Case Study:
Fragile Land Retirement and Wetland Creation

Trees a year after machine planting.

In 1979, Tom and Sylvia Mayberry took over a 30 acre property in Oxford County, next door to where Tom was born and raised. For several years, they experimented with growing crops such as alfalfa and sunflowers in one of the fields, but they moved to a corn, soybeans and wheat rotation in 2007. The property is located on Halls Creek Drain, a cold water tributary of the South Thames River.

Concerns:

Runoff from the adjacent highway was moving down a slope and eroding the clay soil, resulting in lower crop yields in that part of the field. On the other side of the field, next to Halls Creek Drain, a natural spring caused wet soil. Field tile installed in the mid-90s made the wet area more farmable, but runoff from the tiles entered directly into the drain, potentially affecting water quality.

Solution:

In 1992, 3.1 acres of land next to the road were retired and planted with 2000 seedlings. In 2013, a wetland was constructed in the wet area. The tile drains now empty into the pond rather than entering directly into the creek. Trees, aquatic vegetation and wildflowers were planted around the pond, and additional trees were planted along Halls Creek Drain to widen the buffer strip.

"The thing I'm happiest with is that I no longer have water leaving the property directly into a watercourse…cutting off the drains was a good first step."

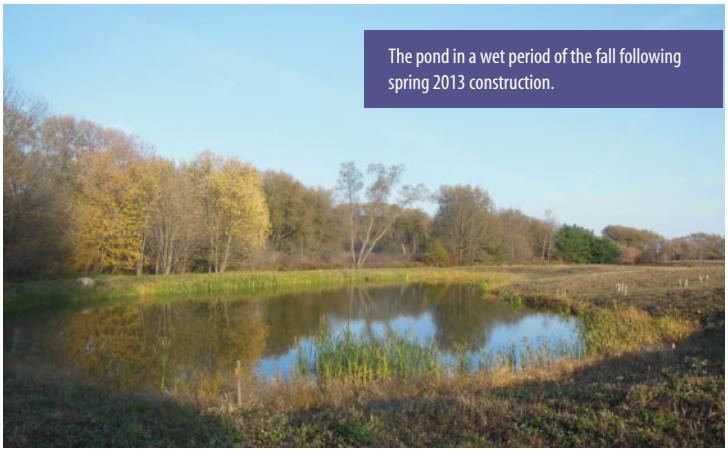
Benefits:

The trees that Tom has planted on the slope, around the pond and along the drain help to:

- Stabilize erodable areas and reduce soil loss,
- Slow and filter runoff.

The constructed wetland has helped to achieve Tom's goal of contributing to water quality improvements in Halls Creek Drain:

- The pond will store stormwater and overland runoff, allowing sediment to settle out,
- Aquatic plants will filter out nutrients and pollution,
- Wildflowers planted around the wetland provide nectar and habitat for pollinators and other wildlife.



The pond in a wet period of the fall following spring 2013 construction.

Project Timeline:

1992 – Farmland next to the highway retired and planted with trees

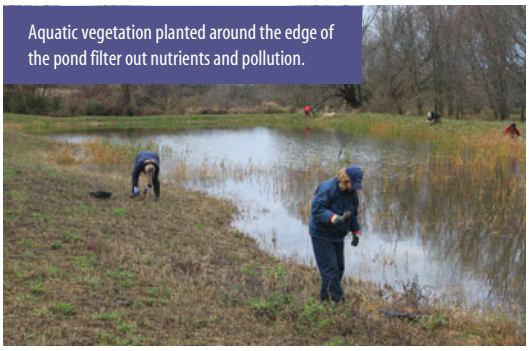
June 2012 – Harvested winter wheat and planted a cover crop of red clover and radish to protect the exposed soil in preparation for wetland creation and plantings in 2013

Spring 2013 – Excavated pond and machine planted trees in area around wetland; intial herbicide treatment applied to the trees

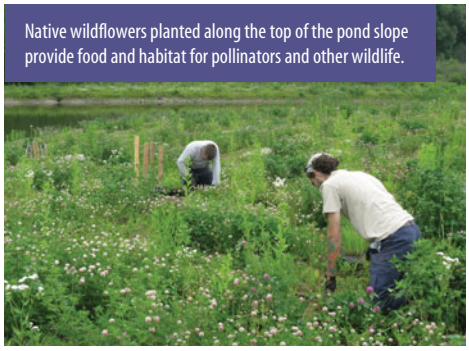
November 2013 – Planted aquatic plants around wetland edge

April 2014 – Sprayed second application of herbicide on trees

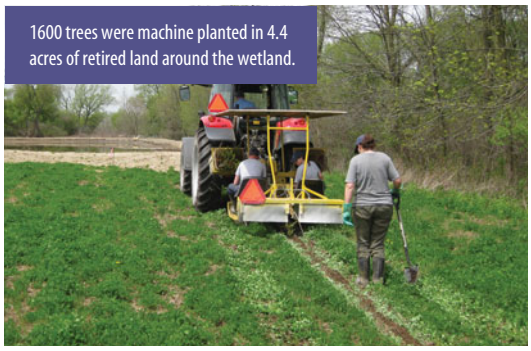
June 2014 - Planted native wildflowers around the high wetland slopes



Aquatic vegetation planted around the edge of the pond filter out nutrients and pollution.



Native wildflowers planted along the top of the pond slope provide food and habitat for pollinators and other wildlife.



1600 trees were machine planted in 4.4 acres of retired land around the wetland.

Aquatic plant species include:

Blue Vervain
Common Boneset
Green-headed coneflower
Joe-Pye Weed
Monkey-flower
Swamp Milkweed
Wild Blue Flag

Native wildflowers include:

Big Bluestem
Brown-eyed Susan
Foxglove Beardtongue
New England Aster
Sky Blue Aster
Swamp Milkweed
Wild Bergamot

Tree species include:

Black Cherry
Hackberry
Bitternut Hickory
Sugar Maple
Burr Oak
Norway Spruce
Tamarack

By the numbers:

17 acres of fragile land retired

3600 trees planted

1944 aquatic plants and **1008** native wildflowers planted around wetland

0.4 acre wetland created

$7,503.20 for pond excavation

$3,092.76 for trees, wildflowers and aquatic plants (in 2013)

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