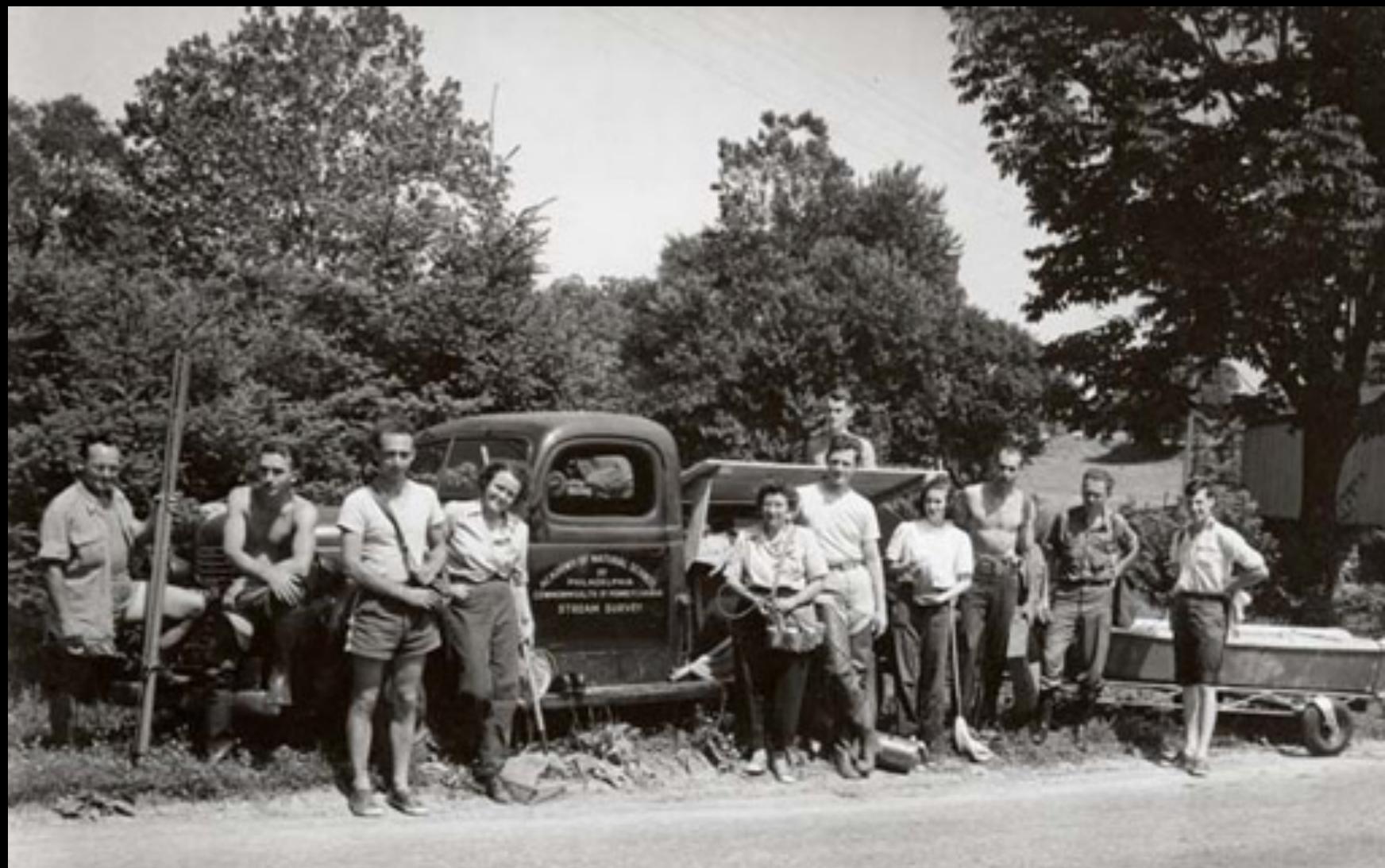




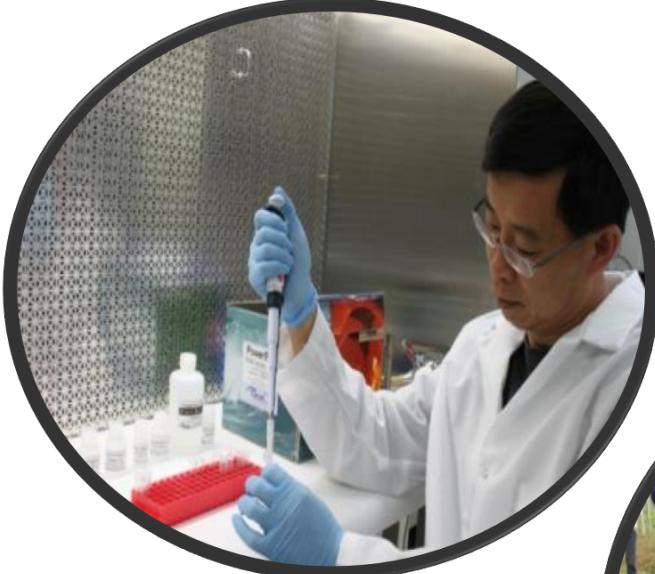
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ADVANCING KNOWLEDGE & STEWARDSHIP OF FRESHWATER SYSTEMS

