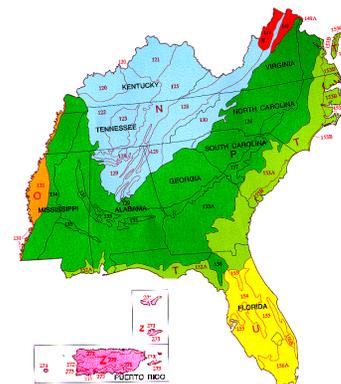




NASIS

Implementation



Interpretations

Southern Regional Cooperative

Soil Survey Conference

Tybee Island, Georgia, June 2-6, 2002

"Life is like a box of chocolates; you never know what you're gonna get."

Tom Hanks, Forrest Gump (1994).

NASIS Implementation

- ✍ What is NASIS ?
 - ✍ Who does what ?
 - ✍ New Concepts

 - ✍ Soil Interpretations
 - ✍ What have we done ?
 - ✍ What do we need to do ?
-

Terminology

- **NASIS** - National Soil Information System
- **SSURGO** - Soil Survey Geographic Database
- **CST** - Customer Service Toolkit
- **SDV** - Soil Data Viewer
- **eFOTG** - Electronic Field Office Technical Guide

What is NASIS ?

From the NASIS web site:

NASIS (the National Soil Information System) is a tool to help you create and maintain soil surveys.

What is NASIS ?

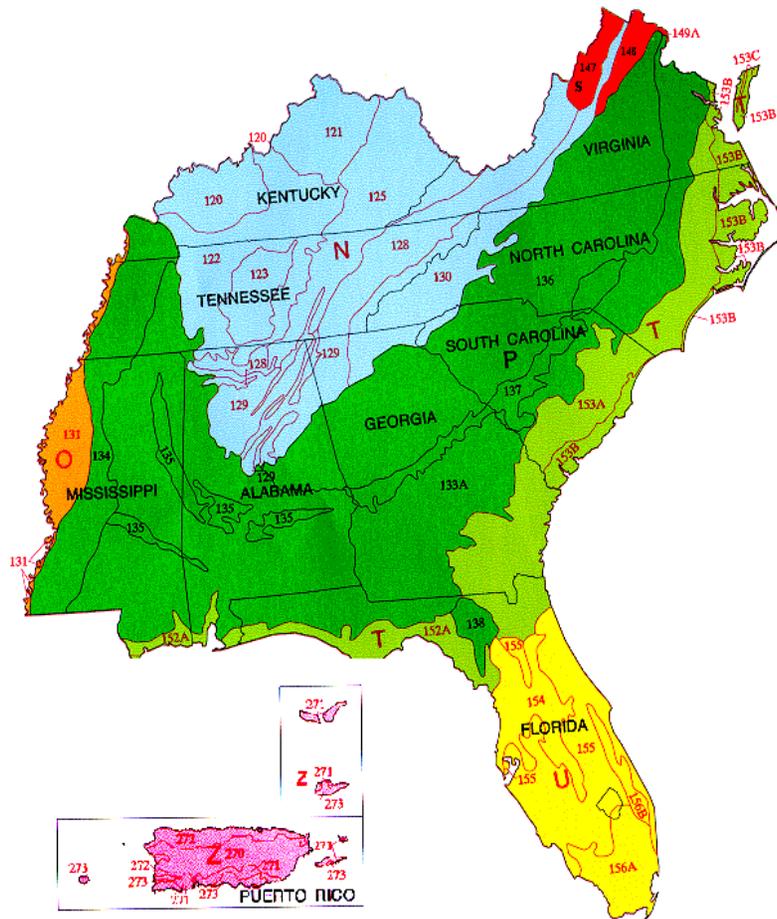
From the NASIS web site:

The major objectives of NASIS are:

- To provide a dynamic and flexible system
 - To support conservation assistance through improved data quality
 - To provide improved automated mapunit management
-

Who does What ?

