

Watershed Restoration

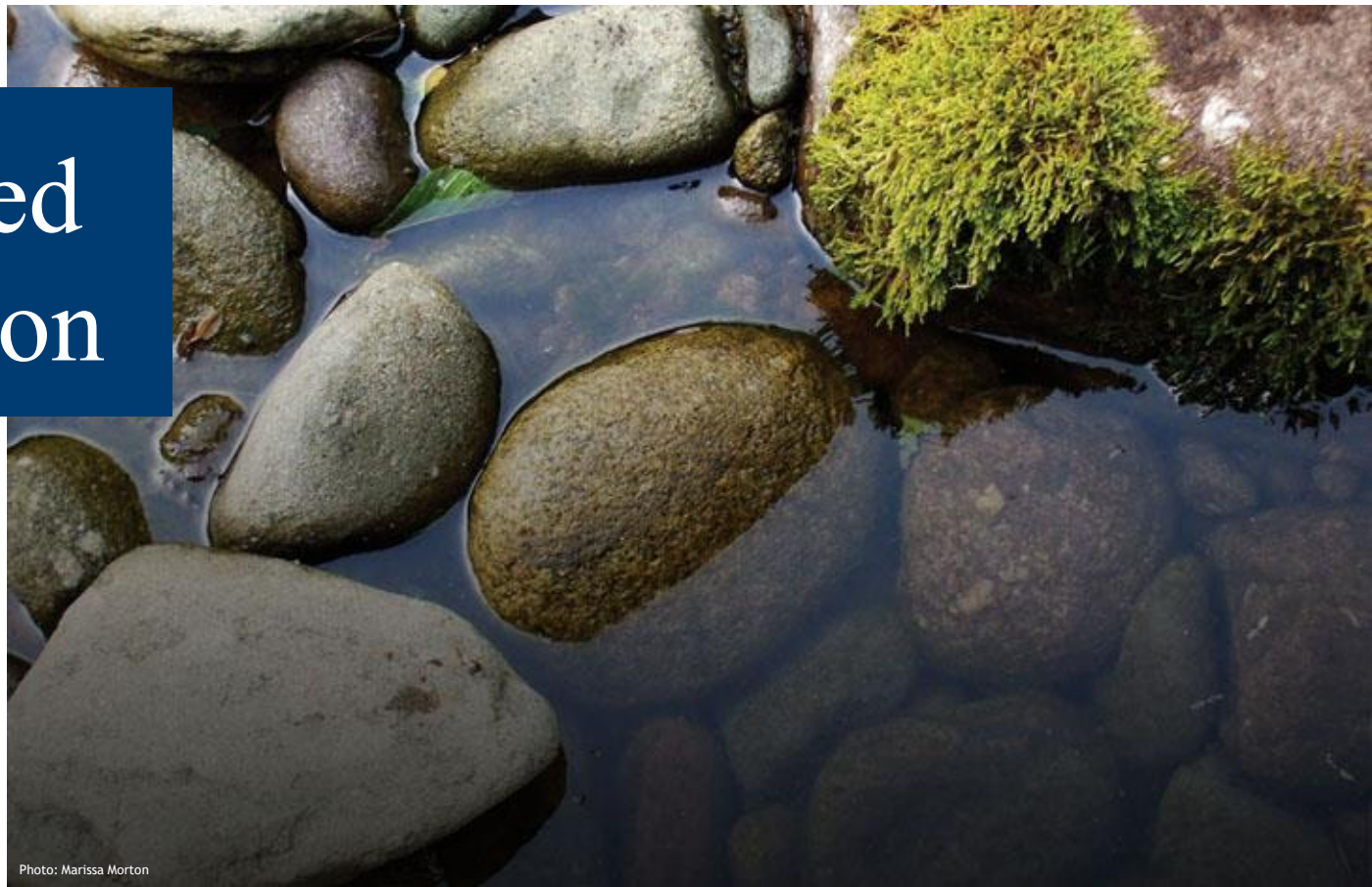


Photo: Marissa Morton

Whole Farm Conservation for Pollution Reduction and Stream Health

Delaware River Watershed Forum - Oct 16, 2019

Lamonte Garber, Watershed Restoration Coordinator

Our Mission

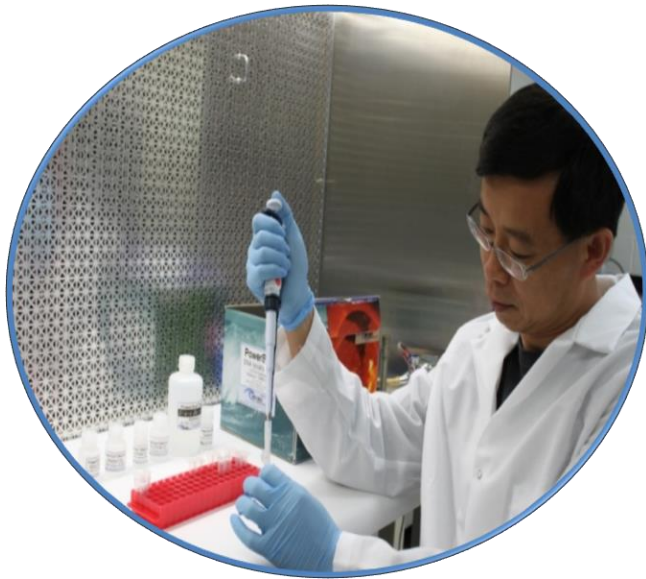
STROUD™ WATER
RESEARCH CENTER



Photo: Marissa Morton

To advance knowledge and stewardship of freshwater systems through global research, education, and watershed restoration

ADVANCING KNOWLEDGE & STEWARDSHIP OF FRESHWATER SYSTEMS THROUGH GLOBAL RESEARCH, EDUCATION, AND WATERSHED RESTORATION









Watershed Restoration at SWRC

- Small Watersheds = Great Opportunity
- Address Pollution & Stream Health
- Farms for Large Scale Change
- BMPs – Forests & Buffers – Soil Health
- Aggregate Projects and Monitor Results
- Restore Watersheds not Stream Channels

