

Michigan's 319 Success Stories – 2005

Title: Improved Macroinvertebrates in Furlong Creek

Opening paragraph: Unrestricted cattle access to Furlong Creek caused an impaired aquatic macroinvertebrate community. When cattle were excluded from the creek, the macroinvertebrate community (aquatic insects, snails, clams, crayfish, etc.) improved to the point that the stream reach was removed from the 303(d) list.

Problem: Furlong Creek, a tributary to Millecoquins Lake, is located in Mackinac County in Michigan's Upper Peninsula. Surveys conducted in 1989, prior to unrestricted cattle grazing on the Krause Road property, found diverse fish and macroinvertebrate communities in the creek. In 1999 cattle were grazing the property and had unrestricted access to the creek, and the fish and macroinvertebrate populations were found to be degraded by excessive instream habitat disturbance and sedimentation caused by cattle trampling the riparian vegetation and walking in the stream. Fish and macroinvertebrate diversity was low, and sensitive fish like rainbow trout and sensitive insect families like caddisflies, stoneflies, and mayflies were absent or very rare. This biotic impairment resulted in 4 miles of the stream appearing on the 303(d) list.

Project Highlights: Cattle were excluded from the stream during the early 2000s via a cooperative effort by the landowner, DEQ staff, and Michigan Department of Agriculture Right-to-Farm staff.

Results: By 2004, the stream had recovered to the point that fish and macroinvertebrate populations were essentially identical to those found before cattle had unrestricted access to the stream (see table, below), and the stream reach will be removed from the 303(d) list.

Partners and Funding: In 1990 and 1991 DEQ provided \$214,000 in Section 319 funds to the Luce-West Mackinaw Conservation District for stream bank fencing and other grazing land protections in the Furlong Creek and Doe Creek watersheds. The property changed hands sometime in the 1990s and apparently the fencing was removed. A subsequent biological survey in 1999 found that cattle again had access to the stream, after which the Krause Road property owner and Michigan Department of Agriculture Right-to-Farm staff collaborated on a farm management plan that would prevent unrestricted cattle access. Section 319 funded the pre- and post-BMP biological surveys.

Photos: Furlong Creek site in 2004, after cattle exclusion. (Note herbaceous vegetation at the stream waterline, a sign of stable stream banks.)



Table:

Biological Measurement	1989 (limited cattle access)	1999 (unrestricted cattle access)	2004 (limited cattle access)
Number of fish species	12	7	13
Rainbow trout present?	Yes	No	Yes
Kinds of macroinvertebrates	24	18	26
Kinds of mayflies	2	1	3
Kinds of caddisflies	6	0	5
Mussels present?	Yes	No	Yes
Macroinvertebrate community rating	Attainment	Nonattainment	Attainment

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