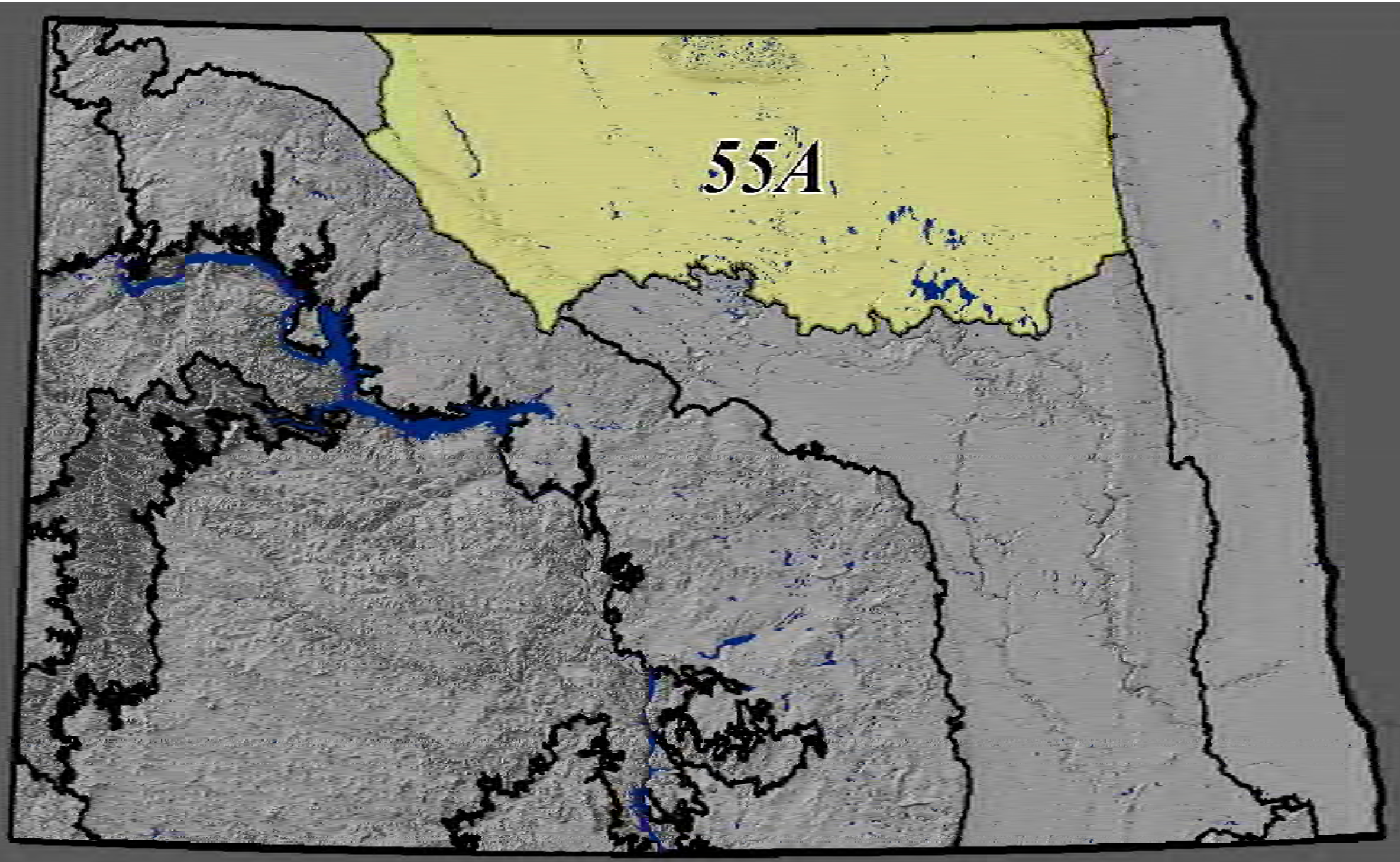
