The Right Time for Nutrient Stewardship is Right Now: Engaging with the Fertilizer Industry

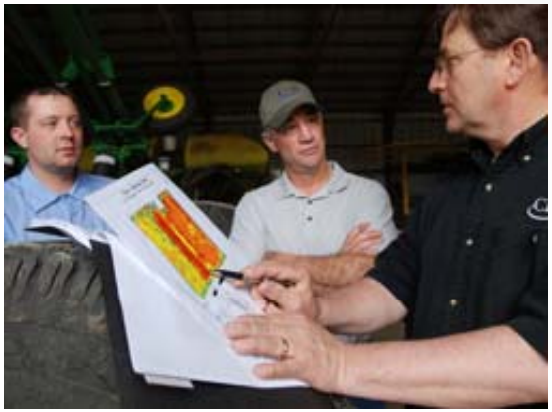
State Level Nutrient Reduction Strategies Workshop - Agriculture

Lara Moody, Director of Stewardship Programs

The Fertilizer Institute
Nourish, Replenish, Grow

Communicating with Stakeholders

- Agriculture needs to understand its role in sustainability
- Policy makers and the public need to understand agriculture's role in sustainability
- Need a means to communicate how nutrient management contributes to sustainability



4 nutrient stewardship

The Fertilizer Institute
Nourish, Replenish, Grow

Essential Goal of Agriculture

- Simultaneously improve productivity & efficiency
  - Increasing societal demands
  - Global financial stress
  - Growing concerns on impact to air and water quality
- Efficiency without productivity
  - Puts pressure on marginal lands
- Productivity without efficiency
  - Squanders resources & increases environmental impact

4R nutrient stewardship

The Fertilizer Institute
Nourish, Replenish, Grow

4R Nutrient Stewardship

- Improve agricultural production while contributing to social well being and minimizing environmental impacts (benefits water and air quality)

- 4R represents the use of fertilizer BMPs to ensure:
  - the right source
  - at the right rate
  - at the right time
  - in the right place

nutrient stewardship

The Fertilizer Institute
Nourish, Replenish, Grow

4R Nutrient Stewardship

- Match nutrient supply with crop requirements and to minimize nutrient losses from fields
- BMPs affecting fertilizer Source, Rate, Time, & Place are site specific
  - Practices chosen for a given field are dependent on soil, climate, and management conditions, crop selection, and other site specific factors

nutrient stewardship

The Fertilizer Institute
Nourish, Replenish, Grow

Scientific Principles

- Source – ensure a balanced supply of essential nutrients, considering both naturally available sources and the characteristics of specific products, in plant available forms
- Rate – assess and make decisions based on soil nutrient supply and plant demand
- Time – assess and make decisions based on the dynamics of crop uptake, soil supply, nutrient loss risks and field operation logistics
- Place – address root-soil dynamics and nutrient movement, and manage spatial variability within the field to meet site-specific crop needs and limit potential losses from the field

4R nutrient stewardship

The Fertilizer Institute
Nourish, Replenish, Grow

4R Partnerships

- To leverage outreach efforts
- To gain insight into needed efforts
- To spread ownership of the message
- To engage stakeholders

nutrient stewardship

The Fertilizer Institute
Nourish, Replenish, Grow

NRCS Grant Efforts

- 590 Nutrient Mgmt. Std./4R Training Modules
  - Partners – TFI, NRCS, Iowa State University, International Plant Nutrition Institute
  - Develop curriculum and on-line training to educate service providers
- N_2O Emission Reduction and GHG Crediting (proposed)
  - Partners – TFI, IPNI, Camco, Climate Trust, Climate CHECK, USDA-ARS
  - Evaluate available N_2O protocols, develop credit aggregation system, and monetize credits for 100 farms

4R nutrient stewardship

The Fertilizer Institute
Nourish, Replenish, Grow

State Fertilizer Associations

- South Dakota Agribusiness Association
  - Provide matching funds for EPA state grant
  - Provide education and outreach materials
  - Obtain feedback on additional needs and material use

- Illinois Fertilizer and Chemical Association
  - Provide input for state strategy
  - Provide education and outreach materials
  - Obtain feedback on additional needs and material use

