



**Michigan's
Nonpoint Source
Program**

Federal Clean Water Act
Section 319 Grant
Tracking code: #: 2010-0051
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Organization Name: Allegan Conservation District
Telephone: 269-673-8965 X4
Fax: 885-665-5584
Emails: christine.groen@mi.nacdnet.net

RABBIT RIVER HABITAT, WETLAND AND HYDROLOGIC RESTORATION October 1, 2010-June 30, 2014

The Rabbit River's water quality has long been threatened by sediment, phosphorus, nitrogen and high flow. Over 40% of land in the Allegan County portion of the Rabbit Watershed is agricultural, and urban sprawl is threatening other areas, such as the land that is located along the 131 highway corridor. Because of the high percentage of agricultural land in the Rabbit River Watershed, one of the goals of this Project was to install agricultural Best Management Practices (BMPs), such as buffer strips, exclusion fencing, and conservation tillage. The Project also focused on stream bank restorations and road/stream crossings in priority areas and public education on water quality issues.

This grant resulted in the installation of two appropriately sized and aligned culverts, a multi-stage channel designed to reduce streambank erosion and provide connection to the floodplain, and exclusion fencing to prevent streambank erosion caused by animal access. Educational workshops on no-till practices, cover crops, healthy soil, rain barrels and native plants were held. Quarterly newsletters were sent out to approx. 500 recipients and 5 educational brochures were printed and distributed.

The benefits to the Rabbit River Watershed were reduced phosphorus, nitrogen and sediment and increased awareness of healthy water practices amongst farmers and land owners in the watershed.

Grant Amount: \$268,200.00

Match Funds: \$200,400.00

Total Amount: \$468,600.00

Best Management Practices:

- Two Road Stream crossings
- One Two Stage Channel
- One CNMP
- Cover crops
- Pipeline and livestock watering facility

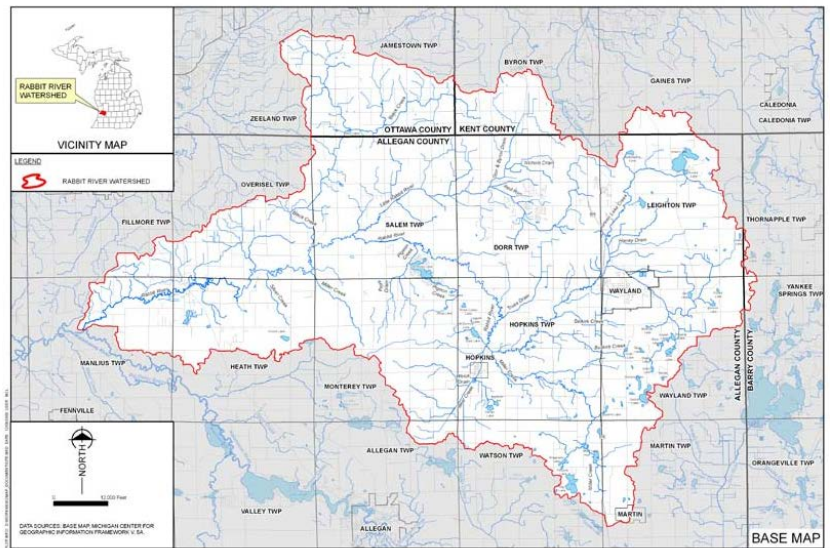


Annual Load Reductions:

- Sediment: 212.7 tons per year
- Phosphorus: 169.4 pounds per year
- Nitrogen: 518.3 pounds per year

I&E Activities:

- Numerous landowner contacts
- 5 Brochures on BMPs
- Rabbit River Newsletters
- Rain Barrel Workshop
- Farm Bill Workshop
- Steering Committee Meetings
- Healthy Soil/Cover Crop Workshops



Partners involved:

- Allegan Drain Commission
- Allegan Road Commission
- Natural Resources Conservation Services
- Salem Township
- Dorr Township
- Calhoun Conservation District
- Kalamazoo River Watershed Council
- Allegan County Land Information Services
- Michigan Department of Environmental Quality





26th Street Culvert Before: Poorly aligned and undersized culvert caused persistent erosion. The culvert was also subject to blockage causing damage upstream.

26th Street Culvert After: Box culvert was installed to lower erosive energy, align with stream flow and allow unrestricted water passage. Critical areas of the stream banks were reinforced to prevent erosion.



146th Street Culvert Before: Unstable roadside bank with culvert barely extended beyond road's edge. Flashy stream with high flows after rain falls.

146th Street Culvert After: Box culvert installed to lower erosive energy during high flow events. Bank reinforcement has stabilized the area.



Murphy Drain Before: Unstable ditch banks creating large sediment runoff into the drain.



Murphy Drain After: Multi-Stage Channel installed to create bank stabilization & reduce sediment flow.



Farm on Pierce Drain: After Photos of well trough and heavy use protection installed to reduce animal access erosion.



After Photos of exclusion fencing and managed grazing installed to reduce erosion caused by animal access.