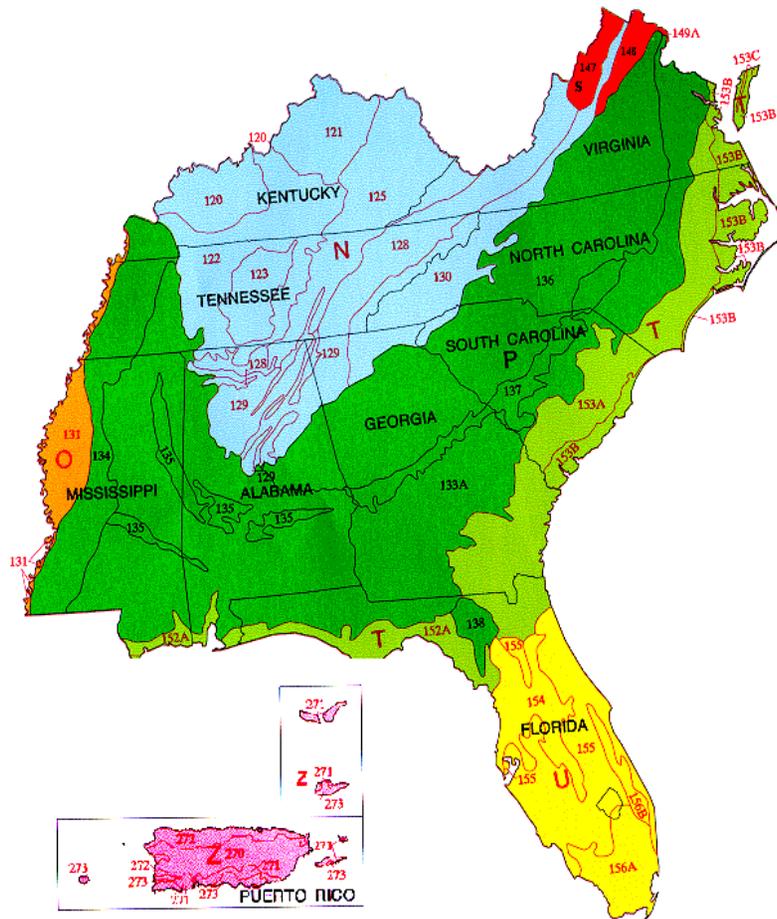
MLRA approach to soil surveys commenced in 1995



- Soil correlation
- Quality assurance project soil surveys

Who does What ?

MLRA approach to soil surveys commenced in 1995



Data population and data quality for project soil surveys

Manuscript development

SSURGO reviews

Who does What ?

MLRA approach to soil surveys commenced in 1995



- Technical soil services
- Distribution
- Utilization

Who does What ?

