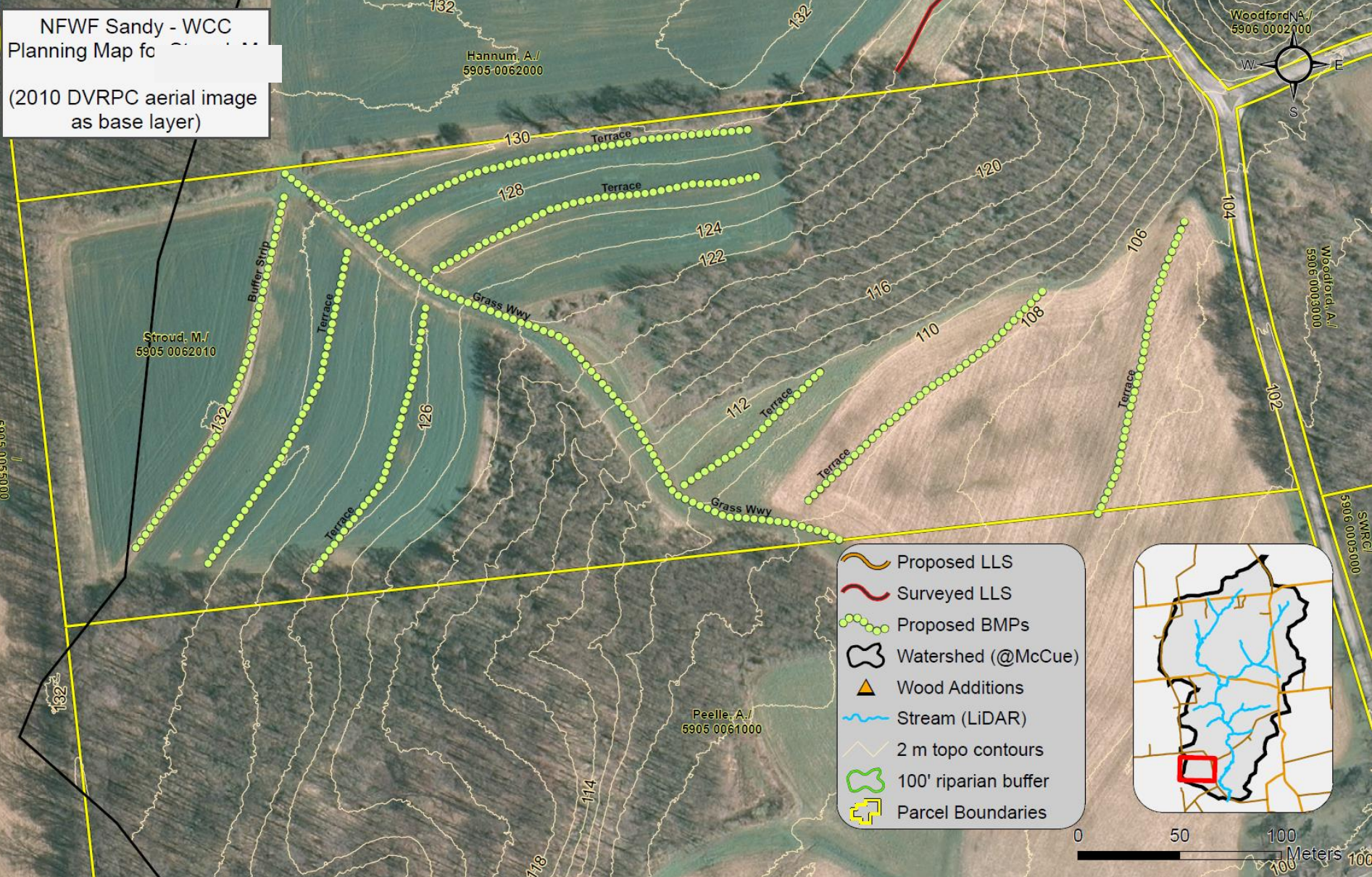
NFWF Sandy - White Clay Creek Watershed
Proposed & Completed BMP Locations as of September, 2016



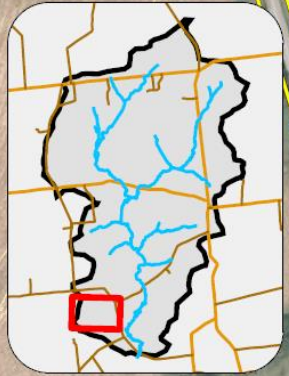
- Level-Lip Spreader (14,706 ft)
- Grass Waterway (573 ft)
- Terrace (17,247 ft)
- Rock Outlet (55 ft)
- Proposed Level-Lip Spreader (8,859 ft)
- WCC Watershed @ McCue Rd
- Stream Reach
- 100' Forested Buffer

NFWF Sandy - WCC
Planning Map for

(2010 DVRPC aerial image
as base layer)



- Proposed LLS
- Surveyed LLS
- Proposed BMPs
- Watershed (@McCue)
- Wood Additions
- Stream (LiDAR)
- 2 m topo contours
- 100' riparian buffer
- Parcel Boundaries





“Level-lip spreader” located behind Stroud Water Research Center before construction



Level-lip spreader during construction



Level-lip spreader during construction



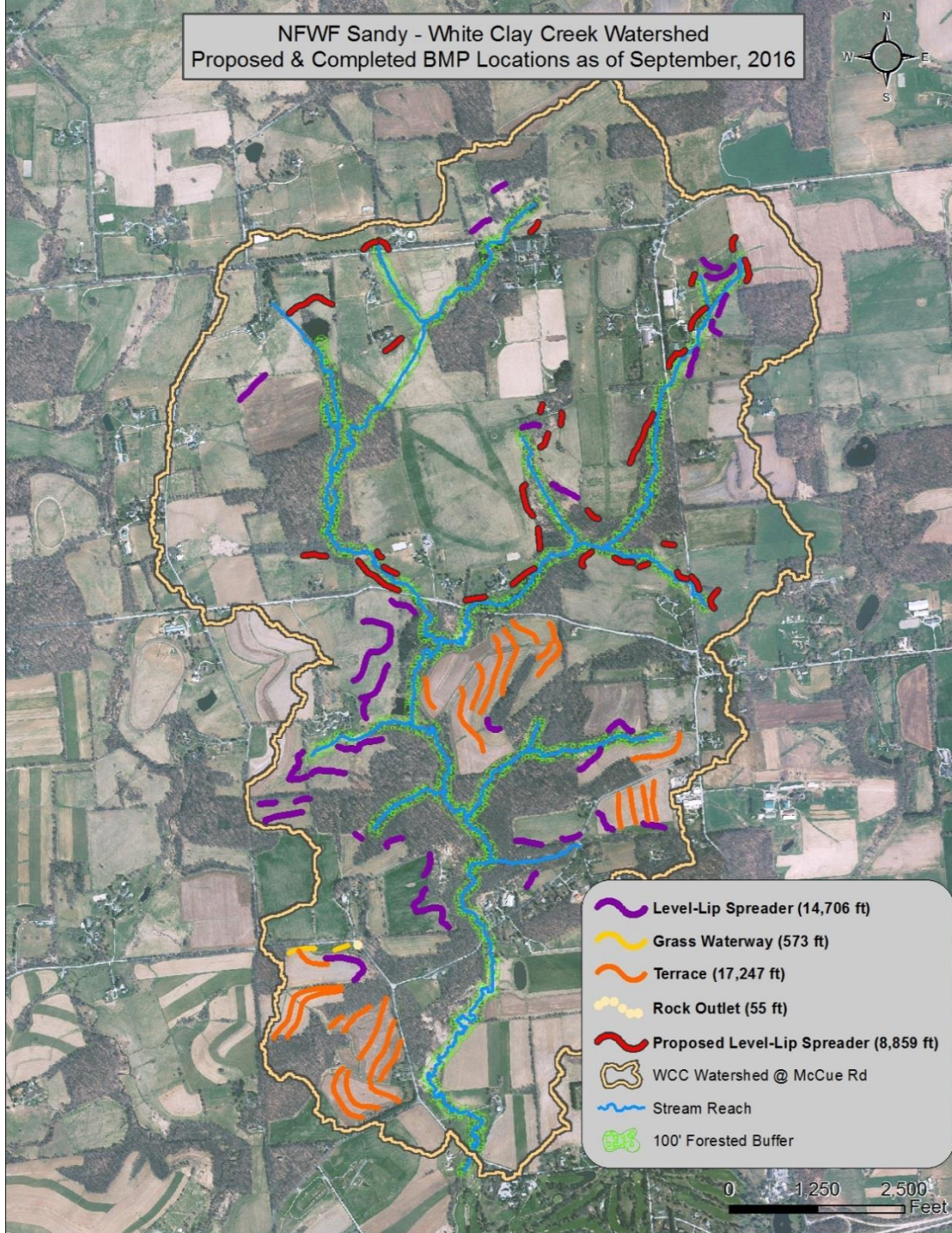
Level lip spreader after construction



“Level-lip spreaders” are shallow conservation swales built along the contour of the slope that collect surface runoff during rainstorms. With most storms the water that is collected will infiltrate into the ground, sediments settle out, and the water flows as groundwater to the stream. In big storms the water will flow over the level-lip evenly into the streamside forest before reaching the stream. Level-lip spreaders help reduce flooding and prevent nutrients and sediments from reaching the stream. These swales are being designed by Chester County Conservation District in partnership with the Stroud Center.



NFWF Sandy - White Clay Creek Watershed
Proposed & Completed BMP Locations as of September, 2016



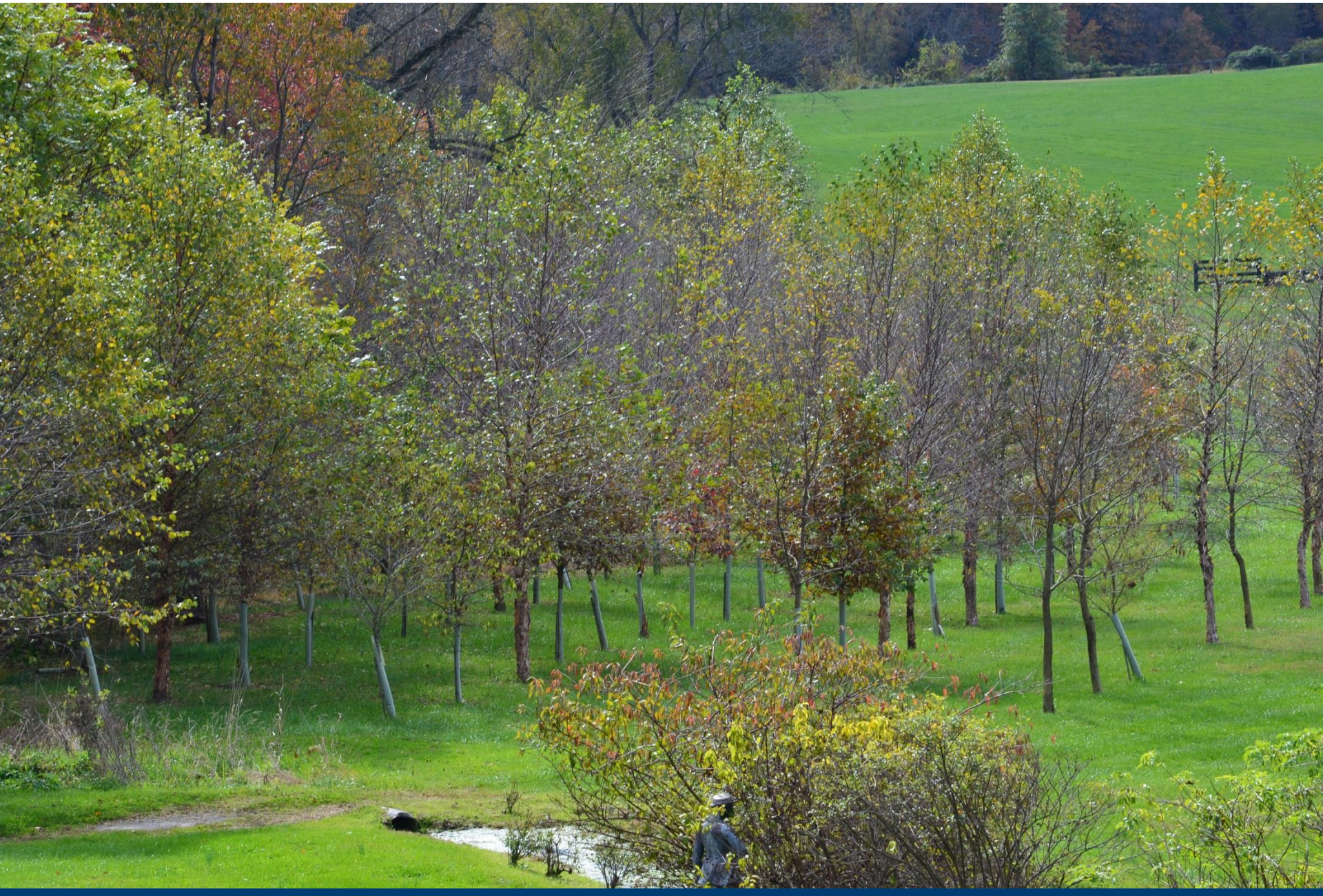
- Level-Lip Spreader (14,706 ft)
- Grass Waterway (573 ft)
- Terrace (17,247 ft)
- Rock Outlet (55 ft)
- Proposed Level-Lip Spreader (8,859 ft)
- WCC Watershed @ McCue Rd
- Stream Reach
- 100' Forested Buffer



Planted Apr 2007
Photo Aug 2008



Spring 2014



WHITE CLAY CREEK FLOODPLAIN RECONNECTION AND RESTORATION CONCEPT PLAN UPPER PROJECT EXTENT

AREA OF FILL TO BE REMOVED TO RE-ESTABLISH
OVERFLOW DIVERSION INTO EXISTING MILL RACE

FLOODPLAIN ENHANCEMENT
ZONE THROUGH WETLAND
CREATION – INSIDE OF
RIVERINE BUFFER

EXCAVATED SEDIMENT TO BE
SPREAD ON ADJACENT FIELDS

HIGH QUALITY
WETLANDS NOT
TO BE DISTURBED

FLOODPLAIN ENHANCEMENT
ZONE THROUGH WETLAND
CREATION – WITHIN ADJACENT
AGRICULTURAL FIELD

FLOODPLAIN ENHANCEMENT
ZONE THROUGH WETLAND
CREATION – OUTSIDE OF
RIVERINE BUFFER



PH PRINCETON HYDRO, LLC.
1108 OLD YORK ROAD
P.O. BOX 738
RINGGEE, NJ 08851
*with offices in NJ, PA and CT

1 inch = 50 feet
0 100 Feet

NOTES:

PROJECT EXTENTS

STROUD RESEARCH CENTER
FLOODPLAIN RECONNECTION
AND RESTORATION
WHITE CLAY CREEK
CHESTER COUNTY, PENNSYLVANIA

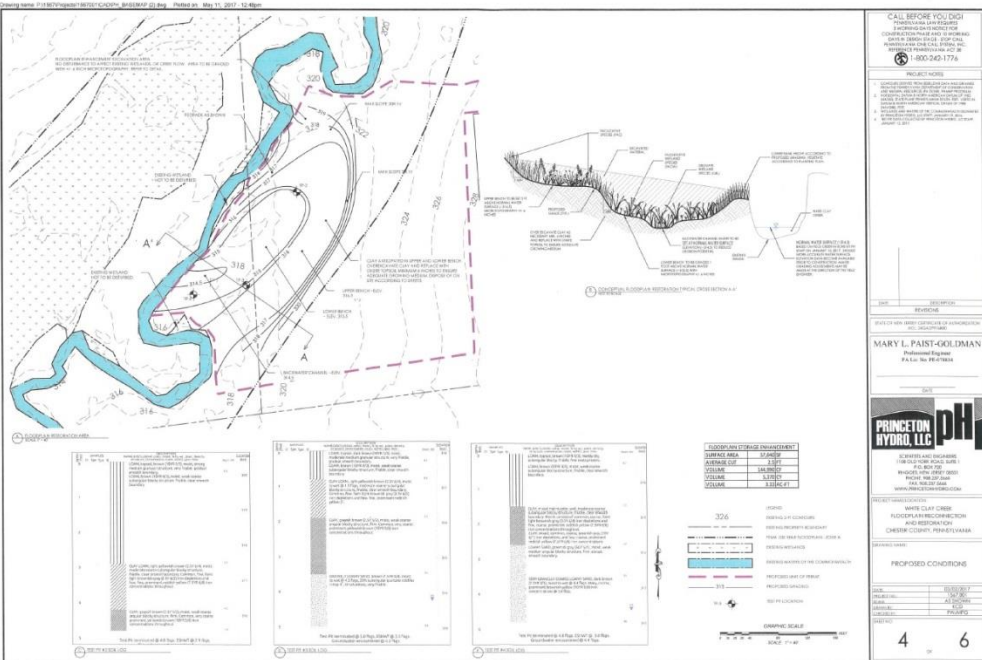
Legend

- Site Access
- Stream line - from LIDAR
- Wetland Line
- Sediment Excavation**
 - Outside Buffer
 - Wetland Buffer
 - Optimal
 - 60' Stream Buffer
- Wetland Areas**
 - Wetlands
 - Wetlands
- Delineation**
 - Wetlands
 - Wetlands
- Parcels

Flood Storage

Level Lip Spreaders and Wetland storage totals over 9,200 m³ of storage
 That's approximately 25% of a 2 inch, 24 hour storm event

How Do Other Factors
 Impact Flood Storage and
 Timing?



Conserving Water Quantity and Quality by Improving Soil Health



Photo: Kelley King, King Photography



Field 6.1
No cover crop

Field 6.2
Yes cover crop



3x-4x Increase in Water Infiltration



Pristine?





What Are Your Goals?

**How Do You Achieve
Them?**

Current Conditions and Progress Toward Restoration Goals

Brandywine Headwaters

White Clay Creek

Red Clay Creek

Plum Run

What Makes the DRWI Unique?

Prioritized Measurable Outcomes



What Makes the DRWI Unique?

Prioritized Measurable Outcomes

- Defining and Quantifying Goals
- Aggregating Effort
- Monitoring Progress and Outcomes

What is the Restoration Goal?

Can it be Quantified?



Monitoring

Has the Restoration
Goal Been Reached?

What is the
Rate of Change?

