Ann Donovan, Watershed Specialist
April 8, 2014


CCCD Manure
Management
workshop


John Glick's
Cover Crop
Demonstration

The Rufus Zook Sink Hole Clean Up in the Pine Creek Watershed

Clean Up Day sponsored by ClearWater Conservancy, CCCD, and many other partners on the John Esh property

Bellefonte Area School students visit John Esh's farm in the Little Fishing Creek watershed.

Amish boys help with the Kline Road streambank restoration project.

Amish boys help with the Seven Willows restoration project on Penns Creek.


Mudsill on Aquilla Stoltzfus'
property on Little Fishing Creek


Ag Crossing on Little Fishing Creek on the Aquilla Stoltzfus' property

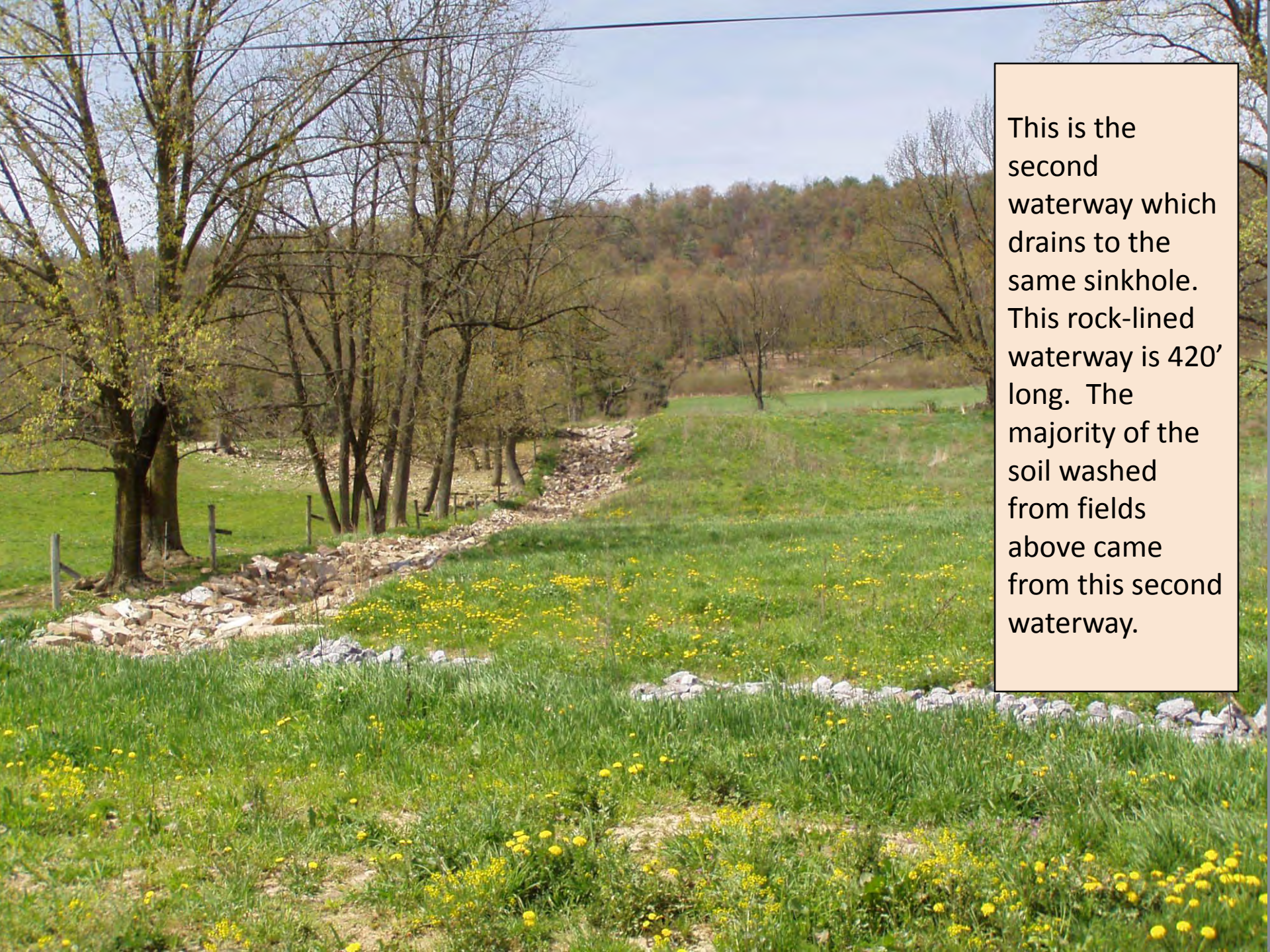

Riparian planting


Stoltzfus Wetlands

This picture shows runoff from an eroded waterway dumping into a sinkhole. Pile of soil on the left came from the fields above the waterway over the course of several years. The landowner has had the soil removed from the sinkhole several times in order to keep the sinkhole open to receive water.

