# SNAP-Plus

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# Tool Focus

- To develop NM planning software that meets the ‘new’ 2002 NRCS 590 standard for Wisconsin
- CNMP have been mandated on Concentrated Animal Feeding Operations (CAFO) receiving NRCS cost-sharing for manure storage
  - Conservation plan (RUSLE2)
  - NM plan (PI)
  - Record-keeping program (SNAP)
  - Manure management (SNAP)

# Tool Focus

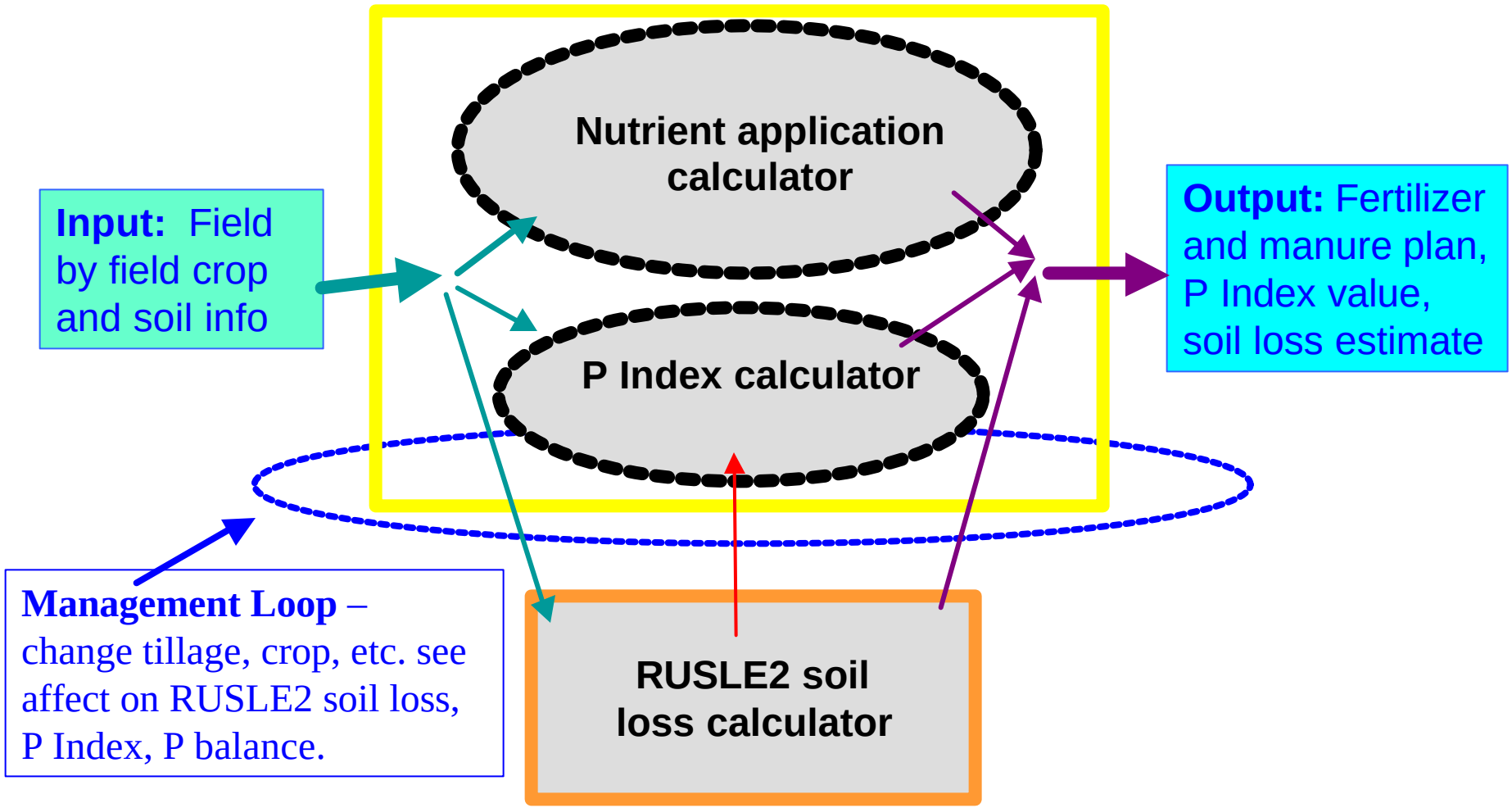
- Most farms have one or two of these components on hand and are often independent of each other

- To integrate several programs (RUSLE2, WI. P Index, P and K balancing, SNAP2000) to simplify NMP development in accordance with WI. NRCS 590 standard

# Tool Focus

- Advantage:
  - Single interface for inputs - SNAP
  - No redundant data entry
  - Consistent data among all programs
  - Bring soil conservation planning and NM together
  - More comprehensive approach, using P Index and RUSLE2, to managing manure and P
  - Facilitate farm level “what-if” experimentation by providing field and farm views and immediate feedback