Before



After



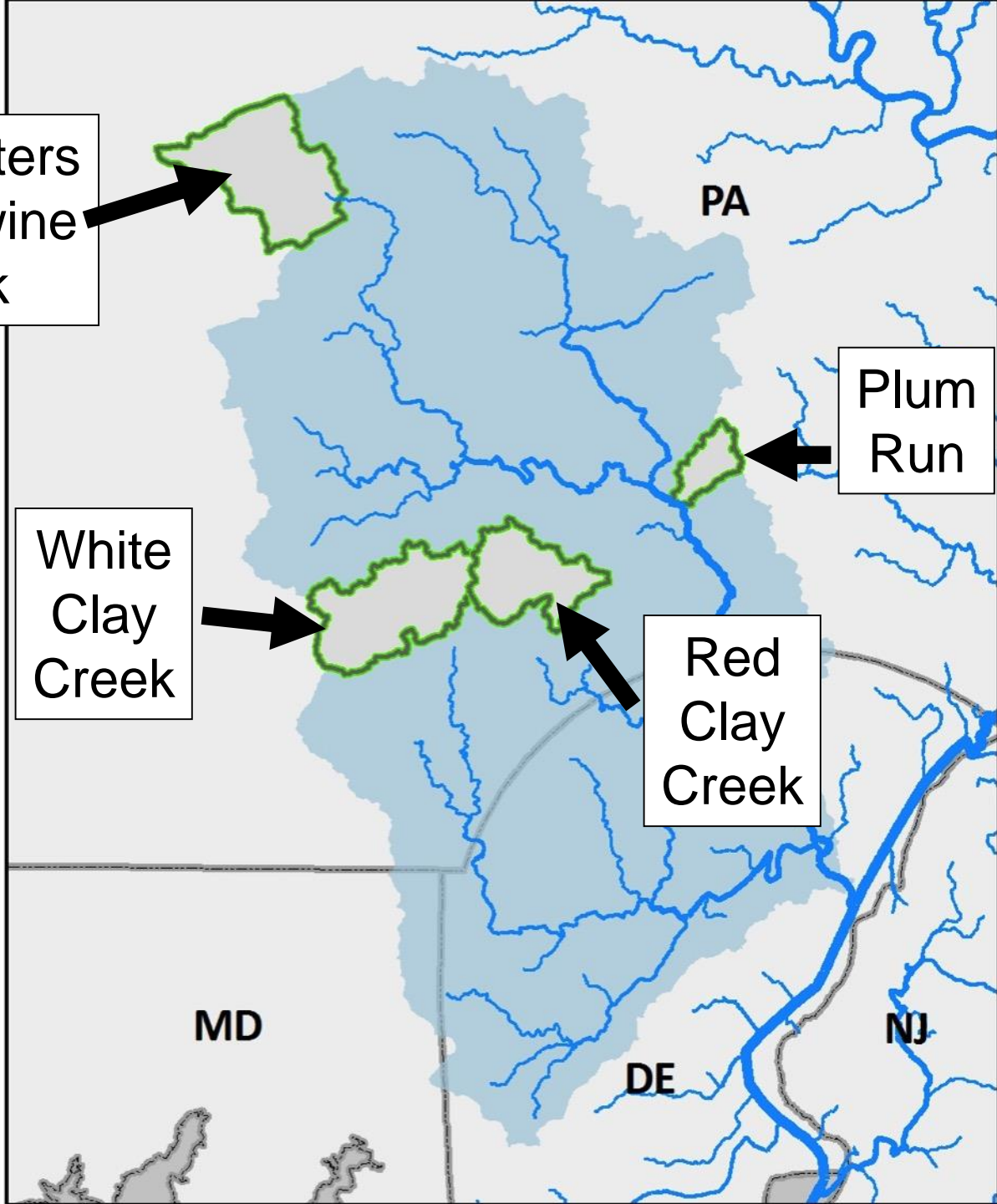
Brandywine Christina Cluster

Headwaters
Brandywine
Creek

White
Clay
Creek

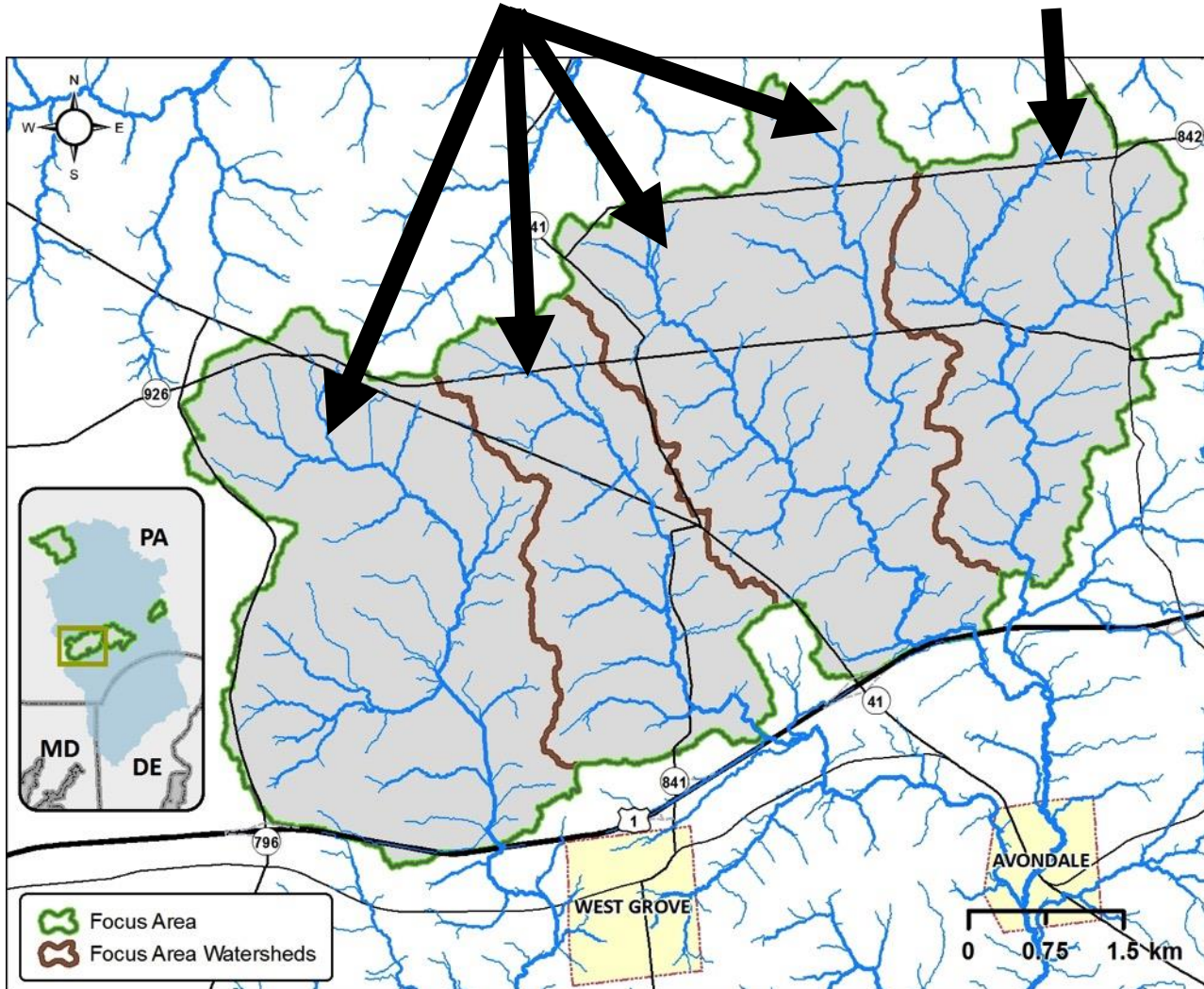
Red
Clay
Creek

Plum
Run



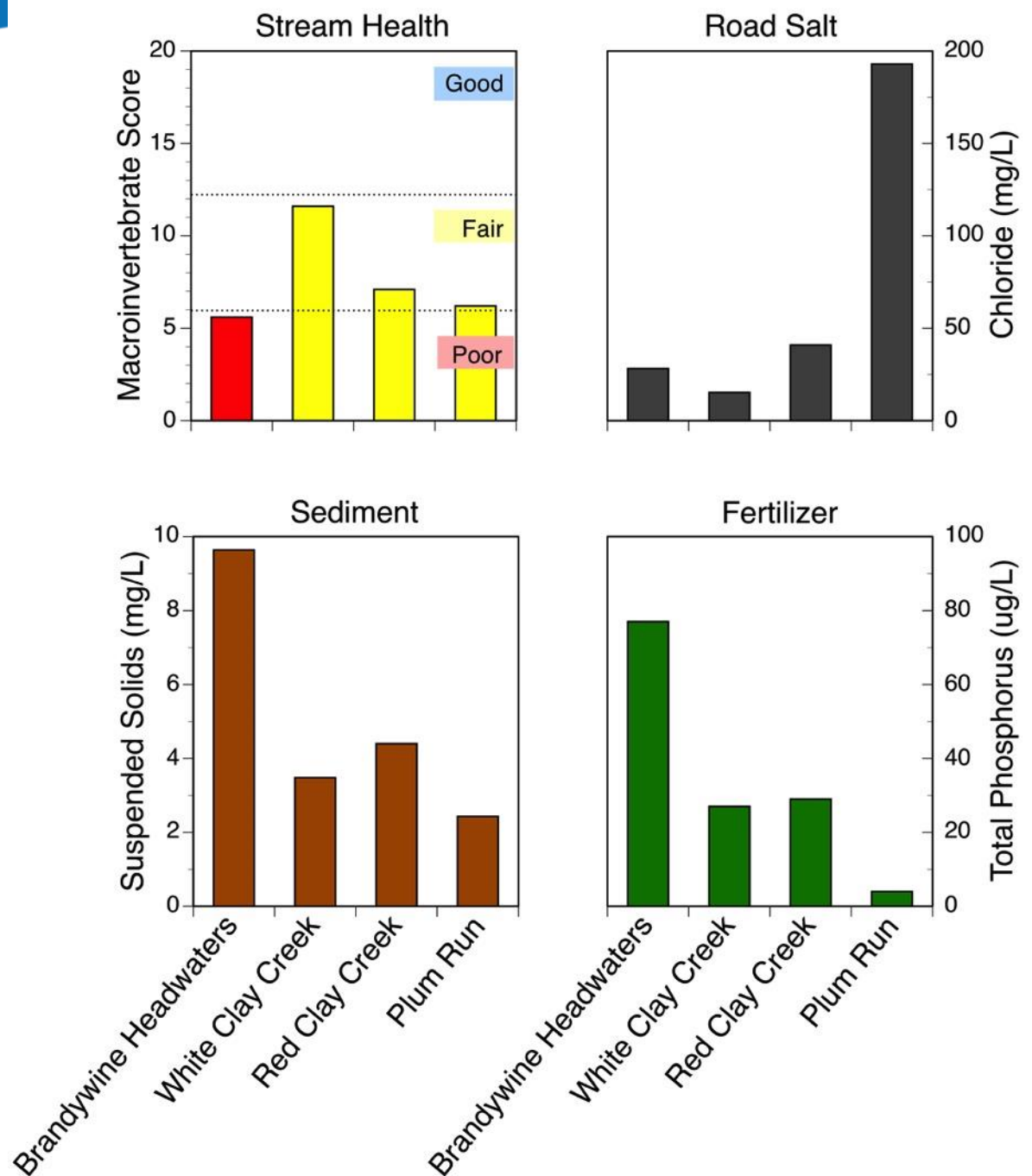
White Clay
Restoration
Replicates

Restoration
Target
EV with Wild Trout

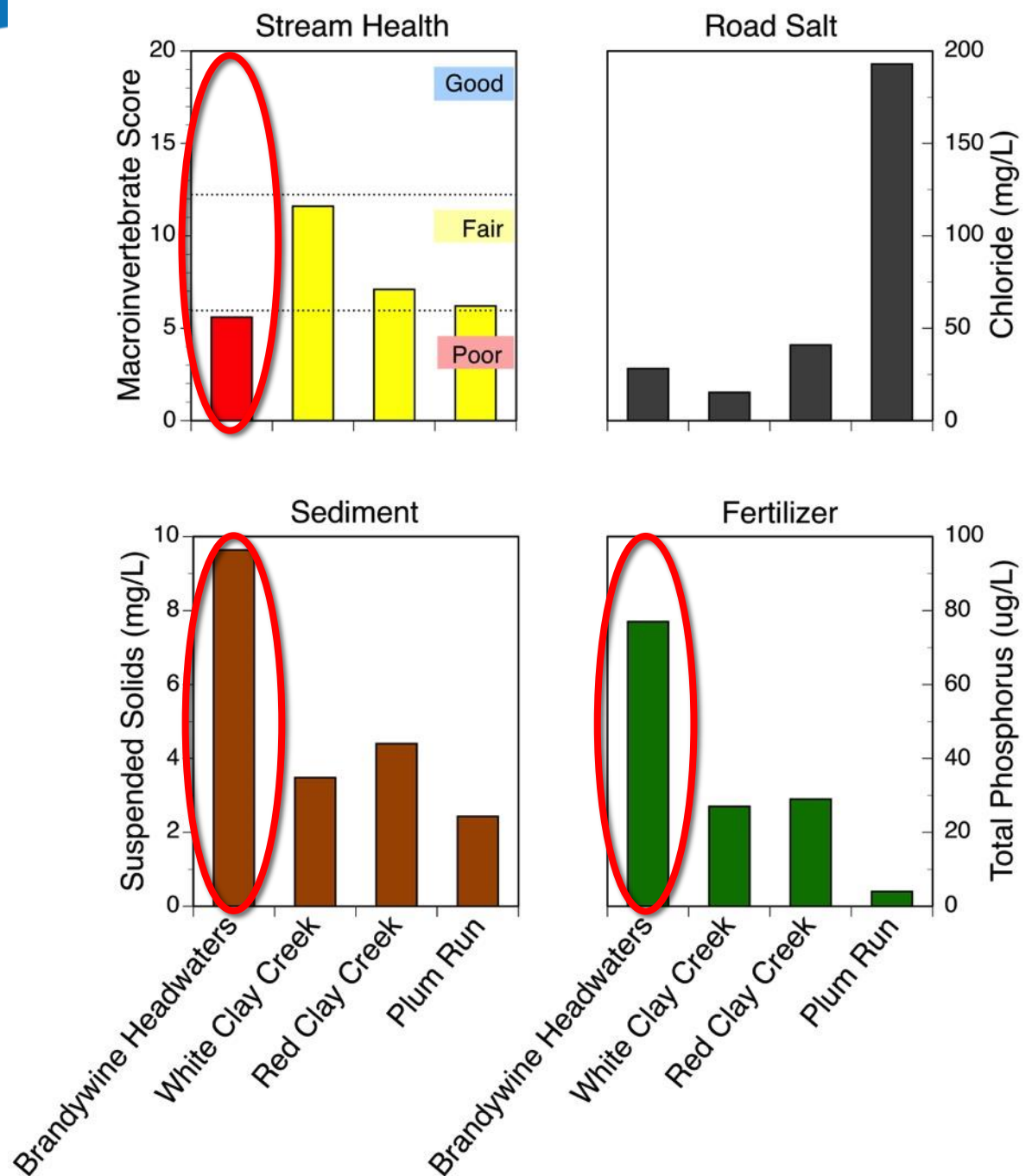


Brandywine Christina Cluster

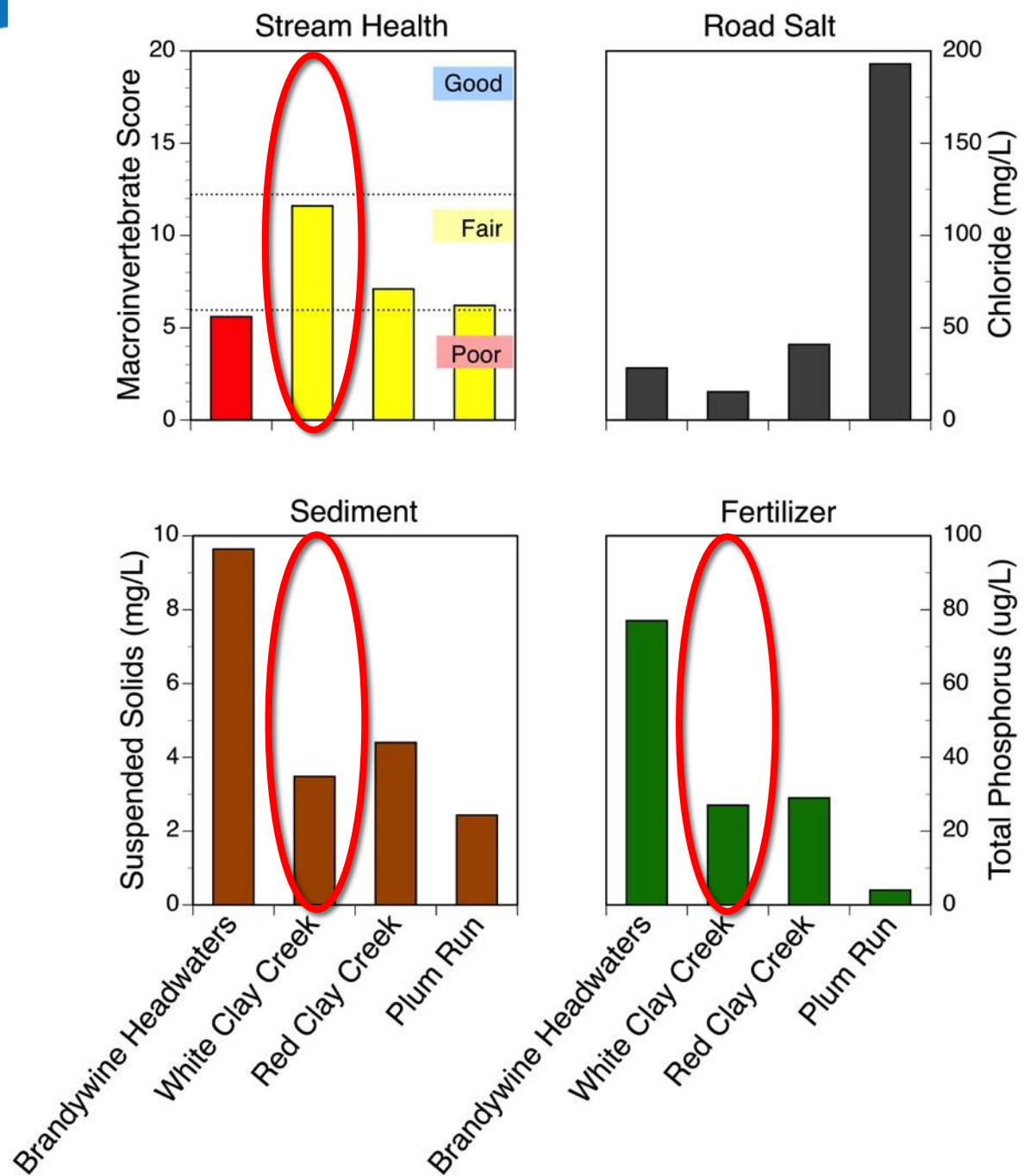
Each focus area
is different



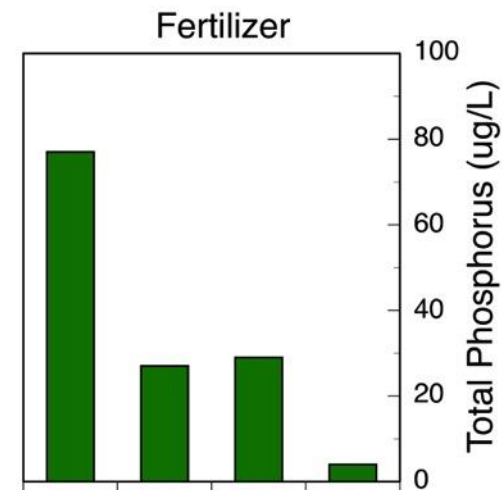
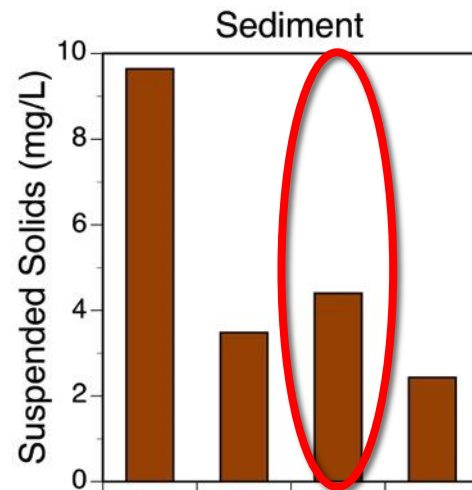
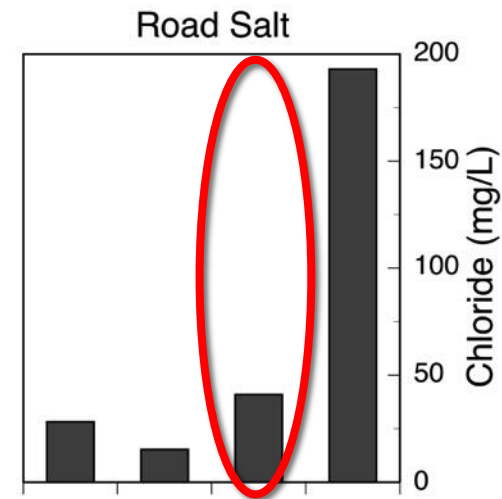
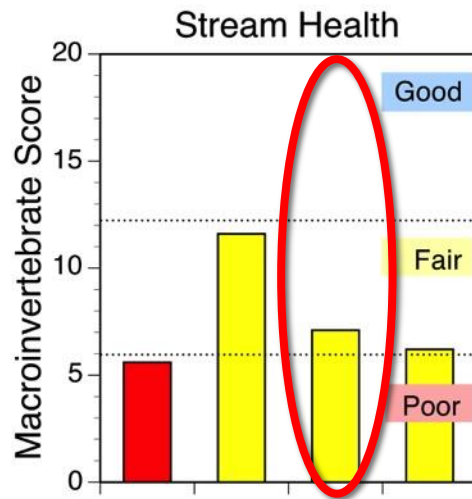
Brandywine Headwaters Focus Area



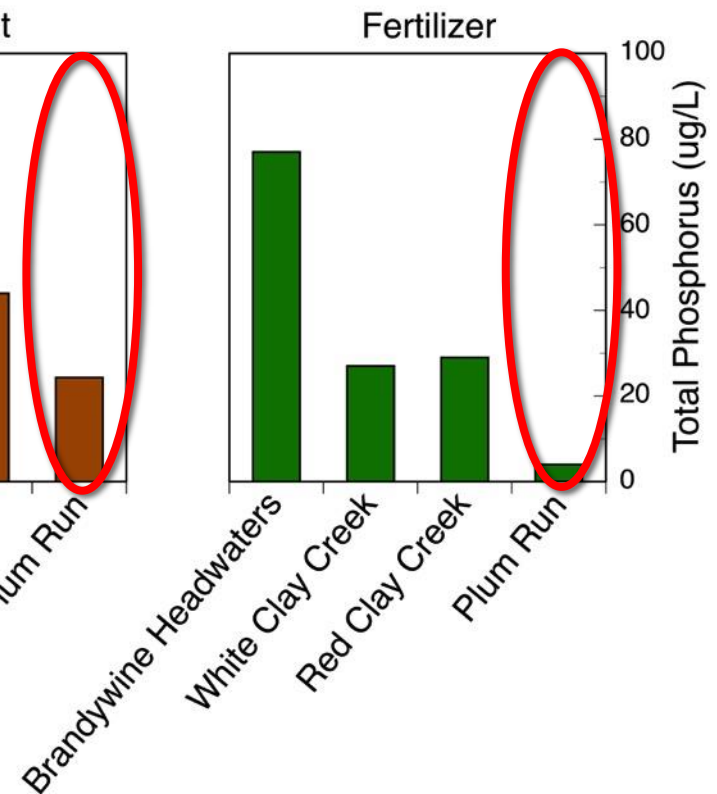
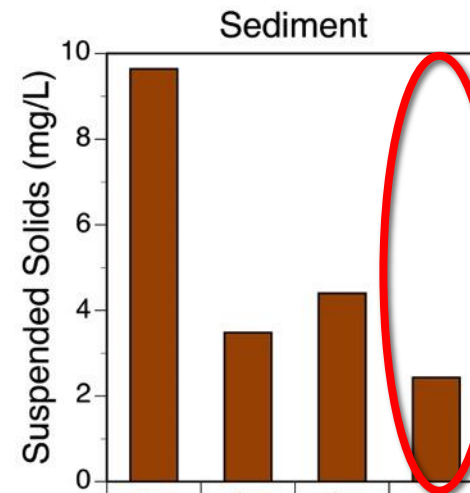
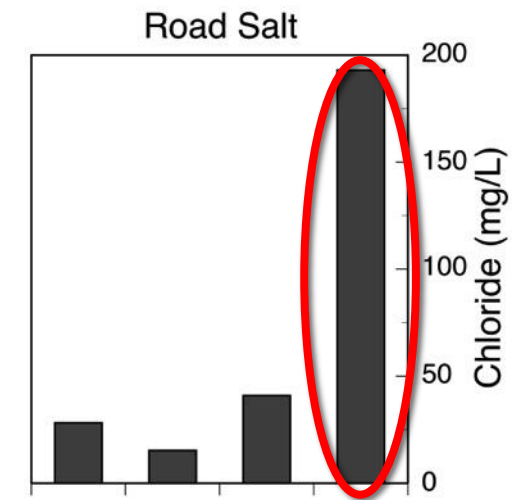
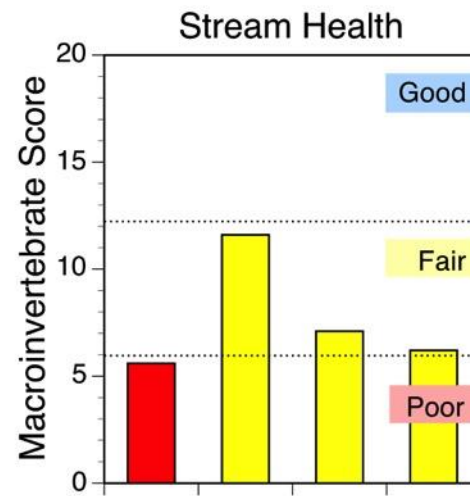
White Clay Creek Focus Area



