

**A MATTER OF BALANCE:**  
***Conservation Agriculture in Uncertain Times***  
***(Bringing Conservation Science to Practice)***

**SEMINAR PRESENTATION ABSTRACTS**

**Title: Historical and Projected Future Climatic Changes in the Great Lakes Region**

**Dr. Jeffrey A. Andresen**

**Professor and State Climatologist for Michigan**

**Department of Geography, Environment and Spatial Science**

**College of Social Science, Michigan State University**

Climate in the Great Lakes region of North America has varied widely in the past and further changes are projected in the future. This presentation will explore long term historical trends and patterns, recent observed trends including warmer mean temperatures and greater annual precipitation totals, projections of future climate, and some potential impacts associated with the climatic trends.

**Title: Edge-of-Field Practices: What are they and how effective for Phosphorus reduction**

**Dr. Matt Helmers, Professor, Dept. of Agricultural and Biosystems Engineering**

**Director, Iowa Nutrient Research Center**

**Iowa State University, Ames, Iowa**

Reducing field to stream transport of phosphorus (P) is critical. While good infield P management is critical, emerging work is looking at potential for edge-of-field practices to be used to reduce downstream P loss. Practices such as drainage water recycling and bioreactors designed to remove P are two such practices that can help reduce the P loss from tile drainage. Practices such as prairie strips have potential to reduce surface runoff P loss. This presentation will discuss edge-of-field practices for both surface runoff and tile drainage P reduction.

**Title: Cows, Crops, AND Conservation. It can't be done...or can it?**

**Mike Buis**

**Buis Beef**

**Chatam, Ontario, Canada**

As cattle rancher and farmer from Chatham, Ontario, Mike has developed a practical and sustainable system of growing and grazing cover crops that allows him to raise beef cattle on some of the most valuable vegetable and cash crop land in Canada. This tile-drained sandy loam soil is very prone to erosion and requires a number of different strategies to conserve soil, water and nutrients. He will cover some of his successes and failures over the last ten years of getting this system to work.

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**Title: Effectiveness of No-till, Residue Management, Cover Crops, and Crop Diversification on Reducing Downstream Nutrient (N&P) Export**  
**Dr. Matt Helmers, Professor, Dept. of Agricultural and Biosystems Engineering**  
**Director, Iowa Nutrient Research Center**  
**Iowa State University, Ames, Iowa**

In-field conservation practices are critical for reducing downstream N&P export. While no-till, residue management, cover crops, and crop diversification may all help reducing surface runoff transport of N and P, they may have differing or no impact on subsurface N&P loss. This presentation will highlight studies that show dramatic nitrate-N loss reduction in leachate with cover crops and crop diversification but much less impact with no-till or residue management.

**Title: Maple River RCPP Eligibility Expansion**  
**Glenn O'Neil, GIS Specialist**  
**Institute of Water Research**  
**Michigan State University, East Lansing, Michigan**

The Institute of Water Research (IWR) at Michigan State University has started year two of its Improving Stream Habitat in the Maple River Watershed project. The project, funded through NRCS' Regional Conservation Partnership Program, is a five-year effort to enhance groundwater recharge and reduce sediment loading to the Maple River and its tributaries by promoting agricultural conservation adoption. The focus of the project's first year was on improving groundwater contributions to streams throughout the watershed, so as to support sensitive fish species that rely on cold-water baseflow conditions. In year two IWR added sediment reduction to the project's goals, which expanded the list of conservation practices available to producers for conservation funding. At this seminar IWR staff will review the project's goals, describe the science driving its prioritization of practices and locations, and explain how producers can enroll.

**Title: Farming Between the Lines: Stories of the Successes and Challenges of Converting to Strip-Till, Inter-seeding Cover Crops, and Using Innovative Conservation Practices to go Above and Beyond Conventional in a Corn, Soybean, Sugar Beet Rotation in the Thumb**  
**Ryan and Melissa Shaw,**  
**SKS Farm, Marlette, MI**

As the title suggests, Ryan and Melissa will cover how they converted their entire operation to strip-tillage in Fall 2014, including the following:

- Strip-Till Equipment and Saving Passes Across the Field
- Twin-Row Advantages
- Integrating Precision-Planted Cover Crops and Planting Green
- Conservation Strategies on a Field-to-Field Basis
- Soil Health Mindset