SCIENTIFIC
RESEARCH

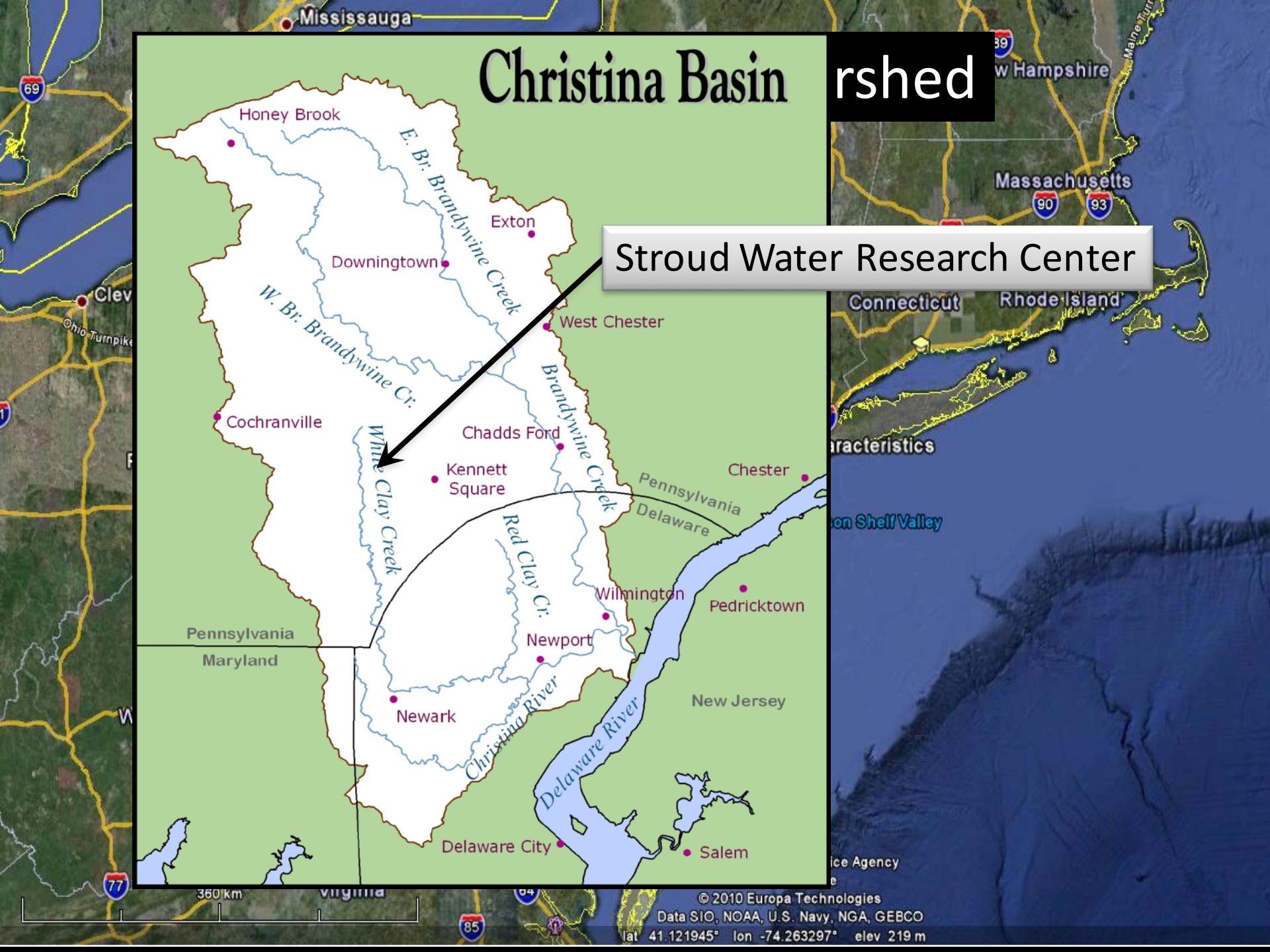


ENVIRONMENTAL
EDUCATION



WATERSHED
RESTORATION









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**





Best Clean Water Opportunity for a Farmer: Headwater Stream

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

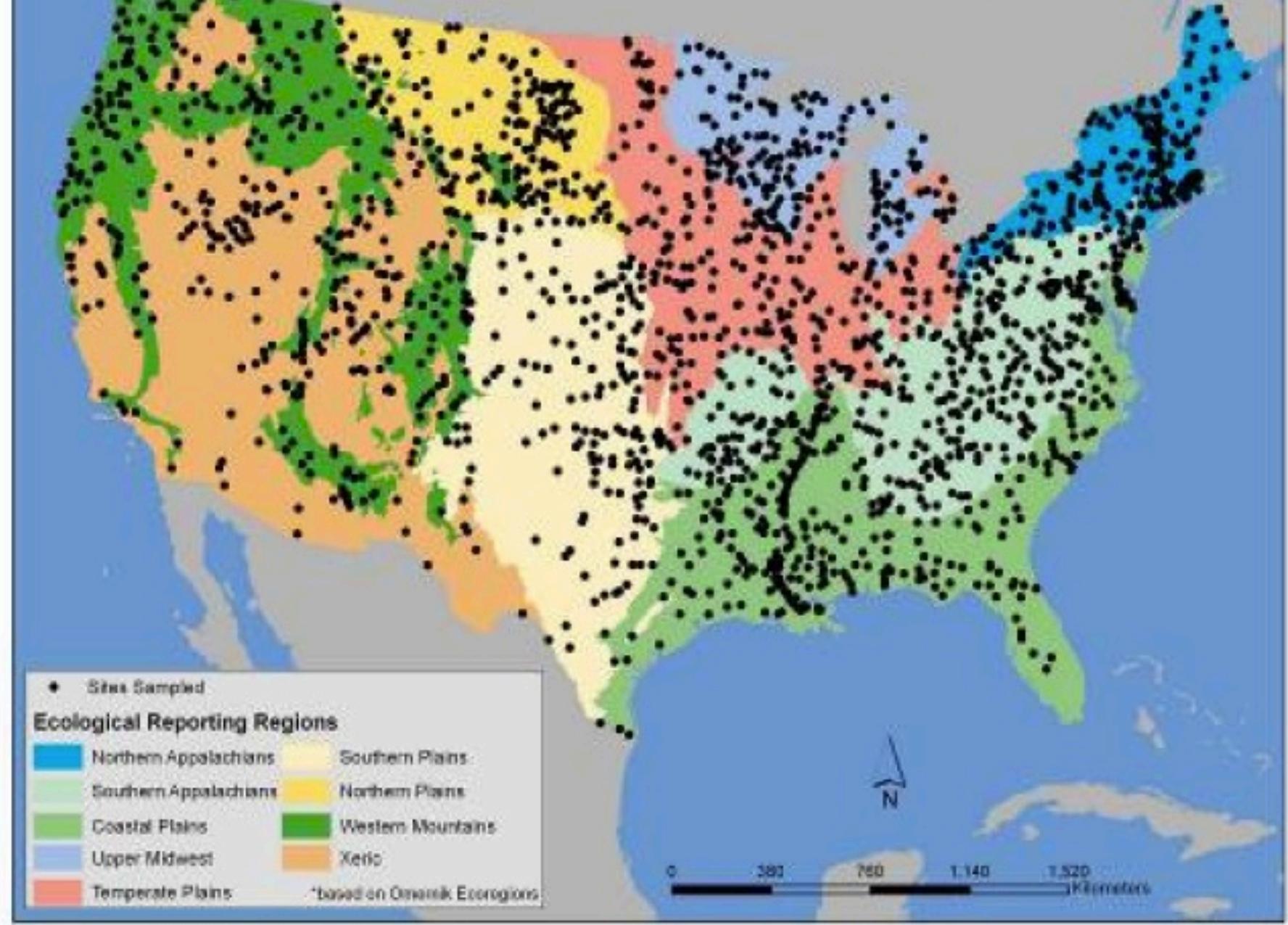


Figure 5. NRSA sample sites.