MLRA approach to soil surveys commenced in 1995



SSURGO development and export

Data population for published surveys

Field Office Technical Guides

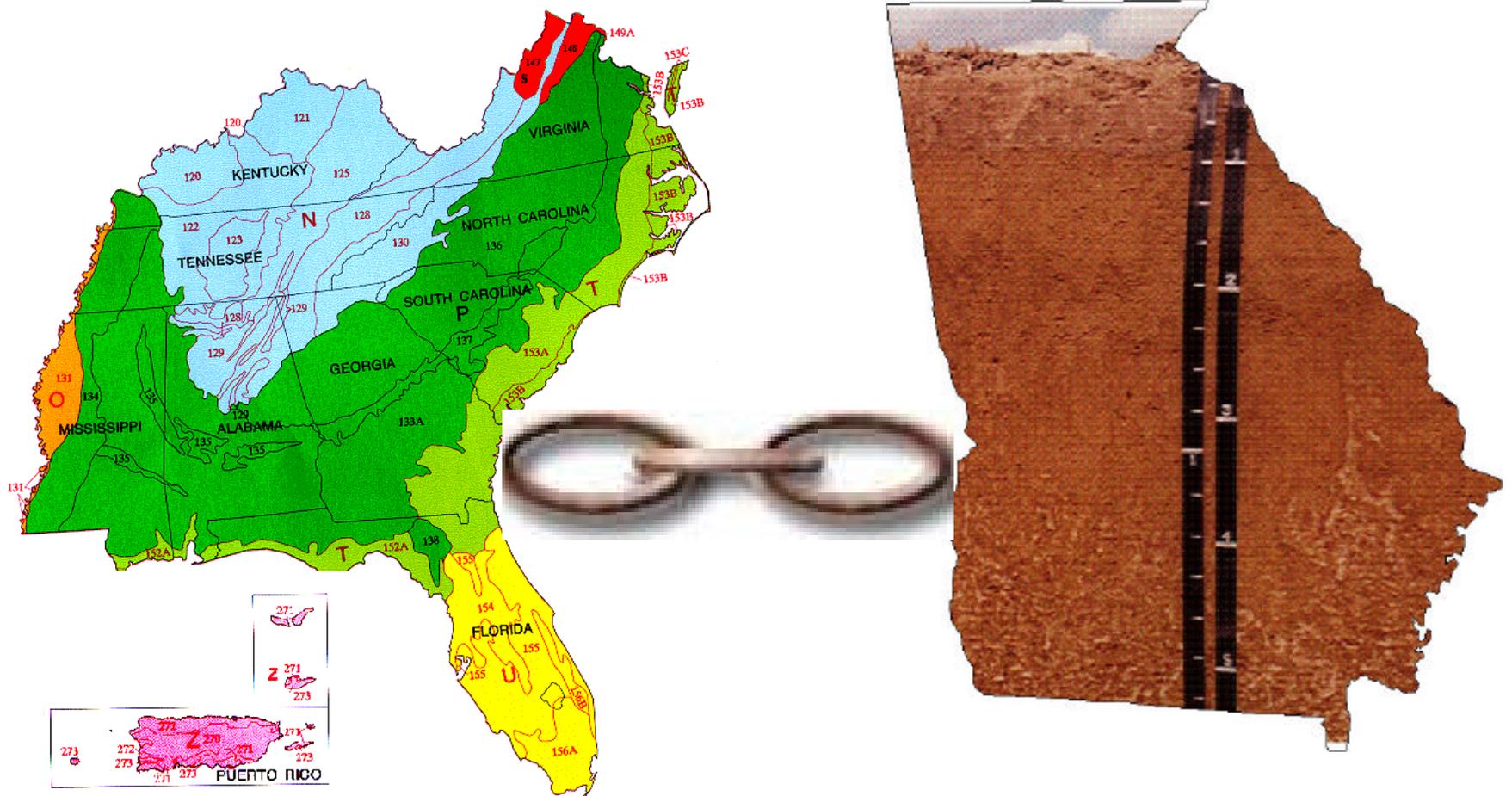
Who does What ?

MLRA approach to soil surveys commenced in 1995



Who does What ?

Data population and utilization are closely linked



Conceptual Changes

- ? A map unit can have an unlimited number of components
 - ? Inclusions are now minor components
 - ? Each component can have an unlimited number of layers
 - ? Representative values
 - ? New data elements added
 - ? Water tables , flooding, and ponding by month
-

Conceptual Changes - Interpretations

- ? Whenever possible, interpretive criteria is based on soil properties, rather than on classes or on other interpretations
 - ? Interpretations are generated from actual component data
 - ? Do not edit interpretive results --edit physical or chemical properties, or edit interpretive criteria
 - ? National interpretations are “templates”
-



Soil

Interpretations



Before NASIS

- Soil Properties on SOI-5
- Send to ISU
- Run Ratings Program
- Store Interpretive Results (Overrides)
- Use SOI-6 to get Interpretations
- Edit data: database, manuscript tables



the good side

- Established and accepted
- Easily understood
- Peer review



the bad side

- Only 6 layers
- Changing layers/depths did not change interps
- Changes to properties did not change interps
- Age of Interps vs. Criteria
- Most limiting feature
- Overrides
- Inconsistencies among data, criteria, interps



