

Northcentral Stream Restoration Partnership

*Shared Goals and Interests in Water Quality and
Habitat Improvement*



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WATERSHED & PROGRAM SPECIALIST

Who's in the Partnership?



Northcentral
Pennsylvania
Conservancy

Reneé Carey
Executive Director



pennsylvania

DEPARTMENT OF ENVIRONMENTAL PROTECTION

Jason Fellon
Bureau of Waterways and Wetlands
NCRO Watershed Manager



David Keller
Habitat Management Division
Conservation Program Specialist



**Pennsylvania Conservation
Districts**

Watershed Specialists
County Conservation Districts

What's the Problem?

- *303d List (EPA designation)*
- *Agricultural Sediment/Siltation*
- *Aquatic habitat impaired*

What Does It Look Like?

- *Poor bank vegetation*
- *Poor riffle habitat*
- *Embedded substrate*

Who Identified the Problem?

- *DEP Biologists through their Unassessed Water*



Northcentral Stream Restoration Partnership

The big picture goal is that a stream can be de-listed as a result of these grants

Project Goals:

- *Improve/create aquatic habitats*
- *Support fish and aquatic life*
- *Stabilize stream banks*
- *Decrease erosion*
- *Stabilize the riparian buffer*
- *Increase filtration of run-off*



Techniques:


- *Stream bank fencing*
- *Riparian buffer plantings*
- *In-stream habitat structures*
- *Ag Crossings*



Northcentral Stream Restoration Partnership

FFBC 902 - TAP NPC/FFBC Date Submitted _____

Technical Assistance Program
Pennsylvania Fish and Boat Commission
Request for Assistance (NPC GG grant)



PROTECT • CONSERVE • ENHANCE

1. Waterway Name: _____
Tributary to: _____

2. County of Project: _____

3. Municipality of Project: _____
Nearest Town: _____

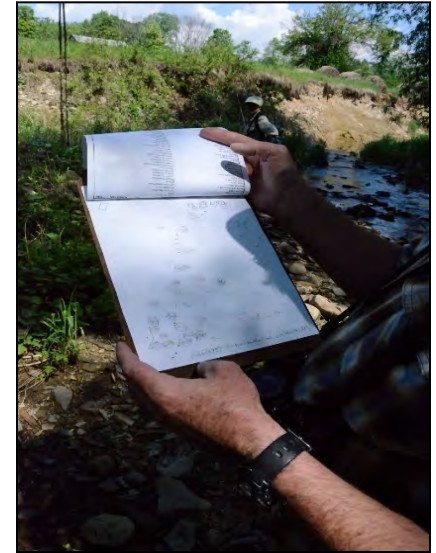
4. Contact Person Name: _____

5. Organization/Agency Representing: _____
State Agency Federal Agency Conservation Organization Private Individual Other- _____
(please circle appropriate category)

