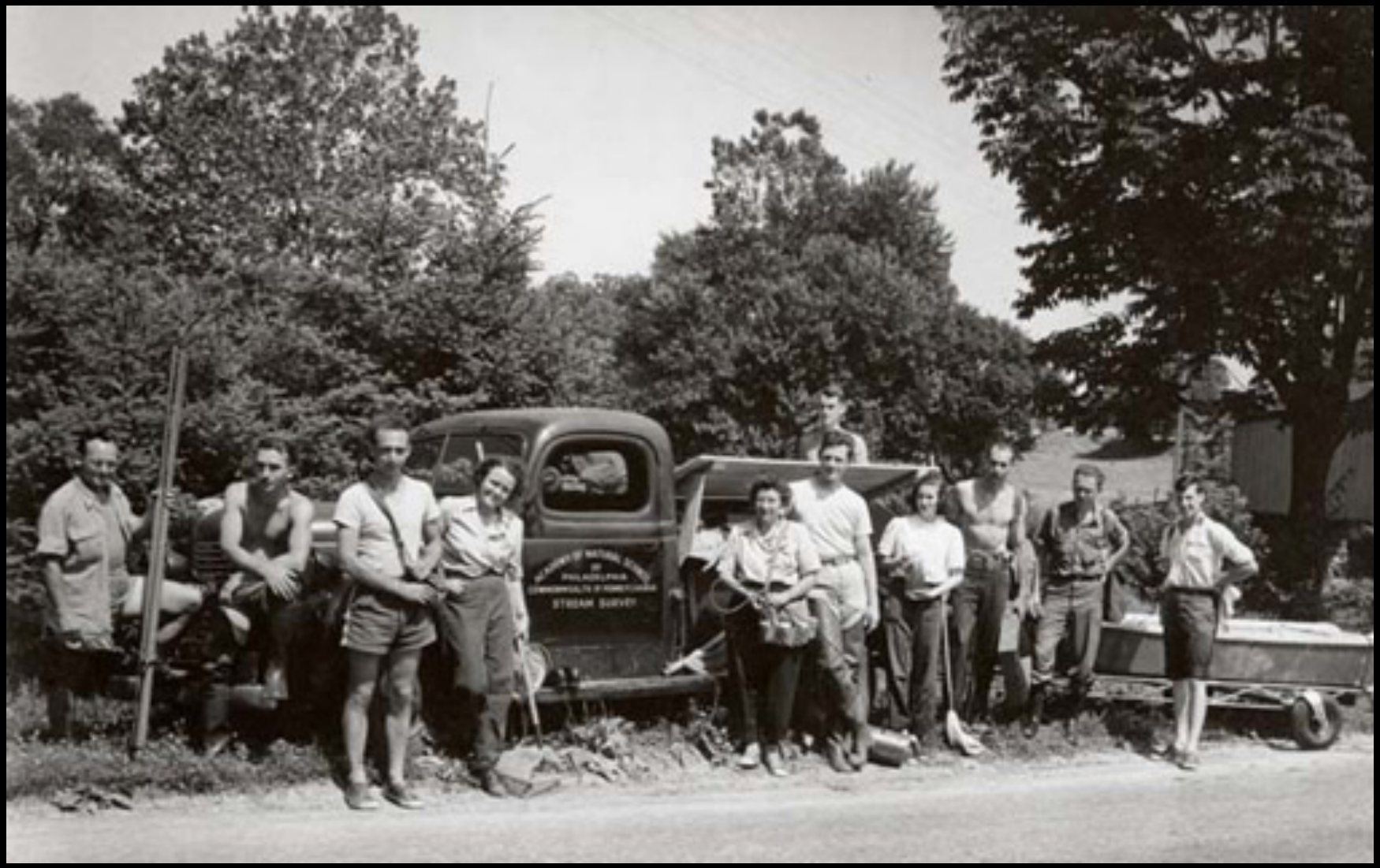
Independent not-for-profit
Research and Environmental Education Center