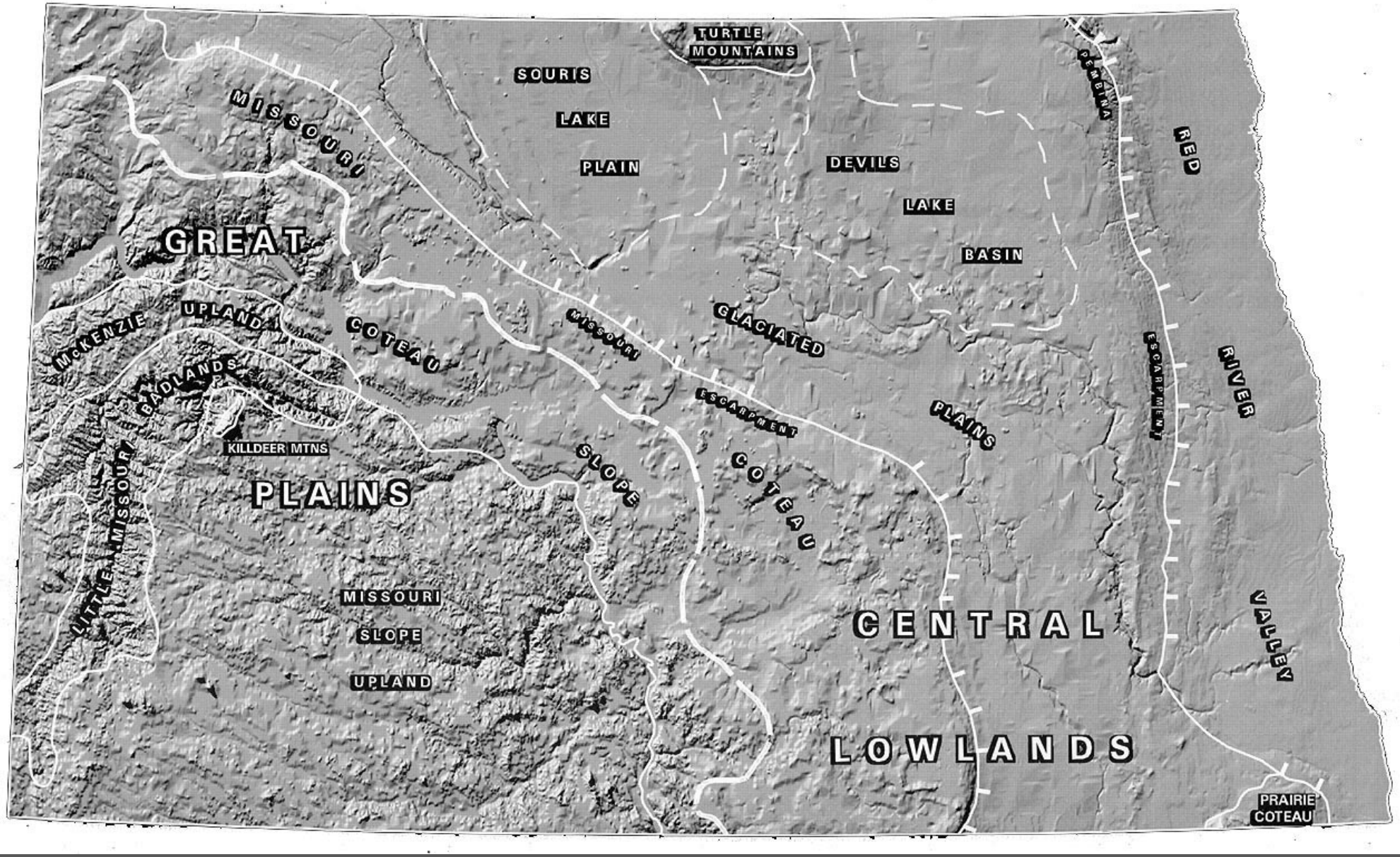