Ephemeroptera (mayflies)



Plecoptera (stoneflies)



Trichoptera (caddisflies)

Pollution indicators



Annelid worms



Diptera (midges)

National Biological Condition

US EPA National River & Stream Assessment

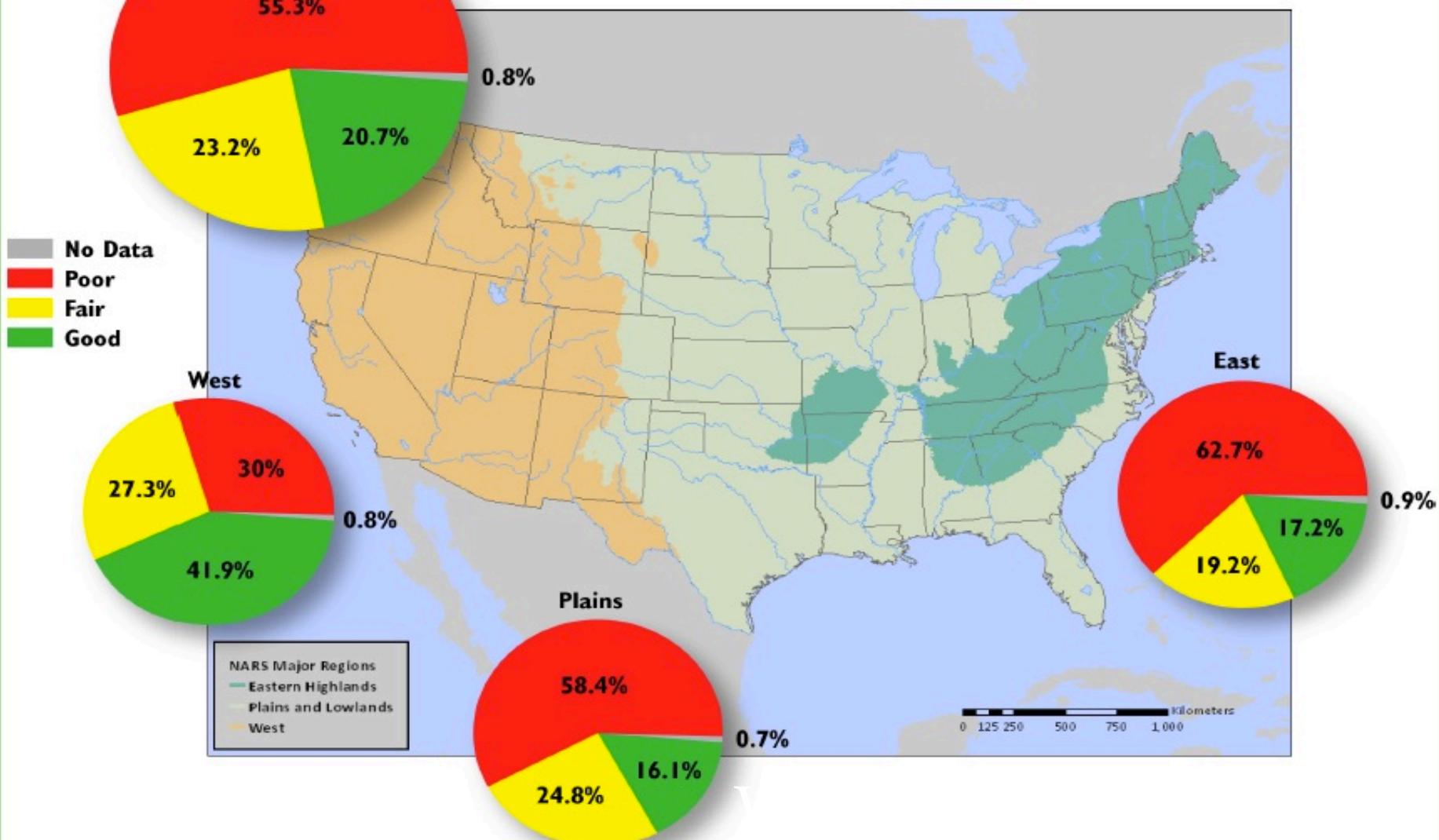


Figure 1. Biological condition of the nation's rivers and streams, based on the Macroinvertebrate Multimetric Index (EPA/NRSA).





