

# GLOBAL PARTNERSHIP ON NUTRIENT MANAGEMENT

## BMP Case Study

### Overview

*Name:* Great Lakes Cover Crops Initiative

*Location/Terrain:* Lake Michigan, Lake Erie and Lake Huron basins

*Crop(s):* Cover Crops

*Nutrient(s):* Agricultural Pollution

*Rationale:* Demonstrate the effectiveness of cover crops within conservation tillage systems

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### Issue(s) of Concern/Challenges:

This project is addressing the concerns surrounding agricultural pollution and runoff as a result from tillage.

### Practice Objectives:

The objective of this project is to demonstrate the effectiveness of cover crops within conservation tillage systems. The project aims to decrease agricultural pollution and inform producers about the economic benefit of these systems.

### Practice Description:

Funded by the U.S. Environmental Protection Agency's Great Lakes Restoration Initiative (GLRI), the Great Lakes Cover Crop Initiative will help producers in the Lake Michigan, Lake Erie and Lake Huron basins plant 15,000 acres of cover crops and conservation tillage systems.

The Conservation Innovation Technology Center (CTIC) will provide producers technical, educational and social support so they may fully understand the benefits of this system, how to incorporate practices into their operation, how to evaluate the changes and adapt management to optimize yield and resource protection.

This project included 18 workshops and the following activities:

- Crop consultants who helped producers write a conservation agriculture/nutrient management plan and work with them to successfully implement these practices;
- Social support networks through an email list serve; the
- Participation in the 2013 National No-Till Conference and CTIC's Cover Crop Summit, hosted in the Western Lake Erie basin; and the
- CTIC website that features producers' experiences with cover crops and conservation tillage along with the results of the Cover Crop Survey.

### Outcomes:

The end outcome is to reduce agricultural pollution in the Lake Michigan, Lake Erie and Lake Huron basins. The number of meetings where project team members presented totaled 111, reaching 5,524 people. The actual acres planted were 37,000, resulting in a reduction of 73,000 pounds nitrogen, 24,000 pounds phosphorus and sediment reduction of 2,888,000 pounds.

### Significance:

This project adopts a multidimensional approach to agricultural conservation and leverages a diverse range of technical and social outlets.

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## Data/Graphs:

### Map Showing Total GLCCI Cover Crop Acres Planted by County

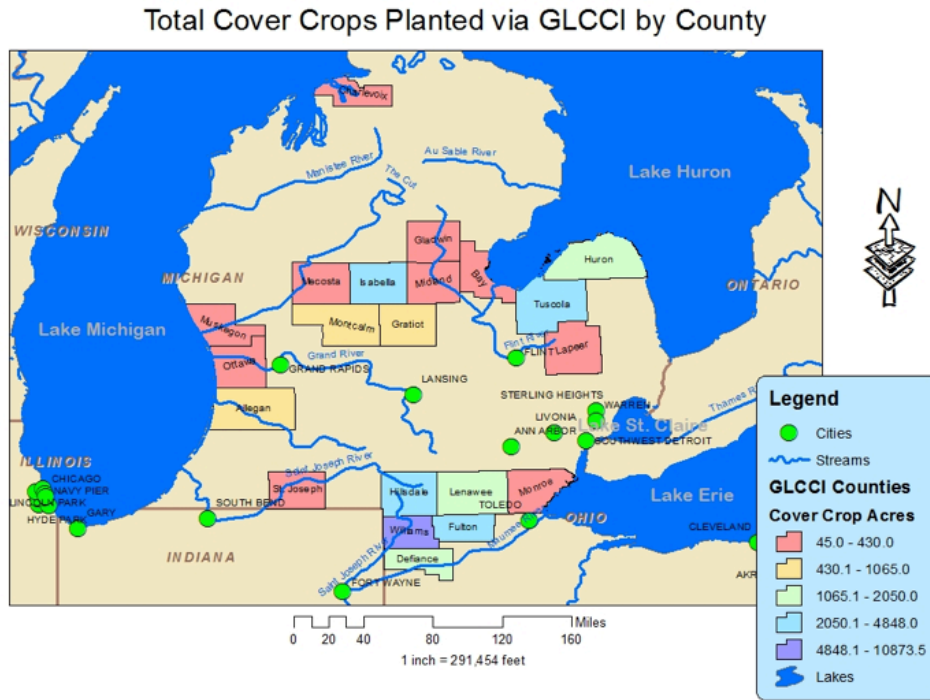
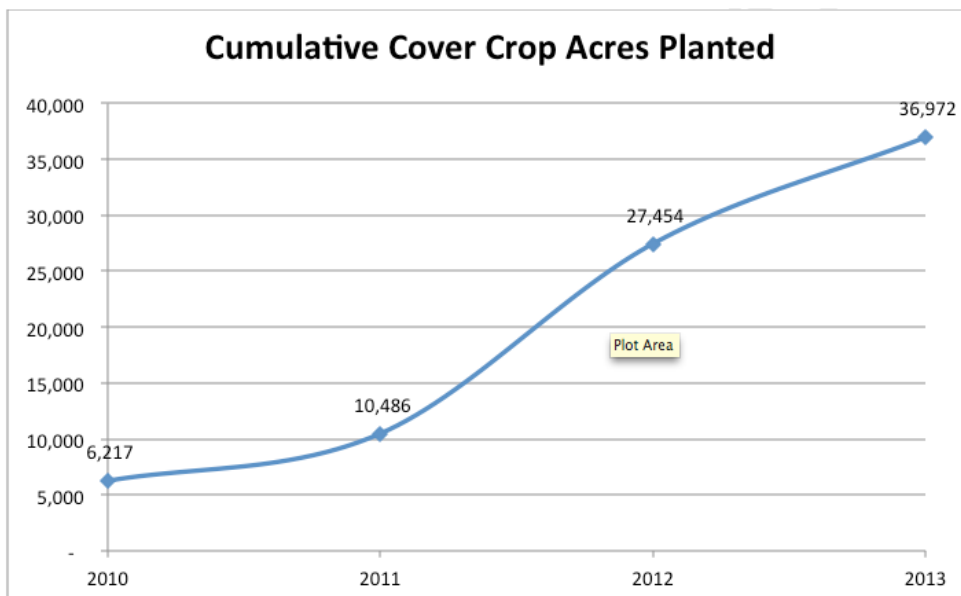


Figure 13. Map showing total cover crop acreage by county that was planted via GLCCI.

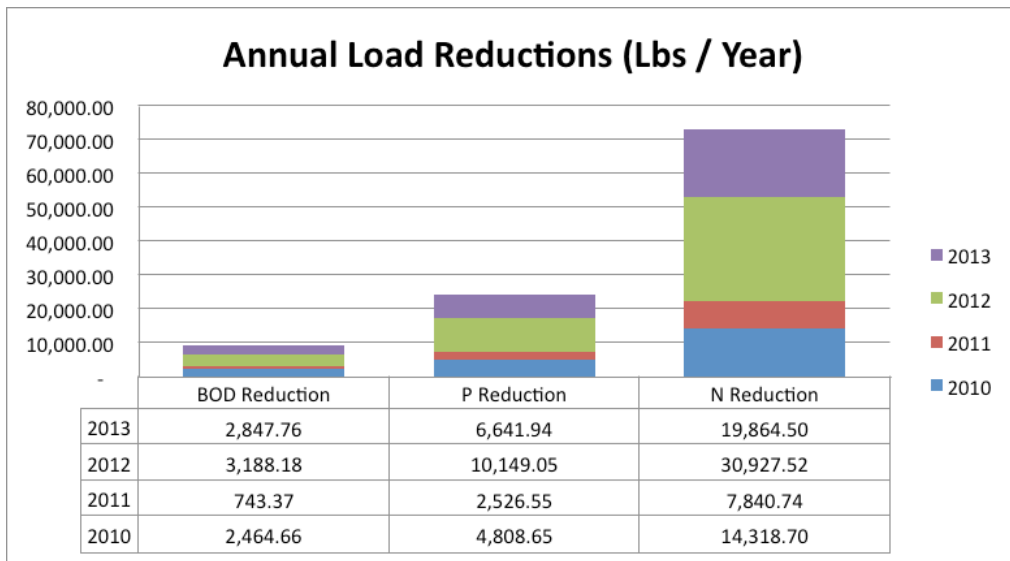
### Final STEPL Load Reduction Calculations and Acreage Figures by Year