With NASIS

- Populate component and horizon data in NASIS
- Select national or local criteria
- Filter data through the criteria in NASIS
- Report or export the interpretations



the good side

- Interps for actual component properties
- Gradational ratings
- Ranking of all properties
- Interps stay current with properties and criteria
- Local options



the bad side

- Null data
- Data conversion issues
- Inconsistent data population
- Changes to criteria (undocumented)
- Criteria documentation (inconsistent)
- New concepts, complexity, acceptance
- Local options



Impacts of New Concepts

- ? A map unit can have an unlimited number of components
- ? Inclusions are now minor components

New Concepts - Components

the good side

- Allows for better representation of what is actually in the map unit

the bad side

- Null component data
- Correlation and population of minor components
- Data Consistency



Impacts of New Concepts

- ? Each component can have an unlimited number of layers

New Concepts - Horizons

the good side

- Allows for better representation of what is actually in the component
- Most limiting vs. representative

the bad side

- Populate by horizons or layers?
- Some interps consider “thickest layer”
- Data Consistency
- Mass of data in reports and manuscripts

Impacts of New Concepts

RV

Representative Value

New Concepts - RV

the good side

- Allows interpretations on the representative value for a property, rather than most limiting

the bad side

- Default numerical rv's are averages
- Text rv's not populated
- Calculations/Interps select random rv if not populated
- Most limiting vs. representative?

Georgia soils data

- 94 Soil Survey areas
- 5000 mapunits
- 5200 components
- 17,000 horizons



Impacts of New Concepts

- ? New data elements added
 - ? Albedo
 - ? Soil taxonomic moisture class
 - ? ECEC
 - ? ponding duration and frequency
 - ? Aspect
 - ? Soil slippage potential
 - ? Horizon designation
 - ? Component surface fragments

New Concepts - New Data Elements

the good side

- Provides for more descriptive and complete characterization of the soils and their interpretations

the bad side

- Not populated (null data)
- Default values used for null data
- Conversion errors
- Population workload



Impacts of New Concepts

- ? Water tables are now soil moisture states.
- ? Soil moisture, flooding, and ponding recorded for each month

New Concepts - Soil Moisture

the good side

Provides for more descriptive and complete characterization of the soils and their interpretations

the bad side

- Conversion errors
 - “perched” water appears “apparent”
- Incomplete data
 - Soils have “long” ponding duration, but frequency is “none”
- Population workload



Impacts of New Concepts

- ? Whenever possible, interpretive criteria is based on soil properties, rather than classes or other interpretations

New Concepts - interps

the good side

- Allows for better interpretation of what is actually in the component

the bad side

- Null data
- What data are the interpretations using?
- Criteria changes



Impacts of New Concepts

- ? Interpretations are generated from actual component data

New Concepts - Criteria

the good side

- Allows for better interpretation of what is actually in the component

the bad side

- Untested criteria
- Some properties are estimations, rather than measurements



Impacts of New Concepts

- ? Do not edit interpretive results -- edit physical or chemical properties, or edit interpretive criteria
- ? National interpretations are “templates”



New Concepts - Criteria

the good side

- Consistency between criteria, soil properties, and interpretations

the bad side

- Coordination?
- Consistency -- multiple interps for the same use
- Complexity
- Workload for development and maintenance

What Have We Done?