KIC 2025
Keep It for the Crop by 2025

4R nutrient stewardship

The Fertilizer Institute
Nourish, Replenish, Grow

Watershed Work

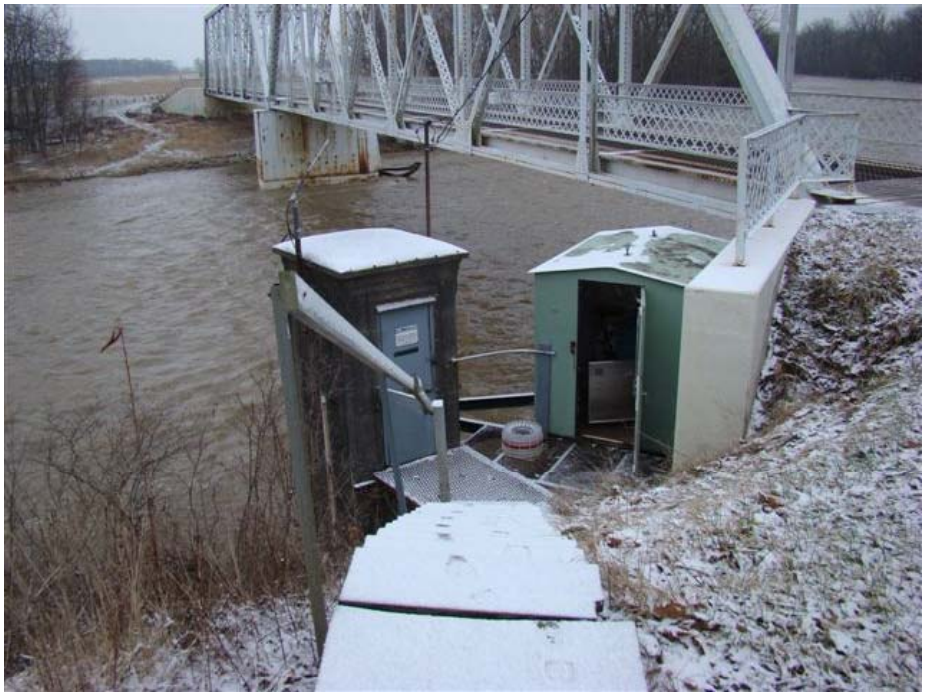
- Conservation Technology Information Center
  - Provide financial match and staff support for multiple efforts
  - Provide education and outreach materials
  - Help align TFI members with efforts
- Sandusky River Watershed Coalition
  - Support funding requests with letters of support
  - Provide education and outreach materials
  - Assist with educational programs in watershed
  - Help align TFI members with efforts