Year	Acres	N Reduction	P Reduction	BOD Reduction	Sediment Reduction	% N Reduction	% P Reduction	% BOD Reduction	% Sed Reduction
		lb/year	lb/year	lb/year	tons/year	%	%	%	%
2010	6217	14,318.70	4,808.65	2,464.66	385.10	0.116441%	0.184603%	0.009663%	0.176023%
2011	4269	7,840.74	2,526.55	743.37	116.15	0.037737%	0.058163%	0.001754%	0.051446%
2012	16968	30,927.52	10,149.05	3,188.18	498.15	0.091443%	0.143288%	0.004553%	0.125747%
2013	9517.5	19,864.50	6,641.94	2,847.76	444.96	0.0006113	0.0009827	0.0000421	0.0011935
<b>Totals</b>	<b>36971.5</b>	<b>72,951.45</b>	<b>24,126.20</b>	<b>9,243.97</b>	<b>1,444.37</b>	<b>0.306753%</b>	<b>0.484324%</b>	<b>0.020179%</b>	<b>0.472563%</b>

### Load Reduction and Cover Crop Planting Charts



\*Figure 14. Cumulative cover crop acres planted through GLCCI.



\*Figure 15. Load reduction contributions per year for GLCCI cover crops.

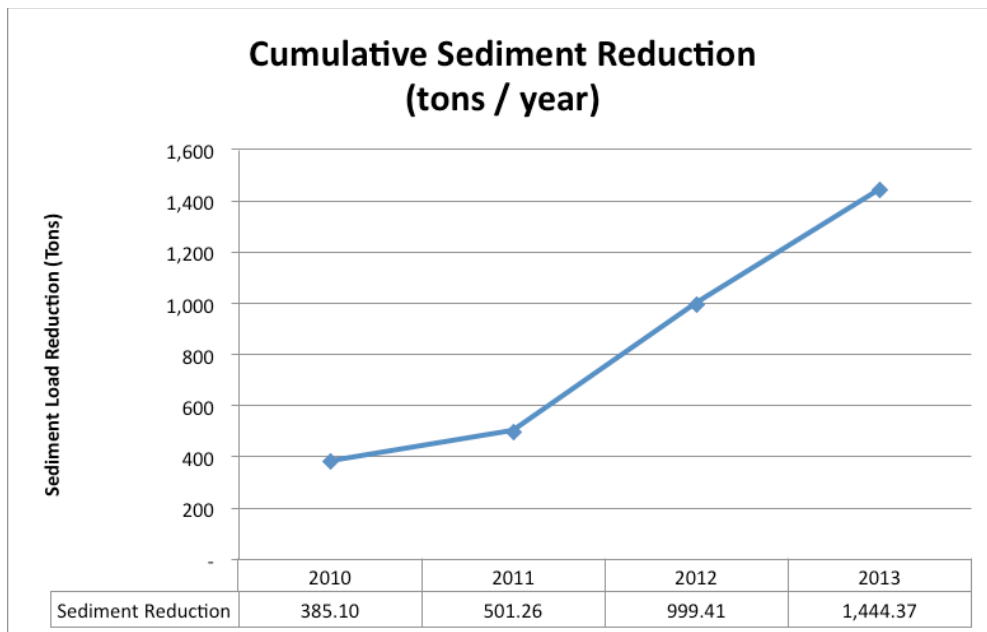


Figure 16. Cumulative sediment load reduction for GLCCI cover crops.