Ewell Sale Stewart Library & Archives

# Advancing knowledge & stewardship of freshwater systems

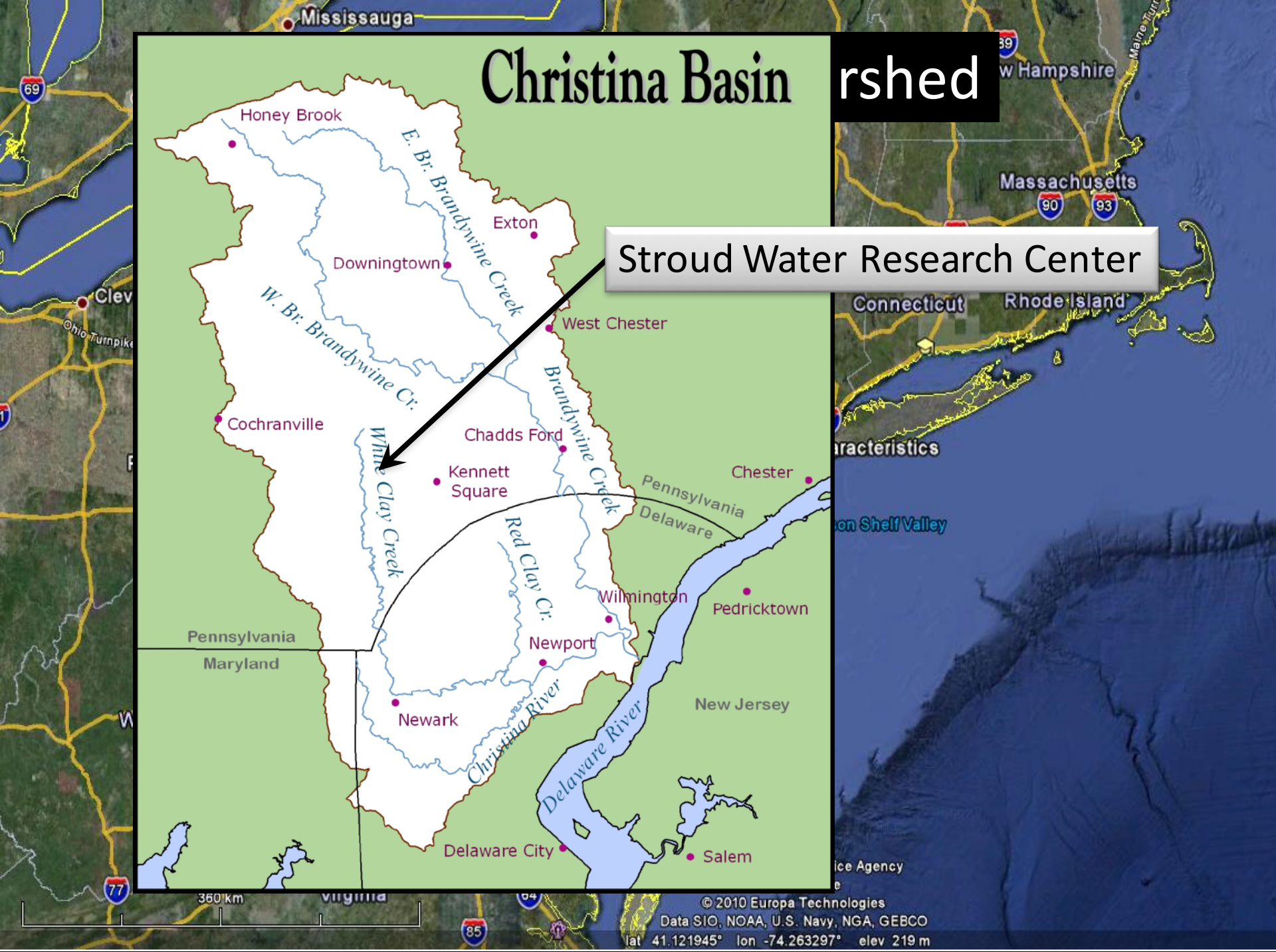
## Scientific Research

## Environmental Education

## Watershed Restoration

Stroud Water Research Center

# Christina Basin rshed



RETURN
EXIT

# Indoor Experiment Stream Channels

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# Cleaning Up the Chesapeake Bay

## A Challenge for 18 Million People

**Your Stream and Groundwater = Your Control**

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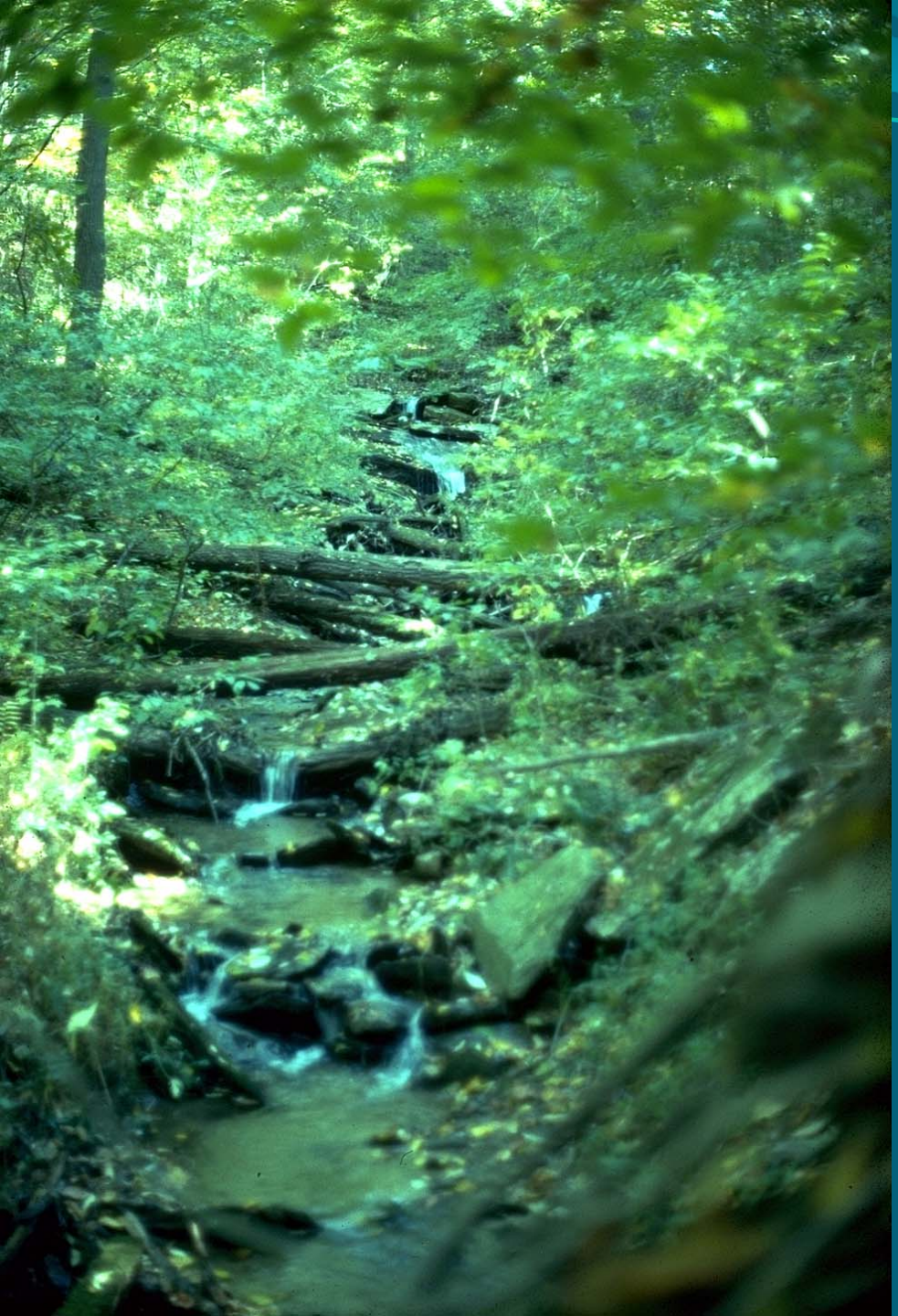

