

A MATTER OF BALANCE:
Feeding our Crops, Protecting the Waters of the Great Lakes
SEMINAR PRESENTATION ABSTRACTS

Title: Instilling Health into Un-Healthy Soils

Dr. Newell Kitchen, Soil Scientist

USDA Agricultural Research Service, Columbia, Missouri

Much is being said about soil health. Why? Soil health is a concept that integrates the whole purpose of soil because it represents the interconnection of multiple soil functions. It includes things such as crop productivity, environmental protection, and soil conservation. But in order for soil health to be more than a concept, soil health needs quantification that is meaningful, portable, and inexpensive. Further, indicator metrics of soil health need to be comprehensive so as to include all key chemical, physical, and biological soil properties. This presentation will explore this growing revolution of soil health, and address some key management practices that will help shift managed landscapes into healthier soils.

**Title: Combating Nutrient Transport in Drainage Water
using Various Conservation Practices**

Dr. Ehsane Ghane

**Biosystems and Agricultural Engineering
Michigan State University**

Attendees will learn how drainage conservation practices work and how they can help improve drainage water quality. These practices include controlled drainage, woodchip bioreactors, saturated buffers, and drainage water recycling.

Title: Thinking Outside the Lake:

How Can Management Benefit Western Lake Erie and its Tributaries

Dr. Scott Sowa, Director of Science

The Nature Conservancy, Lansing, Michigan

Investment in agricultural conservation practices (CPs) to address Lake Erie re-eutrophication should offer benefits that extend beyond the lake. However, if such conditions are not explicitly considered in Lake Erie nutrient management strategies, this opportunity might be missed. We quantified the potential for CPs used to meet nutrient management goals for Lake Erie to simultaneously improve stream biological conditions throughout the western Lake Erie basin(WLEB) watershed. Our modeling simulations showed that widespread implementation of CPs would substantially reduce spring/early summer total phosphorus and dissolved reactive phosphorus (DRP) loads into Lake Erie from the WLEB watershed. Widespread CP implementation would also improve potential fish community health in >17,000 km of streams and reduce the percentage of streams in poor biological condition from 17% to 3%. Despite these improvements, we also found that even with widespread implementation of CPs, not all water quality goals would likely be met for Lake Erie and degraded conditions would likely persist in many streams. Thus, while CPs can play an important role in reducing Lake Erie re-eutrophication, additional strategies and emerging technologies appear necessary to help meet desired water quality conditions for the WLEB.

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Title: Finding Value in Conservation Targeting Using Precision Agriculture Technologies
Dr. Newell Kitchen, Soil Scientist
USDA Agricultural Research Service, Columbia, Missouri

Precision farming technologies and practices have grown because farmers have found managing spatial and temporal variability can increase profits. However, the same information used to base crop inputs for site-specific management can also simultaneously be used to target conservation into the landscape. Such actions can have immediate and positive environmental benefits to soil and water. As such, management strategies that concurrently address both production and conservation need to be encouraged. These ideas will be discussed in this presentation, and illustrated with research and case studies.

Title: Using Tile Drainage Water and Detention Ponds to Supplement Overhead Irrigation
Mr. Bob Mantey
Tuscola County Farmer

Information will be presented on how to use tile drainage and detention ponds to supplement overhead irrigation. This will also involve information on the use of controlled drainage in partnership with the overhead irrigation, since this was a sub irrigated system converted over to overhead irrigation. The history, current use and problems that were encountered while developing this unique system will be discussed.

Title: Right to Farm—An Opportunity, not a ‘Right’
Wayne Whitman, Right to Farm Program Manager
Michigan Department of Agriculture and Rural Development
Lansing, Michigan

In recent years, when people mention the Right to Farm Act (RTFA), it can conjure up images of hipsters raising backyard chickens, despite the protests of their neighbors. And when the neighbors call their Township, and the ordinance officer says “You can’t keep farm animals here!”, the response is “Sure we can, we have the right to farm”. The reality of the RTFA is quite different. This presentation reviews the evolution of the RTFA over the past 35 years, and will provide facts about rights, responsibilities, and opportunities under this state law.