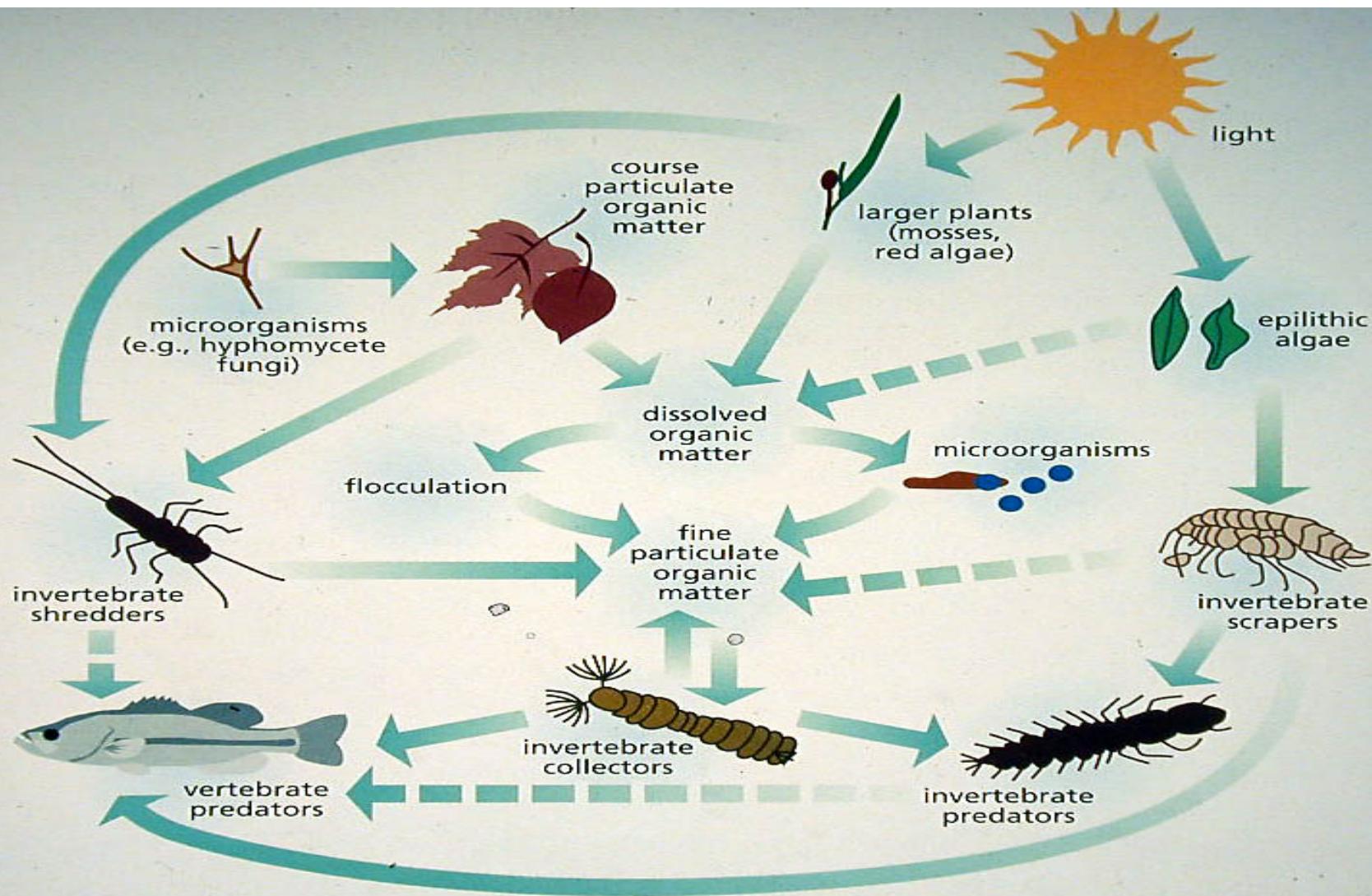




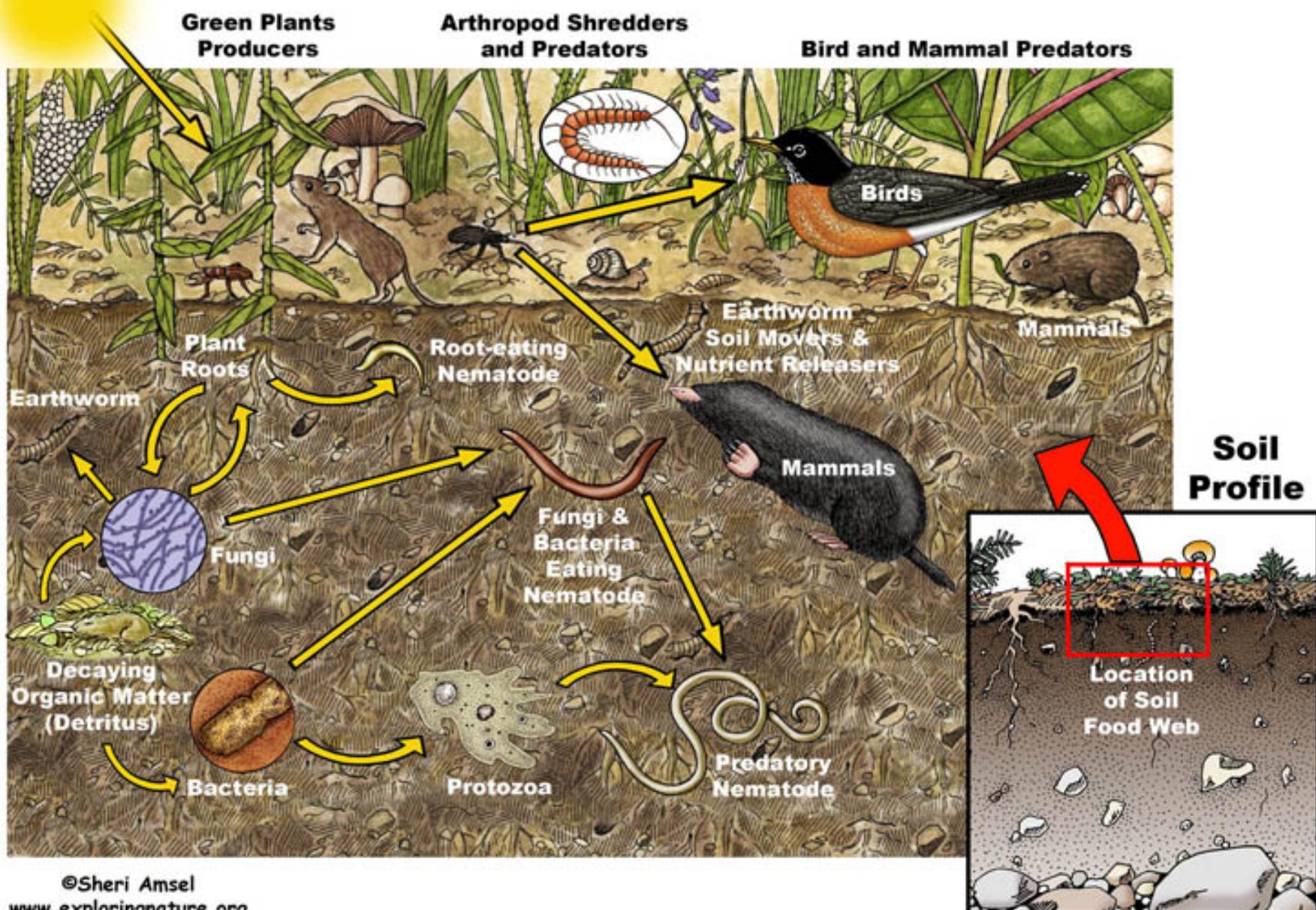
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