# Best Clean Water Opportunity for a Farmer: Headwater Stream

Small streams = 90% of all flowing streams in PA…& the World

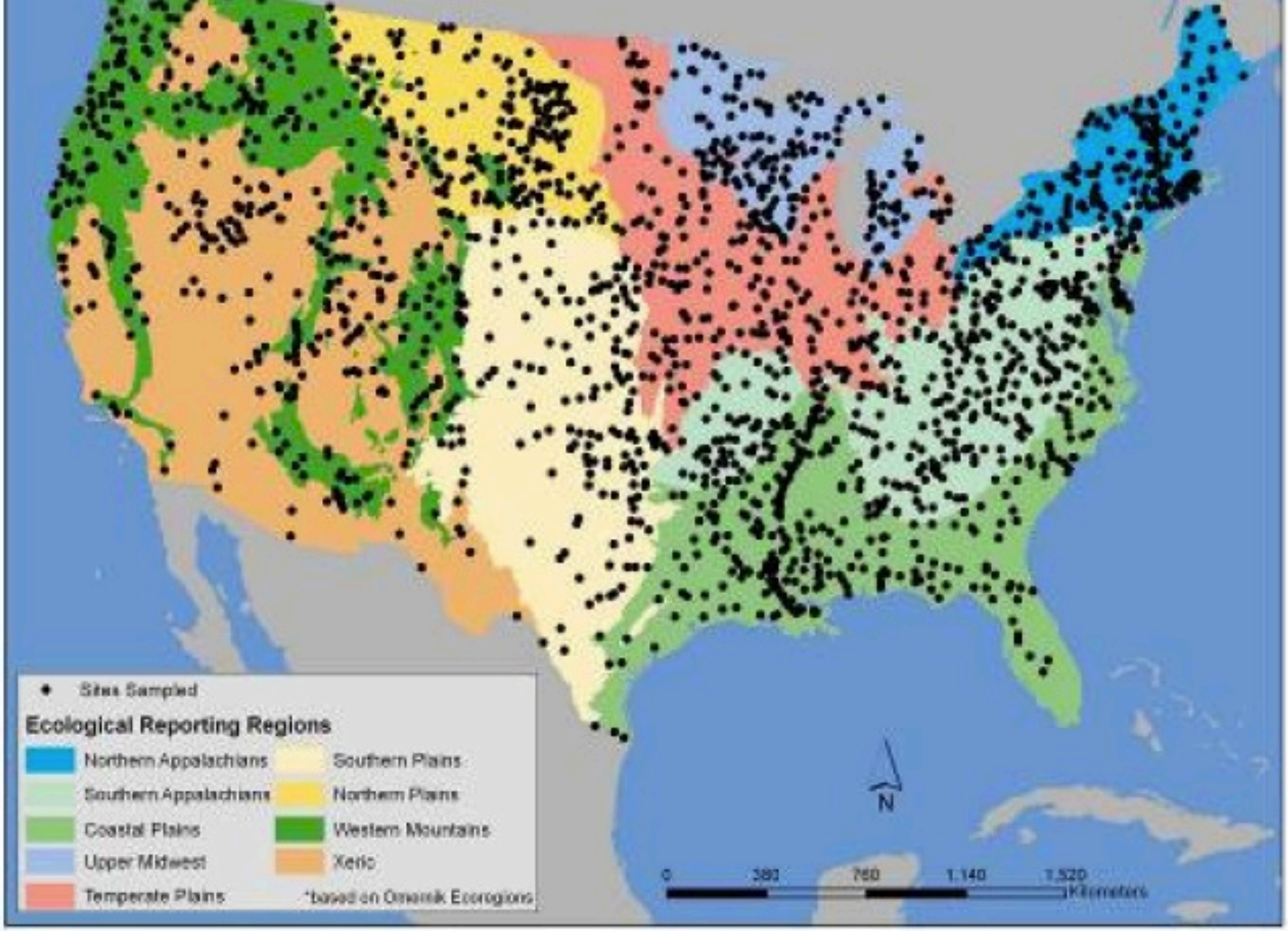


**Figure 5. NRSA sample sites.**

# Clean stream indicators

**E**phemeroptera (mayflies)

**P**lecoptera (stoneflies)

**T**richoptera (caddisflies)

# Pollution indicators

Annelid worms

Diptera (midges)

# US EPA National River & Stream Assessment

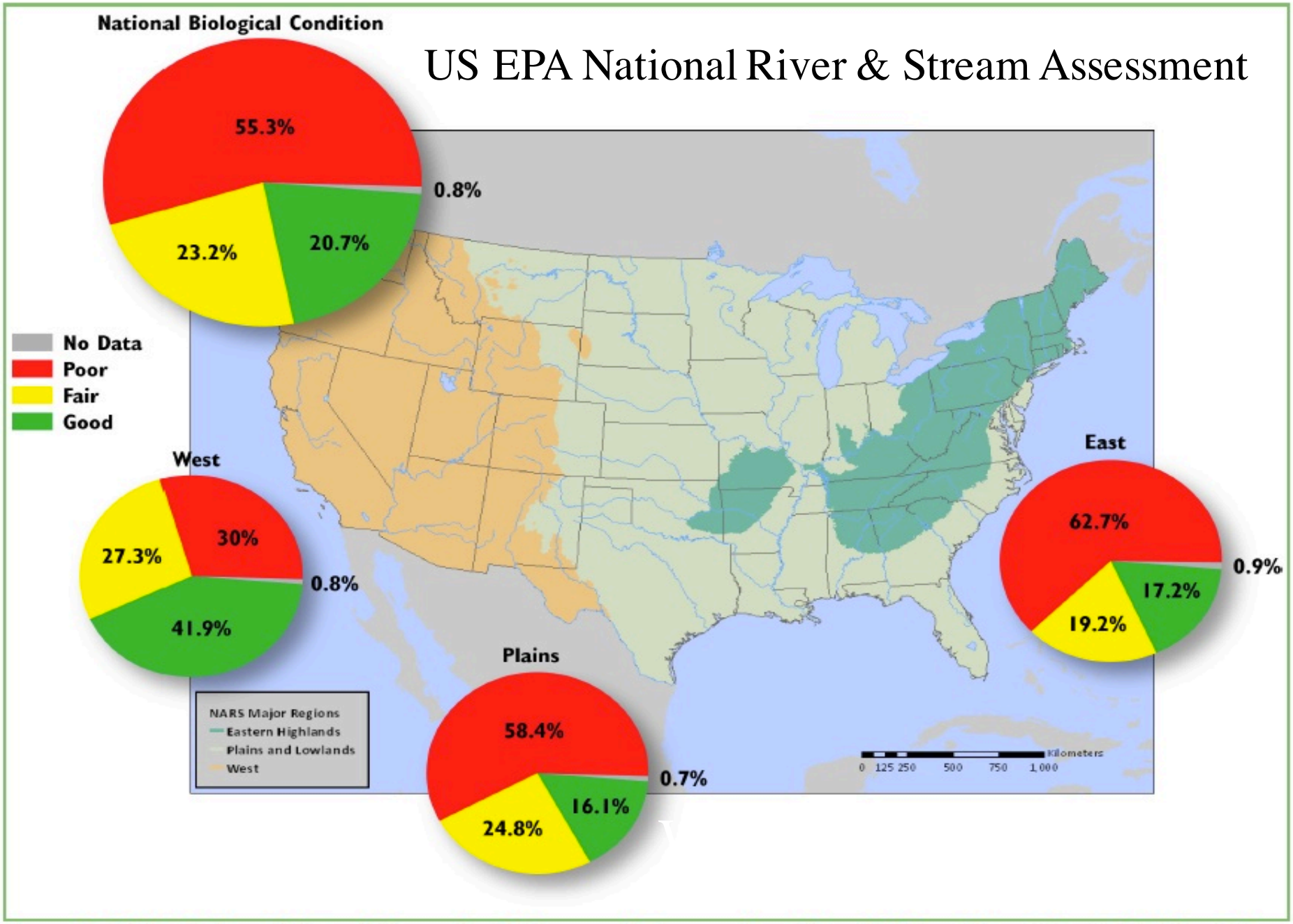


**Figure 1. Biological condition of the nation's rivers and streams, based on the Macroinvertebrate Multimetric Index (EPA/NRSA).**