Red Clay Creek Focus Area

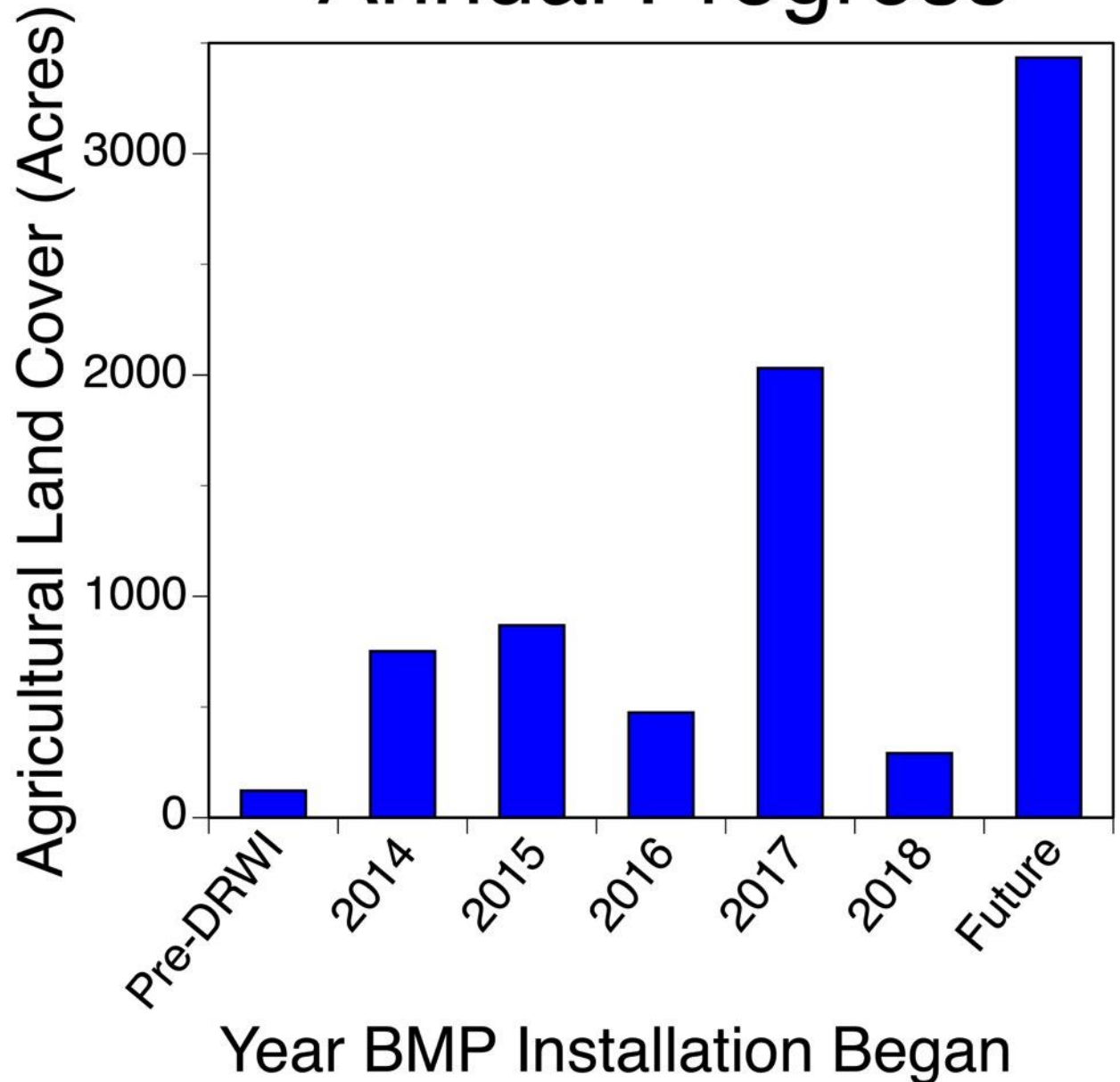


Plum Run Focus Area



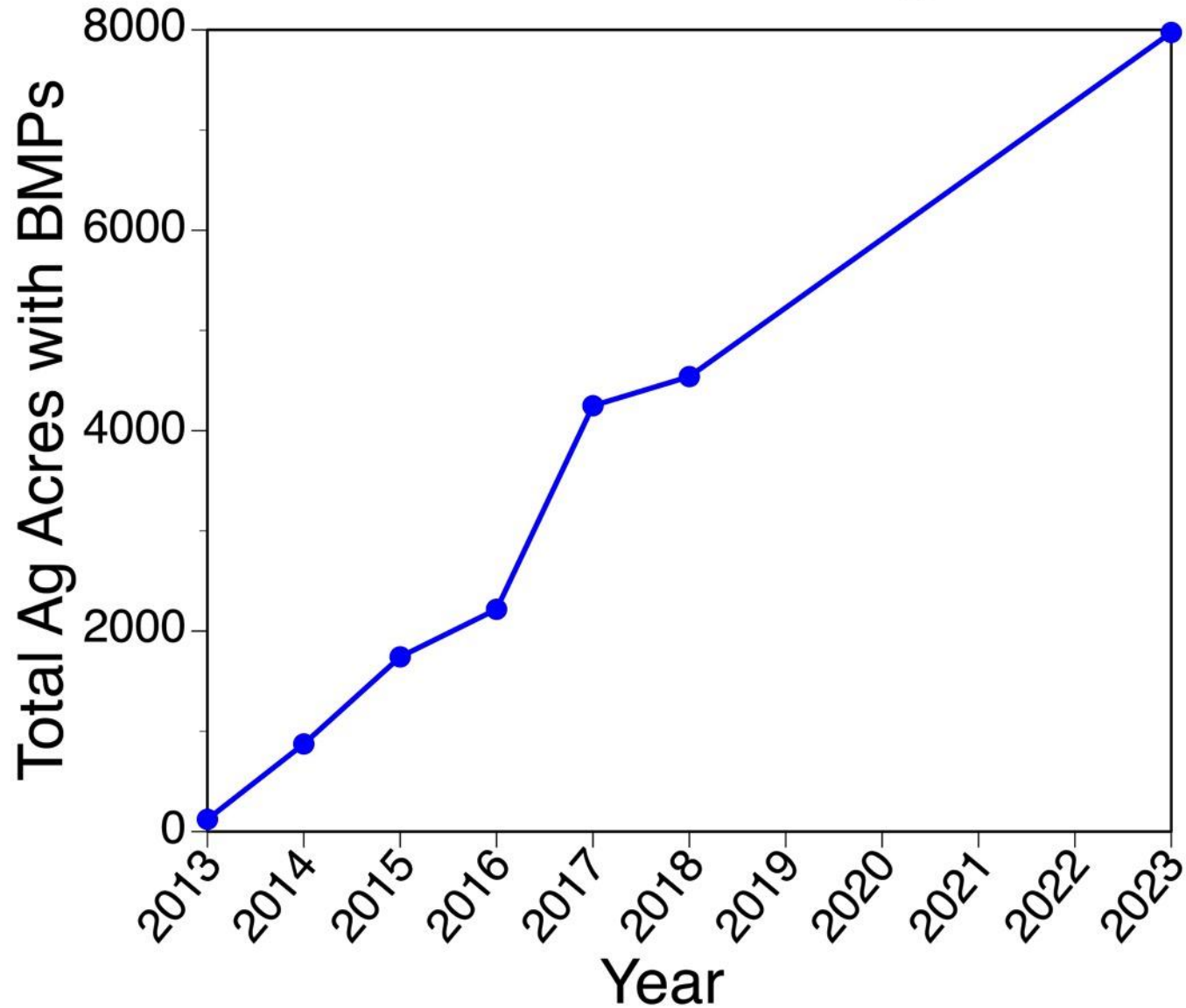
Annual Progress

Brandywine
Christina
Cluster



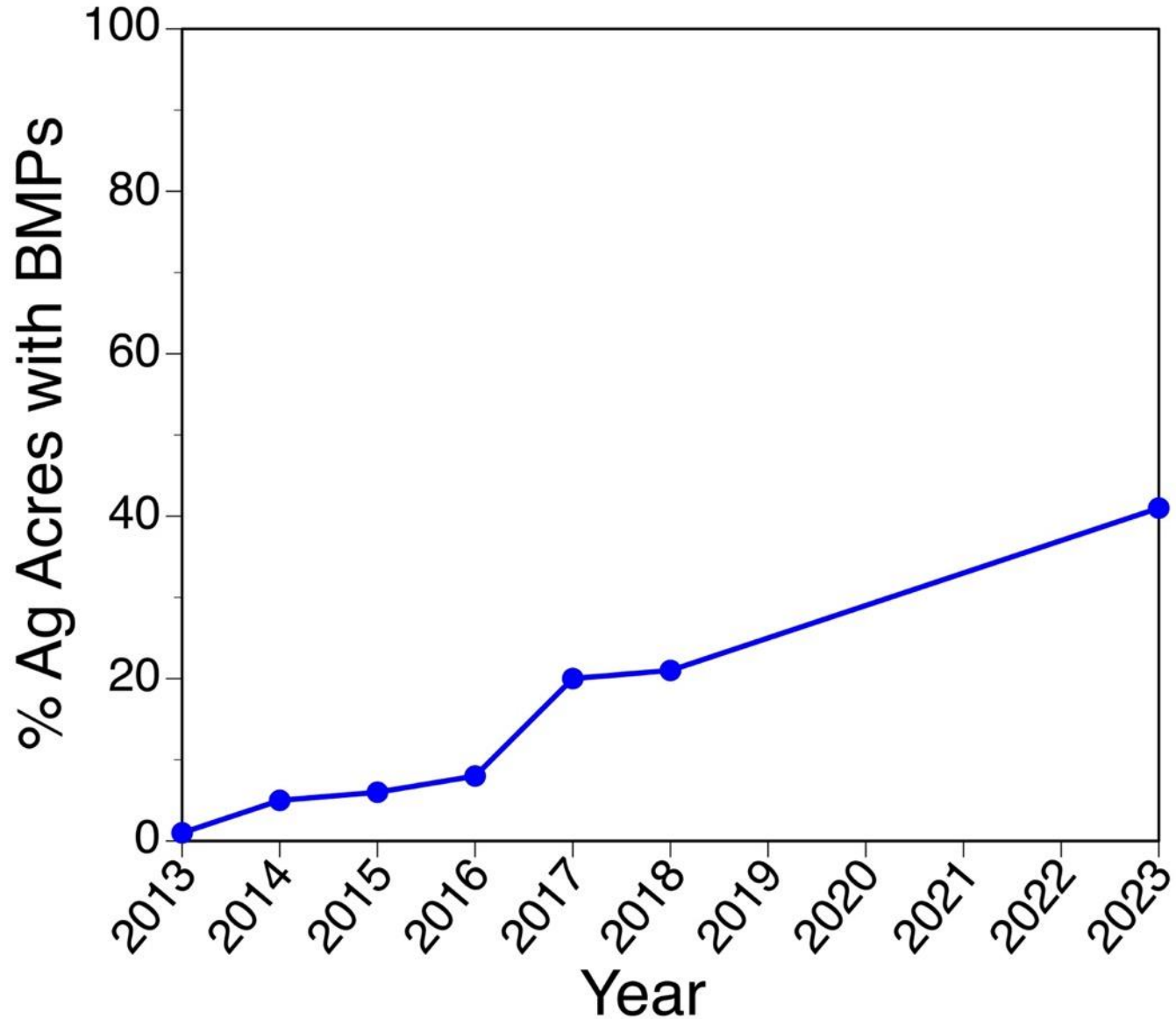
Cumulative Progress

Brandywine
Christina
Cluster



Cumulative Progress

Brandywine
Christina
Cluster



Headwaters WB Brandywine Cr

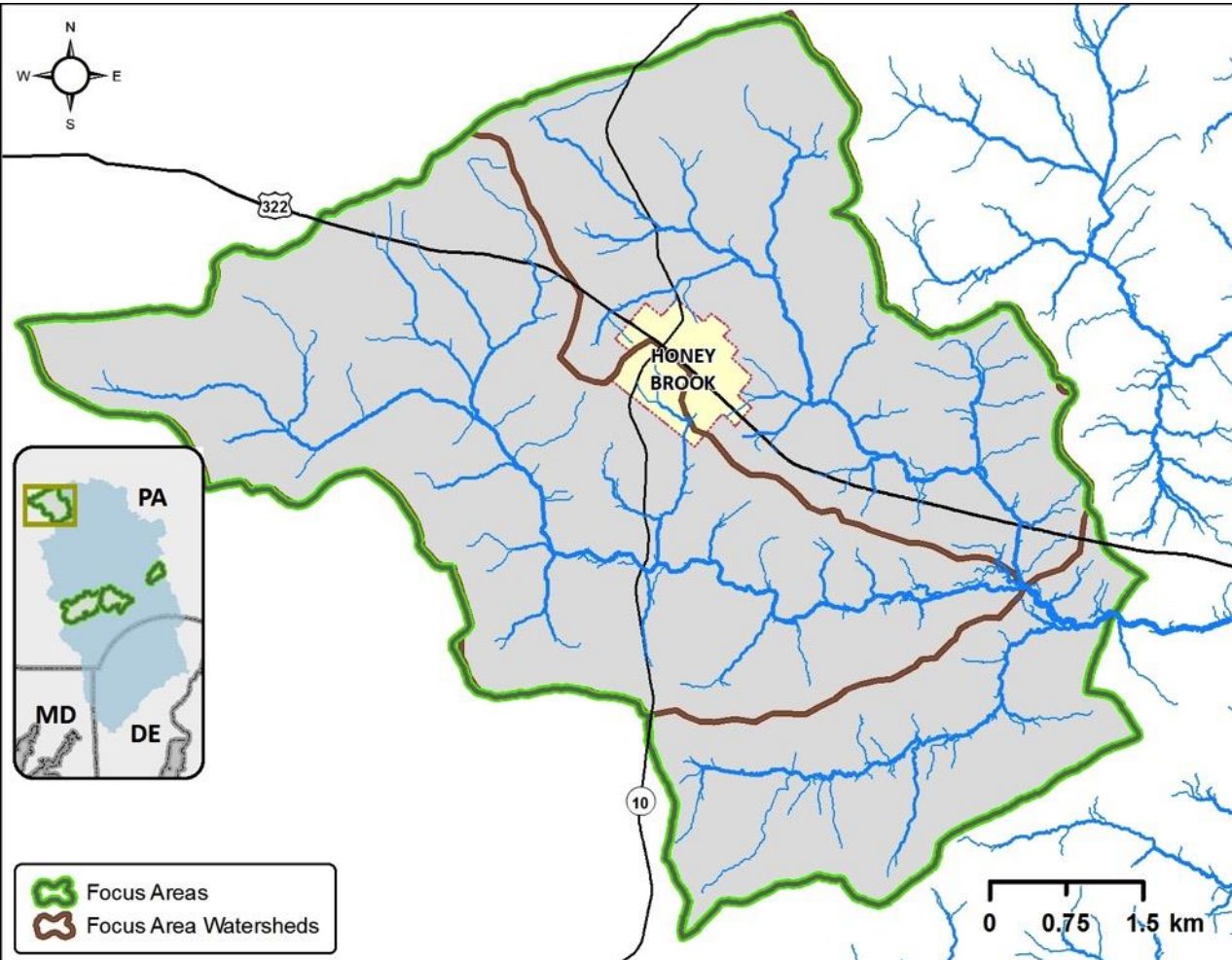
48 km²

29 km of stream

High Quality
Trout Stocking Fishery

Impaired

Goal is
Unimpaired



Headwaters WB Brandywine Cr

Existing
Projects

Future
Projects

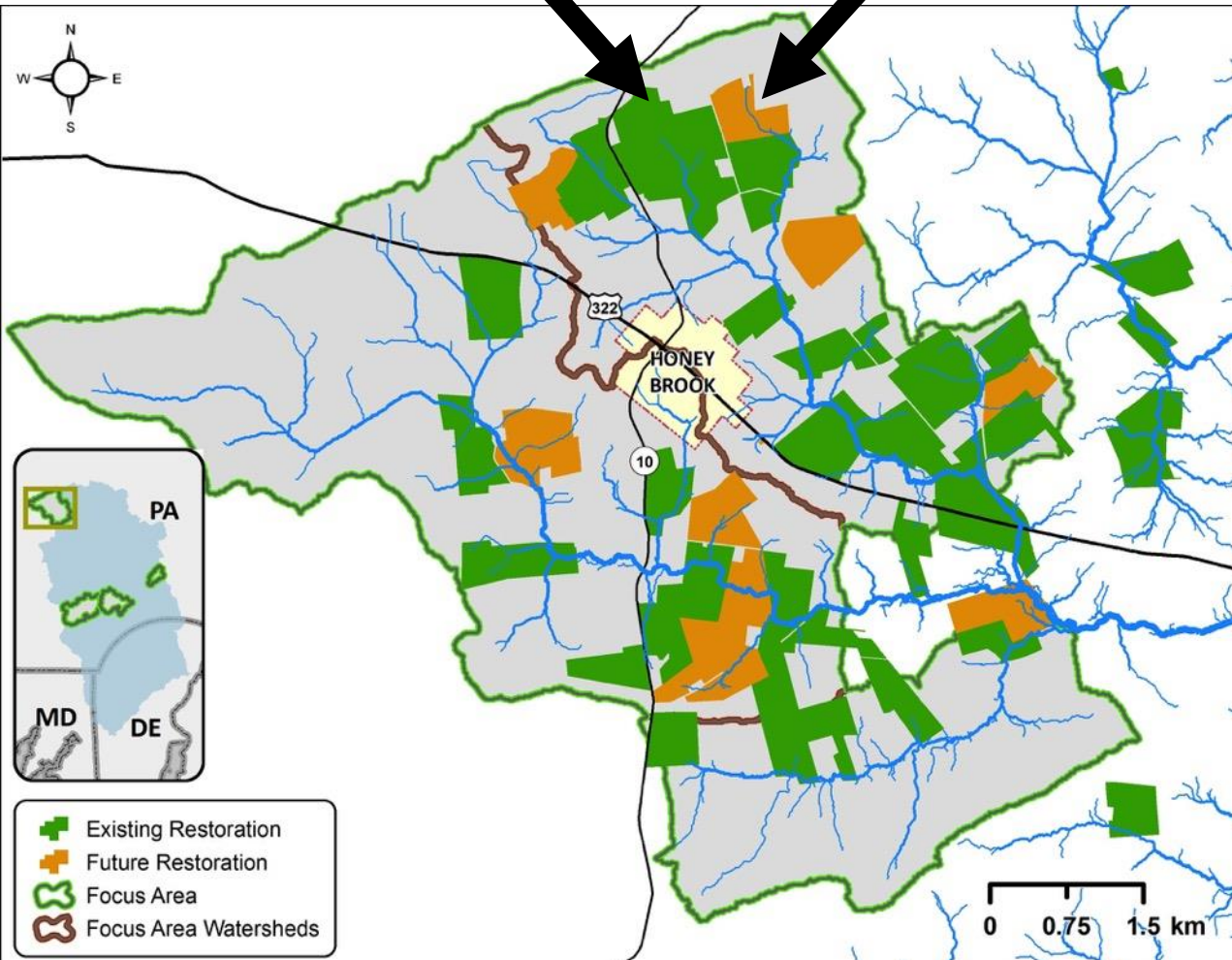
48 km²

29 km of stream

High Quality
Trout Stocking Fishery

Impaired

Goal is
Unimpaired



Headwaters WB Brandywine Cr

Existing projects as %
of agricultural lands

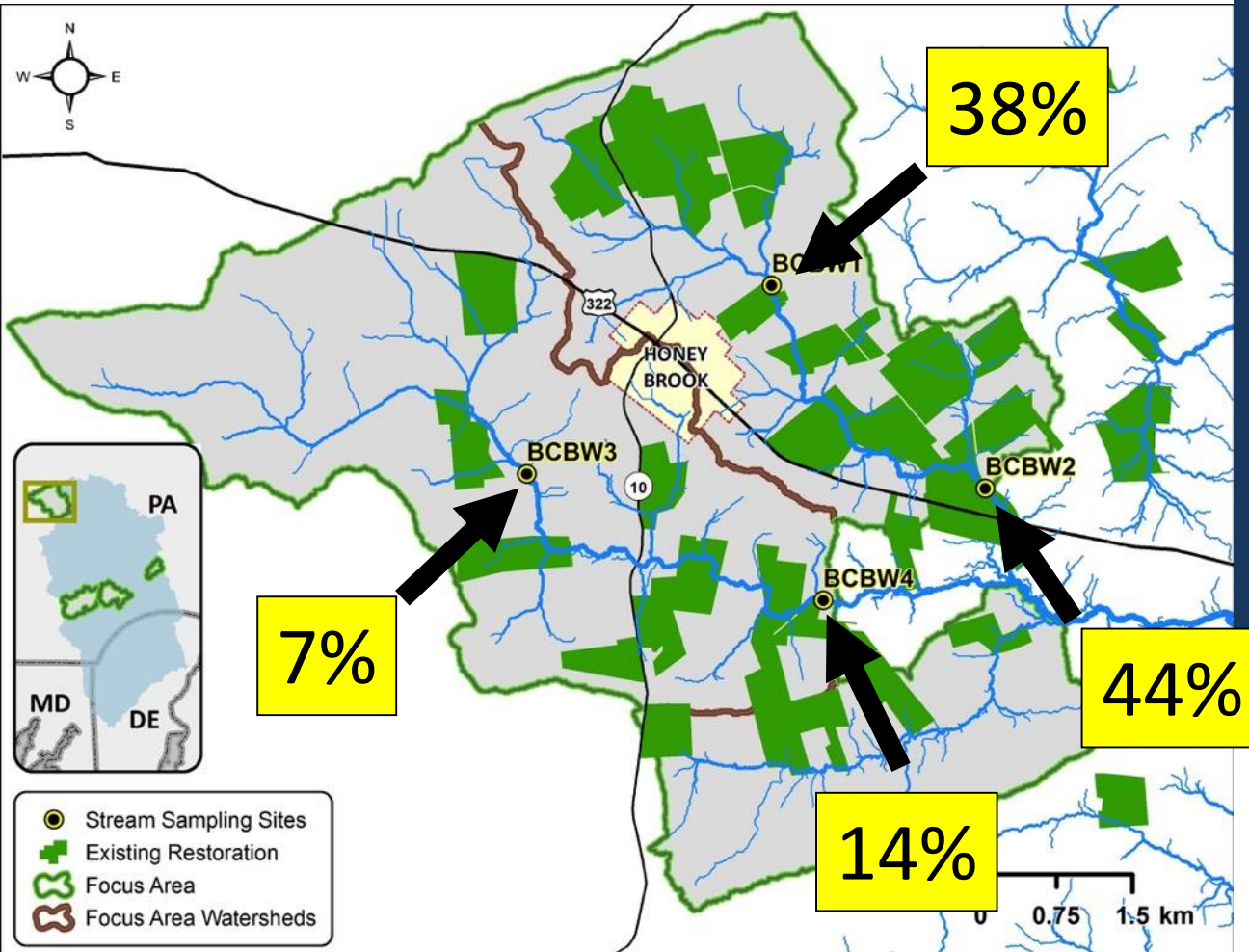
48 km²

29 km of stream

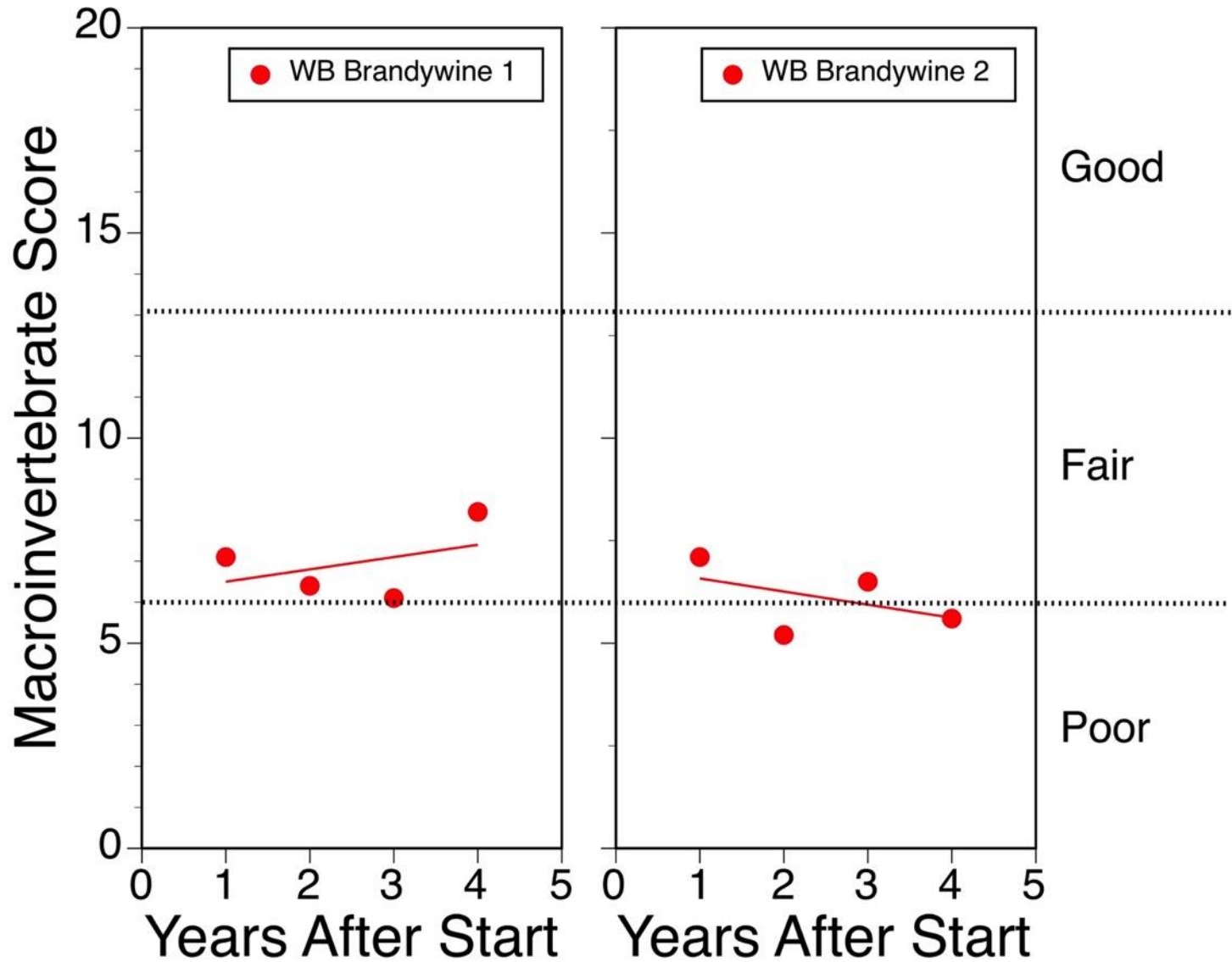
High Quality
Trout Stocking Fishery

Impaired

Goal is
Unimpaired



Brandywine Headwaters



Valley Creek Tributary to Susquehanna River

10 km²

3.5 km of stream



CHESAPEAKE BAY
FOUNDATION
Saving a National Treasure

Apr 1999



Image U.S. Geological Survey



CREP
Conservation Reserve
Enhancement Program

Aug 2016

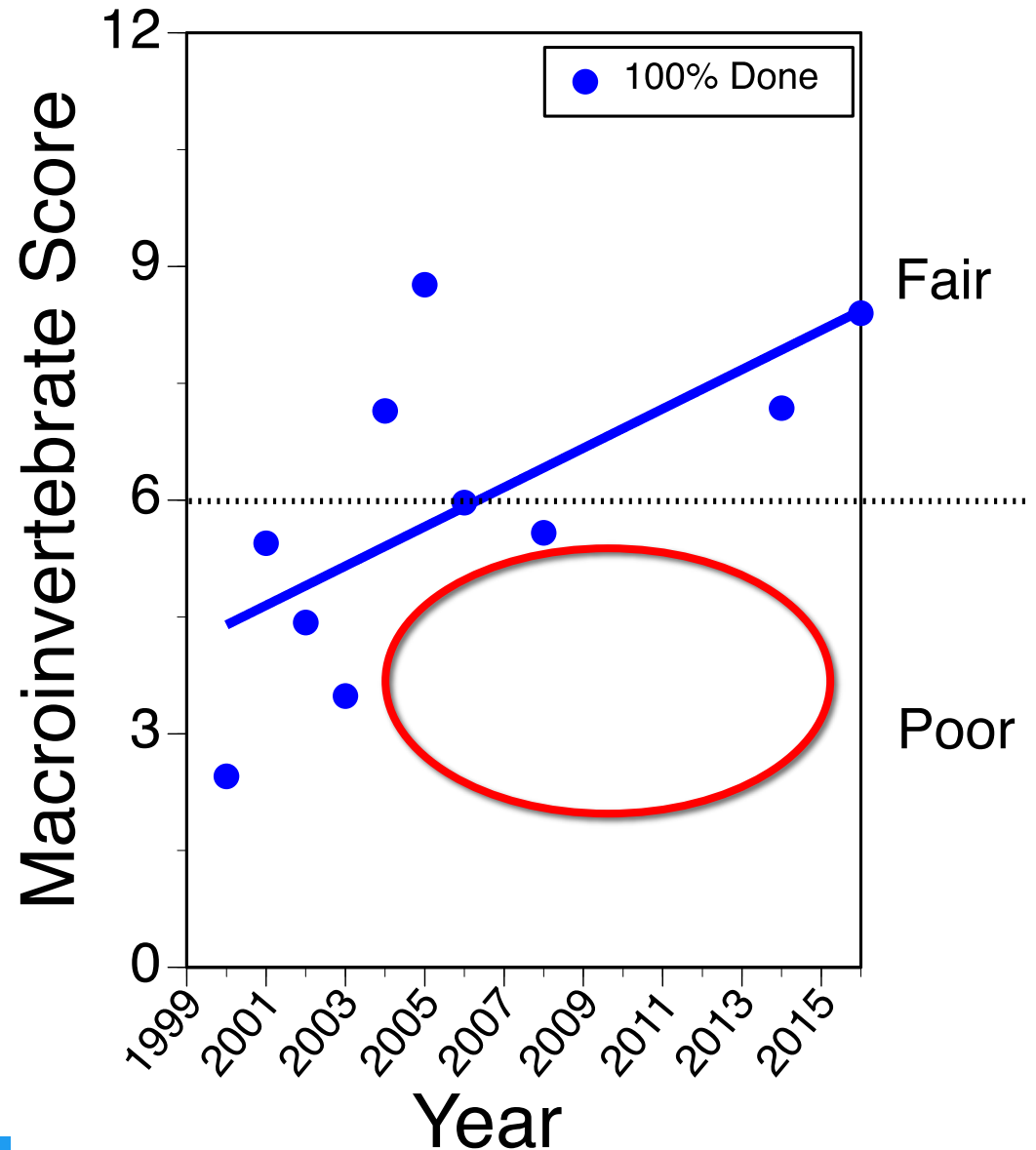