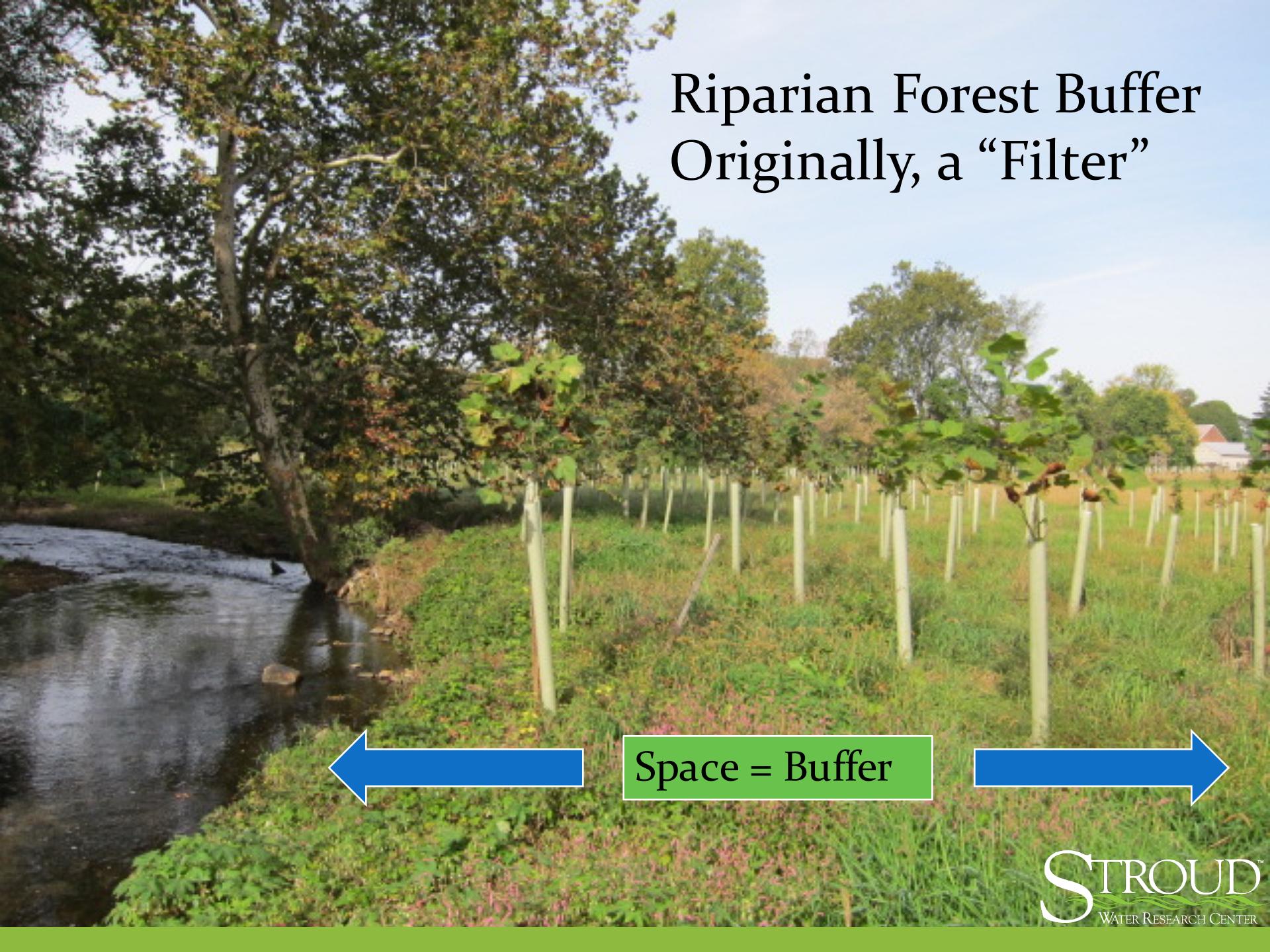
More Workers & Healthier Workers for Clean Water



Soil Food Web







Riparian Forest Buffer

Originally, a “Filter”

