Main Updates for 2017

• **Erosion Prediction Technologies**
  - Water Erosion Prediction Program
  - Wind Erosion Prediction System

• **Nutrient Management**
  - 590 Conservation Practice Standard in process of revision
  - Conservation Activity Plans 102 (CNMP) or 104 (NMP)

• **Integrated Pest Management**
  - 595 Conservation Practice Standard

• **CAP 138 Conservation Plan Supporting Organic Transition**
Erosion Prediction Technologies

- **Water Erosion Prediction Project (WEPP)**
  - A process-based model which utilizes web-based management, climate, and soil databases
    - Using updated climate information (1973-2013)
    - Databases stay current; no annual uploading
  - Yields and crop growth predictions are adjusted for each unique year based on generated climate
    - Simulates a number of years
    - Each day having different input climatic data
### Management Example 1

**Mulch till corn and soybeans**

<table>
<thead>
<tr>
<th>Num</th>
<th>Date</th>
<th>Operation</th>
<th>Crop</th>
<th>Residue</th>
<th>Residue Amount (lb/ac)</th>
<th>Yield</th>
<th>Yield Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5/11</td>
<td>Disk, tandem light finishing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>5/11</td>
<td>Cultivator, field 6-12 in sweeps</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>5/11</td>
<td>Planter, double disk opener</td>
<td>Corn, grain</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>10/20</td>
<td>Harvest, killing crop 50% standing stubble</td>
<td></td>
<td></td>
<td></td>
<td>180</td>
<td>bu/ac</td>
</tr>
<tr>
<td>5</td>
<td>11/11</td>
<td>Chisel, st. pt.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>5/12</td>
<td>Disk, tandem light finishing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>5/102</td>
<td>Cultivator, field 6-12 in sweeps</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>5/102</td>
<td>Drill or airseed, double disk</td>
<td>Soybean, group II, III and IV</td>
<td></td>
<td></td>
<td>60</td>
<td>bu/ac</td>
</tr>
<tr>
<td>9</td>
<td>10/20</td>
<td>Harvest, killing crop 20% standing stubble</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>11/12</td>
<td>Fert applic. surface broadcast</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>11/12</td>
<td>Chisel, st. pt.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Management Example 1 Results

Generated Yields based on temp., water, and soil

Results Mgt 1.

Statistics over 100 Years – Notice the ranges
## Management Example 2

### No Till corn and soybeans

<table>
<thead>
<tr>
<th>Num</th>
<th>Date</th>
<th>Operation</th>
<th>Crop</th>
<th>Residue</th>
<th>Residue Amount (lb/ac)</th>
<th>Yield</th>
<th>Yield Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5/6/1</td>
<td>Planter, double disk opnr w fused coulter with starter fertilizer</td>
<td>Corn, grain</td>
<td></td>
<td></td>
<td>180</td>
<td>bu/acre</td>
</tr>
<tr>
<td>2</td>
<td>10/20/1</td>
<td>Harvest, killing crop 80%pt standing stubble</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>5/10/2</td>
<td>Drill or air seeder single disk openers 7-10 in spac.</td>
<td>Soybean, group II, III and IV</td>
<td></td>
<td></td>
<td>60</td>
<td>bu/acre</td>
</tr>
<tr>
<td>4</td>
<td>10/5/2</td>
<td>Harvest, killing crop 20%pt standing stubble</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Management Example 2 Results

Erosion Reduced (4.7 vs 0.6 ton/ac/yr) and Less runoff

Higher Yields based on better water use efficiency
Erosion Prediction Technologies

- **Water Erosion Prediction Project (WEPP)**
  - Upon release, the web-based model will replace the Revised Universal Soil Loss Equation, Version 2 (RUSLE2)
  - There will be standalone version available to NRCS, partners, and the public
  - Conservation planning, project planning, and inventory and assessment
Erosion Prediction Technologies

- **WEPP – Enhancements in Progress**
  - Small watershed soil loss results
    - Allows linkages of hillslope profiles to channels and impoundments
  - Prediction of ephemeral erosion
    - Simulates channel detachment, sediment transport, and deposition
  - Model testing using predicted changes in climate over the next century to predict effects on erosion, crop growth, etc.
  - State Agronomist level testing scheduled to be conducted this fall
    - Field office and TSP training planned for this winter
Erosion Prediction Technologies

• **Wind Erosion Prediction System (WEPS)**
  • A process based model that utilized managements, climate, and soil databases that will be web-based
    • Using updated climate information (1973-2013)
    • Databases stay current; no annual uploading
  • Yields and crop growth are adjusted for each unique year based on generated climate
  • Standalone version will be available to the Public and NRCS
Nutrient Management

• 590 Nutrient Management Conservation Practice Standard in process of revision
  • Changes are to format and flow
  • No major technical changes expected

• Current options for Nutrient Management
  • Nutrient Management Conservation Activity Plan (CAP 104)
  • Comprehensive Nutrient Management Plan (CAP 102)
  • Farmers contract directly with private sector consultants/agribusiness (NRCS Technical Assistance Funds)
  • NRCS development of Nutrient Management Plans
  • Farmers contract with NRCS to implement nutrient management (NRCS Financial Assistance Funds)
Nutrient Management

- **Partnerships**
  - Increased reliance on the agribusiness sector (TSPs, CCAs, independent crop consultants, companies and cooperatives)
  - Continue to encourage the development and utilization of nutrient management plans to address resource concerns, while maintaining (or increasing) production
  - Education and information sharing related to nutrient management and water quality, air quality, and soil condition
Integrated Pest Management

- **595 Integrated Pest Management (IPM) Conservation Practice Standard in process of revision**
  - Proposal to break it into 2 separate standards
    - IPM
    - Pesticide Mitigation
  - Should be on Federal Register in the next few months

- **Current options for IPM**
  - IPM Conservation Activity Plan (CAP 114) and template
  - IPM Herbicide Resistance Weed Plan (CAP 154) and template
  - Farmers contract directly with private sector consultants/agribusiness (NRCS Technical Assistance Funds)
  - NRCS development of IPM Plans
  - Farmers contract with NRCS to implement IPM (NRCS Financial Assistance Funds)
  - CSP Enhancement added for reduced seed treatments on corn and soybean crops
CAP 138 – Conservation Plan Supporting Organic Transition

- Major change to utilize Organic System Plan (OSP) Templates:
  - TSPs will complete section that are in *bold.
  - This will help producers and staff learn the different parts of the OSP
  - Eliminates the need for a supplement
  - Producers will complete the remaining sections for their OSP
CAP 138 – Conservation Plan Supporting Organic Transition

• **Minor changes are to the remaining NRCS sections:**
  • Resource Concern Inventory shortened to one page
  • Erosion Control Inventory updated to include wind erosion measurements
Cover Crops Issues

- **Pesticide Use and Cover Crops**
  - Considerations of pesticide used during crop production for cover crop establishment

- **Pesticide Use and Cover Crops used for grazing or silage**
  - Consideration of pesticide use when grazing cattle or using the cover crop as a silage

- **Pesticide Labels may not include Cover Crop**
  - Follow recommendations on a cash crop for the cover crop