NFWF

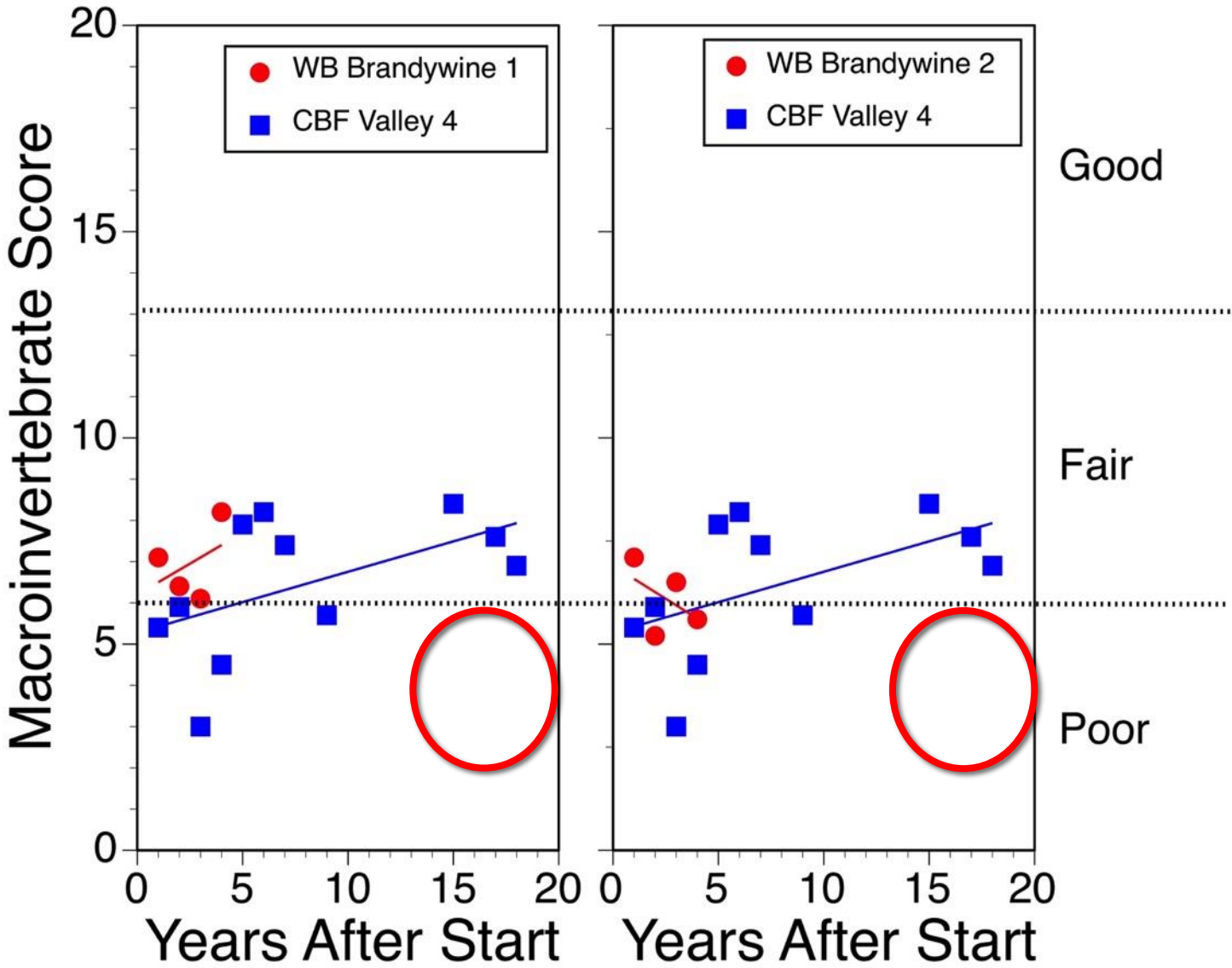


Stream Recovery After Farm Restoration

Comparison
of stream
condition
2000
versus
2016



Brandywine Headwaters



White Clay Creek

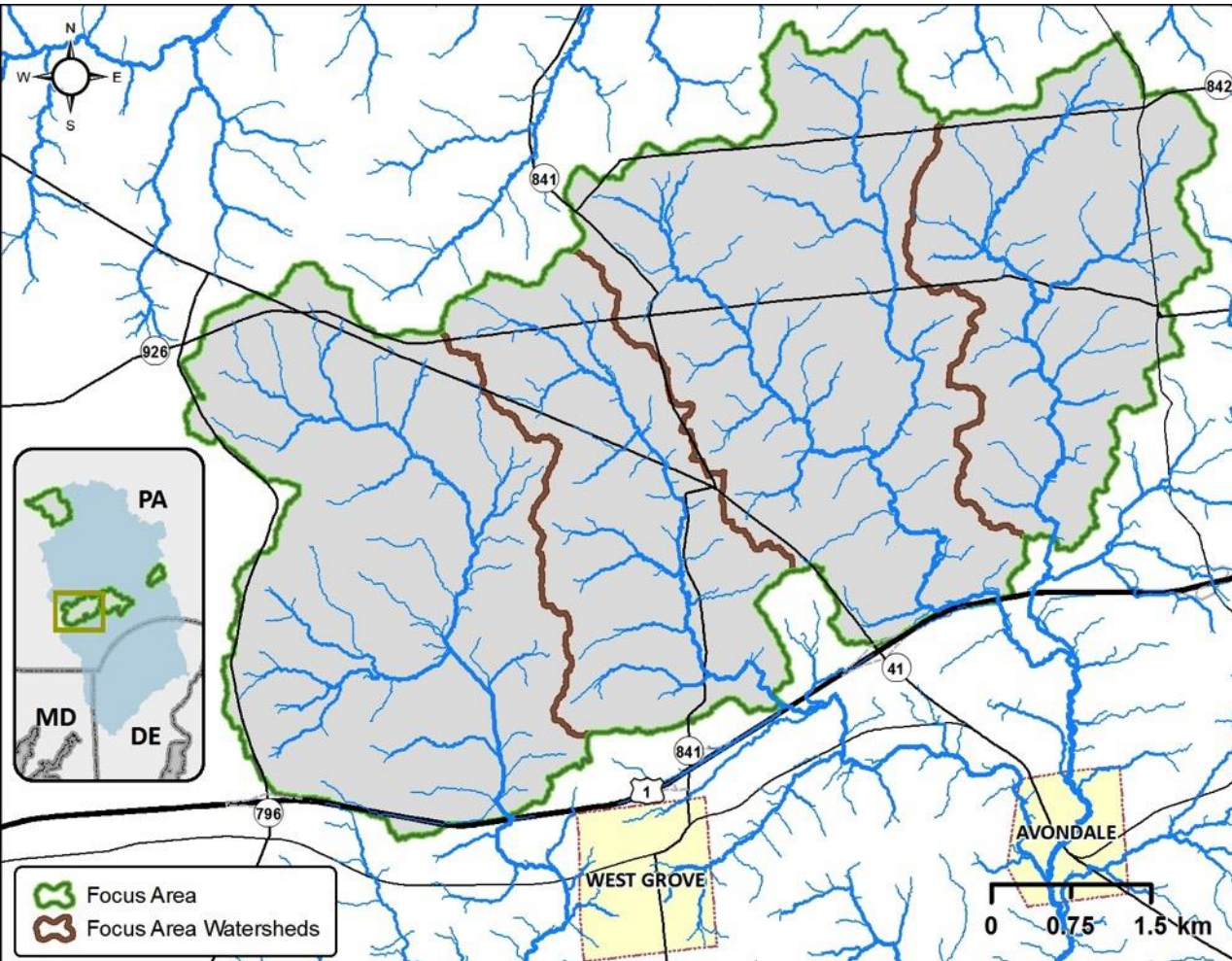
43 km²

34 km of stream

Exceptional Value
Cold Water Fishery

Impaired

Goal is
Unimpaired
&
Wild Trout



White Clay Creek

Future projects

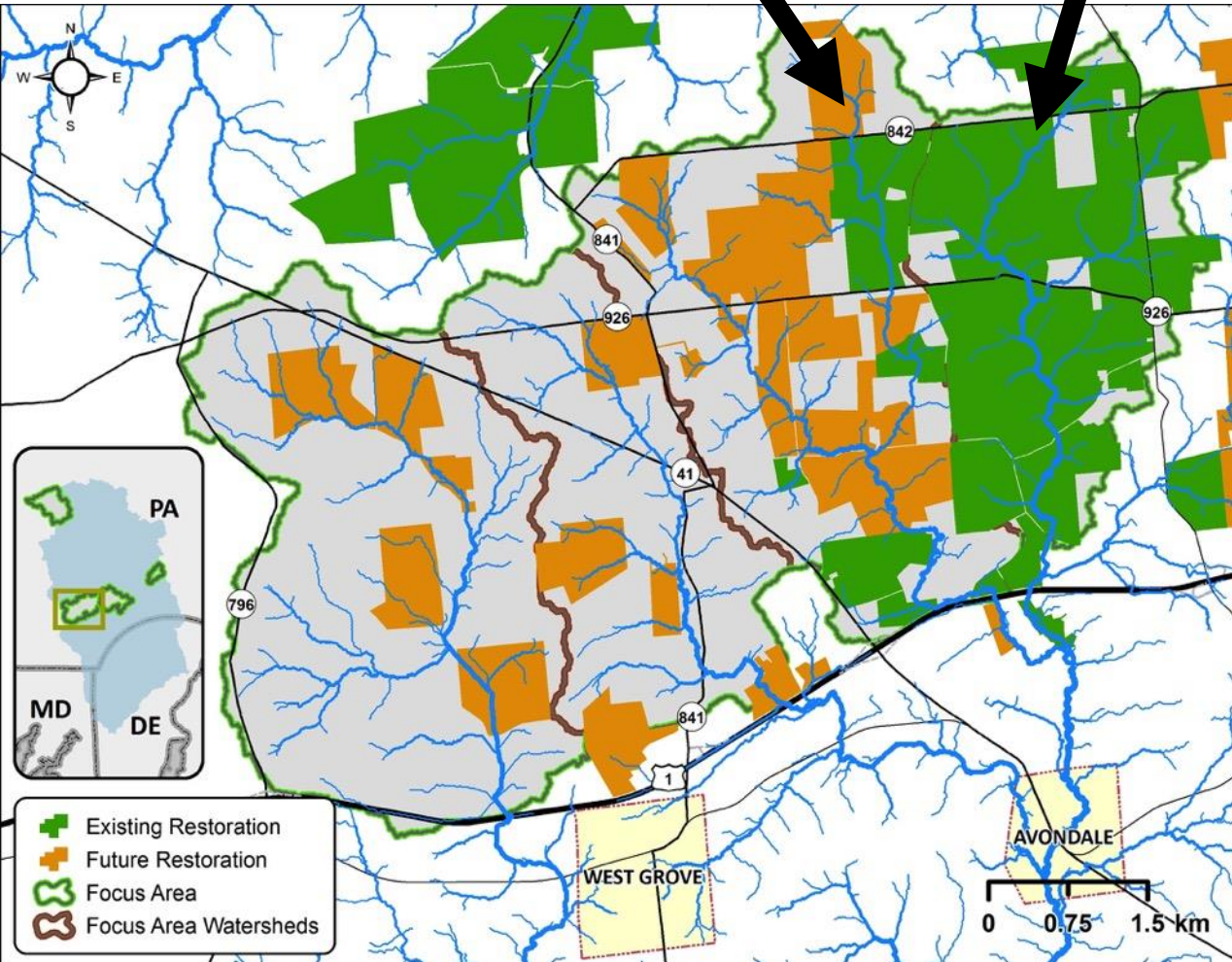
Existing Projects

43 km²
34 km of stream

Exceptional Value
Cold Water Fishery

Impaired

Goal is
Unimpaired
&
Wild Trout



White Clay Creek

Existing projects as %
of agricultural lands

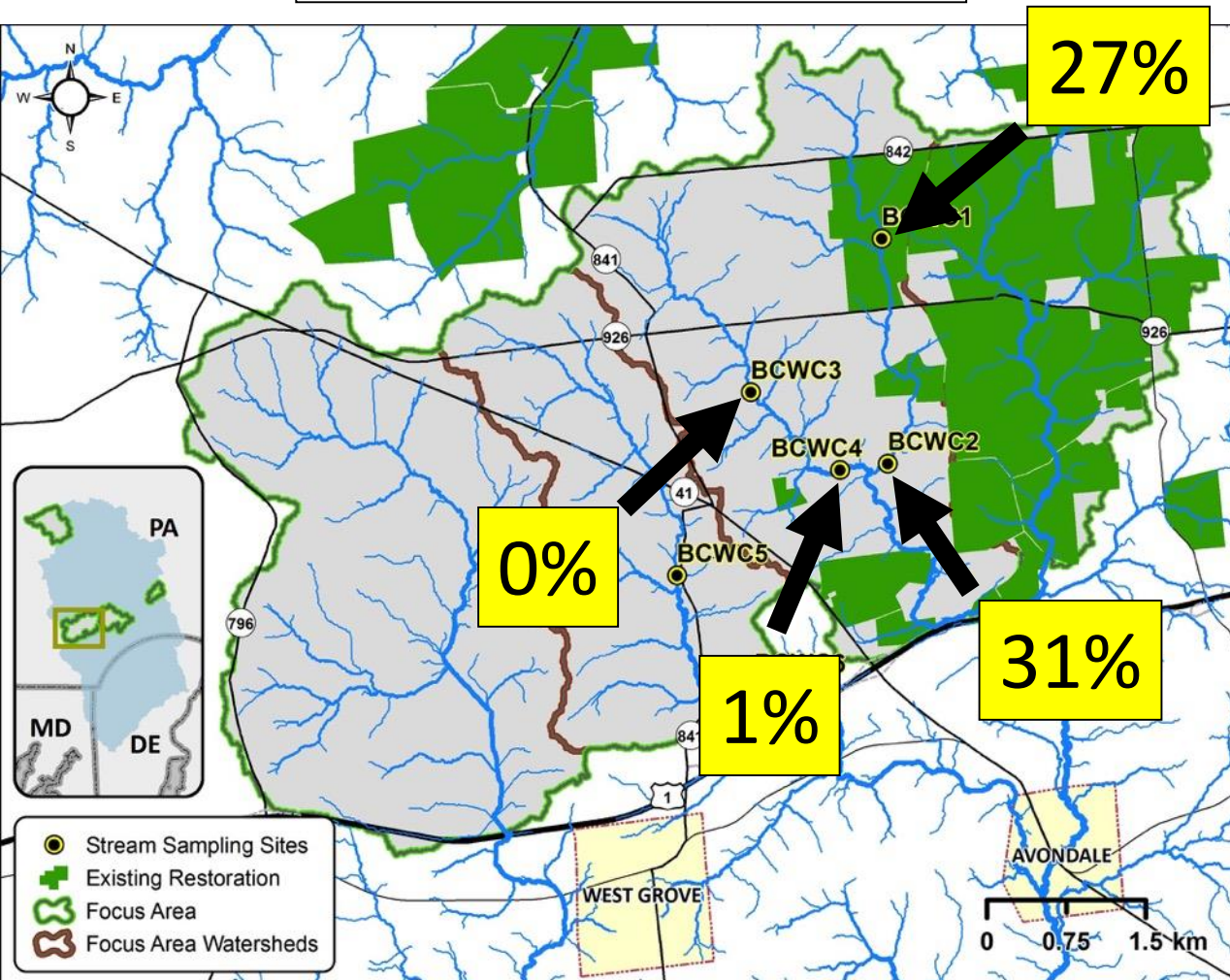
43 km²

34 km of stream

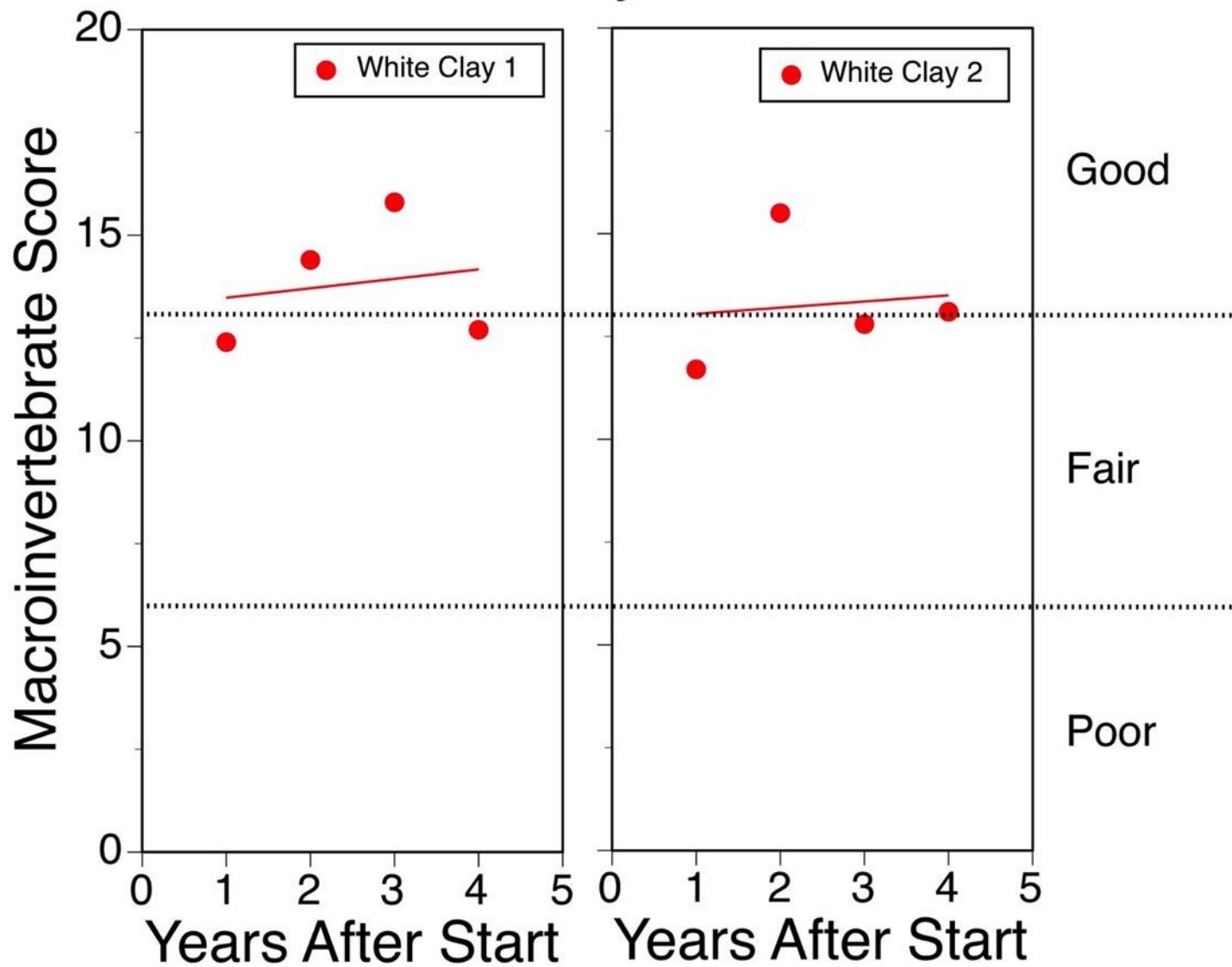
Exceptional Value
Cold Water Fishery

Impaired

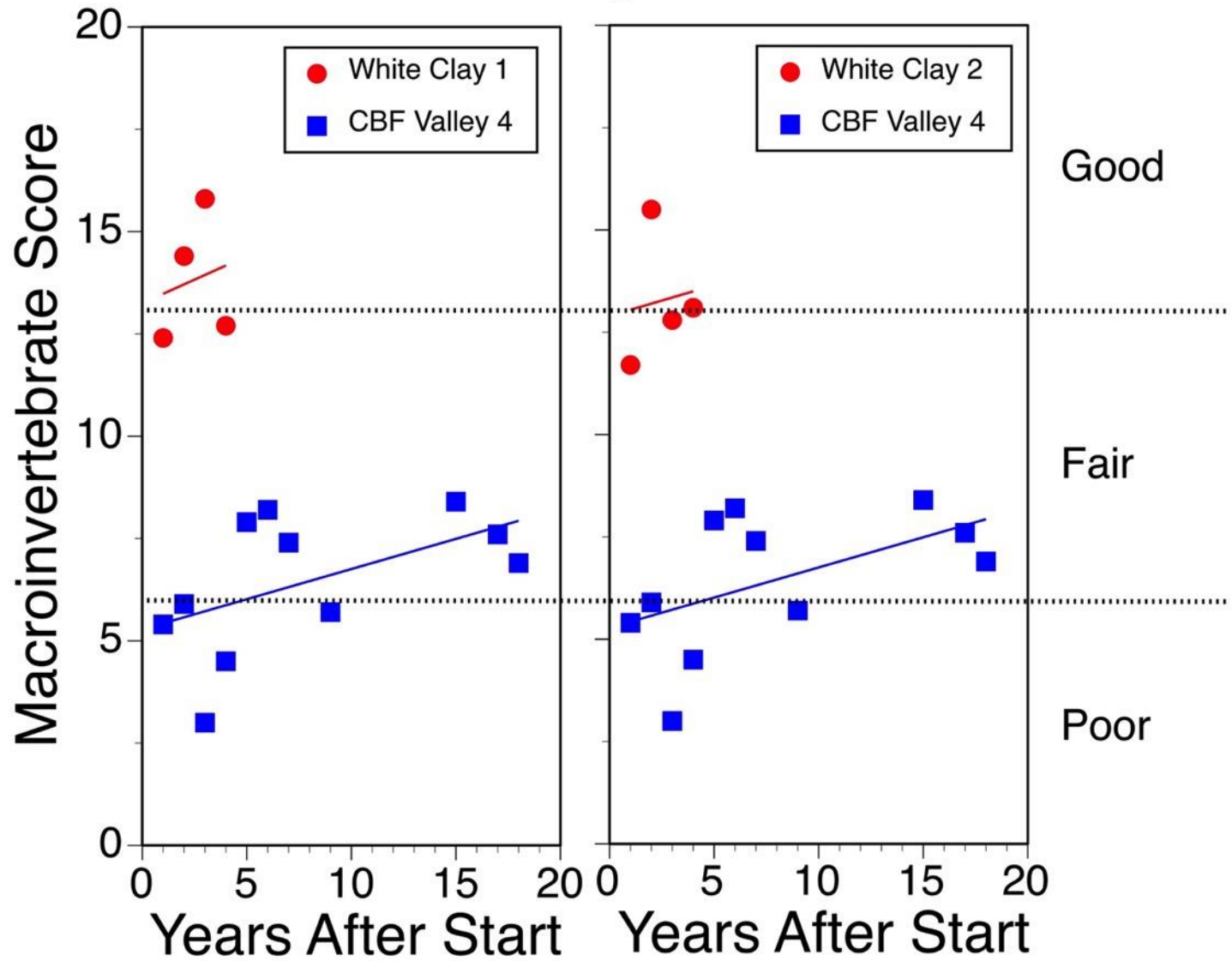
Goal is
Unimpaired
&
Wild Trout



White Clay Creek



White Clay Creek



Headwaters BC
White Clay Creek
Red Clay Creek
Plum Run

2,927 tons of
sediment per year



8,953 lbs of
phosphorus per year



<https://www.drawingtutorials101.com/how-to-draw-simple-dump-truck>

<https://feedyardfoodie.wordpress.com/2013/03/28/march-madness/>

Headwaters BC
White Clay Creek
Red Clay Creek
Plum Run

293 truckloads
sediment per year