Space = Buffer



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



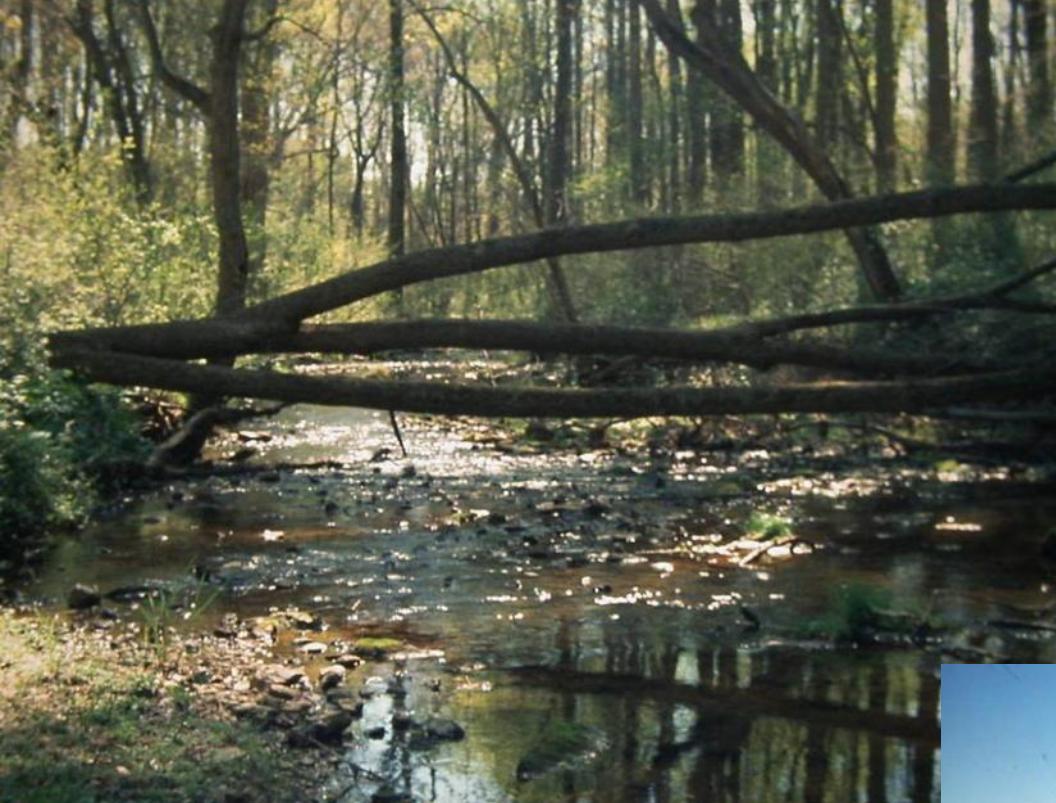


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Large Woody Debris for Habitat and Flow Modification