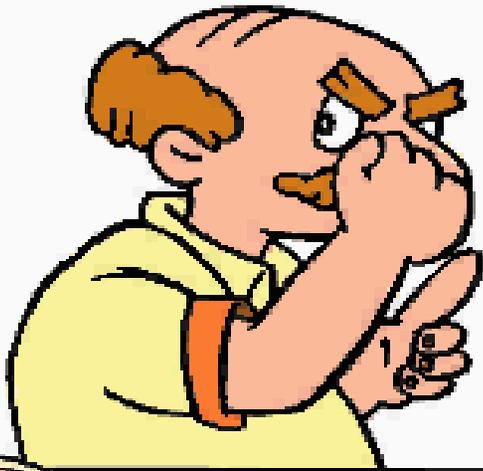
National

- Developed and maintain national interpretations
 - Provided training on NASIS interpretations
 - Developed Soil Data Viewer
 - Developed Access template
 - Working on Null data/not rated issue
 - Established interpretations work group
-

What Have We Done?

MOs and States

Talked about it



- teleconferences
 - emails
 - meetings
-

What Have We Done?

MOs and States

- Used interpretations as they are
 - Copied/edited national interps to create locals
 - Combinations of national and local interps
 - Decided not to use interpretations until . . .
-

What Have We Done?

MOs and States

- Decided not to use interpretations until . . .
 - ✍ Understand how they work
 - ✍ Localized, as needed
 - ✍ Tested
 - ✍ Documented
-

What Have We Done?

Georgia

- Reviewed interps with soil scientists and district conservationists
 - Created local interpretations for selected uses by copying editing nationals
-

What Have We Done?