224 truckloads
manure per year



<https://www.drawingtutorials101.com/how-to-draw-simple-dump-truck>

<https://feedyardfoodie.wordpress.com/2013/03/28/march-madness/>

Summary

- Project progress is strong
(27 – 44% complete in some areas)
- Current conditions support Focus Area goals – unimpaired vs wild trout
- Too early to see ecological outcomes
– need more projects and time

A photograph of a forest stream flowing over mossy rocks, with a fallen log in the background. The scene is lush and green, with many trees and ferns visible. The water is clear and flows over several large, moss-covered boulders. A large, fallen log lies across the stream in the background.

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Current Conditions and Progress Toward Restoration Goals

Middle Schuylkill Cluster

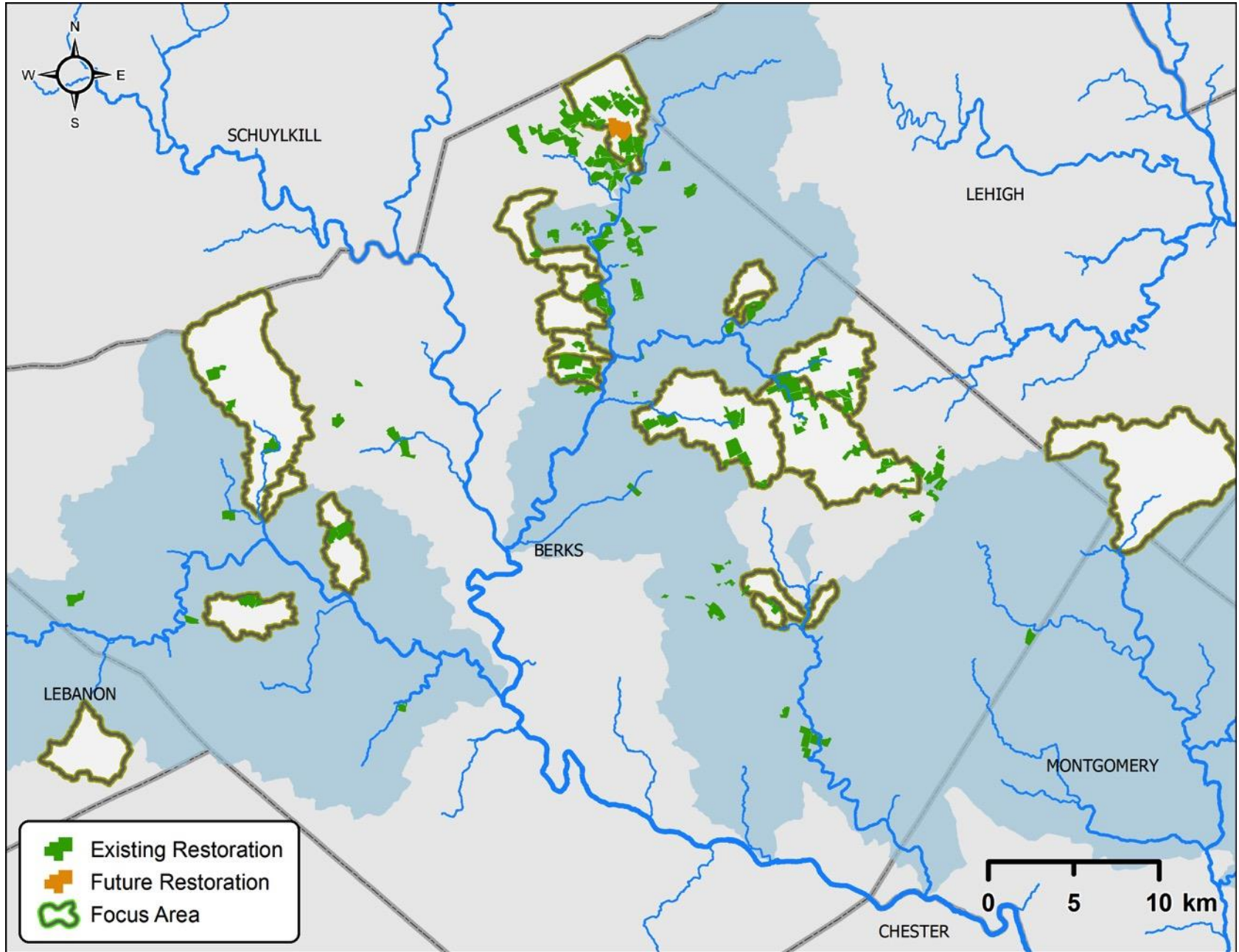
Licking Creek

Spring Creek

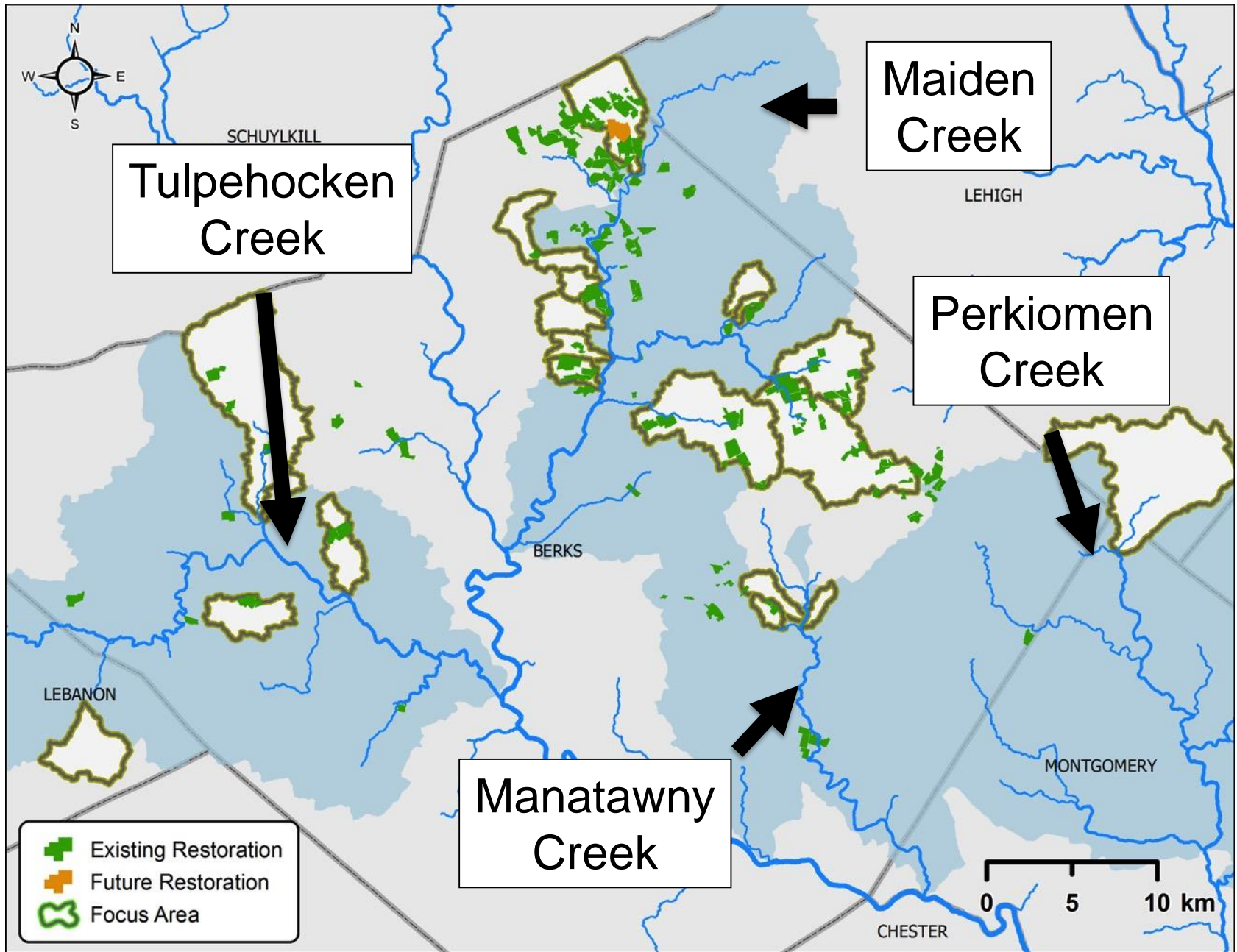
Manor Creek

Rice Tributary

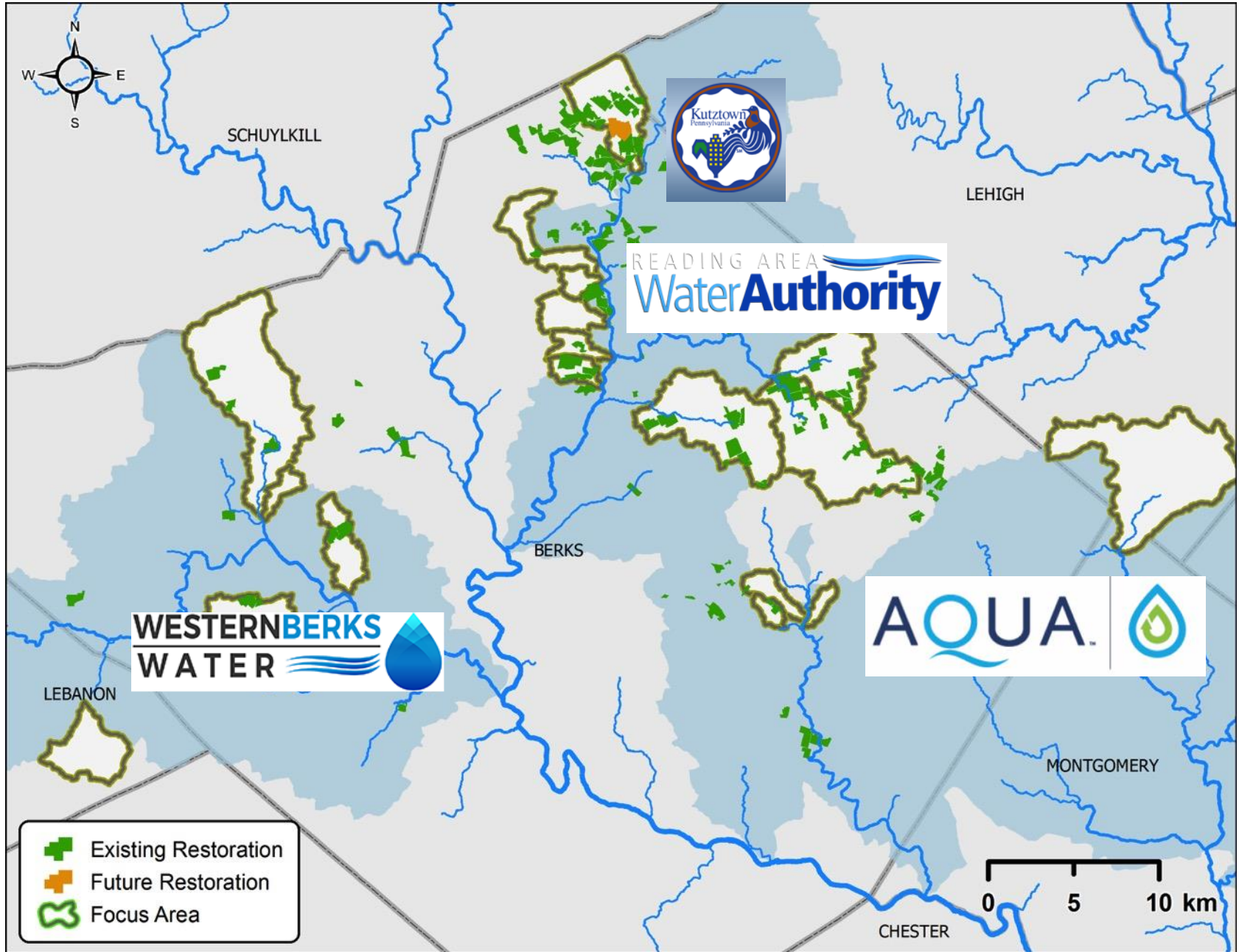
Middle Schuylkill Cluster



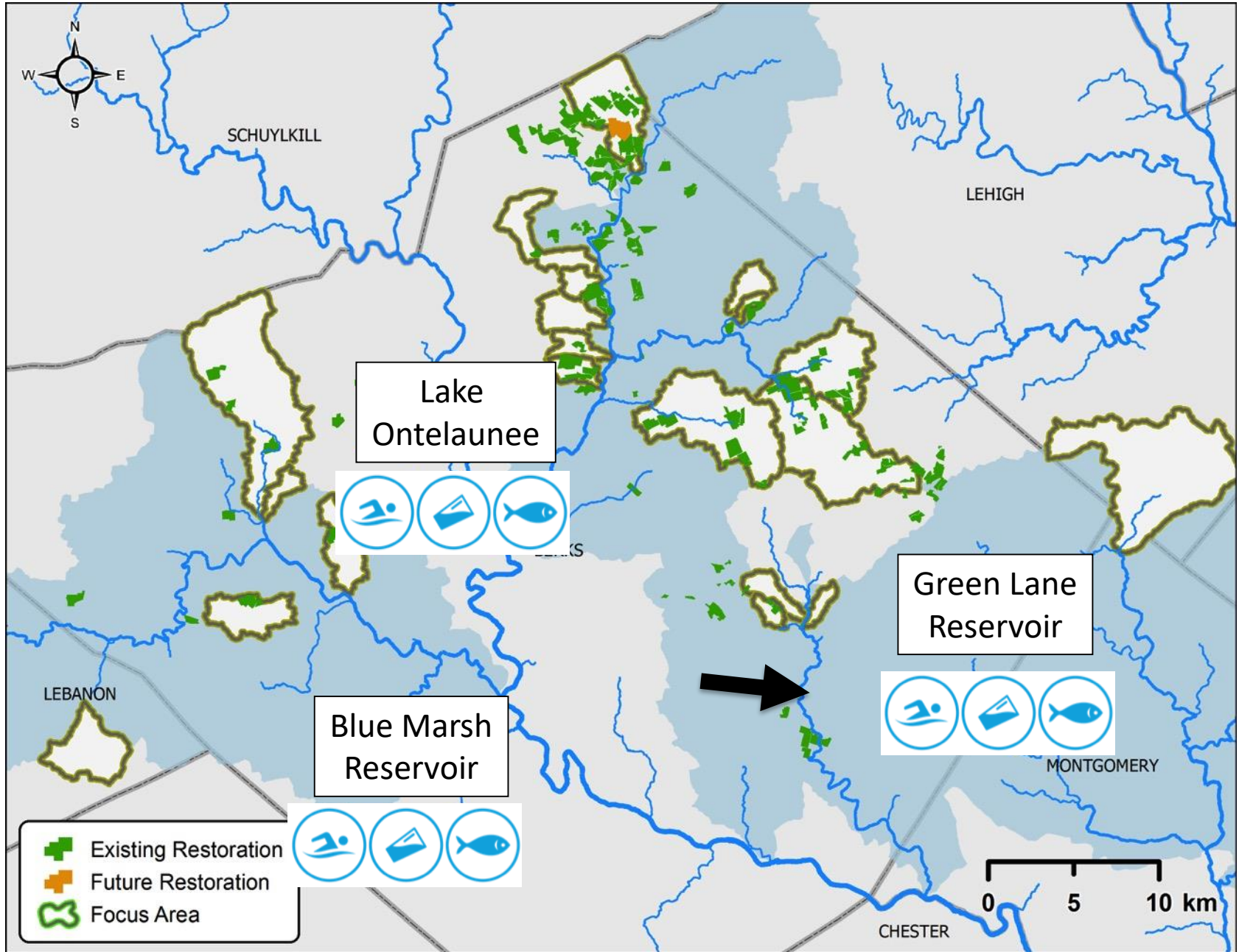
Middle Schuylkill Cluster



Middle Schuylkill Cluster



Middle Schuylkill Cluster



Middle Schuylkill Water Monitoring



Monitoring is like traveling.