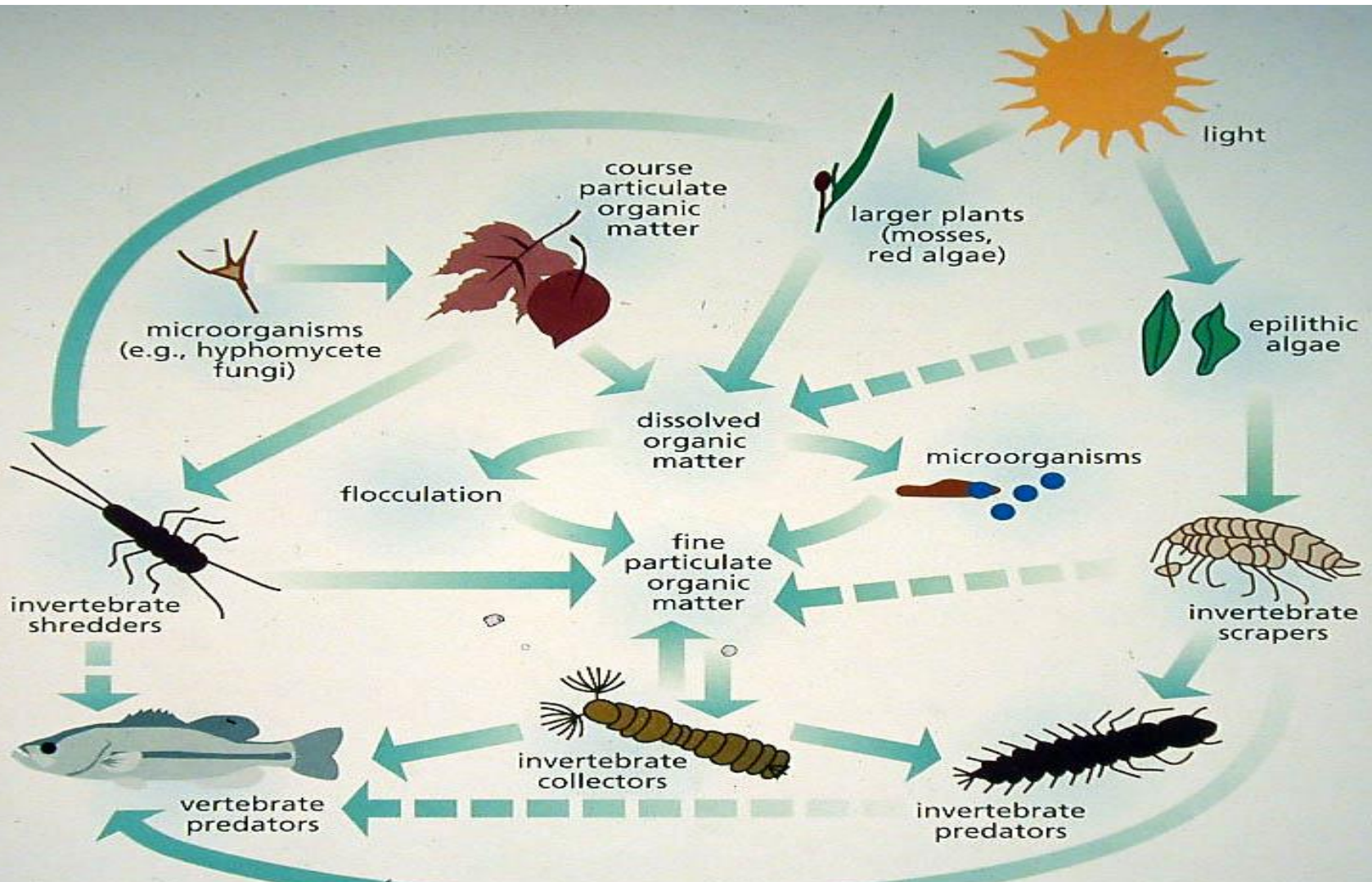


**RESTORATION at SWRC:
give streams more
space, more trees, and
time. Reduce pollutants.
Start at headwaters if
possible.**

**Create conditions in
which in-stream
habitat and stability
develop without
human interventions**



Streams Are Assembly Lines That Can Clean the Water For Us...If They're Healthy



Healthy Stream Indicators



Ephemeroptera (mayflies)



Plecoptera (stoneflies)



Trichoptera (caddisflies)

Restore and protect forests, buffers, wetlands, floodplains



Buffers...not Just “Filters” but Life Support System for the Stream



35 Ft Per Side Minimum



Space = Buffer





Small stream channels are significantly wider and slower and shallower...when they are bordered by a forest





Why Does Stream Width Mat

Forested streams have more ecosystem per unit length ... and thus more potential ecosystem services



Forested



Deforested (grass)

Tree and Shrub “Workhorses”

Our Top Ten Trees for Riparian Sites*

- Sycamore
- Black Willow
- River Birch
- Swamp White Oak
- Pin Oak
- Black Gum
- Red&Silver Maple
- Basswood
- Hackberry
- Tulip Poplar

*Context: Southeastern PA

Great Shrubs & Small Trees for Riparian Sites*

- Red, Silky, Gray Dogwood
- Arrowwood Viburnum
- Black, Red Chokeberry
- Serviceberry
- American Plum
- Hornbeam
- Elderberry
- Alders
- Shrub willows
- Many others!