Northern Black Glaciated Plains, MLRA 55A Recorrelation and Update

Mike Ulmer
Senior Regional Soil Scientist
Northern Great Plains Region

NRCS Natural Resources Conservation Service



Physiographic Regions of North Dakota*

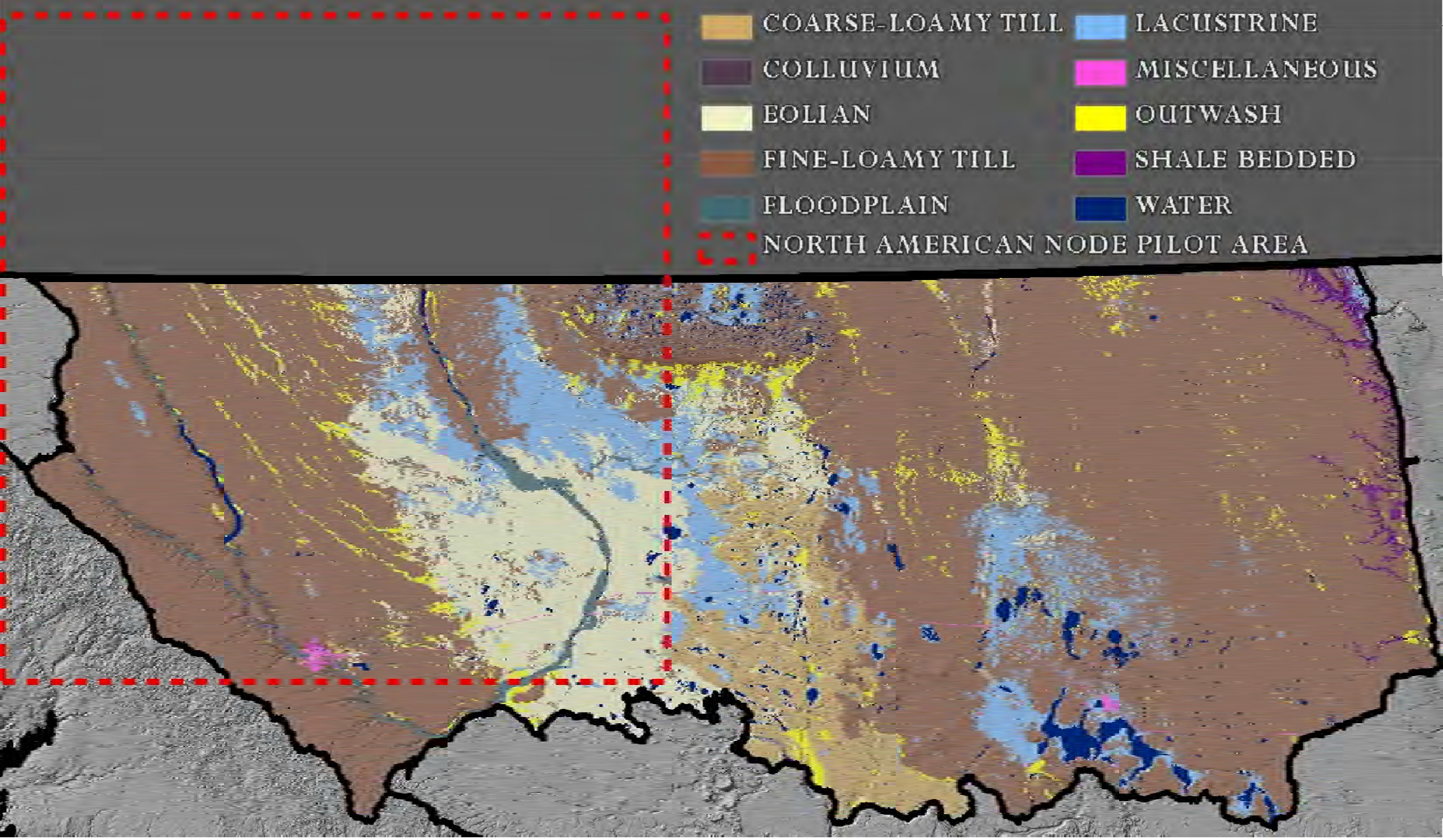
*Bluemle, J.P, North Dakota Geological Survey. 2000.