Photo: Alan Petrucci and <http://smallstreamreflections.blogspot.com>

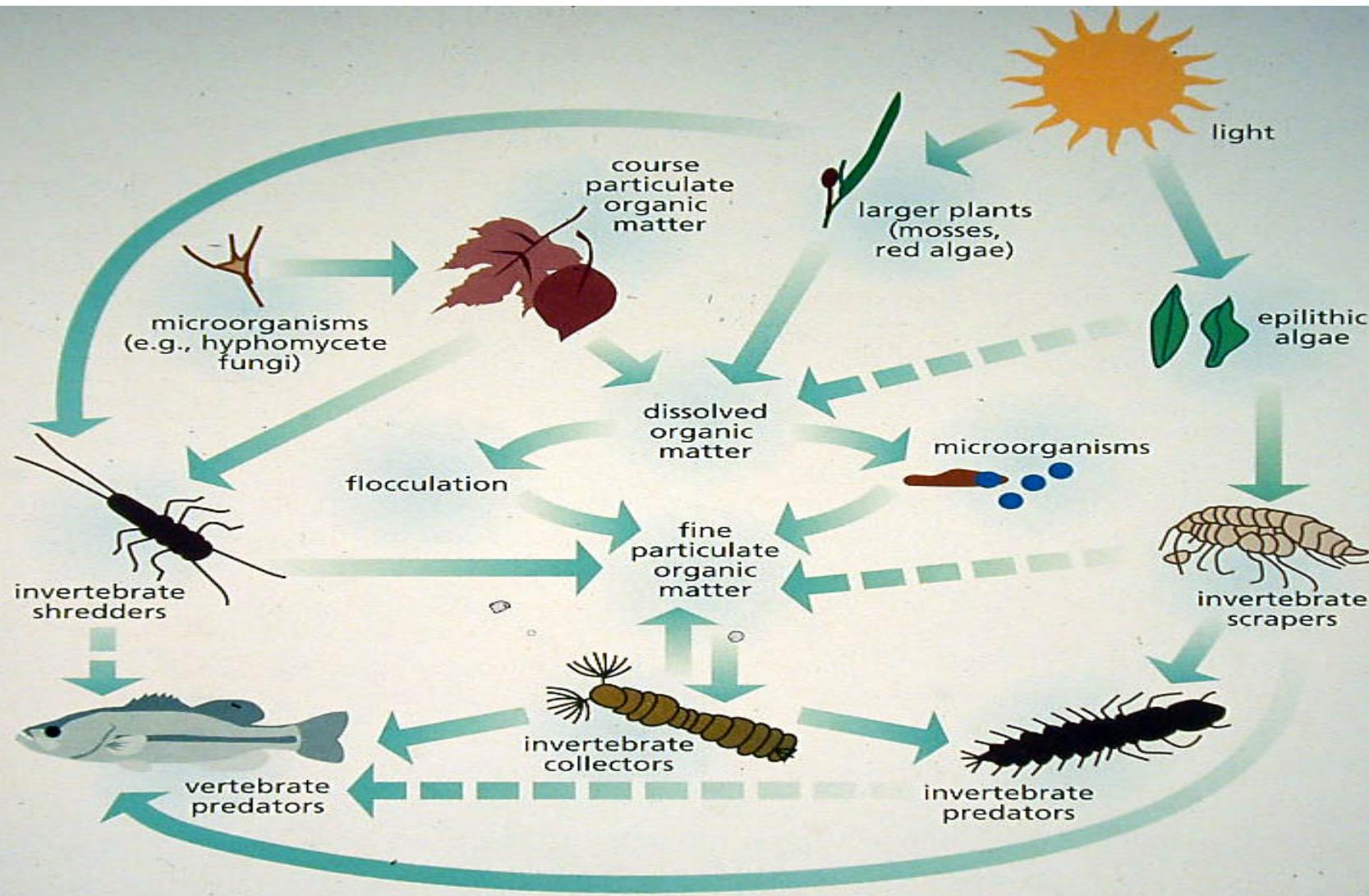


Forested streams are wider and shallower

Same stream, showing narrowing effects of grass



Healthier Streams=More Workers, Healthier Workers



Stroud's Farm Stewardship Program

Conservation & Manure Plans



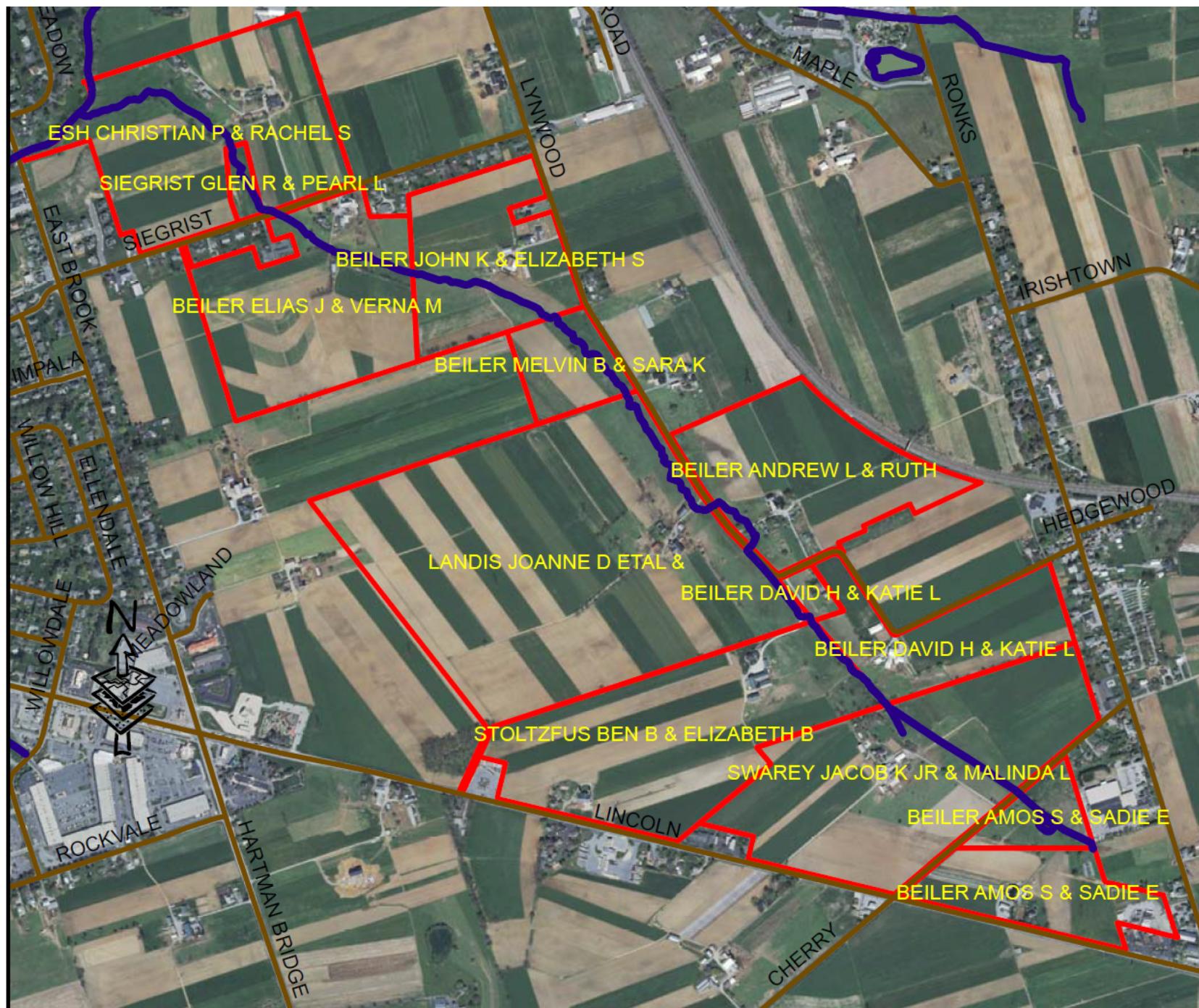
**BMPs for Fields and Facilities –
We Help with Funding if Needed**

