# NRCS Nitrogen Management Balancing Risk

University of Wisconsin
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- NRCS Conservation Planning
  - Utilize standardized "Resource Concerns"
    - Water Quality Degradation Excess Nutrients in surface and ground waters
    - Degraded Plant Condition Undesirable plant productivity and health
  - Develop conservation practice "alternatives" to address identified resource concerns
  - Conservation Practice Standards define alternatives offered by NRCS

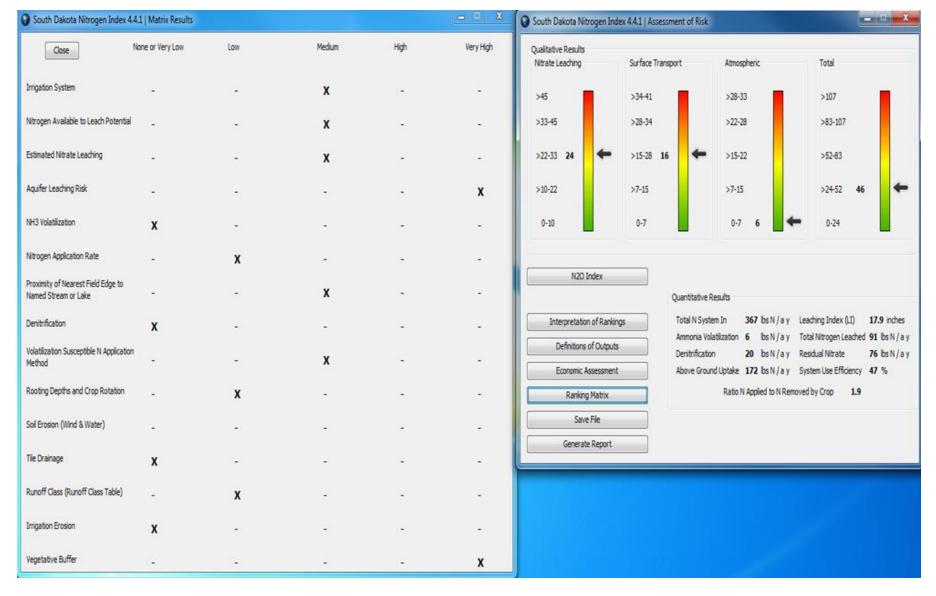
- Nutrient Management (590)
  - Definition: Managing the amount, source, form and timing of the application of nutrients and soil amendments.
- Recognized as an agricultural "Best Management Practice"
- Basis for Financial Assistance Programs and state and federal regulatory programs

- NRCS 590 Criteria for Protection of Surface and Groundwater Resources
  - Develop an annual, field specific nutrient application plan. Account for the source, rate, timing, application method and form of all major nutrients.
  - University of Wisconsin recommendations for nutrient application rates, soil and tissue testing protocols shall be followed.

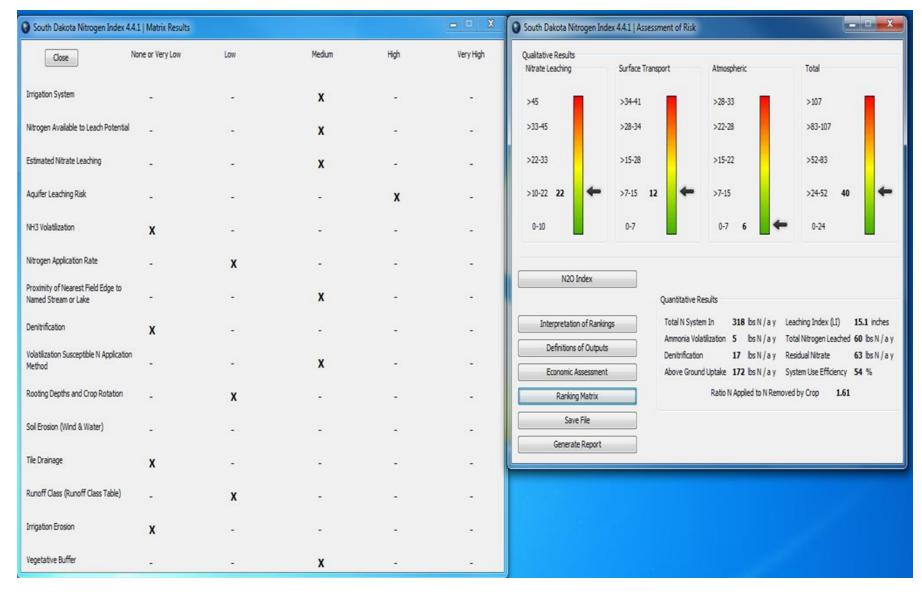
- Implementing Nitrogen Based 590 Plan
  - Minimize fall applied N losses
    - Avoid soils with high risk for N loss
    - Delay manure applications
    - Use of nitrification inhibitors
  - Split N applications during the growing season
  - Use of "stabilized" N sources
    - Organic matter based N (cover crops/manure solids)
    - Treated manufactured fertilizer sources

- Existing Planning Tools
  - Nutrient Management Planning Risk
     Assessment Maps (soils/separation distance)
  - SNAP+ nutrient budgeting tool
- Proposed Planning Tools
  - Nitrogen Index
    - Qualitative risk assessment tool
    - Nitrogen "accounting" tool

#### Nitrogen Index (Before Management)



#### Nitrogen Index (After Management)



- Scientific Research Needs for N Management
  - Refine N loss models
  - Refine in season N availability measurement tools
  - Maximize use of N stabilization technology
  - Develop additional N stabilization technology

- Emerging Issues
  - Rising demand and prices for crops
  - Rising levels of Nitrate N in ground water
  - Rising levels of Nitrate N in surface water
  - Increased regulatory oversight of N management
  - Consumer demand for "sustainable" products

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