US Initiatives

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Natural Resources Conservation Service (NRCS)

- **What the NRCS does:**
  - We help producers develop conservation plans to address identified natural resource concerns.
  - We provide financial assistance for the installation and maintenance of conservation systems.
- **Conservation plans are the basis for all assistance NRCS delivers.**

US Initiatives

- Nutrient Management Planning
  - Nutrient Management Plans
  - Comprehensive Nutrient Management Plans
- Conservation Security Program
- Revisions to policy and guidance
- Development or improvement of tools
- New emphasis on training

Initiative:
Nutrient Management Planning

Important considerations:

- Soil Quality
- Water Quality
- Air Quality
- Plant Quality
- Animal Productivity
- Human Health


Potential Acres Available for Nutrient Management Planning
Cropland 400 million acres
Grazingland 525 million acres
Forestland 400 million acres
(256,000 AFO producer plans)

NRCS' Role

- Develop nutrient management strategies that meet the producer's goals while minimizing the environmental risks.
- Develop and maintain national and state's technical nutrient management standards

Nutrient management plans (NMP)

- A NMP plan can be used as a component of an overall farm conservation plan

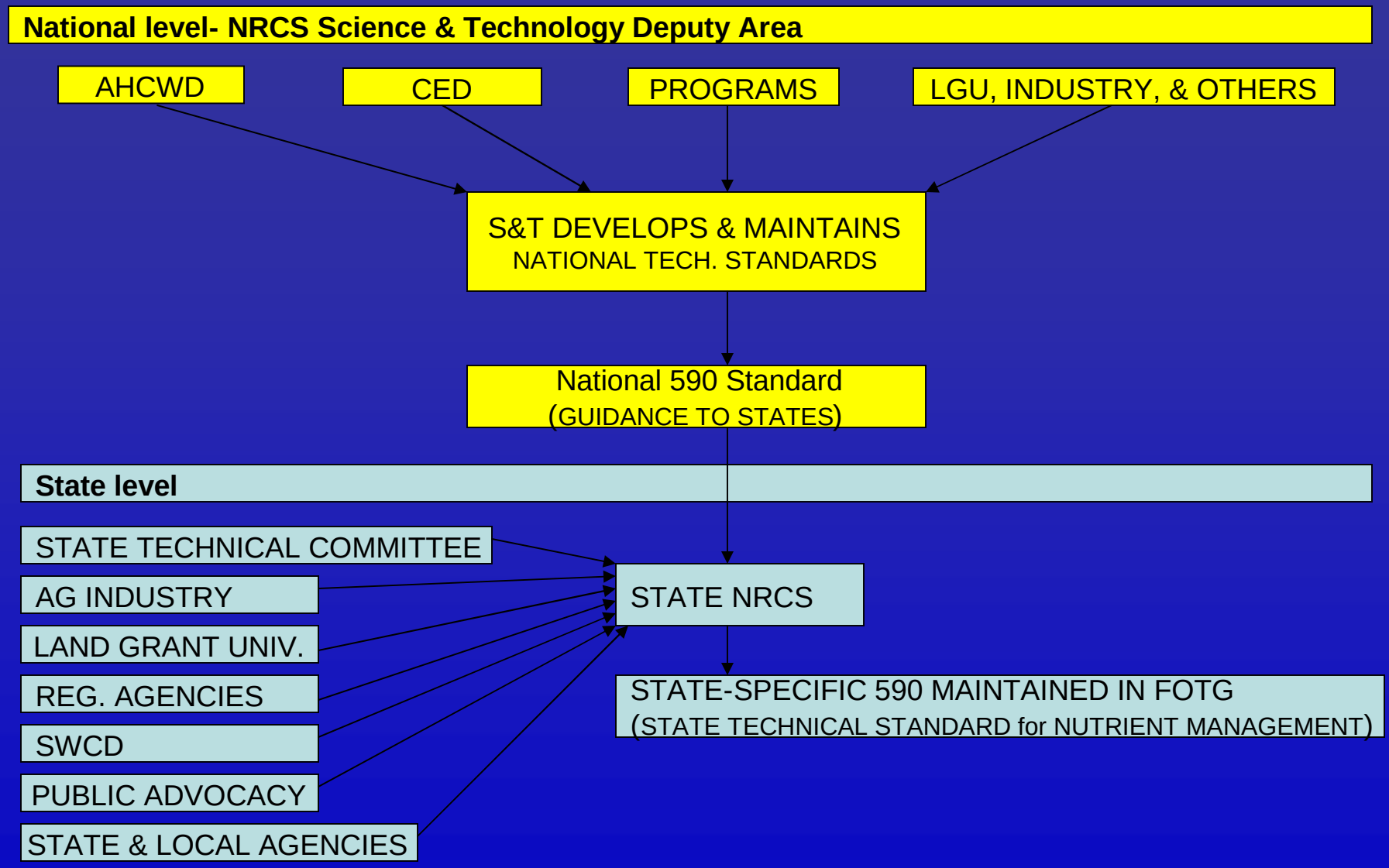
OR

- A NMP can be used as an element of a comprehensive nutrient management plan (CNMP) for Animal Feeding Operations (AFO)