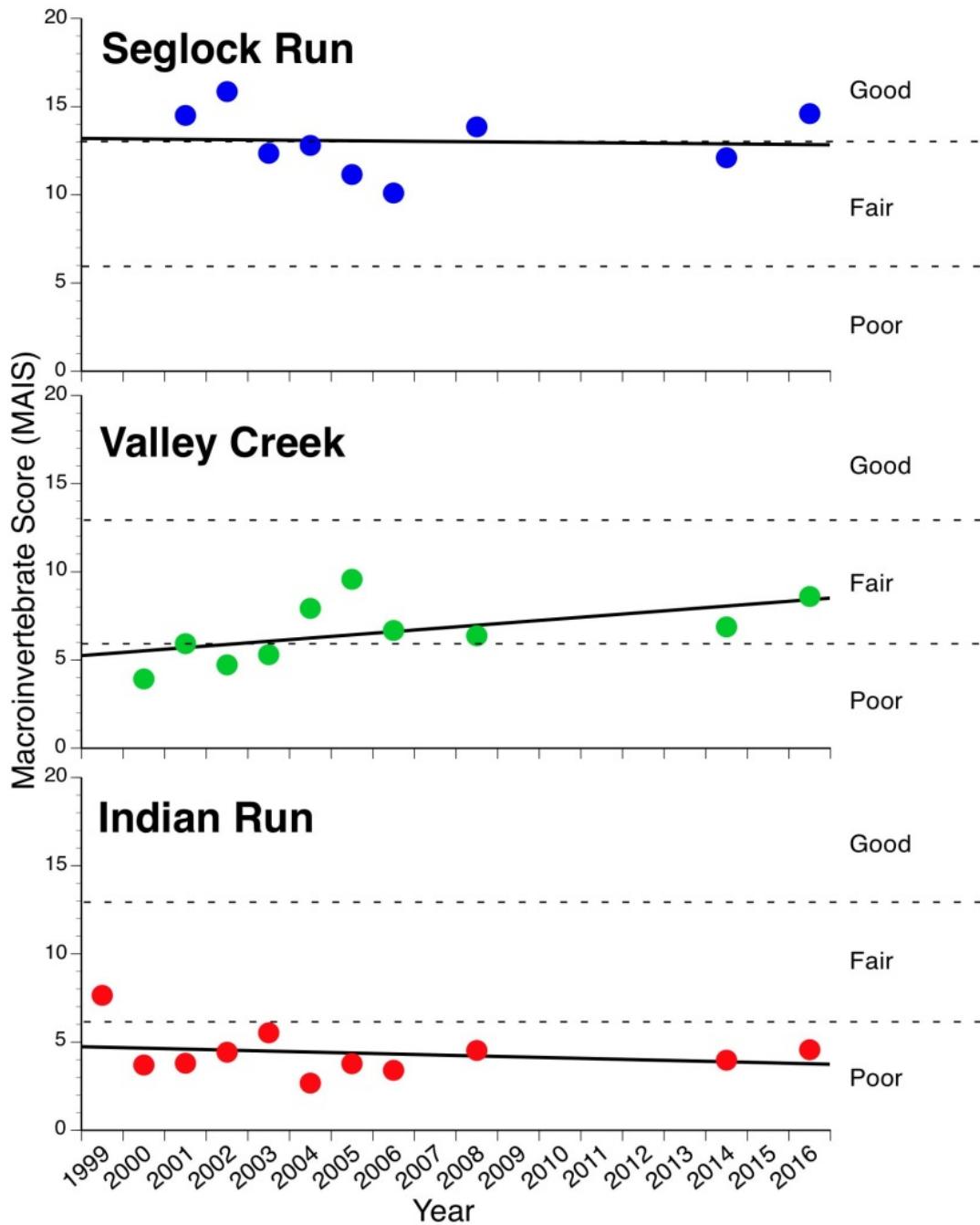


Forested Buffer



Soil Health Practices





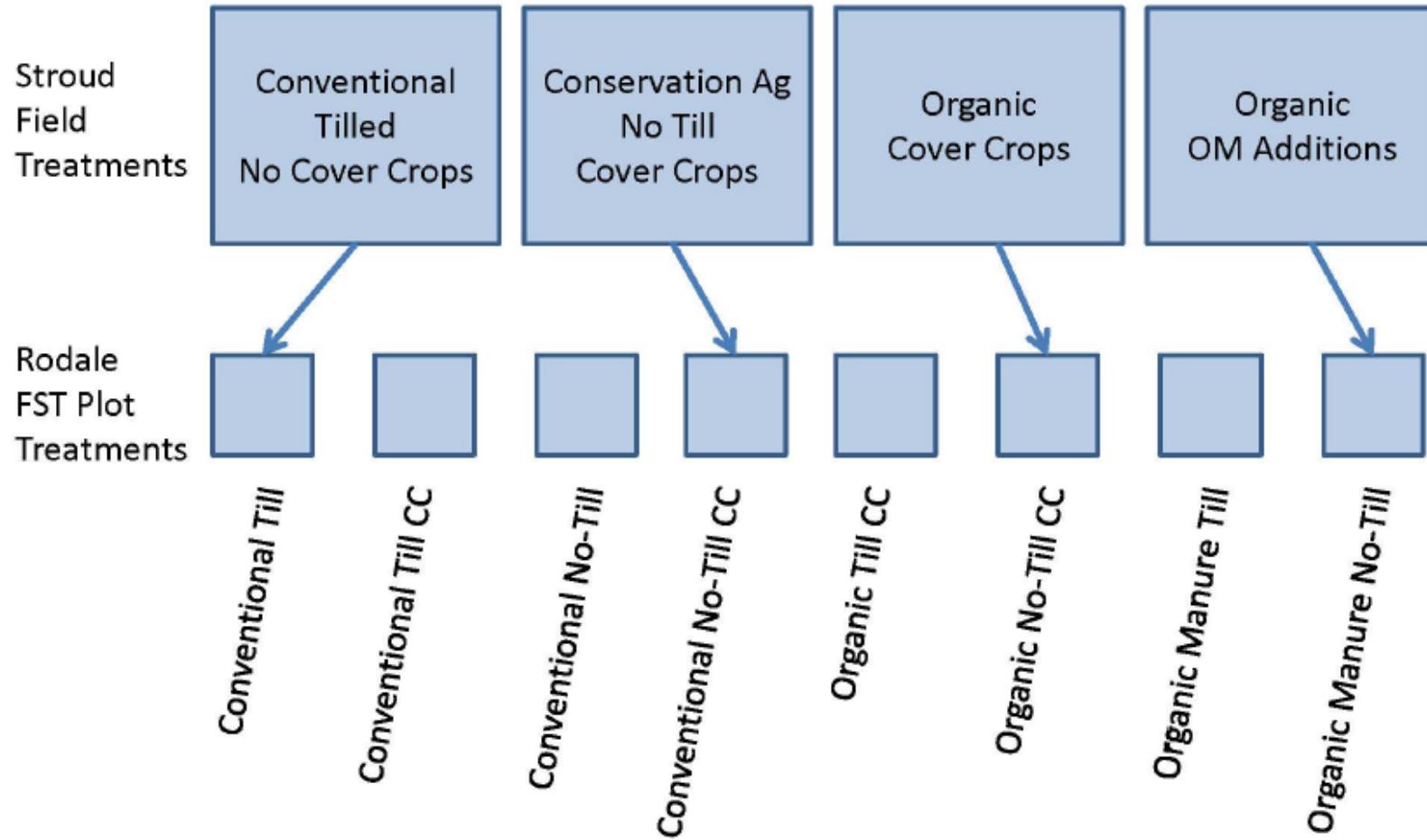
Measuring Stream Response to Restoration on Farms

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







New Project:
Stroud and PA Association for
Sustainable Agriculture
Helping Farmers Evaluate Their
Impact on Local Water Quality





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Thank You!

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