Background: Physiographic Regions (Local)

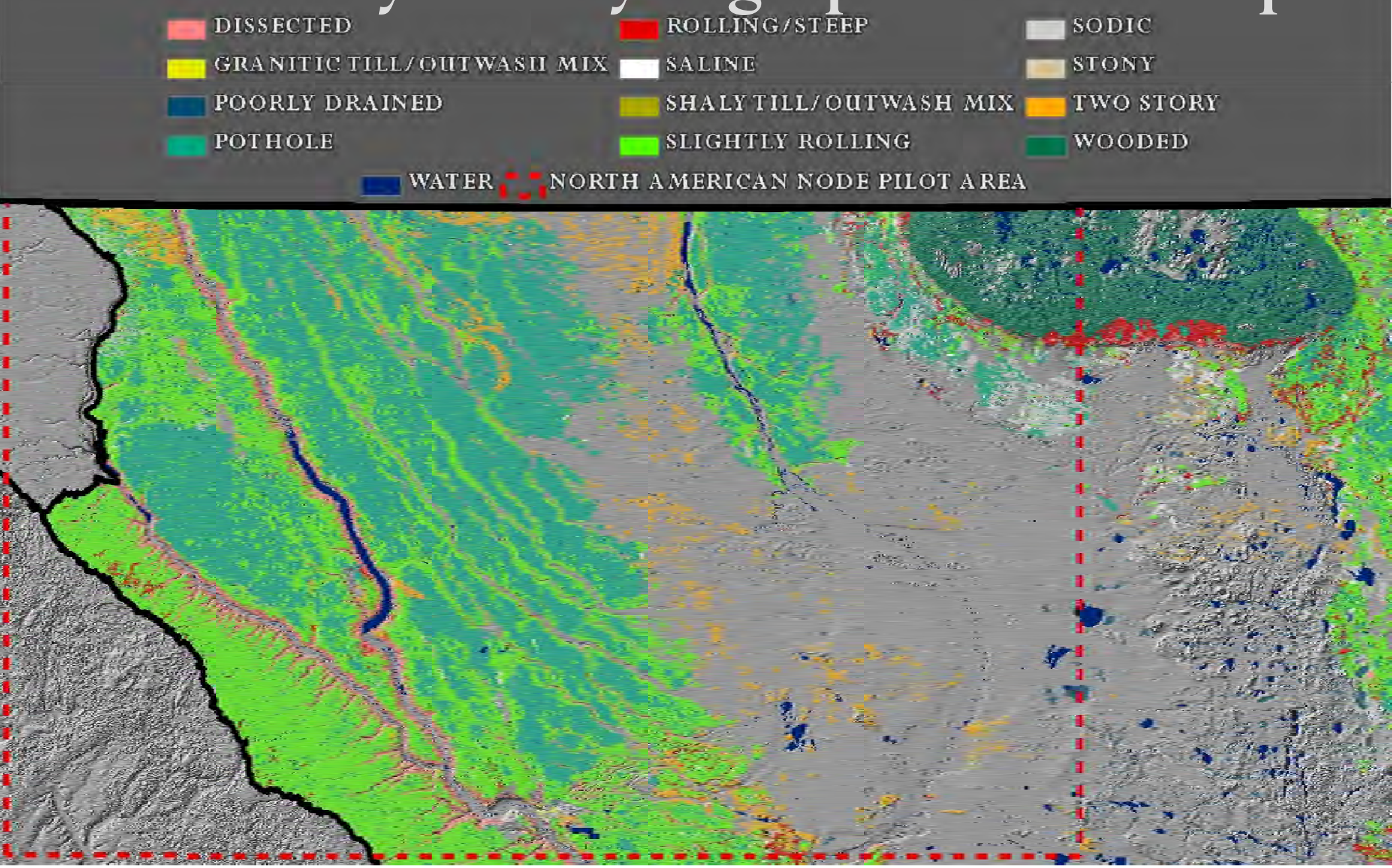
The first step in a MLRA Soil Survey is dividing the MLRA into similar physiographic areas, independent of political boundaries. This process separates a complex MLRA into areas with uniform soils, landscapes and land use. It will divide the survey into more easily managed units. All legend development, correlation, documentation, and other operations are to be completed for each physiographic area independently. This assures that map units will match throughout the MLRA.

