**BACKGROUND**

Water quality, particularly with respect to phosphorus and nitrogen, has been poor in the northwest Ohio region. Intensive agriculture has led to high loadings of both nutrients, and this has led to widespread eutrophication.

In 2005, a total mean daily loading study was conducted on Riley Creek, a tributary to the Maumee River via the Blanchard River. Loadings of N and P above regulatory limits indicated significant mitigation was needed. This study presents the initial findings of a pilot monitoring program on Riley Creek to assess whether any progress has been made in the past seven years.

**METHODS**

Sampling was performed by grab sampling at periodic intervals, approximately weekly from May through August, and then monthly during September and October. Samples were collected from the center of the channel. Upon arrival at the lab, samples were filtered through a GF/F (0.45 μm) filter. Nutrients Nitrate was measured using a YSI ProPlus meter with nitrate ISE. The electrode was calibrated prior to sampling. Phosphate was measured using EPA method 365.1 after precipitation and preservation by the MAGIC (magnesium-induced coprecipitation) method of Anagnostou and Sherrell (2008). 31P-NMR samples were prepared according to the method of Reitzel et al. (2009) and were collected on a Varian Mercury 200 MHz NMR spectrometer. CDOM Chromophoric dissolved organic matter (CDOM) spectra were obtained from 200 – 600 nm in 1 cm path length quartz cells. Spectral slopes were calculated according to Helms et al. (2008).

**REFERENCES**


**CONCLUSIONS**

Since 2005, little progress has been made in reducing the N and P loading in Riley Creek. At most time points, both nutrients were at or above the regulatory limits. The presumptive presence of coliform bacteria suggest that there may be additional inputs that need to be investigated. 31P-NMR shows a temporal difference in reduced phosphorus species, which also warrants further study. Management of N and P loadings may require an analysis of best practices being implemented in the watershed, with an eye toward reducing agricultural inputs during spring.