Site Visits and Selection Process



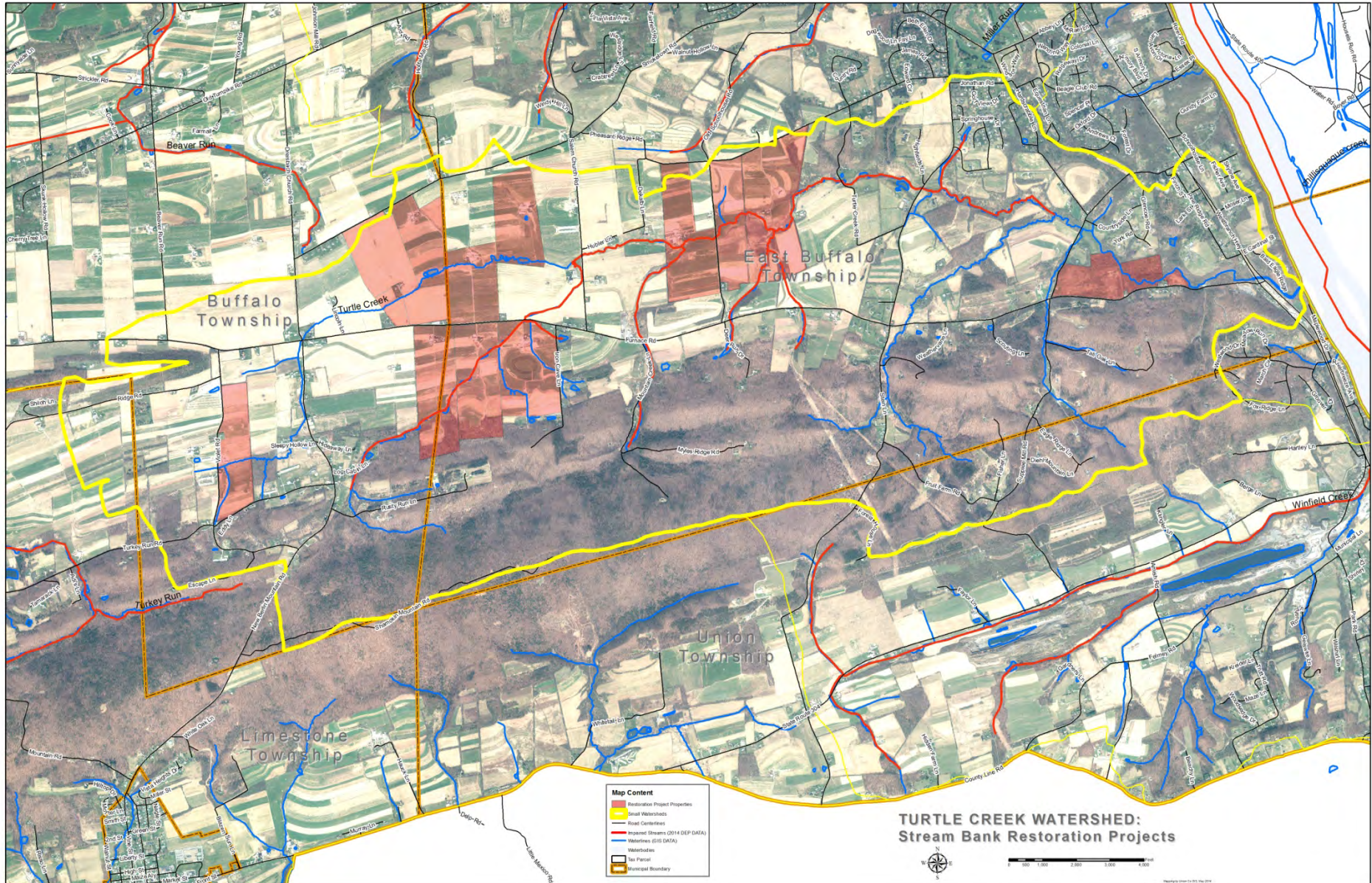
Everyone has a role, some people have several...



Landowner relations, design visits, permits, ordering materials, stockpile materials, public education, volunteer recruitment, construction coordination...



TURTLE CREEK WATERSHED - PARTICIPATING LANDOWNERS



Pre-construction Stream Surveys

- Sediment data collected by PA Fish and Boat Commission
- Field Water Chemistry, Habitat Assessments, Macroinvertebrate collection, ID, and Metrics by DEP
- Electrofishing Surveys by Susquehanna University



Multi-log vane deflectors (MLV)

are typically used where this is a high stream bank. To build a multi-log vane, three logs are stacked together to form a pyramid. The logs are pinned together and secured to the stream bed. The butt end of the logs are placed in a long trench, angled into the stream bed. The log tips are angled upstream to help direct flows toward the center of the stream. Remember, water falls off objects at a 90 degree angle, by angling the end upstream, the water is pushed to the center of the channel.

Modified Mud sills

are best suited to lower gradient streams with steep, eroded banks. The structure helps stabilize the stream bank by removing pressure from the banks. At the same time, a mud sill provides excellent overhead cover. The structure creates a stable under cut bank fish will use.

Log cross vanes (LCV)

are essentially two opposing vanes connected in the middle. The logs are trenched into the bank, one on each side of the stream and meet in the middle. These devices are for grade control and center flow to the middle of the channel. This structure will also create a plunge pool, for added habitat.