Sam S. Zook Farm

Same picture as above after waterway has been stabilized. Soil pile was spread out and area seeded in grass. This waterway originates at a farm pond and is 531 feet in length. Fields above pond / waterway are now in permanent sod.



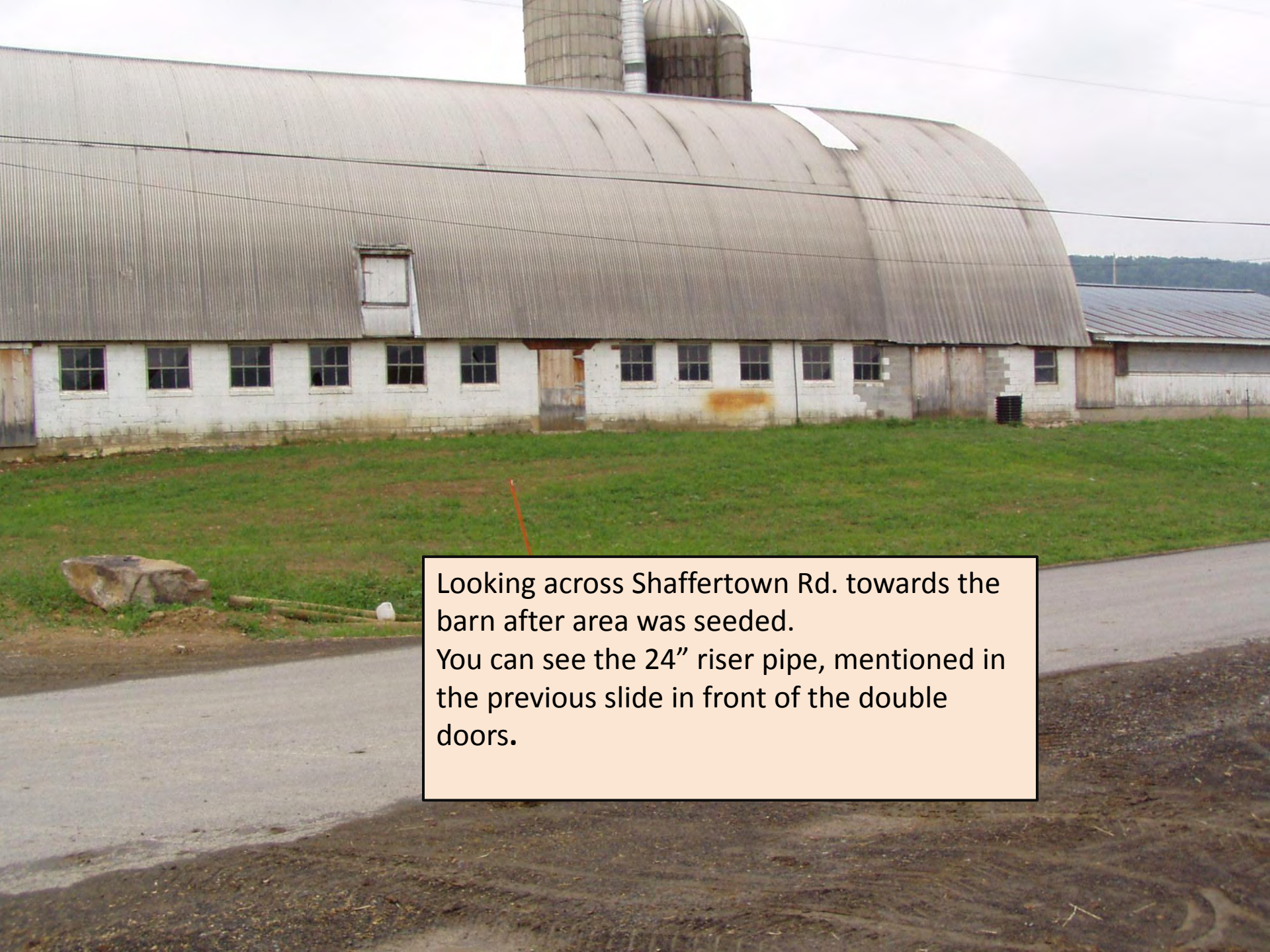
This is the second waterway which drains to the same sinkhole. This rock-lined waterway is 420’ long. The majority of the soil washed from fields above came from this second waterway.

This picture shows the field above the pond / waterways
before it was planted to permanent sod.