Nutrient management plans (NMP) enable the farmer to:

- Budget nutrients for plant production
- Utilize manures and organic by-products as a plant nutrient source
- Maintain or improve the physical, chemical, and biological condition of the soil
- Minimize agricultural non-point source pollution of water and air
- Rely on the NMP to keep them on the "right side of the law"

NATIONAL & STATE STANDARD DEVELOPMENTAL PATHWAY



Nutrient Management Standard (590)

Definition:

- **Managing the *amount*, *source*, *placement*, *form and timing* of the application of nutrients and soil amendments.**

Nitrogen Transport Pathways

- Crop Uptake and Removal
- Leaching
- Runoff
- Erosion
- Denitrification
- Volatilization

Crop Uptake and Removal (590)

- Apply the nitrogen product at the correct rate, form, timing and method of application to reduce all loss pathways.
  - Inventory available soil available N
  - Crop nutrient need based on realistic goals
  - Balanced nutrient budget

Leaching (590)

- The Leaching Index is used to ascertain the risk of nutrient movement to depths below the root zone during the non-growing season
  - Timing and method of nutrient application shall correspond as closely as possible with plant nutrient uptake characteristics.

Runoff (590)

- Excessive runoff must be controlled on all sites that receive nutrients.
- Incorporate nutrients when there is a high risk of contact with surface runoff.
- Comply with state setback distances
- Runoff and erosion are to be avoided when applying irrigation water
- Phosphorus transport risk (PI)

Erosion (590)

- Fields that receive nutrients must be protected from excessive erosion.
- Excessive is defined as erosion rates above soil loss tolerance (T)