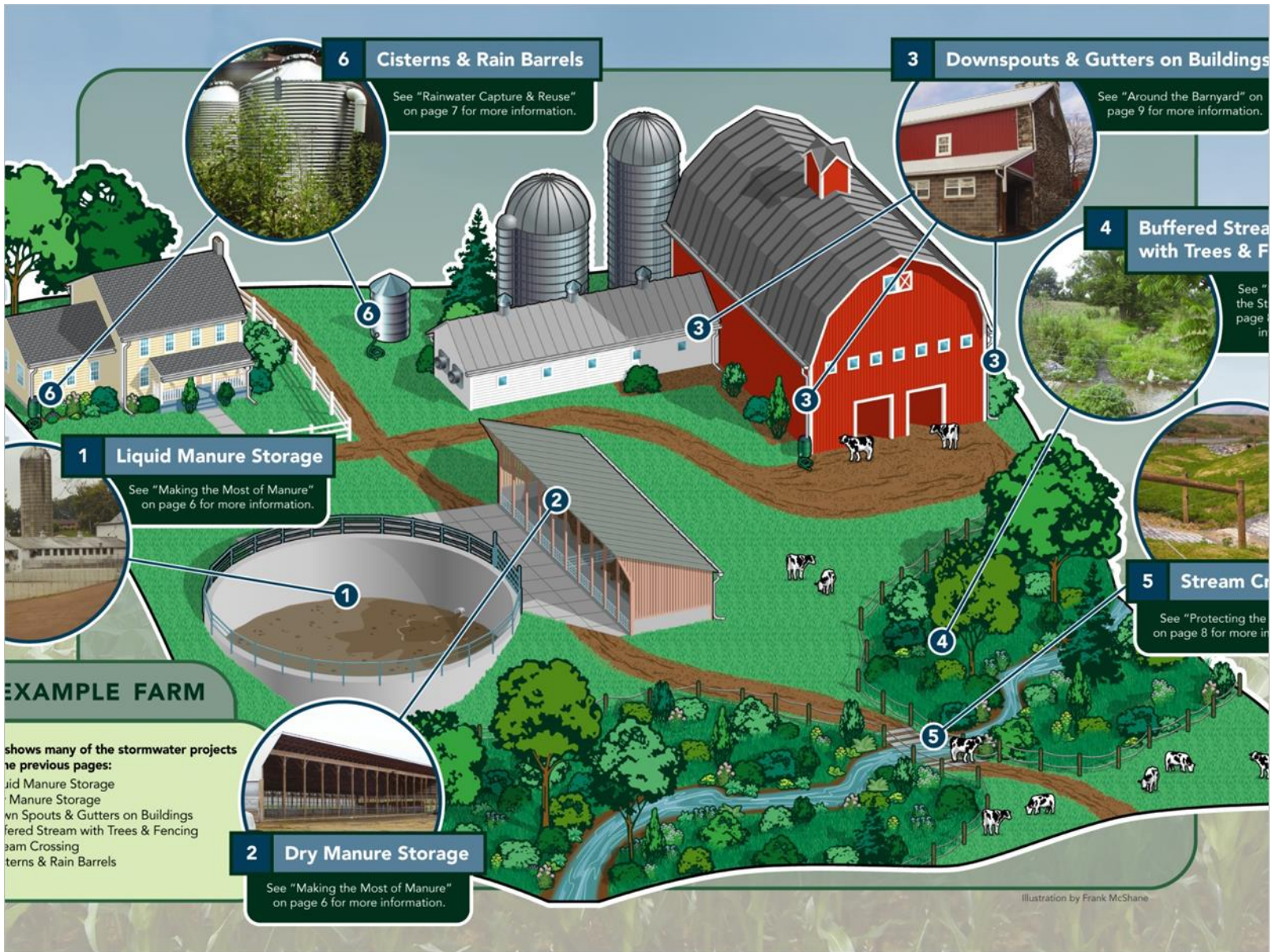
Farm Stewardship Program

Healthy Streams through
Whole Farm Conservation

The Power of Partnership



Thank You
to our
Partners
and
Funders!



EXAMPLE FARM

shows many of the stormwater projects
 from the previous pages:
 • Liquid Manure Storage
 • Dry Manure Storage
 • Downspouts & Gutters on Buildings
 • Buffered Stream with Trees & Fencing
 • Stream Crossing
 • Cisterns & Rain Barrels