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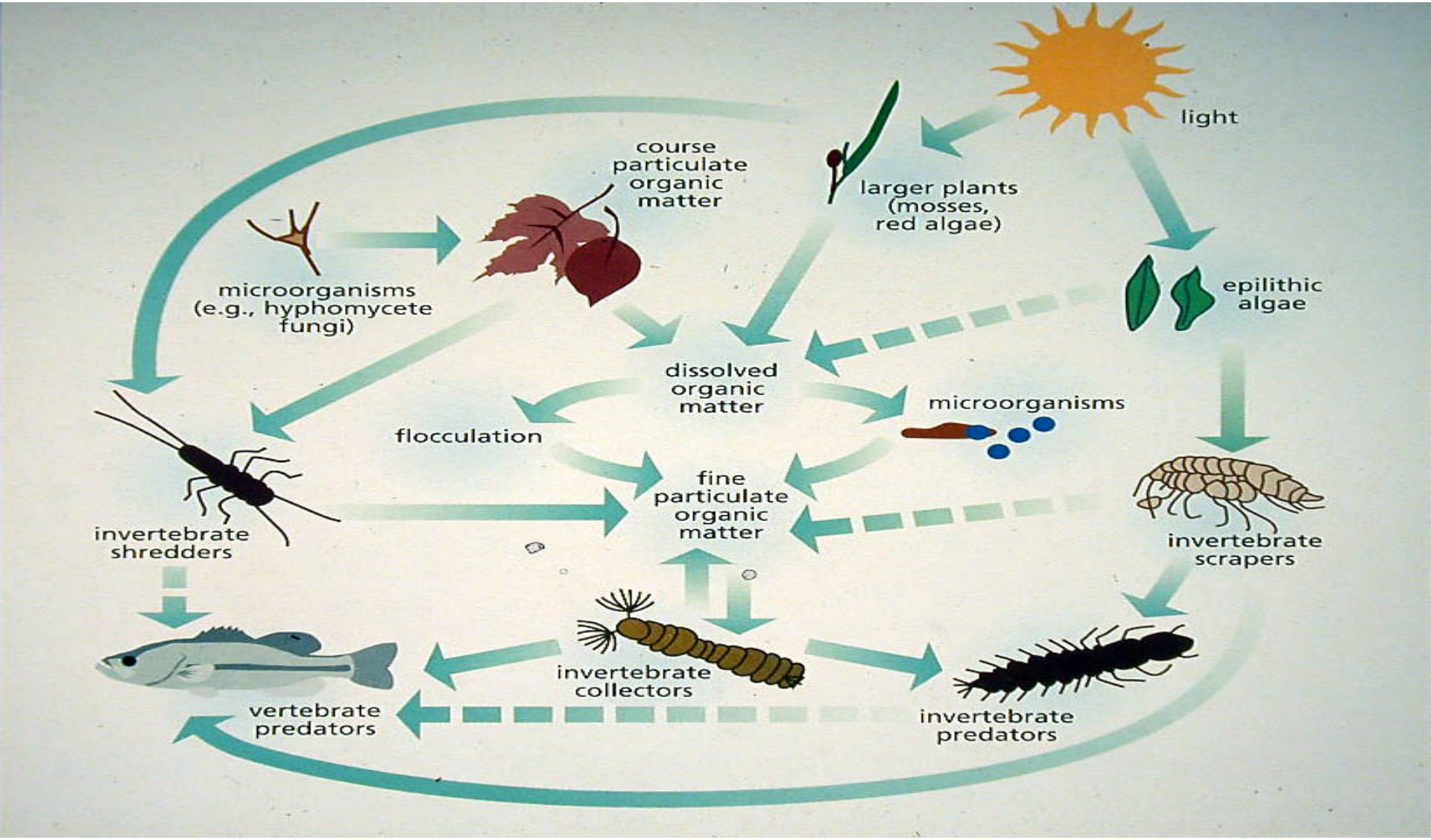
# More Workers & Healthier Workers for Clean Water

