



Michigan's
Nonpoint Source
Program

**Section 319 Funding
Nonpoint Source**

Tracking Code: 2008-0009



Kent County Drain Commissioner

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Black Creek/Lincoln Lake Improvement Project

July 9, 2010 through September 30, 2012

The Black Creek is an Intercounty drain that flows through portions of Montcalm and Kent Counties. A cutoff channel was constructed in 1924 to intercept flows from the main branch of Black Creek and direct it to Lincoln Lake. The cutoff is 1.5 miles shorter and significantly steeper than the downstream reaches of the Black it replaced and has created extremely unstable channel morphology throughout the entire system. Extreme headcutting and downcutting processes have resulted in significant and wide-spread erosion. As a result, sediment is being deposited in Lincoln Lake, impairing water quality and navigation. Estimated sediment load into Lincoln Lake is over 990 tons per year. In addition to concerns with unstable channel morphology and sediment load, the 2006 MDEQ TMDL report indicates *E.coli* levels in Lincoln Lake exceed water quality standards and impair recreational uses.

The project used bacterial source tracking and standard monitoring to identify source and cause of *E.coli* and develop an implementation plan to reduce or eliminate contamination. In addition, restoration design plans were prepared to address unstable channel morphology and reduce sediment load to Lincoln Lake. Designs included the use of natural channel design concepts to achieve stability throughout the watercourse based upon historic and existing conditions.

Grant Amount: \$85,050.00

Match Funds: \$32,000.00

Total Amount: \$117,050.00

Best Management Practices:



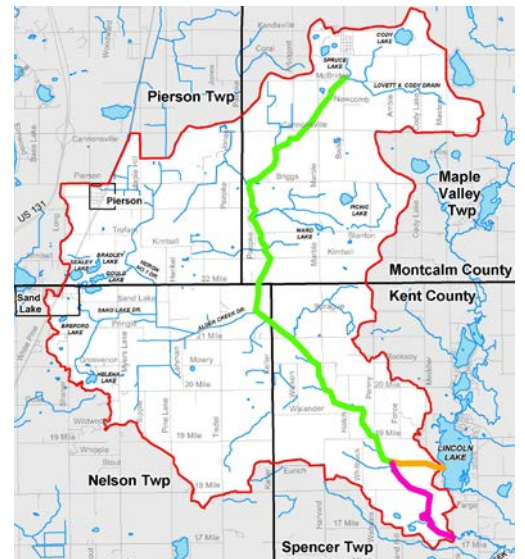
- Detailed engineering plans prepared for Black Creek/Lincoln Lake Intercounty Drain to restore and stabilize channel morphology

- Anticipated annual pollutant load reductions through implementation of proposed BMPs:

Phosphorus - 1,325 lbs/year

Sediment - 1,559 tons/year

Nitrogen - 2,650 lbs/year



Partners involved:

- Kent County Health Department
- Montcalm County Drain Commissioner
- Local citizens
- Spencer Township
- Nelson Township
- Michigan State University
- Lincoln Lake Association

I&E Activities:



- 3,209 brochures/pamphlets for topics covering BMPs for septic, livestock, agricultural runoff, wildlife and water-quality related issues were printed and distributed to residents in the watershed



Sediment load into Lincoln Lake



Bank erosion in Black Creek



Sediment load into Lincoln Lake Drain



Eroding and downcutting channel in Black Creek



E. coli sampling



Potential source and cause for *E. coli* contamination