

# Soil Survey Update

MLRA Soil Survey Region 13 Report  
Morgantown (MO-13)

# Outline

- Office Implementation
- Ag Experiment Station Activities
- Challenges

# MLRA Office Implementation

- 6 of 7 MLRA Offices in place
- Frederick, Maryland coming on line this year
- Staff busy formulating annual and project plans which are cornerstones of the new age

# Agricultural Experiment Station Update

- Work closely with the WVU, VT, PSU, OSU, and MD staff to support current research in soil science
- Work to transfer techniques, procedures, and methodologies
- Mentor project graduate students and encourage them to seek employment with NRCS after graduation

# Agricultural Experiment Station Projects

- Soil Physics
  - Preferential Flow and P Leaching
  - Water Dynamics Across Benchmark Soil Catenas (Trout Run)
  - Water Table Monitoring
- Soil Science
  - P Sorption Capacity Mapping
  - Forest Soil Fertility and Parent Materials (Poster)
  - Soil Property Mapping using Soil-Landscape Modeling (Mon. NF)
  - Geomorphometric Analysis for Soil Survey Update
  - UMD – Subaqueous soils/hydric soil criteria
  - OSU, PSU – Pedon data to NRCS database
  - Soil Temperature - Frigid soil boundary in MLRA 127 (Poster)

# Preferential Flow and Phosphorus Leaching Potential

## Objectives

- Identify active preferential flow pathways
- Measure STP levels in these pathways and in the native soil matrix to determine if P is moving at depth within the active pathways

# Water Dynamics Across Benchmark Soil Catenas

## Objectives

- Provide soil-landform data that can be used to quantify infiltration and subsurface H<sub>2</sub>O movement on benchmark soils.
- Provide Interpretations
- Foundation of Hydropedology models for the Valley and Ridge Province
- COOP between NRCS, WVU, and PSU

# Water Table Monitoring

## Objectives (We are using Mark Stolt's Gizmos)

- Determine the frequency and duration of high water tables in selected seasonally-saturated soils with perched water tables in MLRA-127
- Document the physical, chemical, and morphological characteristics of these soil and relate these properties to measured hydrologic characteristics
- Establish soil-landscape relationships by which these soil-hydrologic relationships can be extrapolated across landscapes

## Methods

- Maximum water table recording devices (MWTRD)
  - a.k.a., “gizmo wells”



# Phosphorus Sorption Capacity

## Previous Studies

- In conjunction with multiple field projects, pedons throughout the agriculturally important regions were sampled and characterized relative to their P sorption capacity
- P sorption capacity (PSC) was determined for 85 pedons from 31 soil series (including 57 pedons from 17 benchmark soils)

## Objective (for FY-2008)

- To use previously collected data to develop maps of P sorption capacity.

# Extrapolating the PSC Taxonomically

- Soils sharing classifications also share many characteristics
- Calculate PSC values by each of the following:
  - Subgroup
  - Great group
  - Suborder
- Assign PSC values to soils based on highest available taxonomic class
- Water, rock outcrop, and urban land receive values of 0
- Soils identified as “other” are null

## Other Projects:

(Posters are on display at this conference)

- Mapping Frigid Soil Boundary in MLRA-127 – Prescott, Thompson, Waltman, Carpenter, Kraul
- Parent Material Study – Jenkins, Jones, Carpenter, Thompson

# CHALLENGES:

- Finish implementation of MLRA Office
- MLRA Offices to develop plans for 2009
- Get technical teams working together across boundaries