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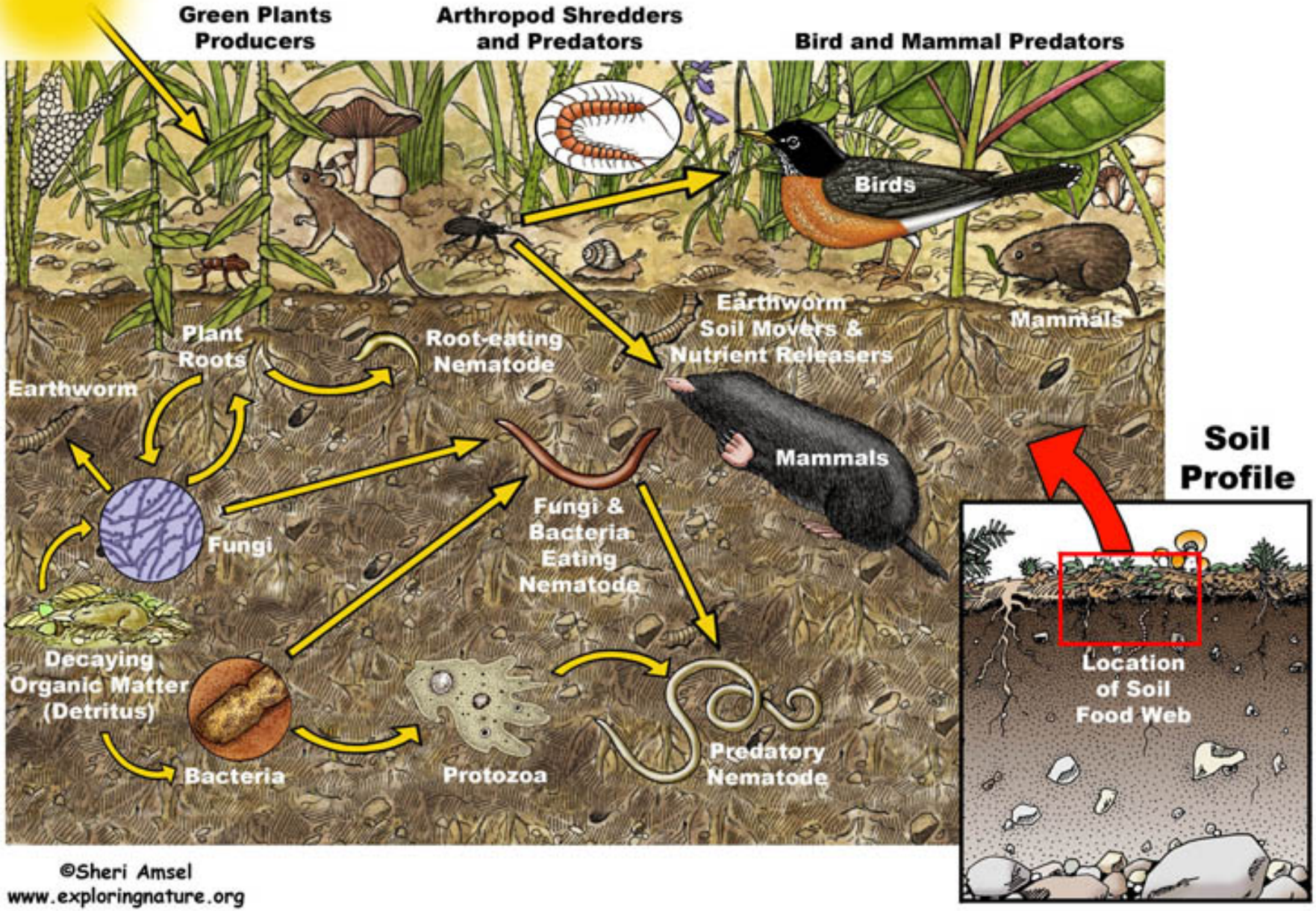
# Soil Food Web

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# Riparian Forest Buffer Originally, a "Filter"

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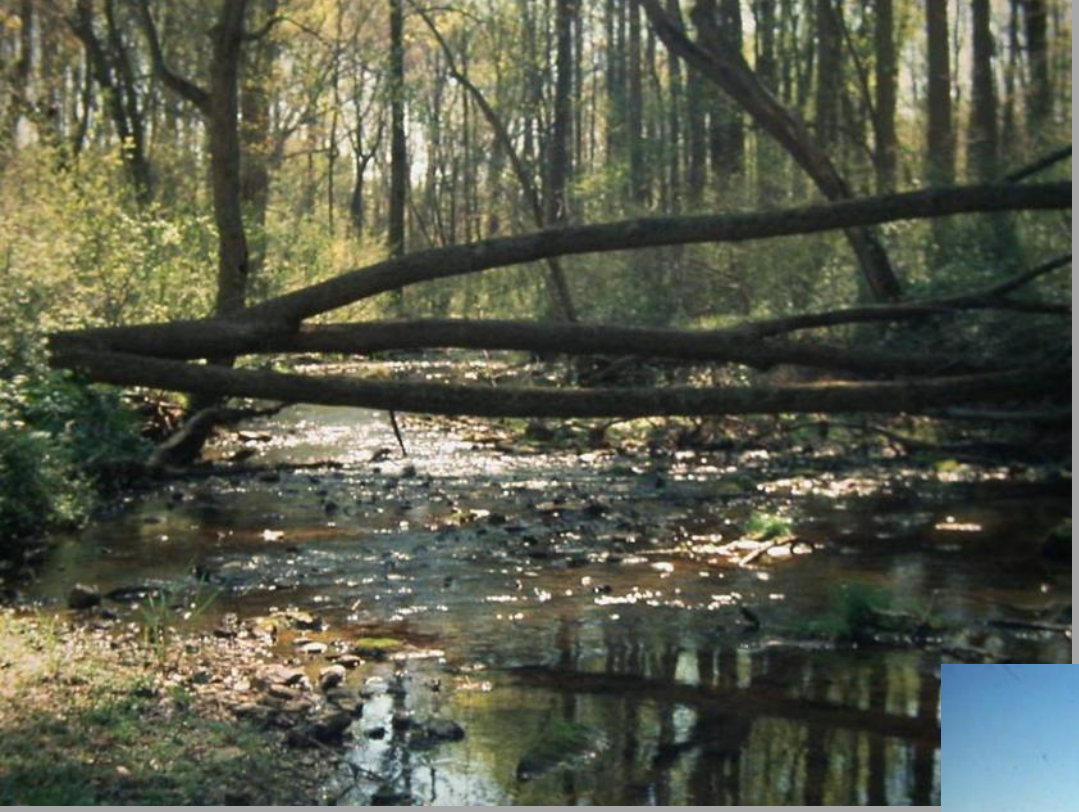
Forested streams are cooler in summer and have shady, filtered light…..