2 Dry Manure Storage
 See "Making the Most of Manure"
 on page 6 for more information.

1 Liquid Manure Storage
 See "Making the Most of Manure"
 on page 6 for more information.

6 Cisterns & Rain Barrels
 See "Rainwater Capture & Reuse"
 on page 7 for more information.

3 Downspouts & Gutters on Buildings
 See "Around the Barnyard" on
 page 9 for more information.

4 Buffered Stream with Trees & Fencing
 See "the Stream" on
 page 8 for more information.

5 Stream Crossing
 See "Protecting the Stream"
 on page 8 for more information.

Illustration by Frank McShane

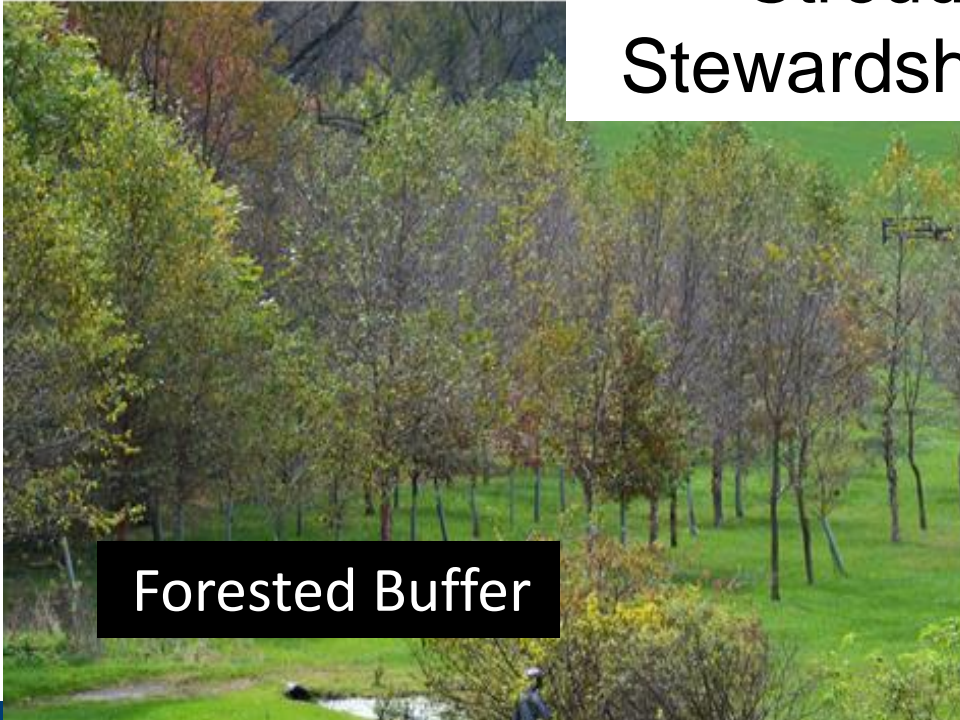
An Example Farm
 - Illustration by Frank McShane for Schuylkill Action Network

Conservation & Manure Plans

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



**Stroud's Farm
Stewardship Program**



Forested Buffer



Soil Health Practices

DRWI Middle Schuylkill Cluster

Core Partners

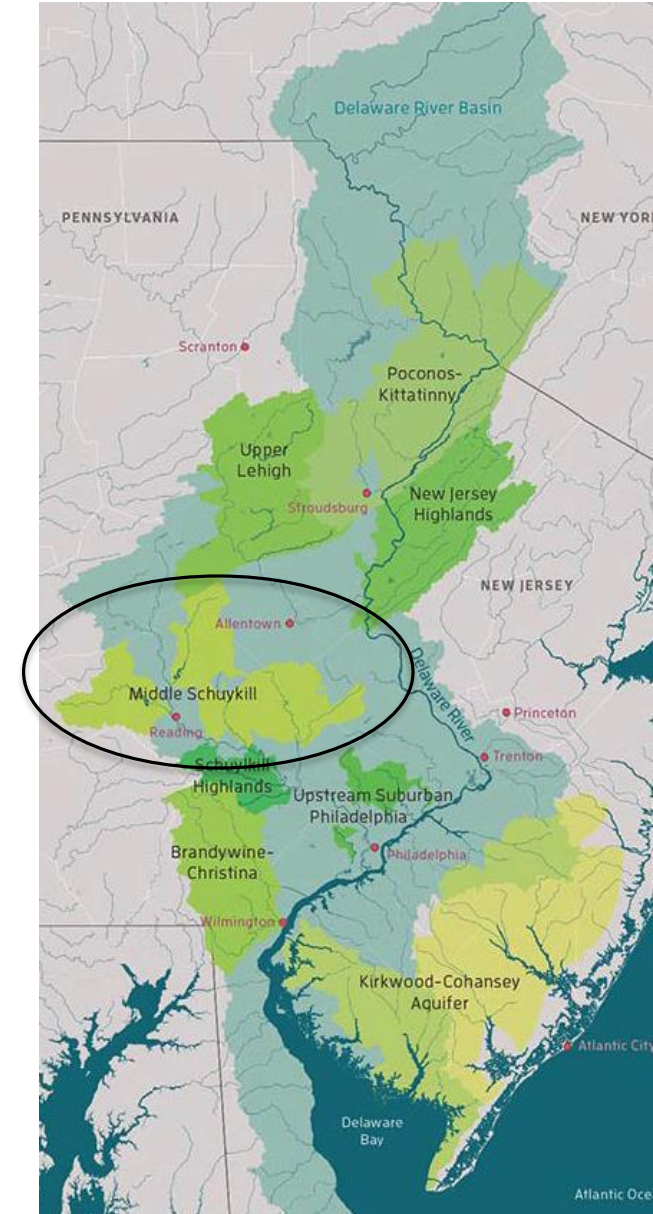
Berks Nature
Partnership for Delaware Estuary
Stroud Water Research Center