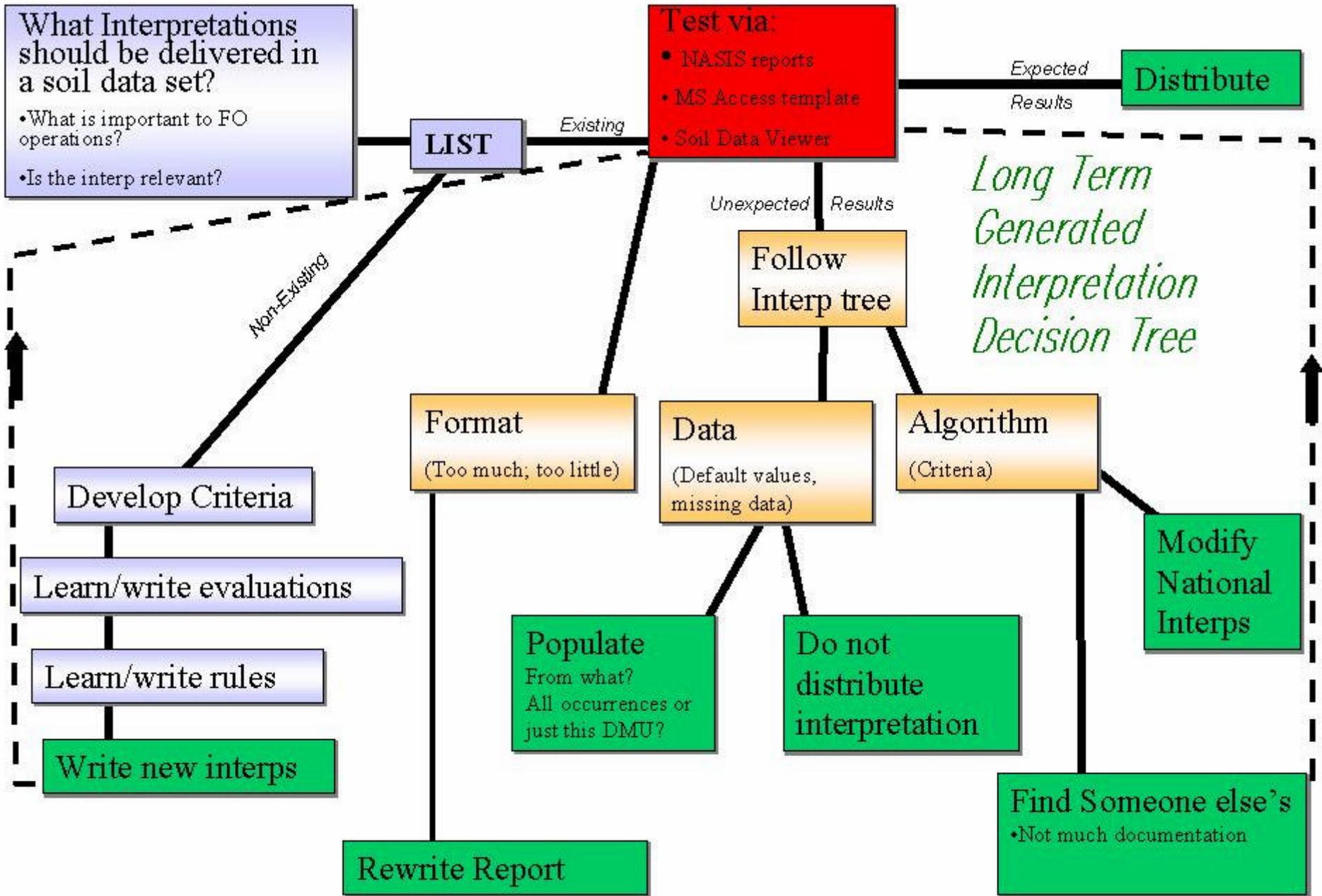
Georgia

- Created local interpretations for selected uses by copying editing nationals
 - Sand
 - Local roads and streets
 - Camp Areas
 - Topsoil
 - Shallow excavations
 - Picnic Areas
 - Roadfill
 - Pond reservoir areas
 - Playgrounds
 - Paths and trails
-

What Have We Done?