# Forested stream banks and channels are more stable and have better habitat – no human interventions required!

# ….a small forested stream can receive up to 10,000 lbs leaves/ac

# Large Woody Debris for Habitat and Flow Modificatio

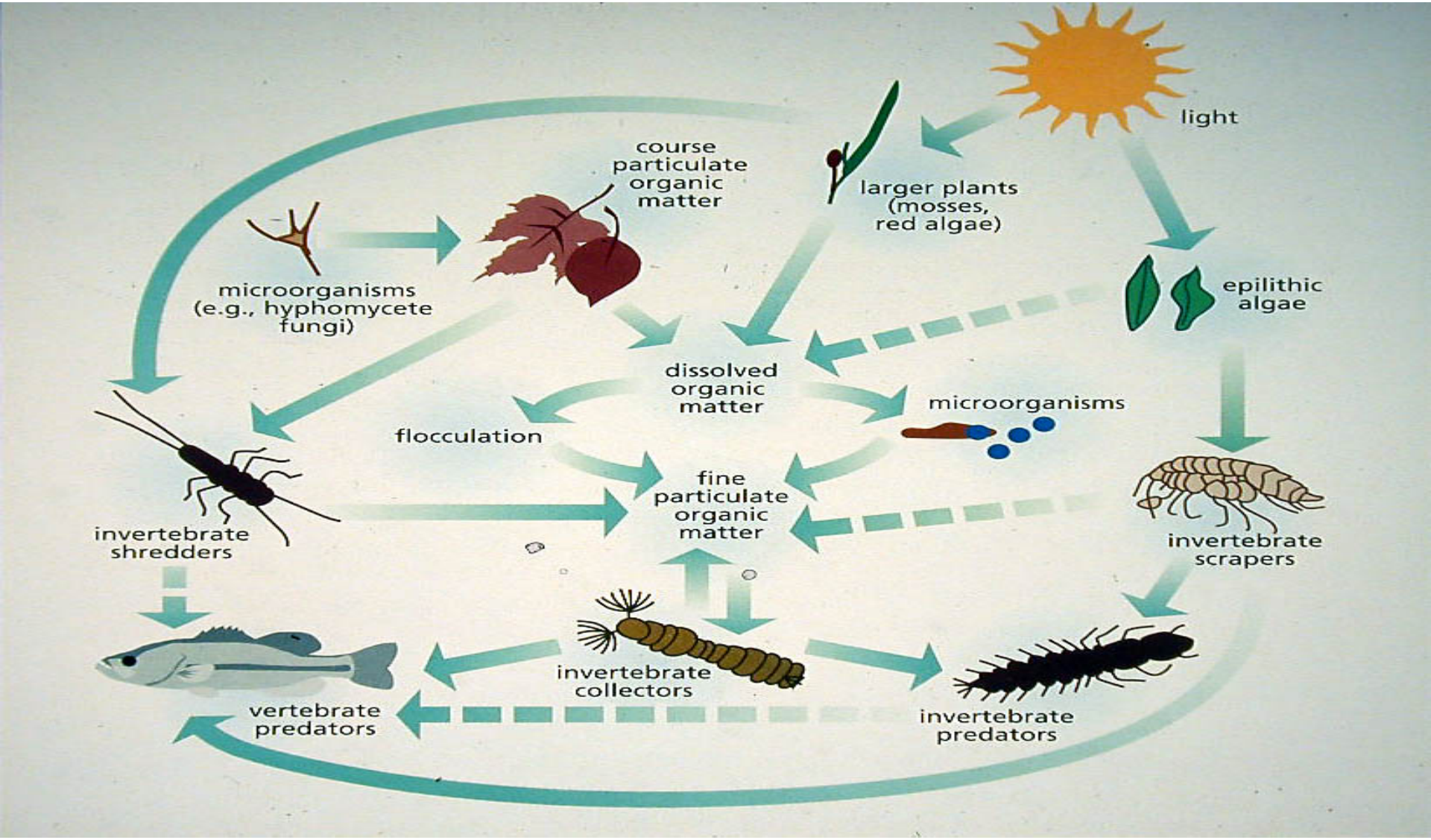
Photo: Alan Petrucci and http://smallstreamreflections.blogspot



Forested streams are wider and shallower

Same stream, showing narrowing effects of grass

# Healthier Streams=More Workers, Healthier Workers

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# Stroud's Farm Stewardship Program

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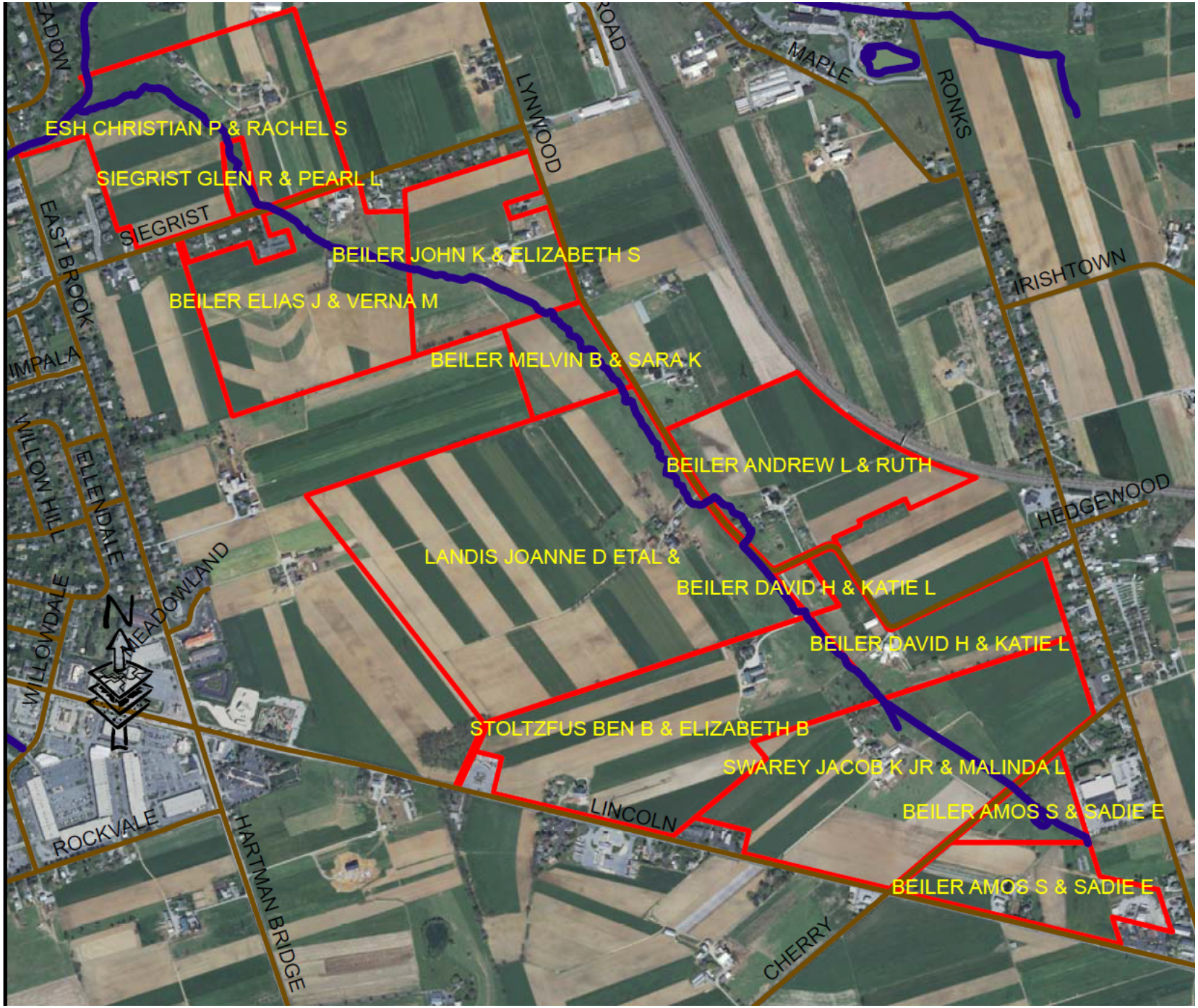
Conservation & Manure Plans