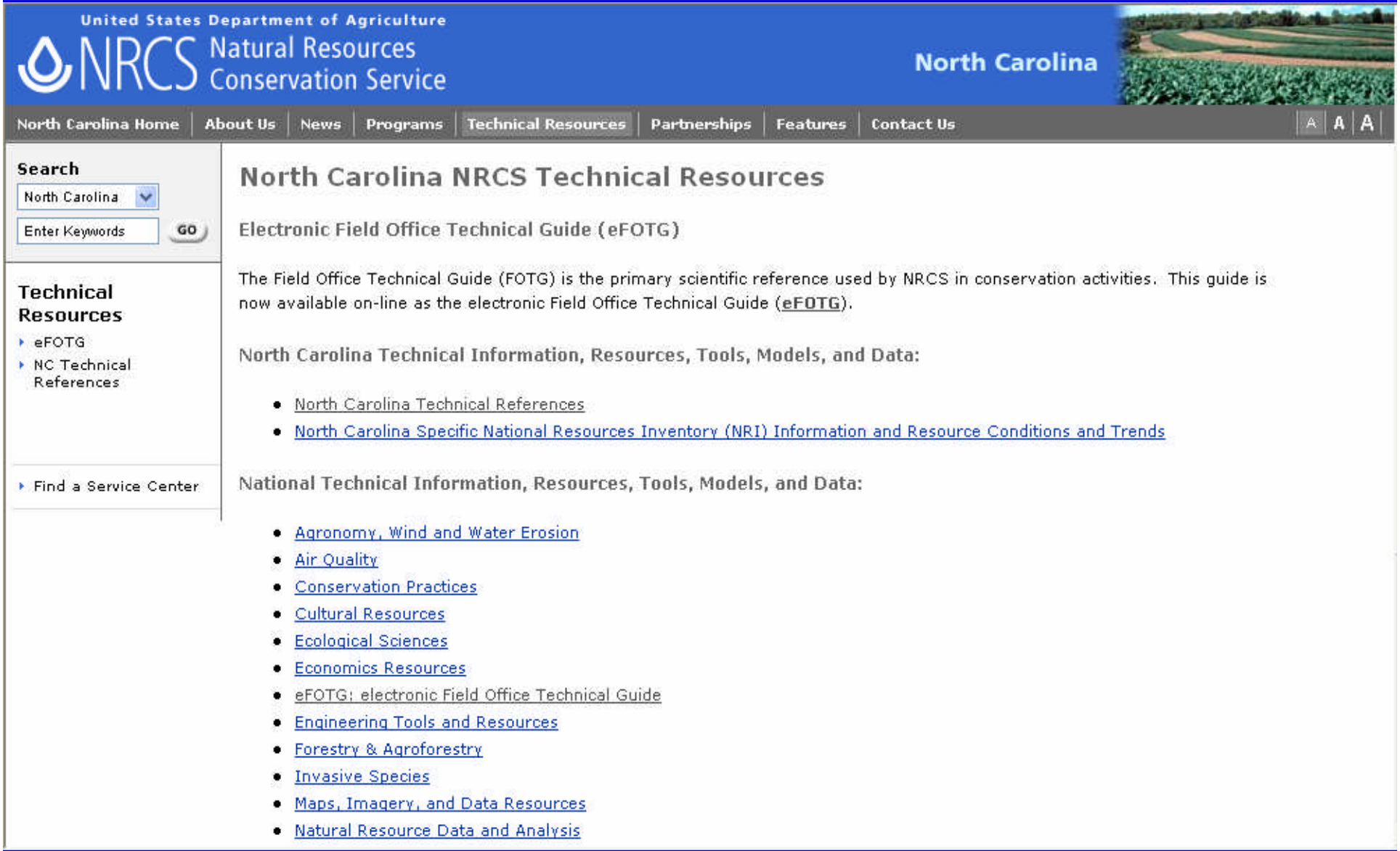
Denitrification

- Selecting the form and placement of N fertilizer will reduce the potential risk for deN
  - Avoid applying N deep into moist soil profiles
  - Nutrients shall not be applied to saturated soils

Volatilization (590)

- Warm, dry, high pH soil conditions are conducive for volatilization
- Incorporate or inject nutrient material, especially high ammonia formulations, manures, drastically reduces volatilization.
- Manures and ammoniacal fertilizers must be incorporated or injected within 24 hours of application.

Found in Section IV of your state's eFOTG



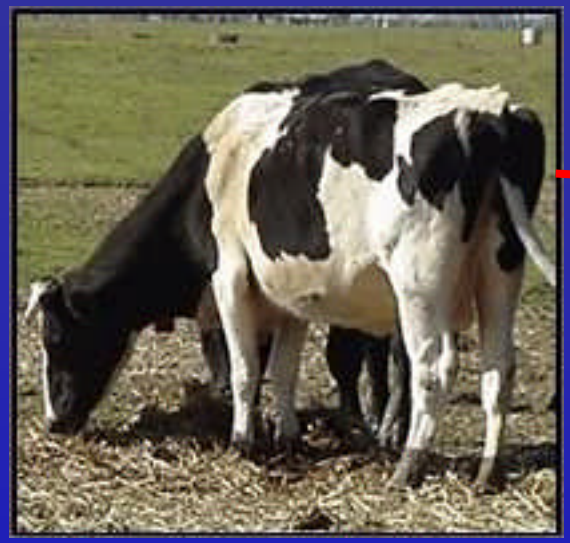
590 at the State-Level

- State-specific nutrient management guidance adapted to the state's laws, needs and conditions.
  - State policy regarding nutrient applications
  - State environmental risk assessments
  - Specialist certification programs
  - State-specific planning components

State guidance might include:

- Soil, manure, plant, and water testing criteria (depth, timing, frequency)
- Crop nutrient recommendations and crop removal rates (LGU)
- Nitrogen and phosphorus risk assessment tools (Leaching Index, P-Index)
- Information on rate, form, timing, and method of nutrient applications

The CNMP



From…

To!

…and everything in between.

- A CNMP is a conservation plan unique to animal feeding operations (AFO-CAFO).

- Group of conservation practices and management activities that ensures both production and natural resource protection goals are achieved.

Six Elements of a CNMP

- **Elements that must be addressed**
  - Manure and Wastewater Handling, Transfer, Treatment and Storage
  - Land Treatment Practices
  - Nutrient Management
  - Record Keeping
  - Feed Management (optional)
  - Alternative uses (optional)

Initiative:
Conservation Security Program (CSP)

- CSP rewards producers that exceed the minimal conservation treatment for soil and water quality resource concerns

CSP Basic Eligibility Requirements

- **Minimum level soil quality (cropland)**
  - A positive Soil Conditioning Index
- **Minimum level water quality (cropland)**
  - Treatment meets or exceed quality criteria according to NRCS technical guides

CSP Enhancement Activities

- Enhancement activities refer to actions that provide resource benefits beyond the level prescribed by NRCS Conservation Practice Standards
  - Nutrient management
  - Manure management
  - Pest management

CSP
Nutrient Management Enhancements

- Conduct annual soil or tissue tests
- Split rate applications of N
- Use of N inhibitors
- Targeted fertilizer applications
- Precision agriculture techniques
- Root Zone Application
- and more……..

Current NM Activities and Projects:

- Automation of nutrient management plans
- Nitrate Leaching and Environmental Assessment Package (NLEAP)
- Phosphorus BMP Fact Sheets (SERA-17)
- N Efficiency and Management Technical Note
- Phosphorus in the Environment (NEDC Course)
- NRCS Boot Camp 2005 and 2006
- Outreach to land grant universities, EPA, ARS, PPI, TFI, TSPs, ASA, SWCS, industry, growers, etc.

More Information?

- NRCS Homepage:

http://www.nrcs.usda.gov