ADVANCING KNOWLEDGE & STEWARDSHIP OF FRESHWATER SYSTEMS

Scientific Research

Environmental Education

Watershed Restoration
Indoor Experiment Stream Channels
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.
Clean stream indicators

Ephemeroptera (mayflies)

Plecoptera (stoneflies)

Trichoptera (caddisflies)
Pollution indicators

Annelid worms

Diptera (midges)
EPA 2013: Water quality in 55% of streams & rivers is listed as poor.

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).
More Workers & Healthier Workers for Clean Water
Riparian Forest Buffer
Originally, a “Filter”
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 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

- Light
- Larger plants (mosses, red algae)
- Epilithic algae
- Microorganisms
- Course particulate organic matter
- Dissolved organic matter
- Flocculation
- Invertebrate shredders
- Vertebrate predators
- Invertebrate collectors
- Invertebrate scrapers
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
Thank You!

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