There are lots of ways to do it.

They all serve a purpose.

But they are not all equal.



Data Challenges/Lessons Learned

Source water concerns may \neq Restoration goals

Regulatory requirements may \neq Restoration goals

Engagement events may \neq Restoration monitoring

Project monitoring may \neq Focus Area monitoring



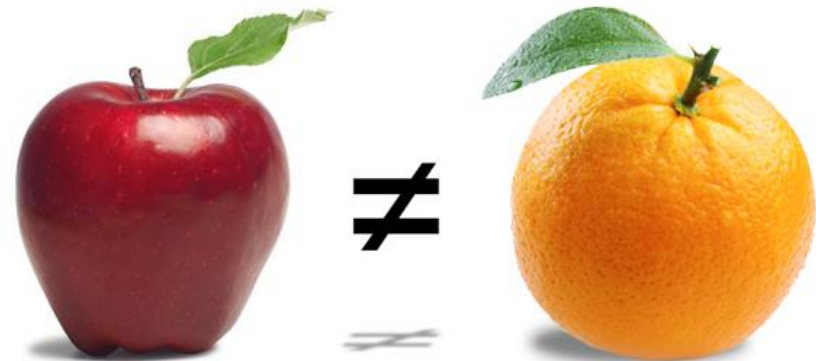
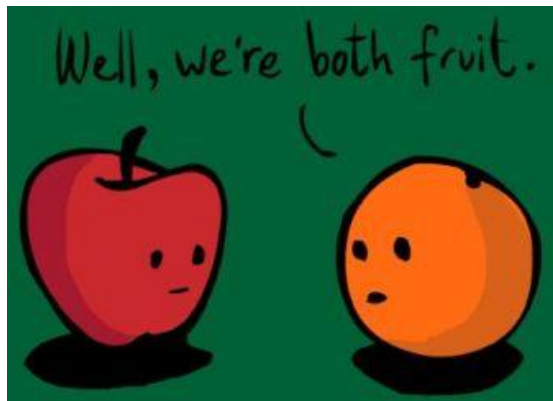
Data Challenges/Lessons Learned