002-043-028.00000

BROWN FARM DESIGN



002-043-026.00000







Before/During



After



Before



After

Before



After

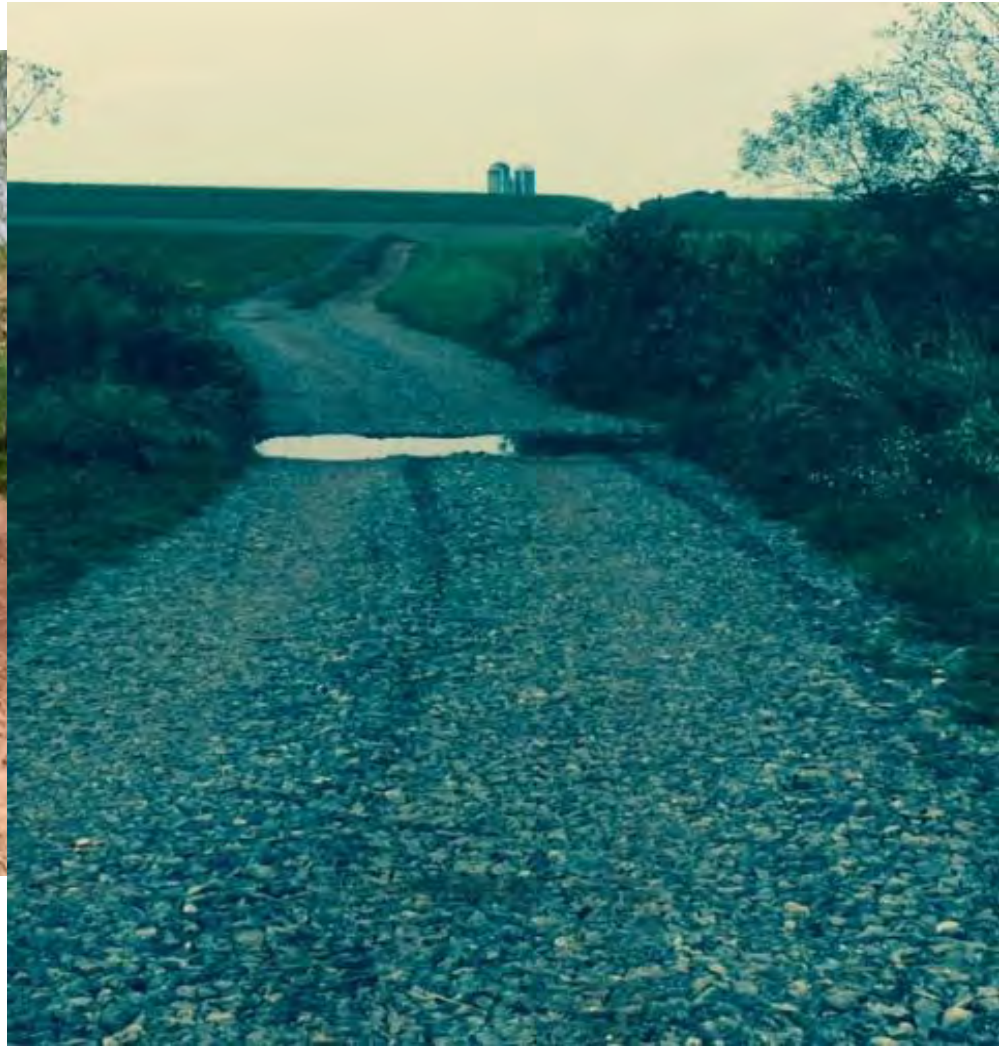


2 Months Post Construction



4 Months Post Construction

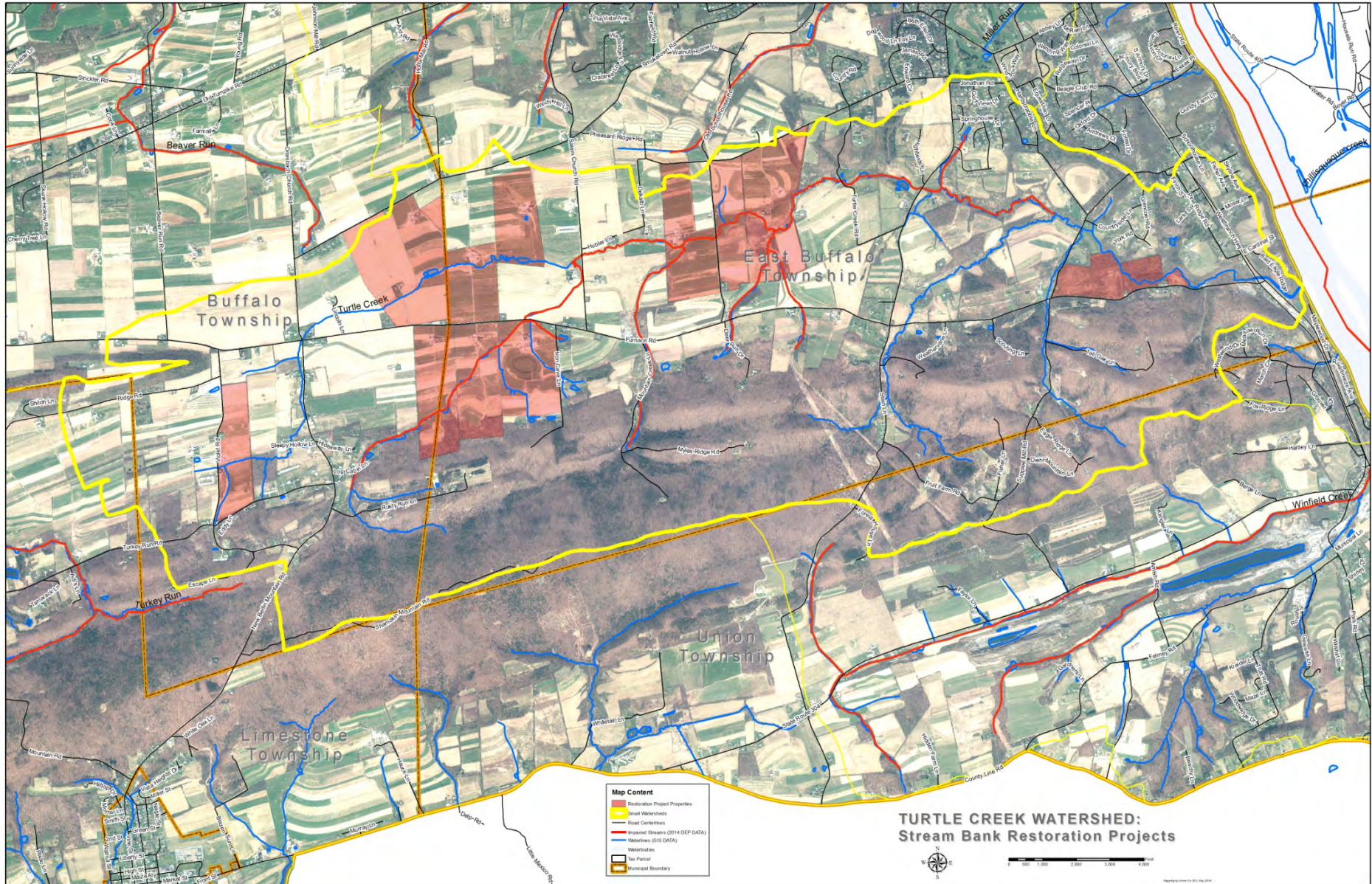
Before

