

July 2006

Toussaint River Watershed TMDL

Where is the Toussaint River watershed?

The Toussaint, Packer and Rusha Creek watersheds are located in northwest Ohio in portions of Wood, Sandusky, and Ottawa counties that were formerly covered by the Black Swamp. The mainstem of the river is 37 miles long and drains 143 square miles or 91,613 acres. Land use in the watershed is mostly agriculture, with 77 percent cropland, 16 percent forest and pasture, and 3 percent urban or other use. Additionally there is 2% open water, and another 2% of land covered by marshes and reconstructed wetlands in the Ottawa National Wildlife Refuge and near the mouths of the Toussaint River and Rusha Creek. There is one city Bowling Green, and 6 villages including Luckey and Genoa in the Toussaint watershed.

The upstream segments of both Toussaint and Packer Creek are highly channelized for agricultural drainage. The Rusha Creek subwatershed and the lower 10 miles of the river are characterized by managed wetlands and diked farm fields. Shallow bedrock in the Luckey area makes groundwater highly susceptible to contamination from surface runoff.

How did Ohio EPA collect water quality data?

Comprehensive biological, chemical, and physical data were collected by Ohio EPA scientists in 2003 throughout all streams in the Toussaint watershed. Samples at 24 sites were evaluated, including monitoring the abundance and diversity of fish and aquatic insect communities, measuring the physical habitat of the stream and adjacent land use, and analysis of water samples to determine the chemical quality of the water and sediments.

The conditions of the watershed were compared with state water quality goals to determine which stream segments are impaired, and how much needs to be done to restore good stream habitat and water quality. This evaluation is done as part of Ohio EPA's Total Maximum Daily Load (TMDL) program.

How does your stream "measure up?"

All streams are designated Warm Water Habitat (the water will support plant and animal species accustomed to warm water), including the lake-affected

lower 10 miles of the river. Of the 24 sites evaluated, only 11 meet the standard for Warm Water Habitat. The remaining 13 sites are not meeting that standard. The majority of low habitat evaluation scores occur in areas that drain less than 10 square miles and the lower ten miles of the river.

Is the Toussaint watershed polluted?

Yes and no. Some areas of the Toussaint River and its tributaries have good water quality and populations of fish and other aquatic life. The Toussaint River upstream of the lake-affected area meets the water quality standards,

Some areas of the watershed do not currently meet water quality standards. Toussaint Creek is impaired by municipal sewage from the villages of Luckey and Genoa. Communities with combined sanitary and storm sewer systems may have untreated human and industrial waste overflowing to the river during heavy rainstorms. The lower 10 miles of the Toussaint River are impaired by excessive nutrients and sediment deposits from upstream.

What else degrades the Toussaint watershed?

Many small streams like Martin Ditch, Gust Ditch and Rusha Creek, and the headwater segments of Toussaint and Packer Creeks are impaired by physical changes to the land. Stream channelization, drainage tiles, and loss of floodplains and streamside vegetation has impaired the upstream portions of Toussaint Creek in Wood County, the first 6.5 miles of Packer Creek, Most of Rusha Creek, and all of Martin Ditch and Gust Ditch. When streams are widened and deepened for agricultural drainage, they contribute excess soil to the stream which destroys habitat for fish and other aquatic life. Soil carried through ditches degrades Lake Erie.

When trees along the stream banks are removed, the lack of shade allows the water temperature to increase, which decreases the amount of dissolved oxygen for aquatic organisms. This is made worse by manure runoff and untreated sewage flowing from failing home septic systems and small communities without any wastewater collection or treatment.

Lack of water in the small headwater streams, especially in the summer, makes it hard for pollutants to be absorbed and treated by the natural

stream biology. Agricultural drainage improvements such as tiling and routine dredging contribute to uneven and unsustainable water flow in these small streams, making it hard to support good aquatic life communities.

In the lower end of the river the loss of natural wetlands, and the shift to more managed (diked) marshes has degraded aquatic habitat.

The Army Corps of Engineers (ACOE) routinely dredges the mouth of the river for navigation, and removed some of the spent military ordnance from the former Erie Army Depot in 2002. The ACOE conducts ongoing monitoring of ordnance movement.

What is being done to improve the water resource?

The community is taking steps toward reducing pollution in the Toussaint River watershed. The Ohio EPA is working with the ACOE, the Fish and Wildlife Service and Ducks Unlimited to enhance wildlife habitat, while preserving floodplain function and fish movement. Also, many conservation measures such as no-till farming, crop residue management (leaving soybean stubble and corn husks on the field after harvest), planting winter

cover crops, and creating buffer strips (small areas or strips of land in permanent vegetation) have been adopted to reduce soil erosion.

The TMDL program identifies measures to reduce pollution further. Some actions are already occurring. Two previous state/federal grants provided cost share for agricultural conservation practices, such as filter strips and flood plain set-aside areas. Programs funded through the U.S. Department of Agriculture have helped provide animal waste storage facilities and additional erosion control buffer practices.

The Village of Genoa began a ten year project to separate combined sewers that was completed in 2002. Luckey is required to address combined sewer overflow events by developing a long-term plan to control combined storm water and sewage overflows to the streams during rainfall. Genoa will also be required to make wastewater treatment plant improvements to achieve greater phosphorus removal.

Where will restoration projects help the river?

Due to the large percentage of land in crop production in Ohio's agricultural watersheds, including the Toussaint River

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and Packer Creek, sediment and nutrients are the most pervasive pollutants that need to be controlled. Each of the four subwatersheds contain stream segments that have been identified as having low water quality. The following streams could benefit from restoration projects that prevent soil erosion and increase or protect the amount of good stream habitat:

- Toussaint Creek between City of Bowling Green and Webster Rd.
- Packer Creek between Stony Ridge Rd and Billman Rd.
- Rusha Creek

- Martin ditch
- Gust Ditch

It is expected that traditional best management practices and land management measures will be targeted at the stream segments most vulnerable to erosion during high-flow storm events

The Local Watershed Group

The Maumee Remedial Action Plan (RAP) was created in 1987, and partners of this local watershed group

were involved in identifying problems and developing recommended actions for a watershed clean up plan. This organization will also be vital to the implementation of the Toussaint River TMDL recommendations. They have been addressing issues in the Toussaint and Packer watersheds since 1992. More information is available at:

<http://www.maumeerap.org/stage2.html>