4 nutrient stewardship

The Fertilizer Institute
Nourish, Replenish, Grow

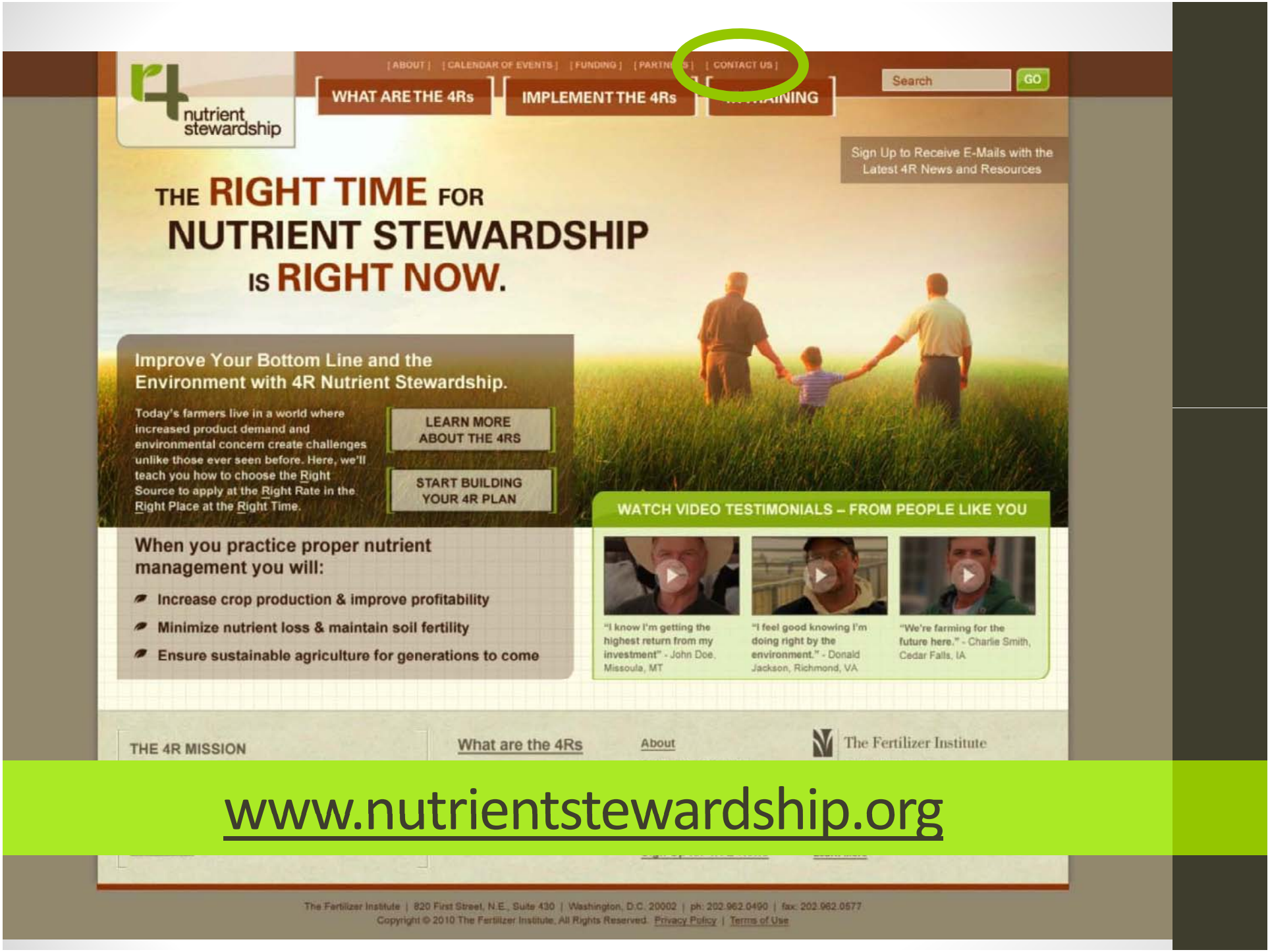
Watershed Work

- Heidelberg University
  - Provide funding assistance to maintain water quality monitoring



nutrient stewardship

The Fertilizer Institute
Nourish, Replenish, Grow



ASA/IPNI series on 4R Nutrient Stewardship

5 CEUs in nutrient management

Know your fertilizer rights

By Tom Bruulsema, International Plant Nutrition Institute, Guelph, ON, Canada; ***Jerry Lemunyon***, USDA-NRCS, Fort Worth, TX; and ***Bill Herz***, The Fertilizer Institute, Washington, DC

Crops & Soils 42(2): Mar-Apr 2009

The four fertilizer rights: Selecting the right source

By Robert Mikkelsen, International Plant Nutrition Institute, Merced, CA; ***Greg Schwab***, University of Kentucky, Lexington; and ***Gyles Randall***, University of Minnesota, Waseca

Crops & Soils 42(3): May-Jun 2009

The four fertilizer rights: timing

By W.M. Stewart, International Plant Nutrition Institute, Norcross, GA; ***J.E. Sawyer***, Iowa State University, Ames, IA; and ***M.M. Alley***, Virginia Tech, Blacksburg, VA

Crops & Soils 42(5): Sep-Oct 2009

4 nutrient stewardship

Selecting the right fertilizer rate: A component of 4R nutrient stewardship

By S.B. Phillips, International Plant Nutrition Institute, Owens Cross Roads, AL; ***J.J. Camberato***, Purdue University, West Lafayette, IN; and ***D. Leikam***, Fluid Fertilizer Foundation, Manhattan, KS

Crops & Soils 42(4): Jul-Aug 2009

Know Your Fertilizer Rights: Right Place

by T.S. Murrell (IPNI), G.P. Lafond (AAFC), and T.J. Vyn (Purdue U.)

Crops & Soils 42(6): Nov-Dec 2009