Same field from above picture but looking from the opposite direction 2 years after it was sown to permanent grass.

New manure storage (65’ x 10’) with access lane, Dry Hill stationary pump and pump pad with side walls.

The 24’ manure transfer line goes under Shaffertown Rd. The 24’ vertical pipe seen in foreground is connected to the manure transfer line. The 4” milkhouse wastewater pipeline outlets into this vertical pipe. The vertical pipe could also serve as a reception pit for scraped manure and runoff if a concrete barnyard was ever installed outside the barn.



Looking across Shaffertown Rd. towards the barn after area was seeded.
You can see the 24” riser pipe, mentioned in the previous slide in front of the double doors.

Jacob and Amos Stoltzfus

Flooded Heavy Use Area (HUA) during a runoff event contributed by snow melt & rainfall. Runoff from this area directly impacts Spring Bank Run, Elk Creek and the Elk Creek Fish Hatchery.

These pictures show construction nearing completion just before area was seeded and the fence completed. The floor of the HUA was raised 6 inches. A 2 foot curb with stairs was placed around the HUA. A 2 foot high earthen berm was placed around the outside of the HUA. The black riser culvert pipe and the white PVC riser pipe are part of the leachate collection system.

New 60’ x 10’ Concrete Manure Storage and Heavy Use Area Protection.
The storage is located just off the access road that splits the farm fields.
This enables easy access to all crop fields that receive liquid manure.

780 feet of 6 inch manure transfer pipeline (hanging over wall) allows manure to be pumped from the existing manure storage, located down by the barn and Heavy Use Area, up to the new storage which is centrally located in the crop fields. We located the storage here because it was easier for the draft horses when they were spreading.

This is a picture from inside the Heavy Use Area Protection prior to fence being completed.
The stairs allow the cows to climb out over the curb and the earthen berm.
Below the slotted floor is the 38’ x 11’x 8’ reception pit.

Cattle Walkway built over an area of concentrated flow.

Amos E. Stoltzfus

In the spring of 2011 an assortment of berries, fruit & nut Trees were planted within the riparian buffer of the Amos E. Stoltzfus farm. The area planted covered roughly 1 acre. Some of the plantings included: elderberries, chokeberries, blueberries, raspberries, quince, currants, gooseberries, buffaloberries, apples, peaches, pears, plums, cherries and hazelnuts.


Before installation of culverts & streambank fencing


This picture was taken from the same location as the picture above after streambank fencing and two culvert crossings were installed.


Cattle walkways on the John Esh Farm in the Little Fishing Creek watershed --- Before CCCD's assistance.


Same walkways after improvements

Benuel Stoltzfus farm in Penns Valley

New 70’ x 6’ concrete manure storage


Remote Manure Loading Area
This remote fill pipe located in the middle of the crop fields comes from a manure storage near the barn. This makes less travel for the draft horses.

Willow Bank Farm & Seed
John M. Glick

The Glick farm improvements were part of the Little Fishing Restoration 319 grant.

Animal concentration area (ACA) before BMPs were installed.
An existing manure storage is located below the ACA.
Behind the manure storage is a small tributary to Little Fishing Creek

This is an Amish Dairy operation located off HWY 64 in Walker Township Centre County in the Little Fishing Creek Watershed. This section of Little Fishing Creek is designated High Quality Waters and has been determined impaired by agricultural activities. The operation consists of 50 lactating cows and 30 additional young stock.

Runoff from the ACA travels down the cattle walkway and enters a small tributary to Little Fishing Creek.

All runoff is contained on the concrete lot and is directed into the manure storage. A push-off ramp enables solids to be pushed into the storage.

The intent of this project was to address runoff concerns from an existing Animal Concentration Area (ACA). The first step in this process was to minimize the size of the concentrated area. The cows were excluded from approximately 1 acre of the area closest to a small tributary to Little Fishing Creek. The landowner had already installed streambank fence, although with very little buffer. This area will only be used for flash grazing when vegetation is adequate. The remaining area was stabilized with concrete and curbing. All the runoff was directed into an existing manure storage.

A 4 foot high wall was constructed along the east end of the lot to enable stacking of manure.

Leachate from the silo pictured here was collected and piped to the storage .

TOTAL CONSTRUCTION COST: $44,836.86

Breakdown of cost-share:

319 funds: $35,869.49

Landowner: $8,967.37

- David Stoltzfus—Buck neighbor
- Little Fishing Creek opportunities
- Spring Bank Run concerns

- Amish contractors:
  Eli Fisher
  Merv Stoltzfus
  Menno Zook

- Amish businesses:
  Goot Esa
  John Glick Seeds
  Brush Valley Greenhouse
  Fisher's Boot Shop

- Italian television!

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