-MO 7 Soil Survey Field Guide (January, 1997)

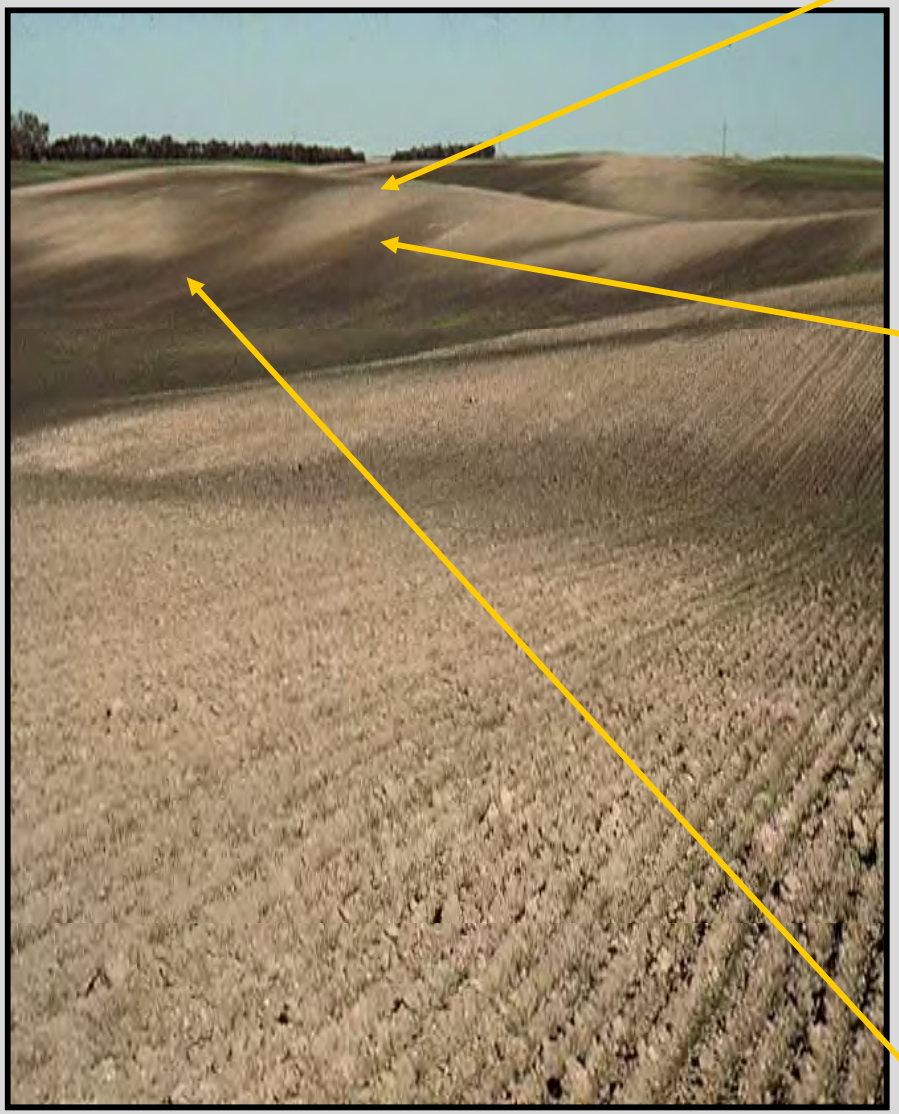
Northern Black Glaciated Plains, MLRA 55A
Local Physiographic Groups (MLRA Update)



Northern Black Glaciated Plains, MLRA 55A
Fine-Loamy Till Physiographic Sub-Groups