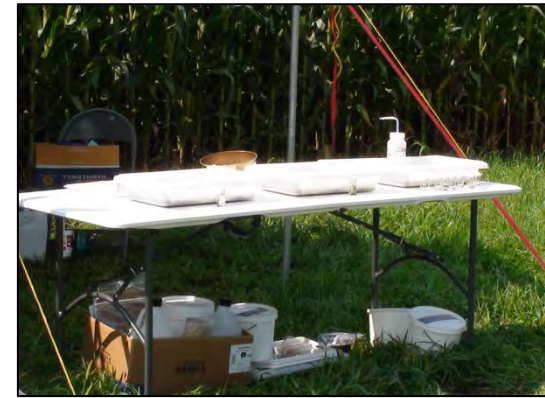


After



TURTLE CREEK WATERSHED - PARTICIPATING LANDOWNERS



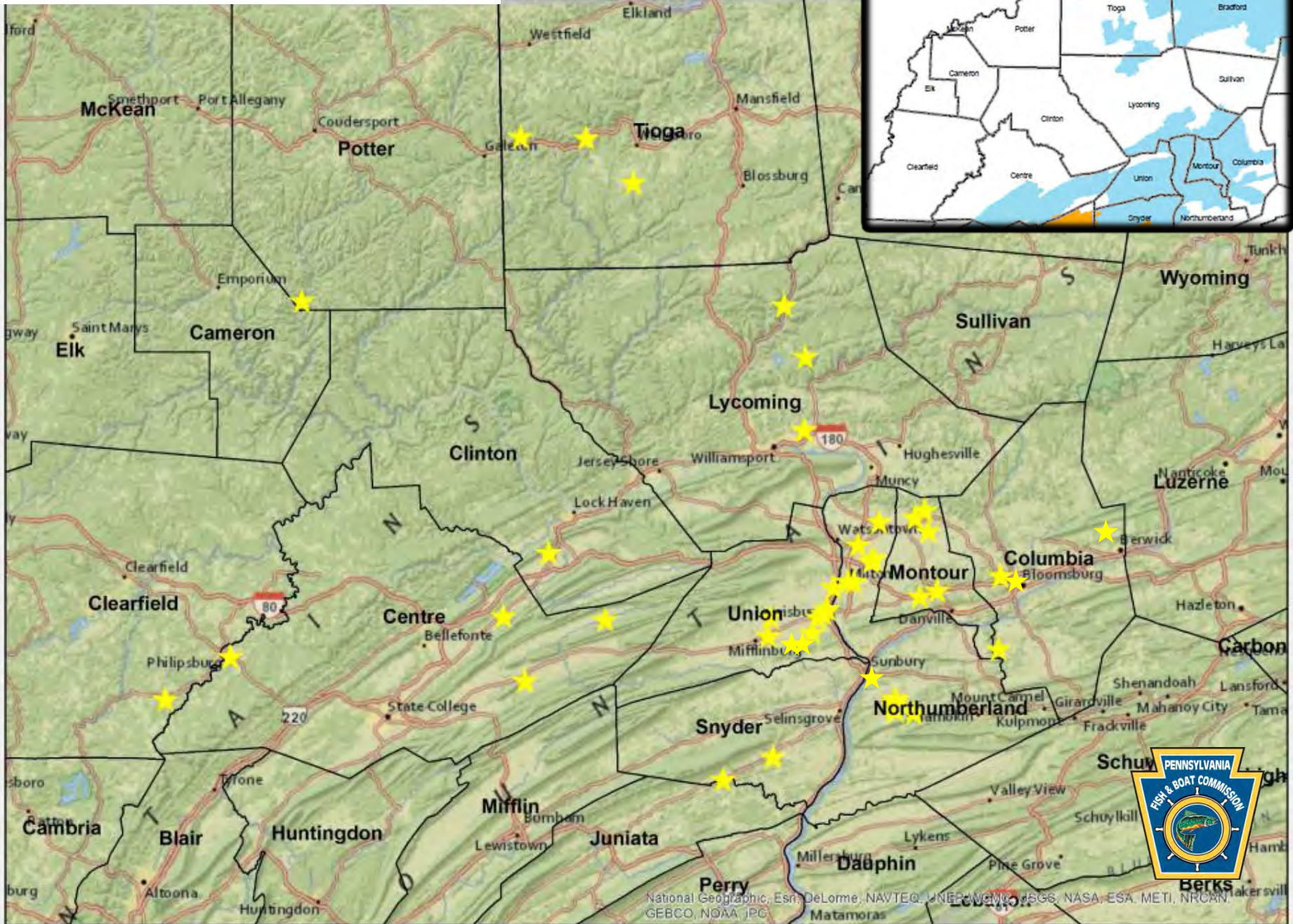


Turtle Creek Stream Restoration Project Field Days

August 5-8, 2014



Completed projects are stars



Northcentral Stream Restoration Partnership

What's been **done** to date?

- 70+ Projects – Impacting over 41,400 feet (~7.75 miles) of stream
 - Installed over 645 habitat structures
 - Ag BMPs
 - 11 Animal Walkways
 - 41 Animal Crossings
 - 35,400 feet of Fencing

What's been **spent** to date?

- Spent = \$1,036,000
- Match = \$383,000





Questions?