



**Federal Clean Water Act
Section 319 Grant**
2004-0102



Calhoun Conservation District

Telephone: (269) 781-4867 x. 5

Fax: (269) 781-3199



Email: Calhoun@calhouncd.org

Rice Creek and Battle Creek River Implementation Grant

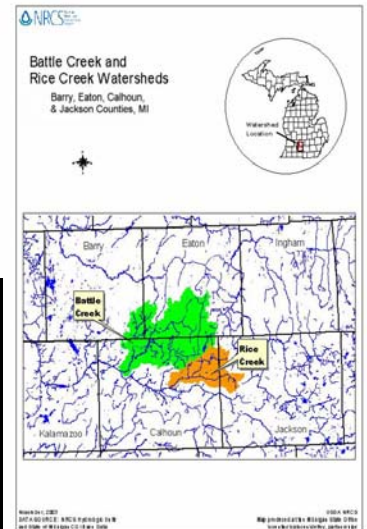
September 1, 2004 to June 30, 2009

The Rice Creek and Battle Creek River Watersheds are both tributaries of the Kalamazoo River and located in northeastern and northern Calhoun County. Each watershed has an EPA approved watershed management plan. For implementation of these watershed management plans, a unique partnership was developed between various conservation agencies and organizations. A majority of the projects that were implemented to reduce nonpoint source pollution and improve water quality in these watersheds was a collaborative effort using partnership funding. Over 1 million dollars went to on-the-ground projects to improve water quality conditions of these two watersheds. Partners were the key to the success of this project!

Grant Amount: \$ 594,338.88

Match Funds: \$ 425,586.34

Total Amount: \$1,019,925.20



Best Management Practices:

- 35 Water Quality Resource Mgt. Plans written
- \$824,206 of BMPs installed through partner funding
- 2 miles of stream restoration on Rice Creek
- 1 mile of stream restoration on the Battle Creek River
- Land use planning in Calhoun and Eaton counties

Annual Load Reductions:

- 3,669 tons of sediment reduced
- 4,210 pounds of phosphorus reduced
- 8,367 pounds nitrogen reduced



Partners involved:

- MDNR
- NRCS
- USFWS
- Trout Unlimited
- Frontier City Flycasters
- City of Charlotte
- City of Battle Creek
- City of Marshall
- City of Olivet
- Kalamazoo River Watershed Council
- Eaton County Conservation District
- Michigan Stream Team
- USGS
- MDOT
- MDA
- Great Lakes Basin Commission
- USACE
- Potawatomi RC & D
- Southwest Michigan Land Conservancy
- Michigan Stream Team

I&E Activities:

- 4,000 storm drains marked in the watersheds
- Landowner Conservation Options Workshop
- Erosion Control & Low Impact Development Workshop
- Annual River Clean Ups



Research:

- *Regional Hydraulic Geometry Curves for Southern Michigan Rivers
- *Stream Classifications at Reference Reach USGS Gage Stations
- *Geomorphic Assessment at Representative Reaches of the Battle Creek River
- *Sediment Budget Study



Excavation of the historic channel of the BCR Restoration Project in Charlotte



Battle Creek River Restoration Project Before:

The Battle Creek River is a designated drain managed by the Eaton County Drain Commission. A portion of the river flows through Bennett Park in Charlotte. This stretch of the river exhibited excess sediment loads, eroding stream banks, loss of stream connectivity, and disturbed hydrologic flow due to historical dredging and maintenance.



Battle Creek River Restoration Project After:

In order to restore hydrologic flow and stream connectivity, reduce stream bank erosion, and reduce sediment loads, a one-mile reach of the river in Bennett Park was restored using natural channel design. A portion of the historical channel was restored and water was diverted from the drain to the newly restored channel in June of 2009. The drain was then abandoned and filled to floodplain elevation.



Rice Creek Restoration Project Before:

A portion of Rice Creek that flows through Ketchum Park in the City of Marshall was exhibiting excess sediment loads, water temperature variations crucial to trout survival, loss of stream connectivity, and unstable hydrologic flow. In an effort to collaborate with the City of Marshall and their removal of one dam and the abandonment of another at the project site, the creek was restored using natural channel design.



Rice Creek Restoration Project After:

In order to restore hydrologic flow, stream connectivity, reduce sediment loads, and reduce temperature variations, two miles of stream channel was restored using natural channel design. A rock weir constructed upstream of the project allows a split flow between the mill race and the historic channel that allows for fish passage, with the larger percentage of the flow now being diverted into the historic channel.