BMPs for Fields and Facilities –
We Help with Funding if Needed

Forested Buffer

Soil Health Practices


ESH CHRISTIAN P & RACHEL S
SIEGRIST GLEN R & PEARL L
SIEGRIST
EAST BROOK
BEILER JOHN K & ELIZABETH S
BEILER ELIAS J & VERNA M
BEILER MELVIN B & SARA K
LYNWOOD
ROAD
MAPLE
RONKS
IRISHTOWN
IMPALA
WILLOW HILL
ELLENDALE
BEILER ANDREW L & RUTH
HEDGEWOOD
LANDIS JOANNE D ETAL &
BEILER DAVID H & KATIE L
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SWAREY JACOB K JR & MALINDA L
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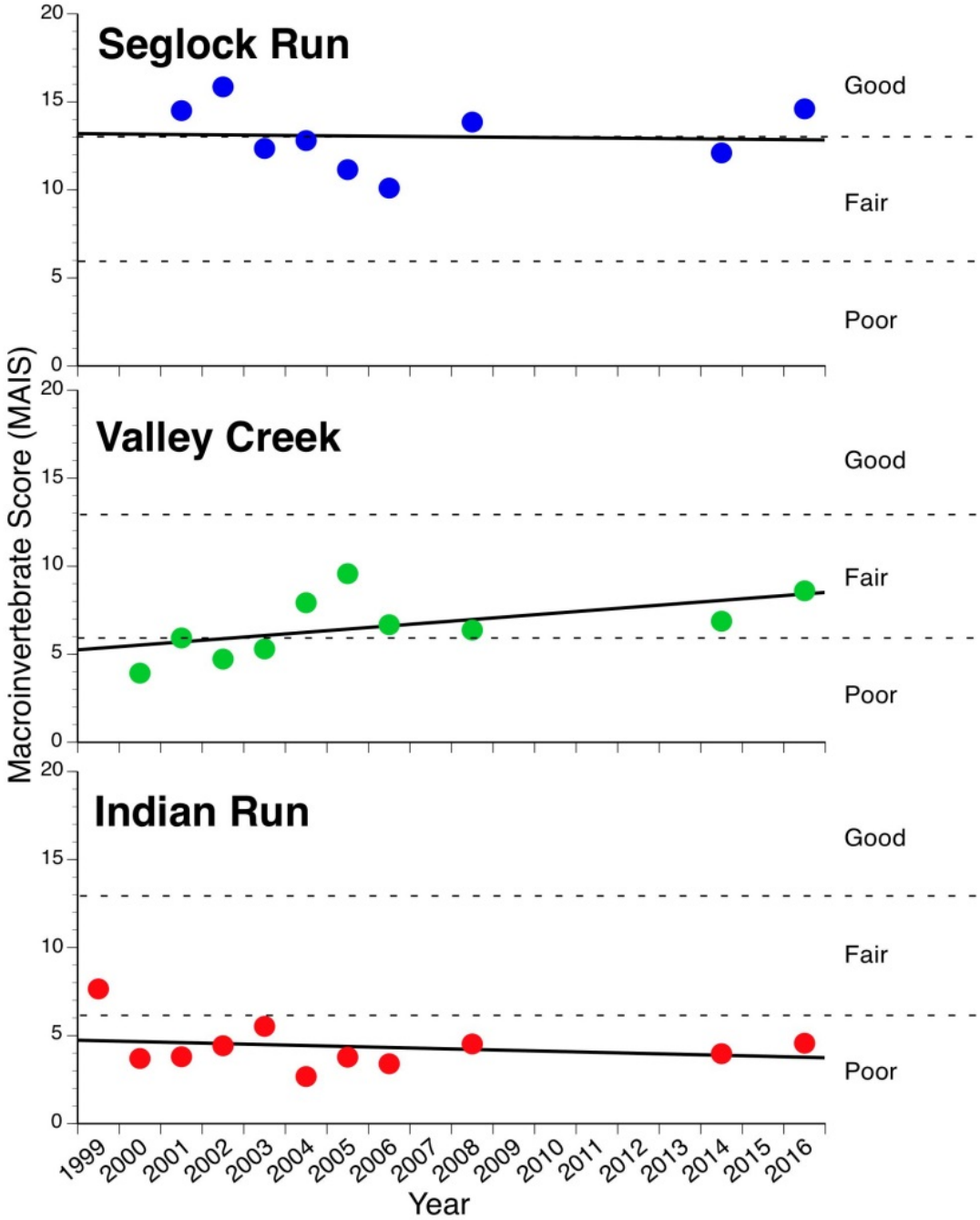
ROCKVALE
HARTMAN BRIDGE
BEILER AMOS S & SADIE E
CHERRY




# Measuring Stream Response to Restoration on Farms

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# New Study: Stroud & Rodale Institute

**Evaluating how conventional, conservation, and organic farming management practices enhance soil health and improve water quality**