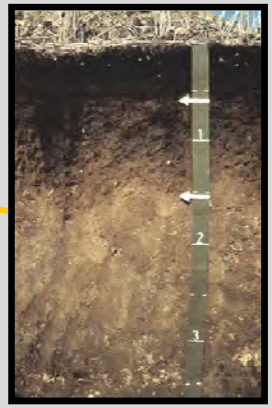


Soil-Landscape Relationships Fine Loamy Till



Buse Series

FINE-LOAMY, MIXED, SUPERACTIVE,FRIGID TYPIC CALCIUDOLLS

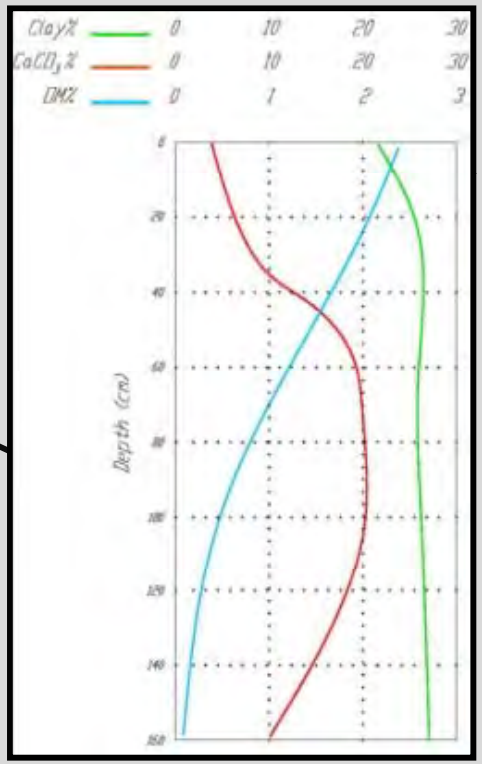


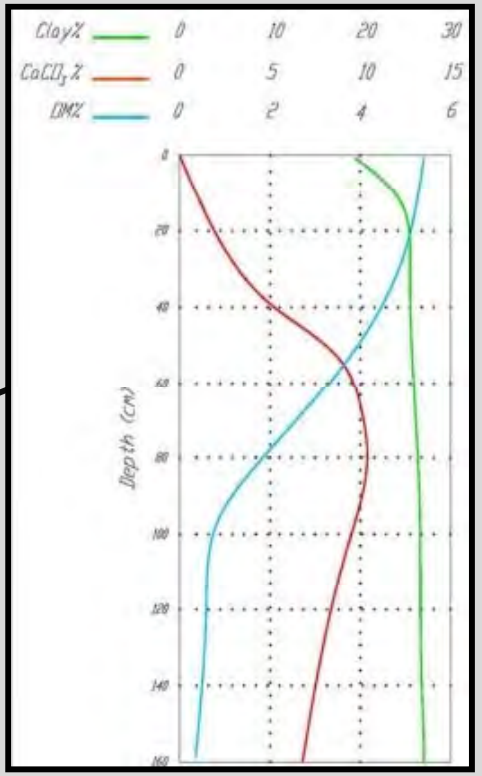
Barnes Series

FINE-LOAMY, MIXED, SUPERACTIVE, FRIGID CALCIC HAPLUDOLLS

Svea Series

FINE-LOAMY, MIXED, SUPERACTIVE, FRIGID PACHIC HAPLUDOLLS



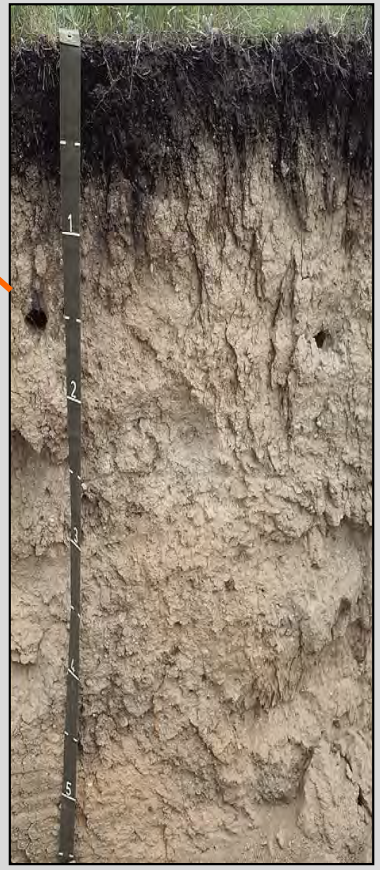