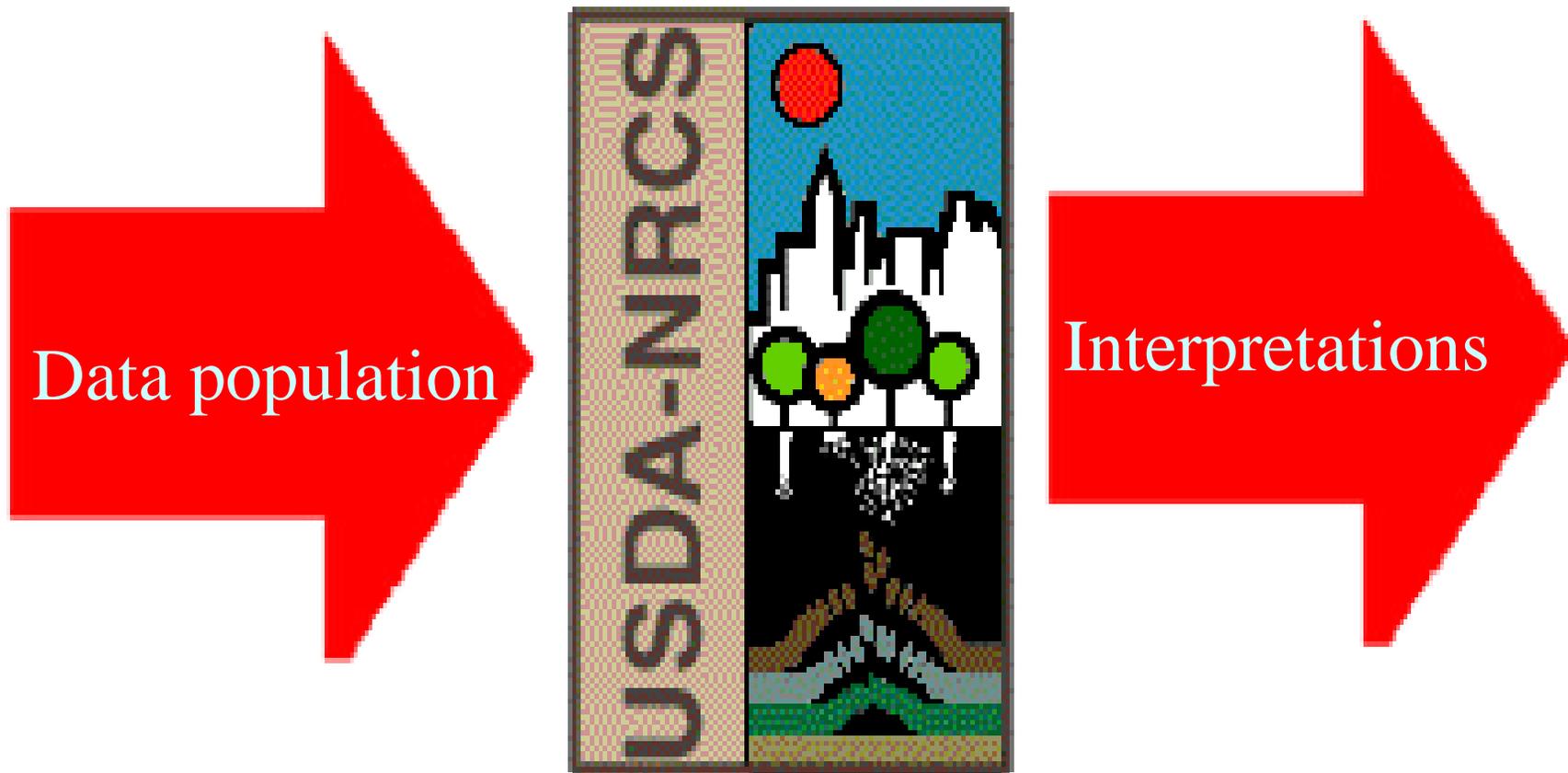
Georgia

- For SSURGO, populate/edit data, export combination of local/national interps
 - For CST, edit selected soil properties, export data, not interps
 - RUSLE2
 - nontechnical descriptions
 - soil moisture, flooding, ponding
-



What Do We Need to Do ?

*From the **MO**'s (My Observations & My Opinions)*



Chronology

- SSSD to NASIS- '94
 - Changed data structure
 - Converted data to new structure ?
 - Added many new data elements
 - but most were unpopulated
 - Maintained FOCS export in old data structure

Chronology

- NASIS v. 3.0, '96
 - Introduced “generated interpretations”
 - **FOCS export still in old data structure**
 - old “stored” interps still exported

Chronology

- NASIS v. 4.1, '99
 - Allowed for NASIS export that included “generated interpretations”
 - FOCS export still available in old data structure
 - old “stored” interps still exported

Chronology

- NASIS v. 5.0, '01
 - Central server
 - FOCS export still available in old data structure
 - old “stored” interps still exported

Chronology

- As of November 2001, only SSURGO 2 structure supported by SDV and accepted for SSURGO
- Only generated interpretations exported
- Previous SSURGO data must be re-certified and re-archived

What Do We Need to Do ?

*From the **MO**'s (My Observations & My Opinions)*

- Document
 - Simplify
 - Educate
 - Evaluate
 - Populate
 - Modify
 - Create
 - Distribute
 - Field offices, public
 - CST, SSURGO, eFOTG, Soil Data Warehouse
 - Educate
 - Evaluate
 - Modify
 - Create
-

What Do We Need to Do ?

From the MO's (My Observations & My Opinions)

Among and between

COMMUNICATE

NRCS

Universities

Other Cooperators

Private Sector

MO's

States

Field Offices

NSSC

Who?

“I just want to know how I can good soil interpretations.”

NASIS data population, validation and export

SSURGO

Access database and template

Soil Data Viewer

Electronic Field Office Technical Guide

Soil Data Warehouse

Summary

 **NASIS Interps based on actual data**

 **Populate NASIS with good data**

 **Review interpretive results**

 **Refine Criteria**

 **Develop Local interps as needed**

 **Give them away, help folks use them**

"That's all I have
to say about that."

Tom Hanks, Forrest Gump (1994).