Site matters

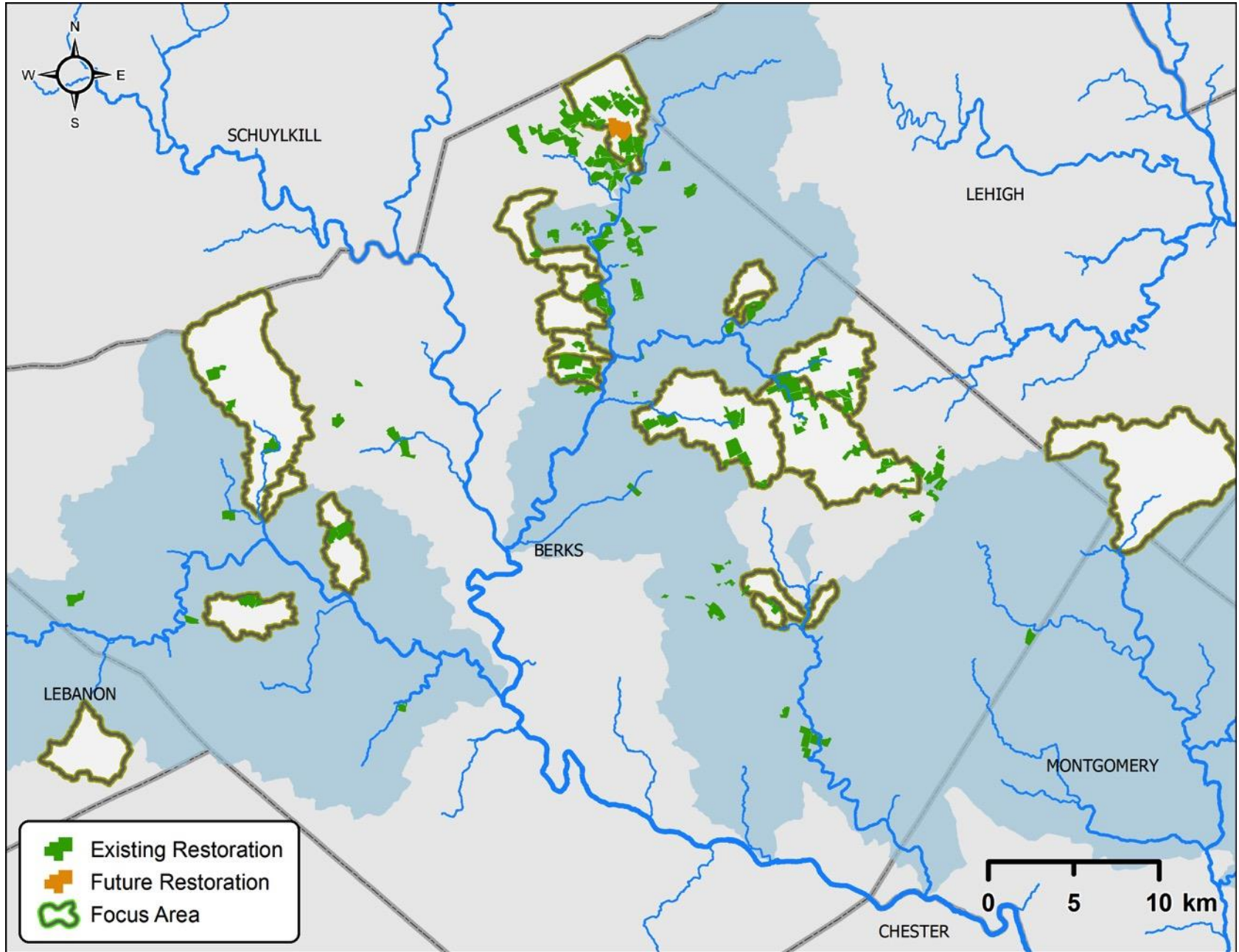
Season matters

Variable measured matters

Rigor matters

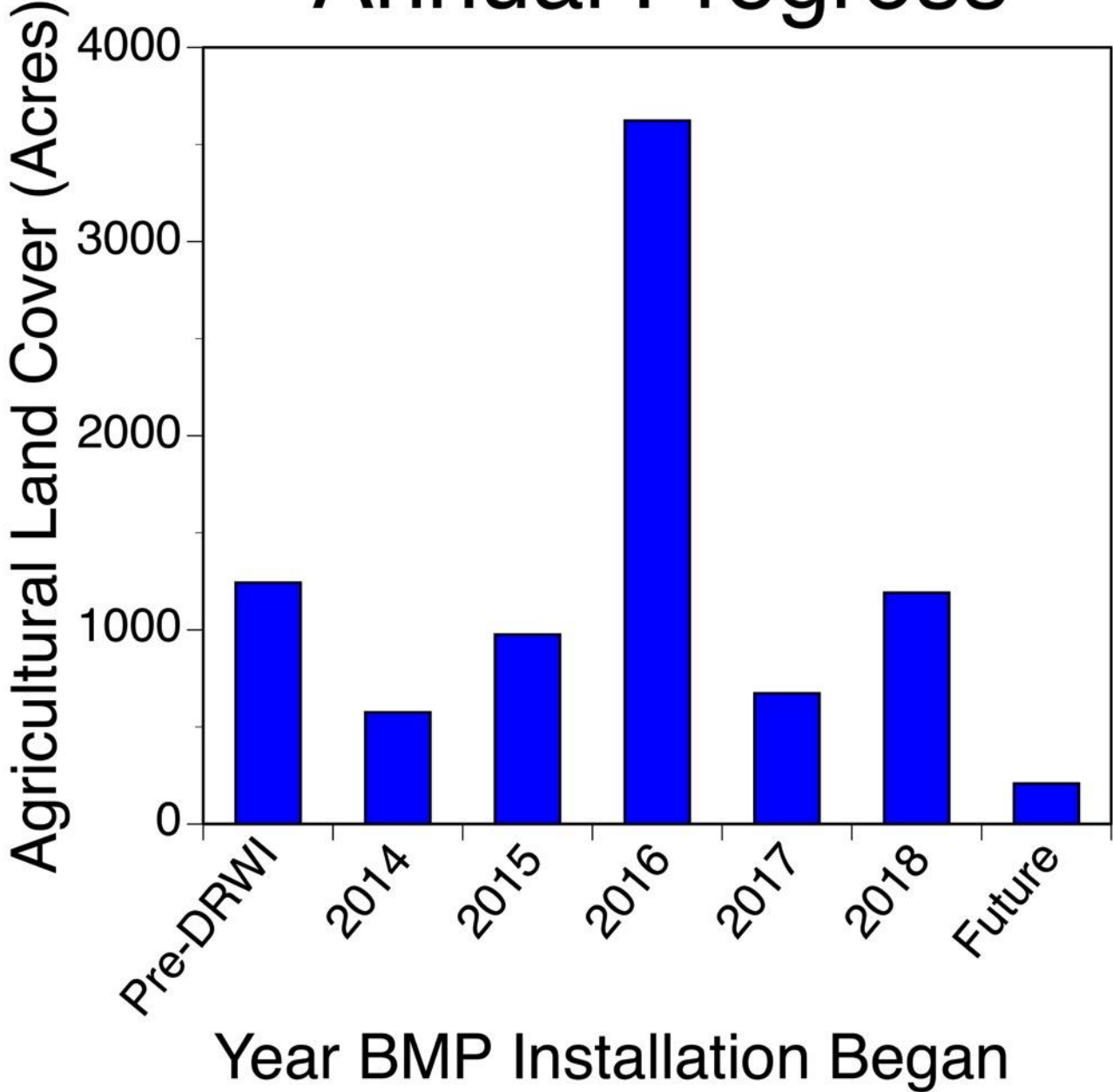


Middle Schuylkill Cluster



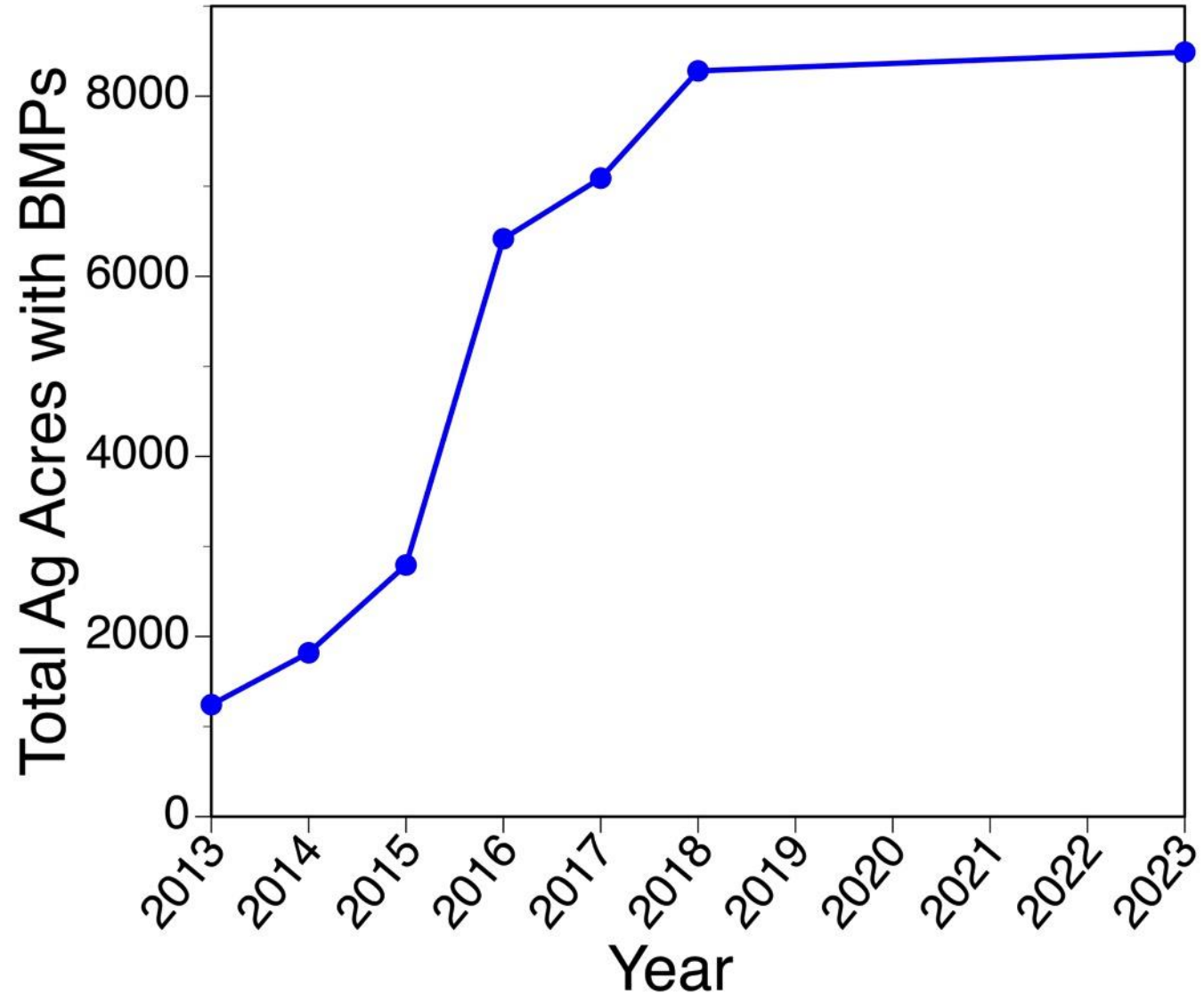
Annual Progress

Middle
Schuylkill
Cluster



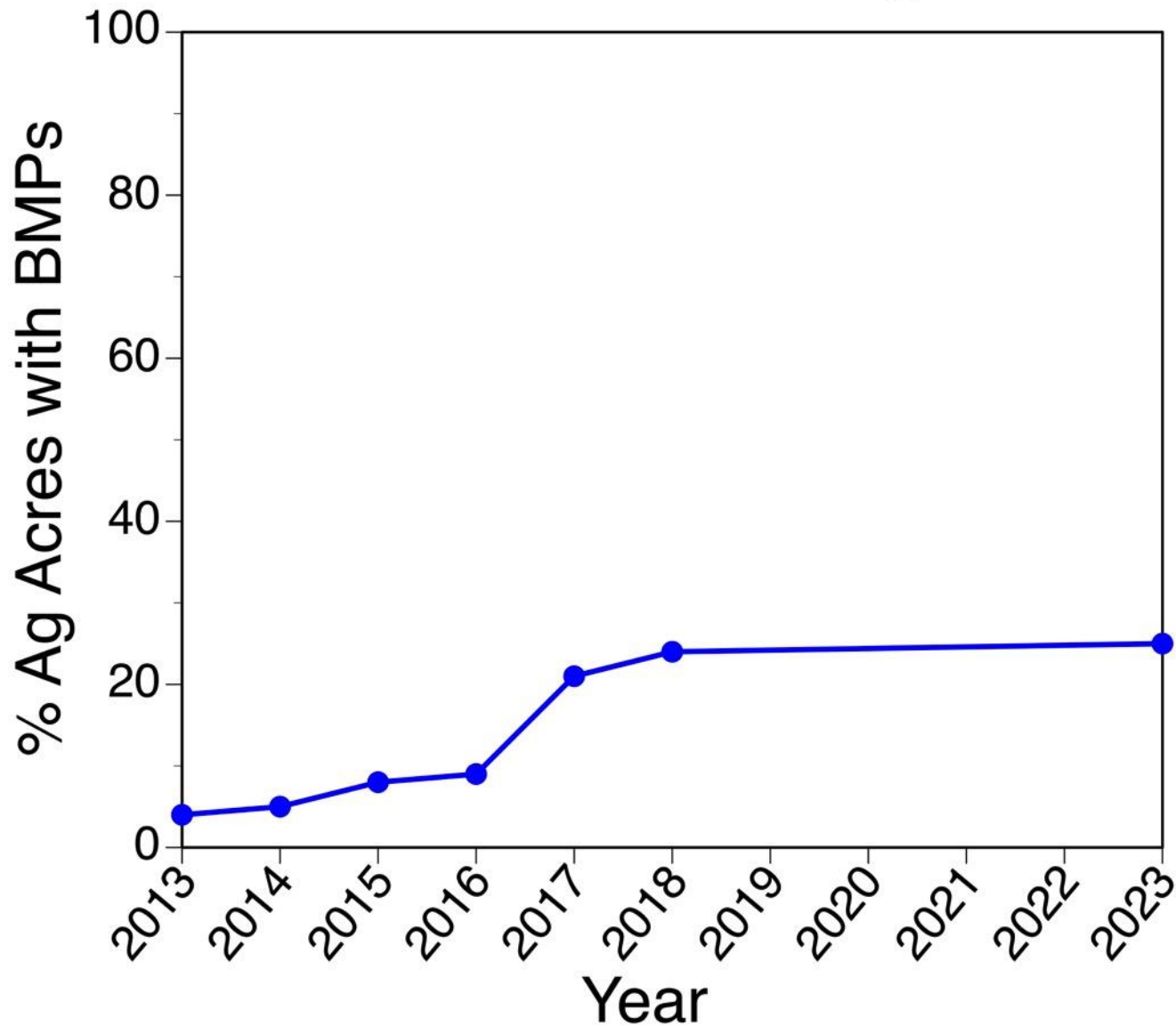
Cumulative Progress

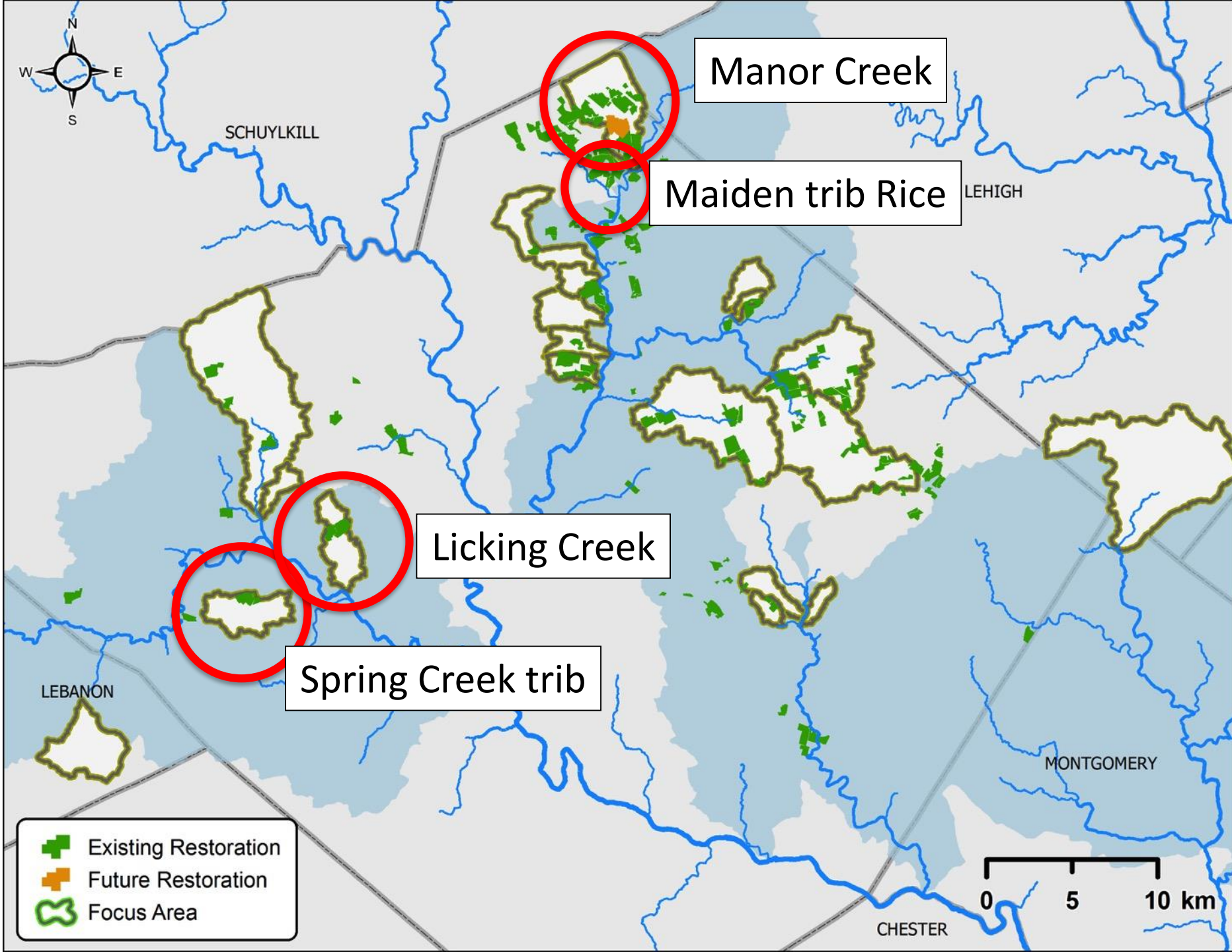
Middle
Schuylkill
Cluster

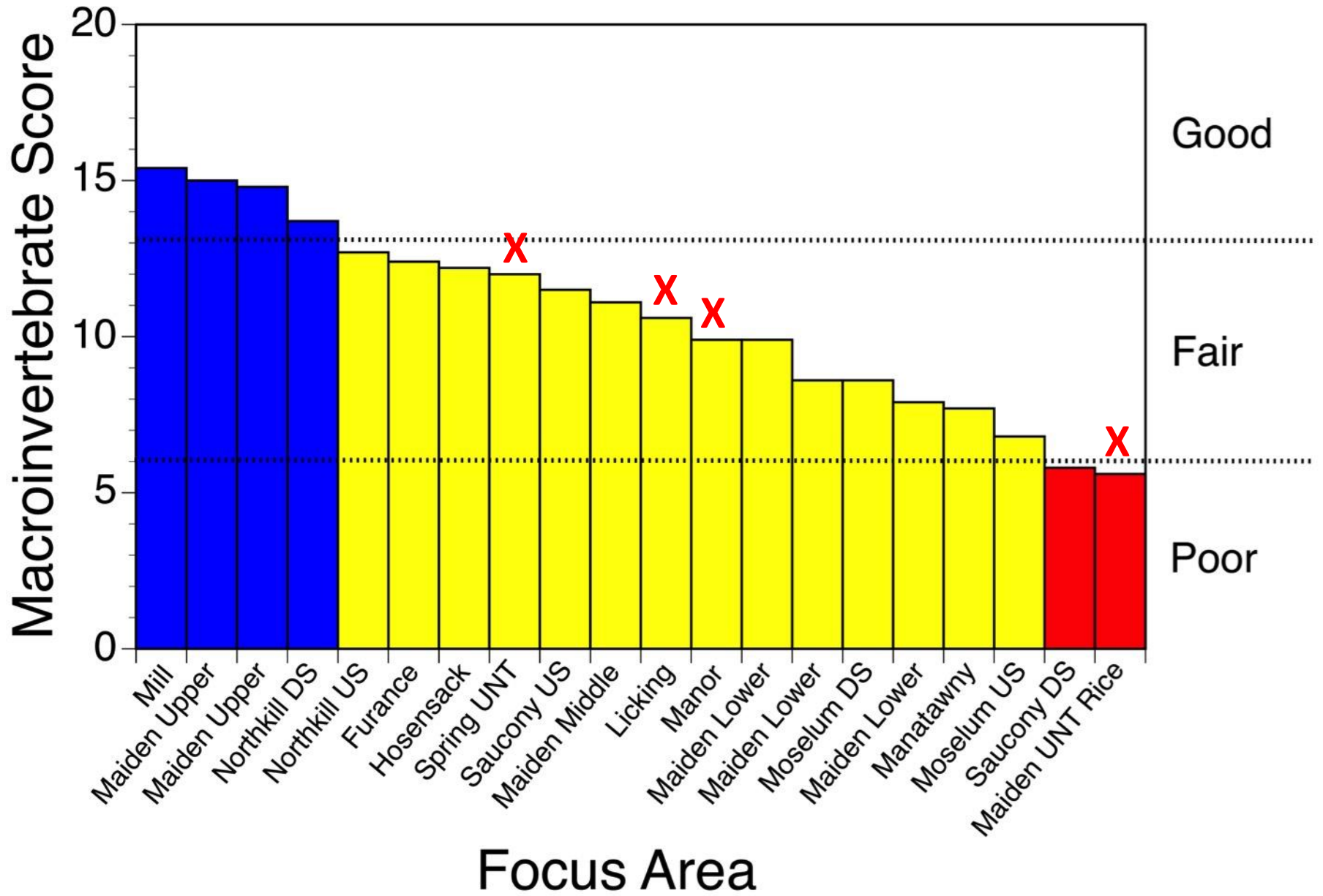


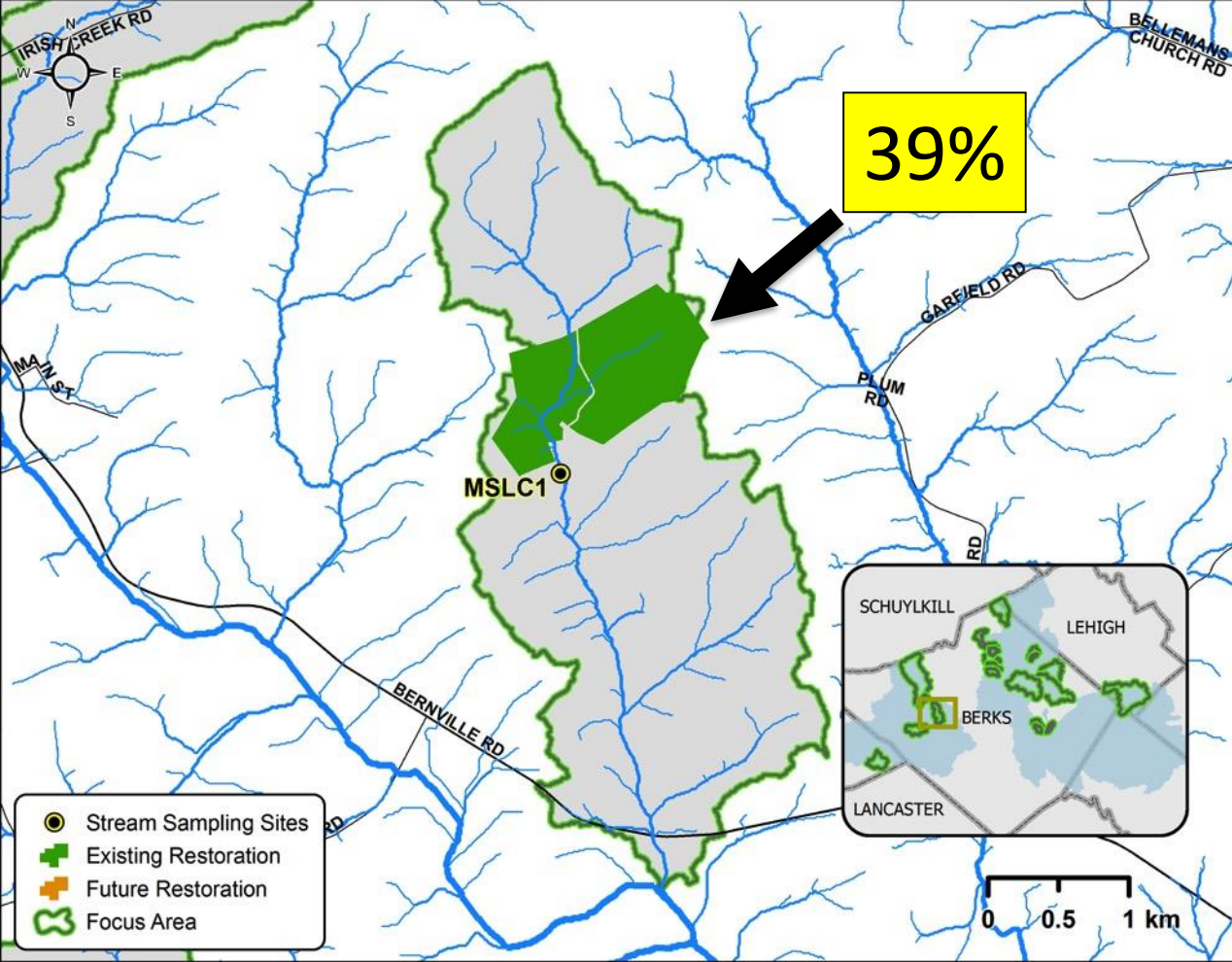
Cumulative Progress

Middle
Schuylkill
Cluster









Licking Creek in Tulpehocken

4 km²

3.7 km of stream

29% forest

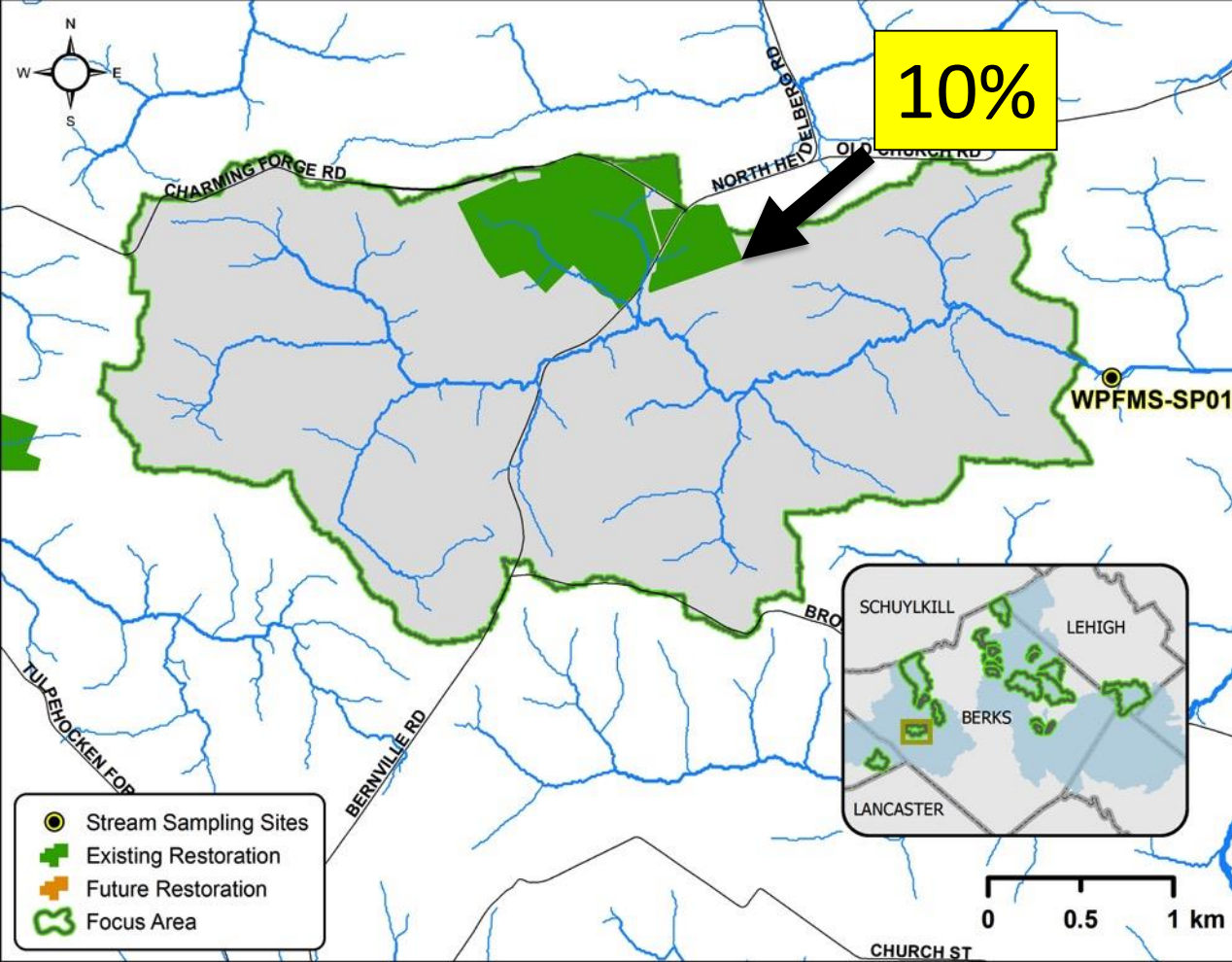
45% pasture

20% row crop

Trout Stocking Fishery

UnImpaired

Goal is
Cold Water Fishery



Spring Creek in Tulpehocken

10 km²

6.8 km of stream

23% forest

43% pasture

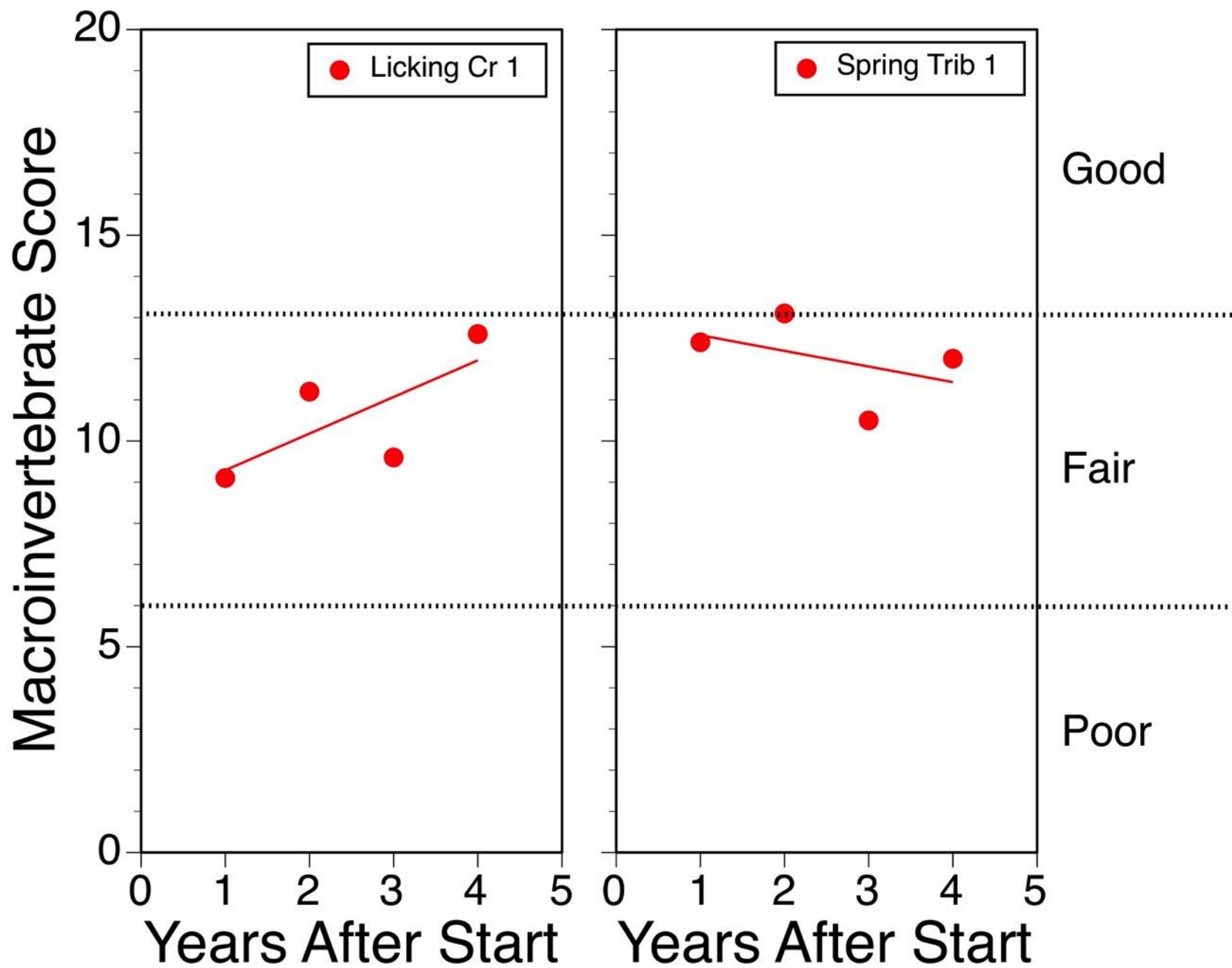
23% row crop

Trout Stocking Fishery

Unimpaired?

Goal is improved Trout Stocking Fishery

Tulpehocken Tributaries



Valley Creek Tributary to Susquehanna River

10 km²

3.5 km of stream



CHESAPEAKE BAY
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Saving a National Treasure