## Funded Dec 2017
## May 2018 field trials begin

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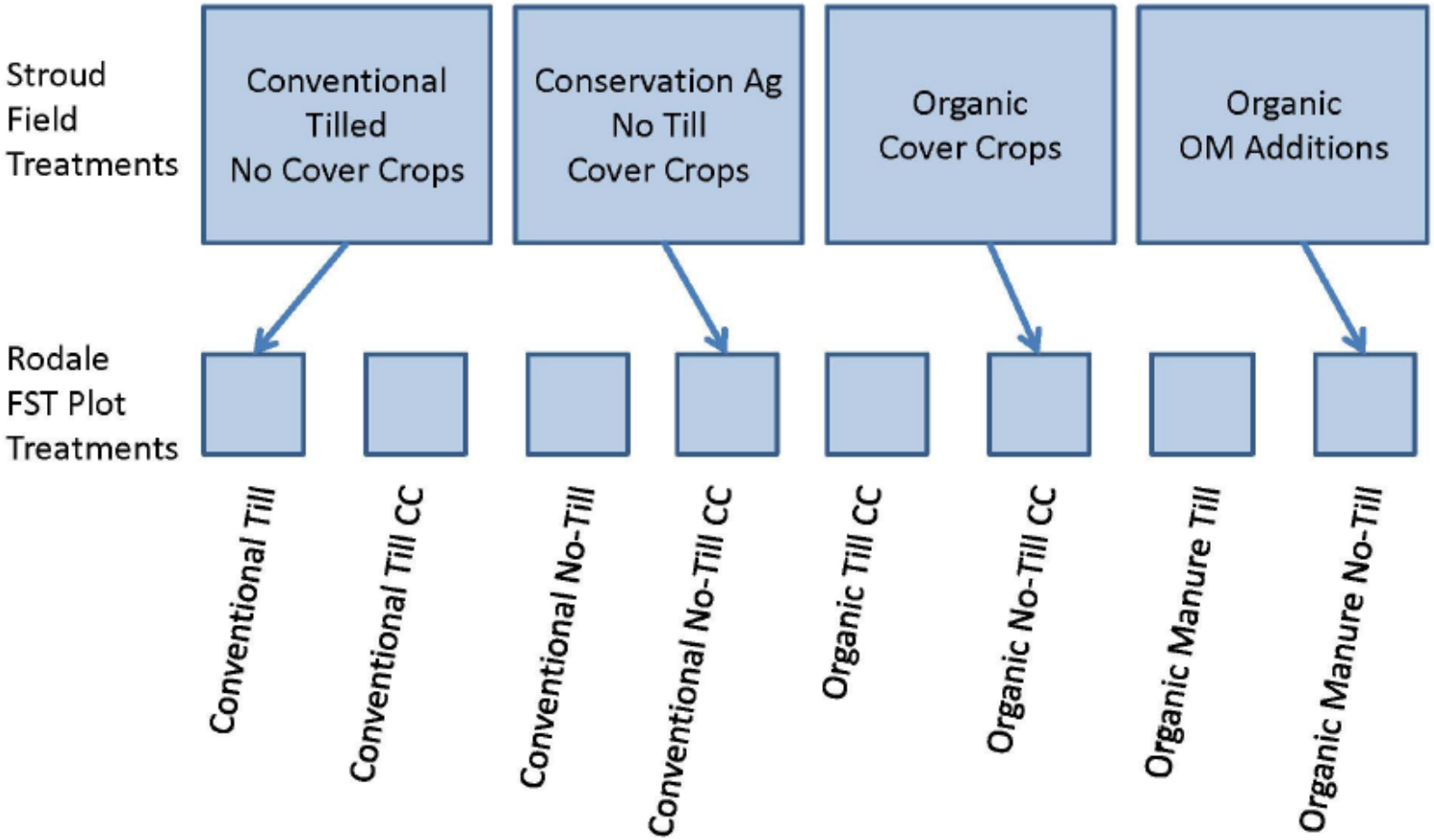


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# New Project:
# Stroud and PA Association for Sustainable Agriculture

## Helping Farmers Evaluate Their Impact on Local Water Quality

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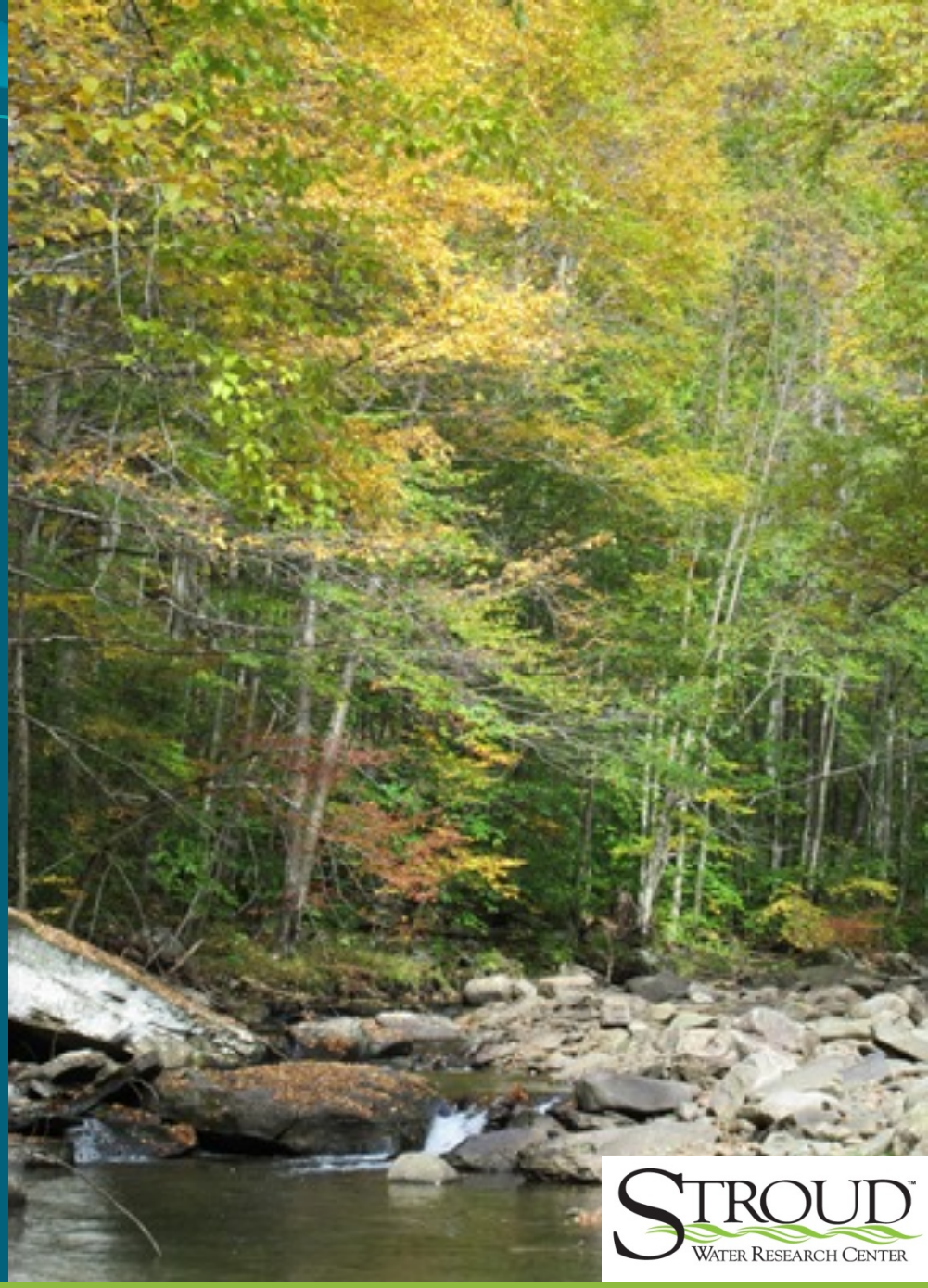
# *Thank You!*

Lamonte Garber
Stroud Water
Research Center
lgarber@stroudcenter.org

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