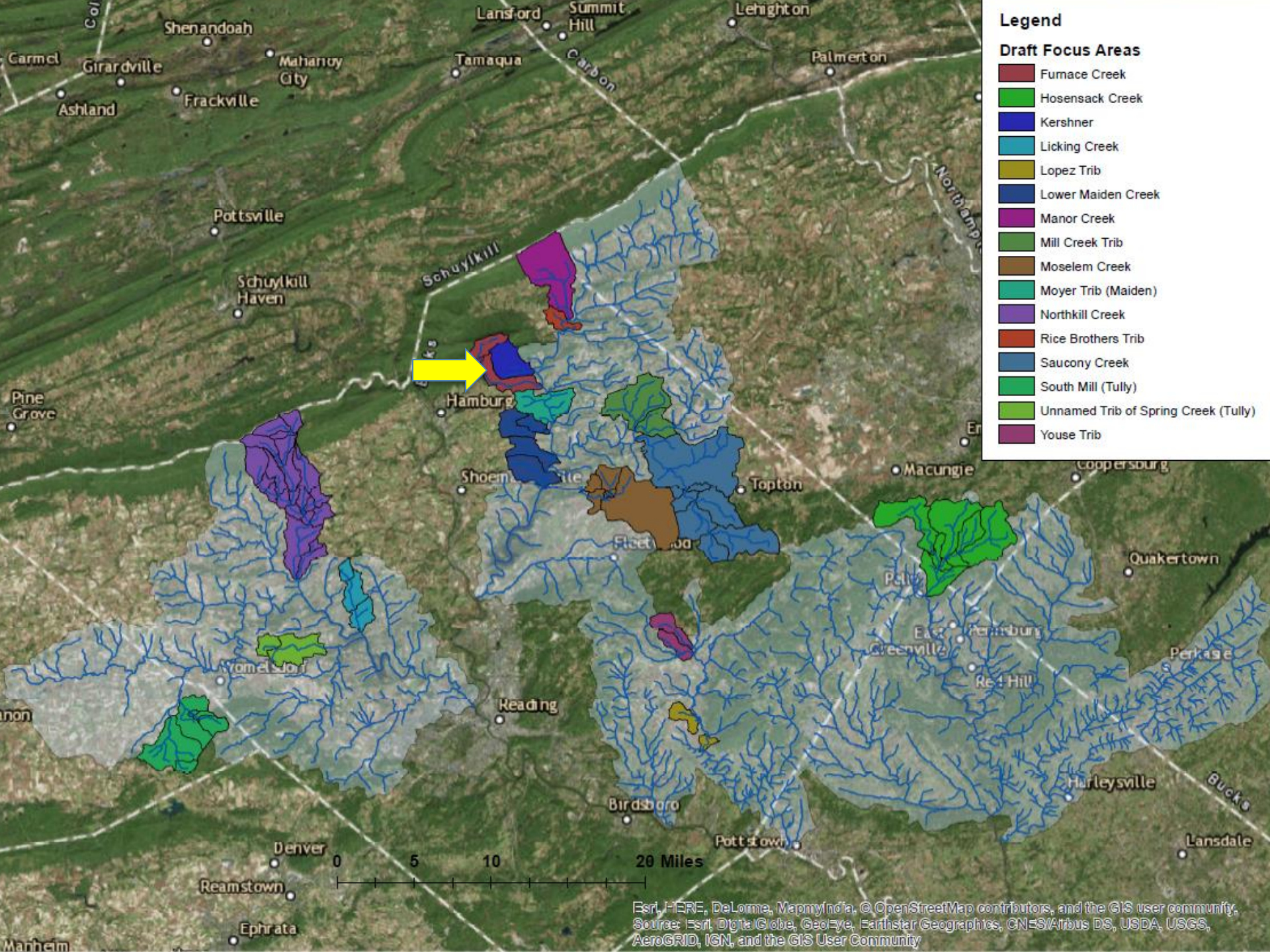
Key Agency Partners

USDA-NRCS and FSA
Berks County Conservation District
Berks County Department of Agriculture

A Restoration Cluster

Agriculture the focus
Complementary strategies on stormwater and
poultry industry.





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Thank You!

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