Apr 1999



Image U.S. Geological Survey



CREP
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Aug 2016

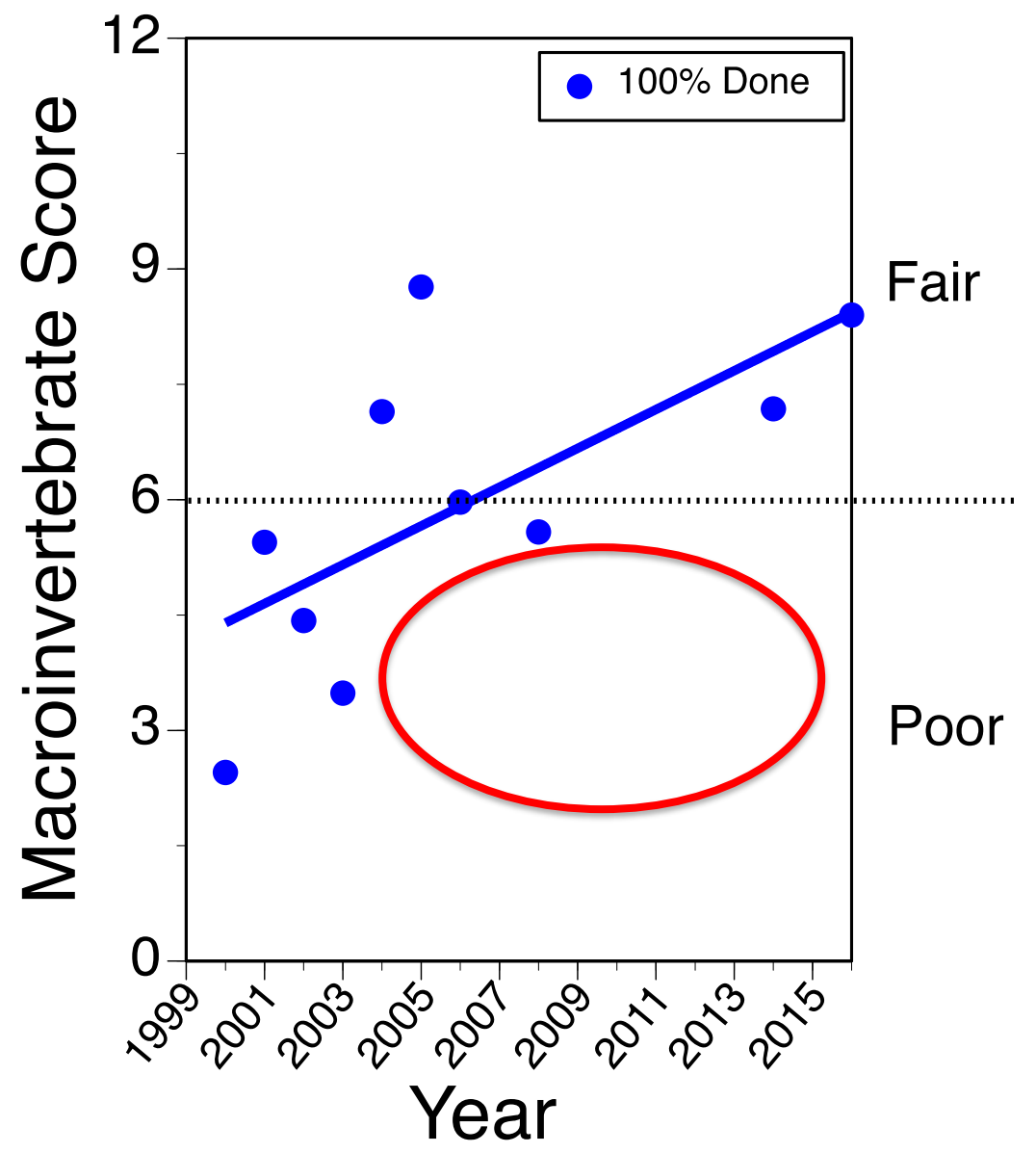


NFWF

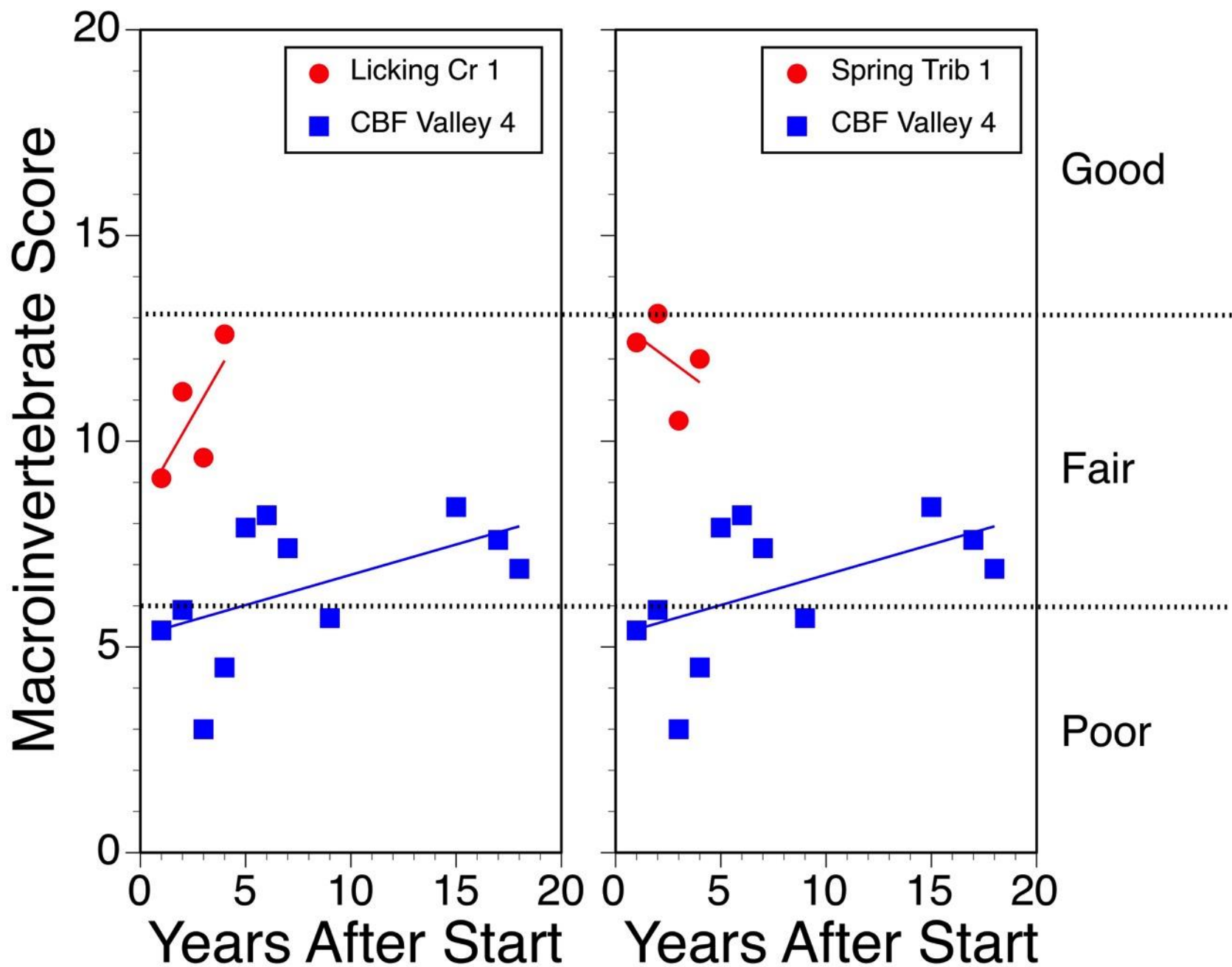


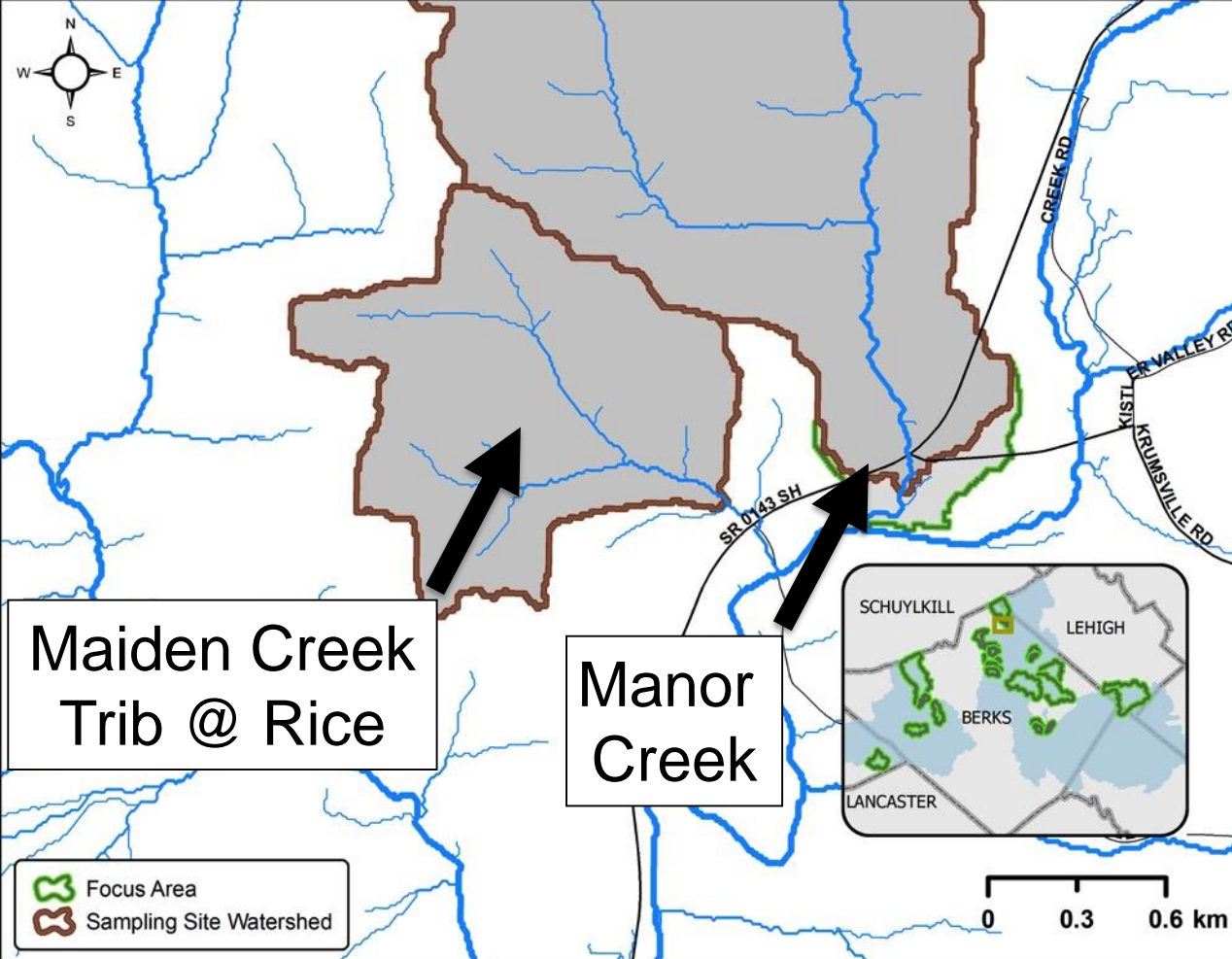
Comparison
of stream
condition
2000
versus
2016

Stream Recovery After Farm Restoration



Tulpehocken Tributaries





Maiden Creek
Trib @ Rice

Manor
Creek

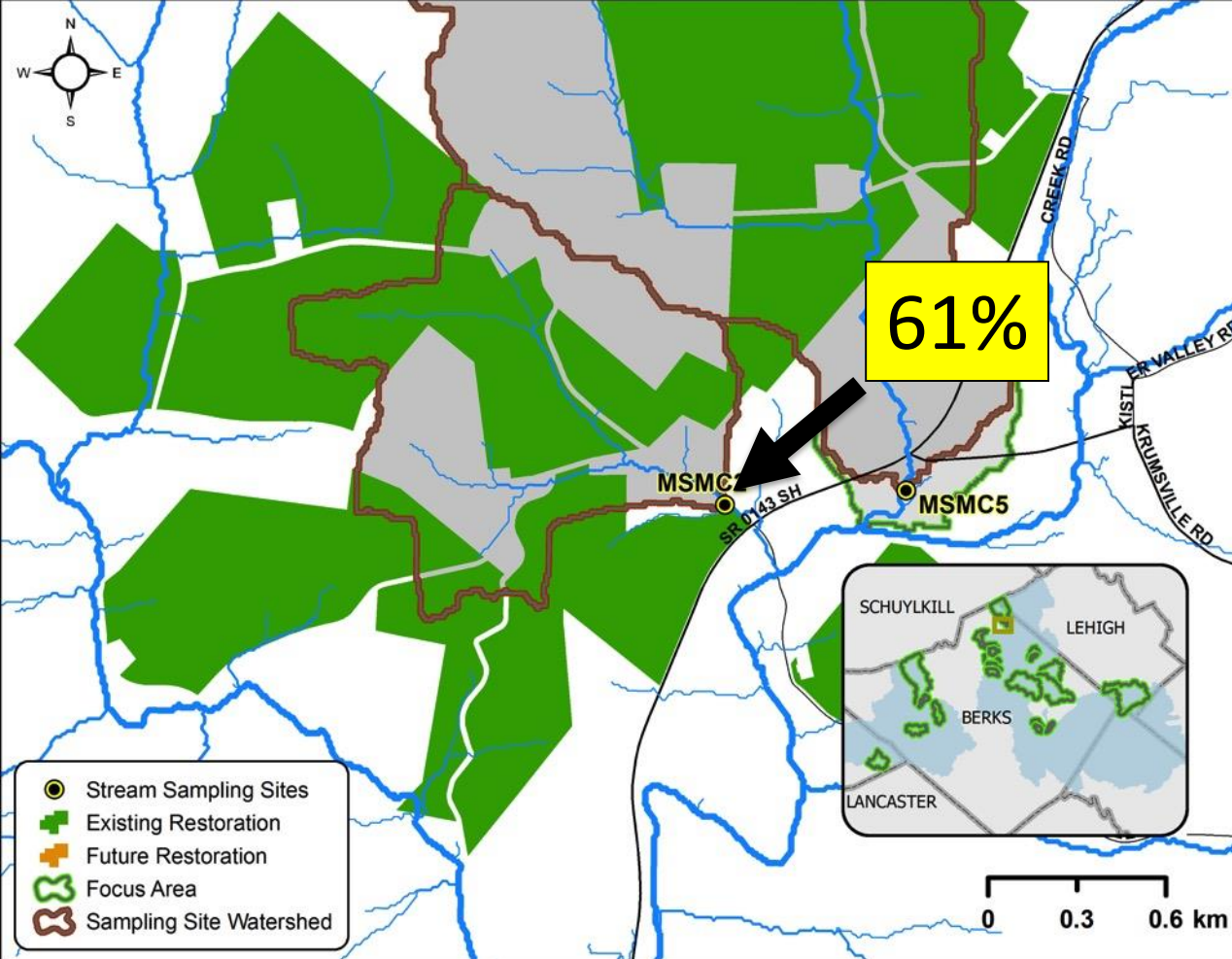
Maiden Trib @ Rice Farm

- 1 km²
- 6.8 km of stream
- 5% forest
- 47% pasture
- 31% row crop

Cold Water Fishery

Unimpaired?

Goal is
improved
Cold Water Fishery



Maiden Trib @ Rice Farm

1 km²

6.8 km of stream

5% forest

47% pasture

31% row crop

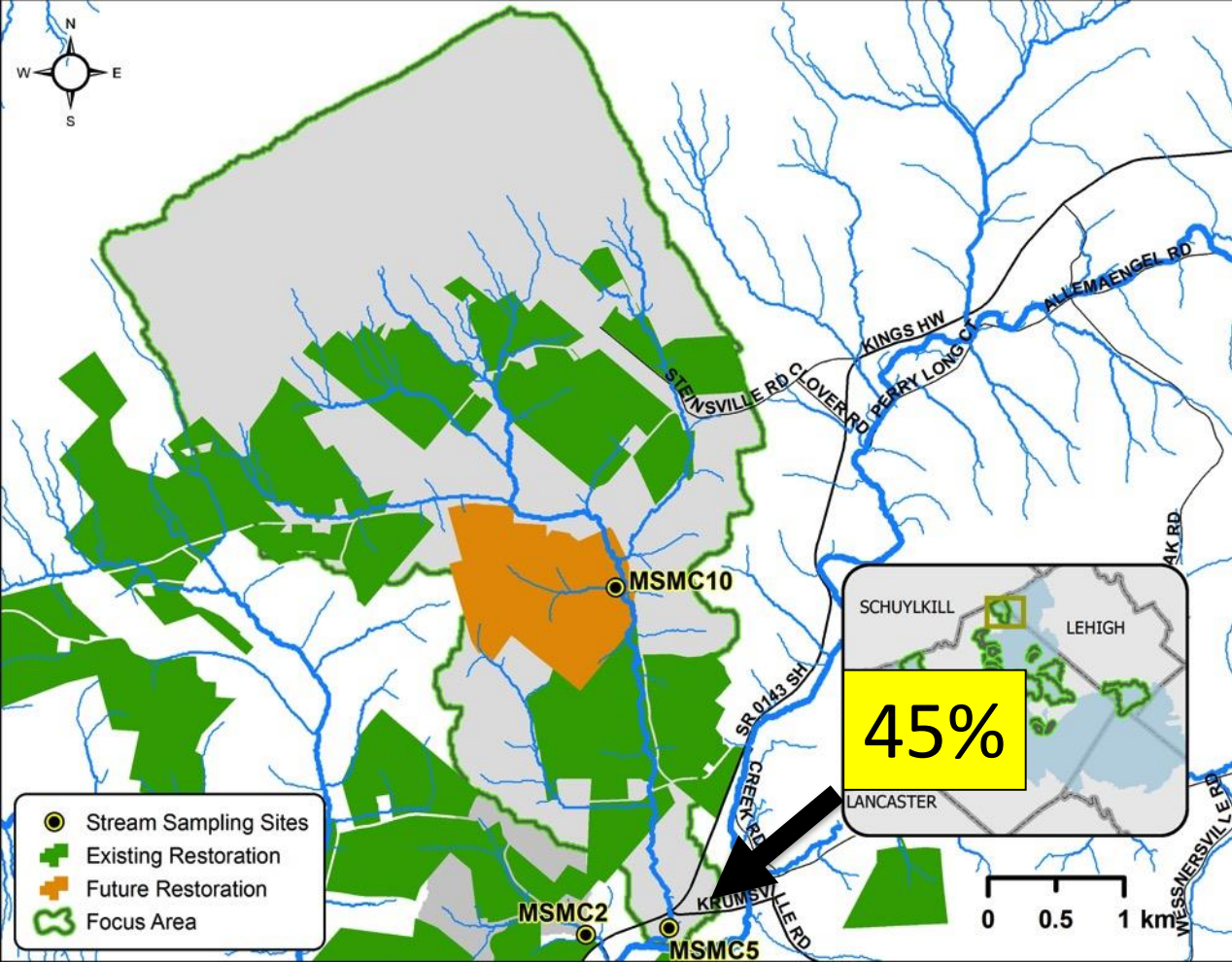
Cold Water Fishery

Unimpaired?

Goal is

improved

Cold Water Fishery



Manor Creek in Maiden

17 km²

5.8 km of stream

52% forest

26% pasture

18% row crop

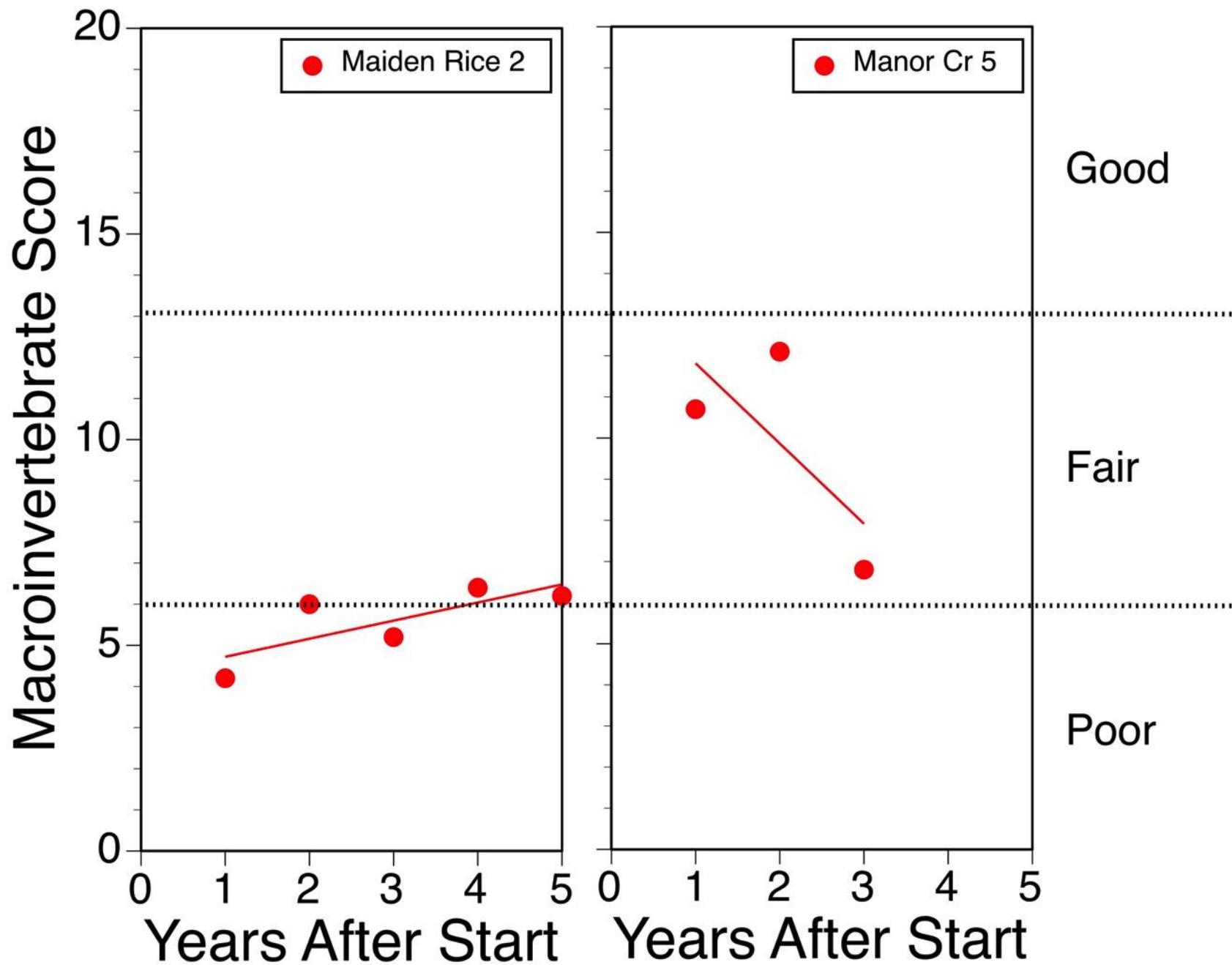
Cold Water Fishery

Unimpaired

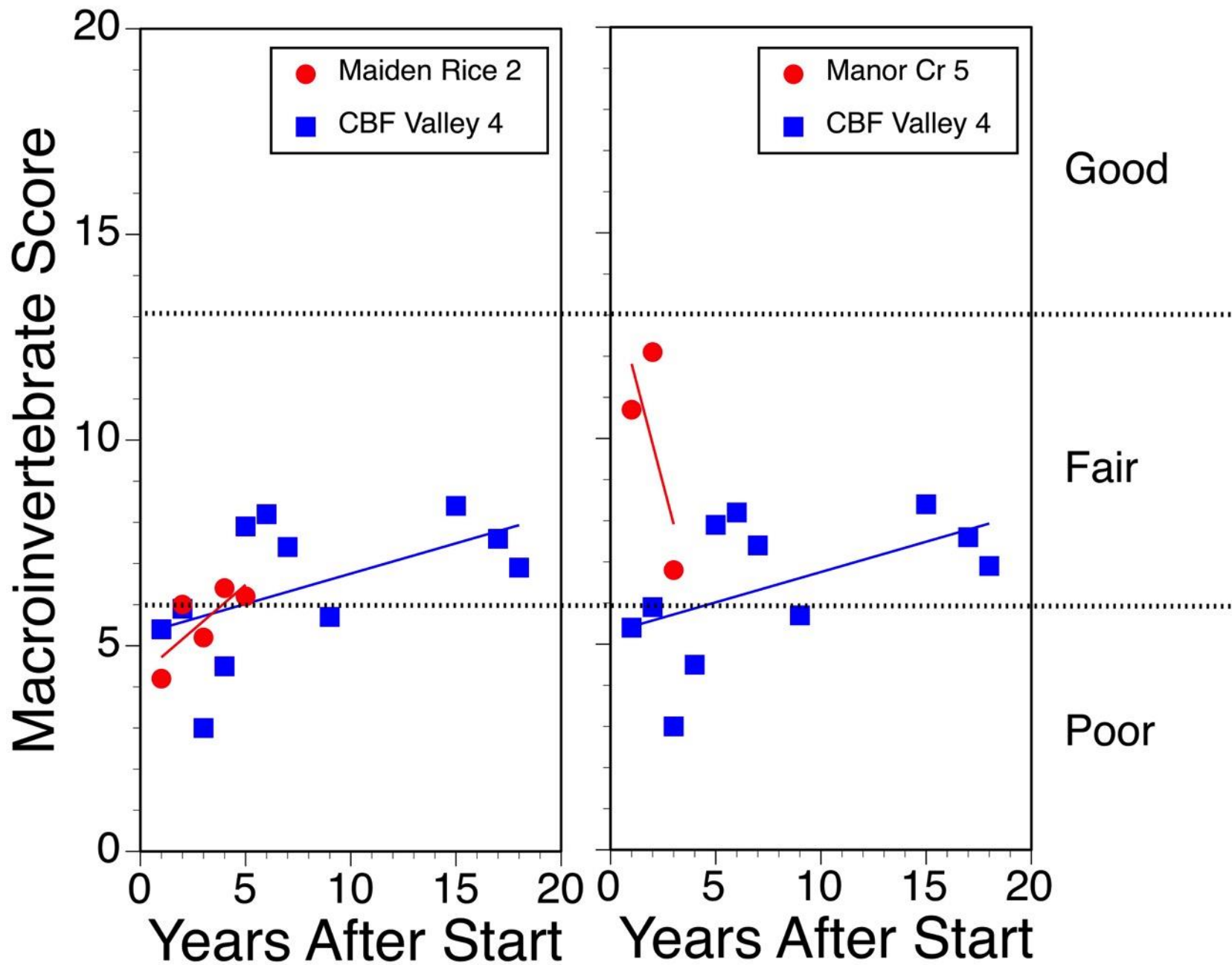
Goal is improved

Cold Water Fishery

Maiden Tributaries



Maiden Tributaries



Middle Schuylkill Cluster Phase 1 & 2

6,294 tons of
sediment per year

17,910 lbs of
phosphorus per year



<https://www.drawingtutorials101.com/how-to-draw-simple-dump-truck>

<https://feedyardfoodie.wordpress.com/2013/03/28/march-madness/>

Middle Schuylkill Cluster Phase 1 & 2

629 truckloads
sediment per year



448 truckloads
manure per year



<https://www.drawingtutorials101.com/how-to-draw-simple-dump-truck>

<https://feedyardfoodie.wordpress.com/2013/03/28/march-madness/>



877 truckloads
sediment and manure
per year

8770 truckloads
sediment and manure
in years

5.1 miles of trucks line up
bumper-to-bumper
per year

51 miles of trucks
over 10 years



Summary

- Project progress is strong
(45 – 61% complete in some areas)
- Current conditions may support higher
Focus Area goals – unimpaired →
cold water fishery → wild trout
- Too early to see ecological outcomes
– need more projects and time

A photograph of a forest stream flowing over mossy rocks, with a fallen log in the background. The scene is lush and green, with many trees and ferns visible. The water is clear and flows over several large, moss-covered rocks. A large, fallen log lies across the stream in the background.

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