# SNAP-PLUS


Nutrient application calculator
P Index calculator
Input: Field by field crop and soil info
Output: Fertilizer and manure plan, P Index value, soil loss estimate
Management Loop – change tillage, crop, etc. see affect on RUSLE2 soil loss, P Index, P balance.
RUSLE2 soil loss calculator

# Knowledge and Data Transferability

- Inputs
  - **Farmer's name, county, crops grown and fertilizers**

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  - **Field and soil data imported electronically**

# Field and Soil Data Needs

- Field name
- Sub farm name
- FSA tract & field No.
- Acres
- Soil name & symbol
- Slope % and length
- Distance to water from field edge
- Contour, strip cropped, terraces, filter strip
- Distance from manure source
- Soil test results – electronic import

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- Inputs
  - Farmer's name, county, crops grown and fertilizers
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  - Manure type & quantity, % collected, analysis, annual volumes
  - **Cropping data**
    - **Crop to be grown**
    - **Yield goal**
    - **Tillage type**
    - **Legume/manure application information**
    - **Fertilizer application information**

Snap-Plus

File Edit Tools Reports Options Help

**Farm Name:** LCA Acres **Season Year:** 2004 Screen Report Internet available Rusle2 connected

Farm Data | Field Data | Cropping Data | Nutrient Sources | Summaries | Field Records

**Field Name:** f1

| County | Acres | Slope | Soil Name | Soil Symbol | Soil Group |
|---|---|---|---|---|---|
| WI-Winnebago | 20 | 4 | Kewaunee | KnB | |

Rotation Wizard | View/Edit Soil Test Data

| For plan year 2004 | Soil Test Date | pH | OM % | P (ppm) | K (ppm) |
|---|---|---|---|---|---|
| | missing | 2.635370 | 2.635578 | 1.06077 | 3.74312588 |

Rotation ave soil loss (Ton/acre): 6.5 "T" for this field (Ton/acre): 3.0 Rotation ave P Index: 7.8 Plan period P Balance -195

| | 2002 | | | 2003 | | | 2004 | | | 2005 | | | 2006 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Soil Test Date:** | 11/24/2001 | | | 11/24/2001 | | | 11/24/2001 | | | 11/20/2004 | | | 11/20/2004 | | |
| **Irrigated / Rotation length:** | Irrigated | | | Irrigated | | | Irrigated | | | Irrigated | | | Irrigated | | |
| **Crop:** | Alfalfa seeding | | | Alfalfa | | | Alfalfa | | | Corn silage | | | Corn grain | | |
| **Yield Goal:** | 1-3 | | | 3.5-4.5 | | | 3.5-4.5 | | | 20-25 | | | 130-150 | | |
| **Tillage / Residue (%):** | No till | | | No till | | | No till | | | No till | | | No till | | |
| | N | P2O5 | K2O | N | P2O5 | K2O | N | P2O5 | K2O | N | P2O5 | K2O | N | P2O5 | K2O |
| **Special Crop Needs:** | 0 | 30 | 200 | 0 | 30 | 200 | 0 | 30 | 200 | 160 | 40 | 70 | 160 | 55 | 20 |
| **Recommendation:** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Total Needs:** | 0 | 30 | 200 | 0 | 30 | 200 | 0 | 30 | 200 | 160 | 40 | 70 | 160 | 55 | 20 |
| **Prior years legume credit:** | 0 | | | 0 | | | 0 | | | 0 | | | 0 | | |
| **Prior years manure credit:** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Plan manure applications:** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Plan fertilizer applications:** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Total credits:** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Nutrient excess or deficit:** | 0 | -30 | -200 | 0 | -30 | -200 | 0 | -30 | -200 | -160 | -40 | -70 | -160 | -55 | -20 |
| **Crop P removal / P balance:** | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| **P Index (Total = Part + Sol):** | 0 = 0 + 0 | | | 0 = 0 + 0 | | | 0 = 0 + 0 | | | 0 = 0 + 0 | | | 0 = 0 + 0 | | |

The lime required for this rotation to reach pH 6.8 is 0 t/a 80-89 lime

# Knowledge and Data Transferability

- Outputs
  - Improved N, P, K and manure management
  - Brings soil conservation together with NM
  - Multi-year view facilitates long range planning for manure and P and K balancing
  - User lead to appropriate management practices to decrease cost and/or environmental risks

# Knowledge and Data Transferability

- Outputs
  - P based NM plan
  - Rotational soil loss (RUSLE2)
  - Yearly, rotational and whole farm PI
  - P and K balance by year and rotation
  - Record-keeping – program itself serves as a record-keeper

# Present Plans

- Complete development Feb. 2004
- Beta test software, feedback incorporated
- Release Summer 2004, downloadable from UW Soil Science website
- Training workshops around the state, Fall and Winter 2004

# Future Plans

- GIS data input and map output
- Transfer data to and from commercial GIS software
- Incorporate financial/feed management software
- N and P whole farm balancing software

# SNAP-PLUS

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