Soil-Landscape Relationships Fine Loamy Till

Langhei Series

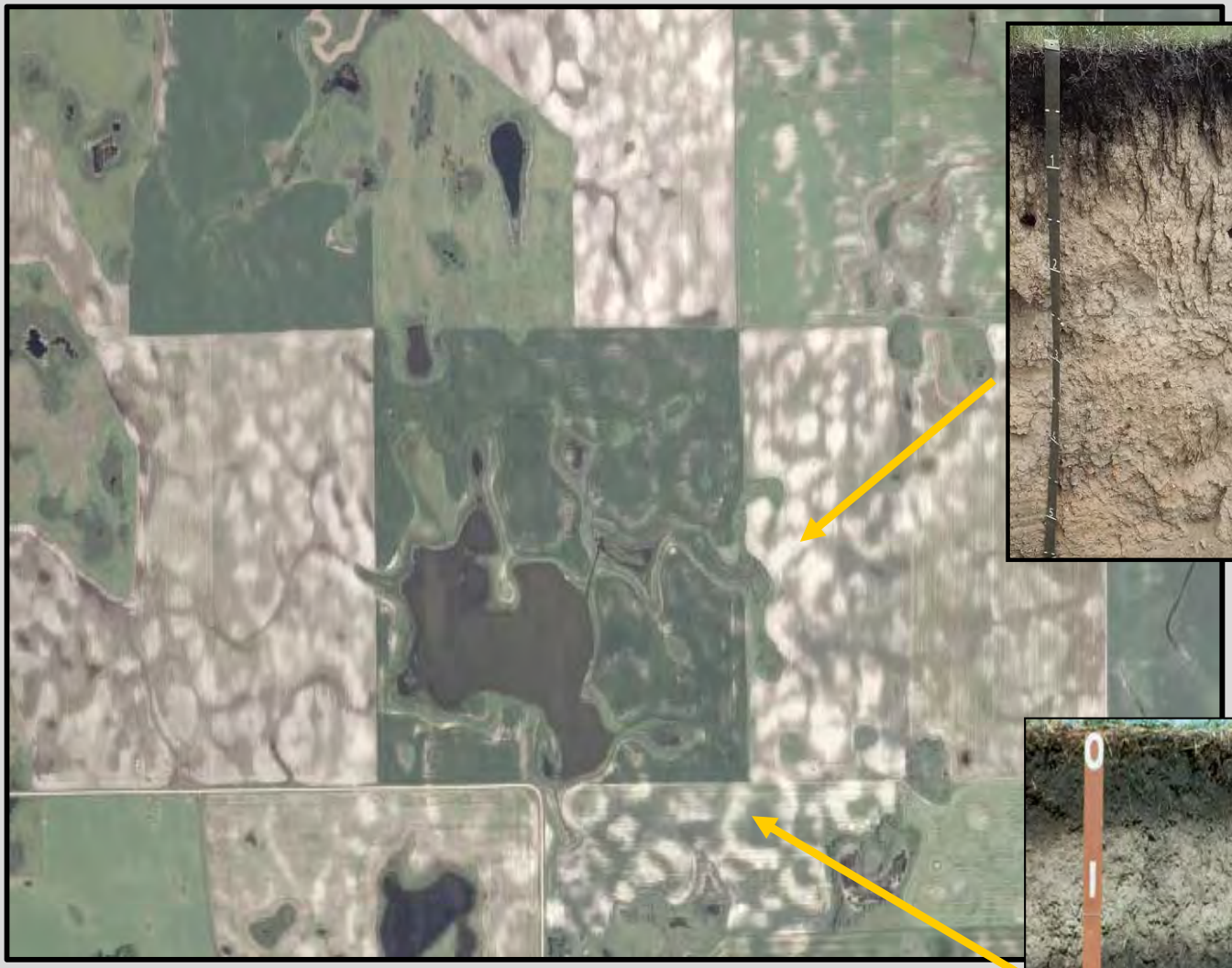
FINE-LOAMY, MIXED, SUPERACTIVE, FRIGID TYPIC EUTRUDEPTS

Buse Series



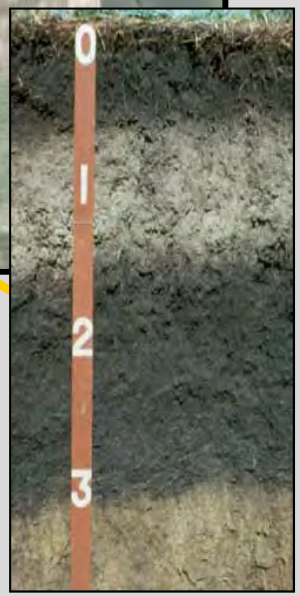
FINE-LOAMY, MIXED, SUPERACTIVE, FRIGID TYPIC CALCIUDOLLS

Doughnut Topography



Buse Series

FINE-LOAMY, MIXED, SUPERACTIVE,FRIGID TYPIC CALCIUDOLLS



Tonka Series

FINE, SMECTITIC, FRIGID ARGIAQUIC ARGIALBOLLS

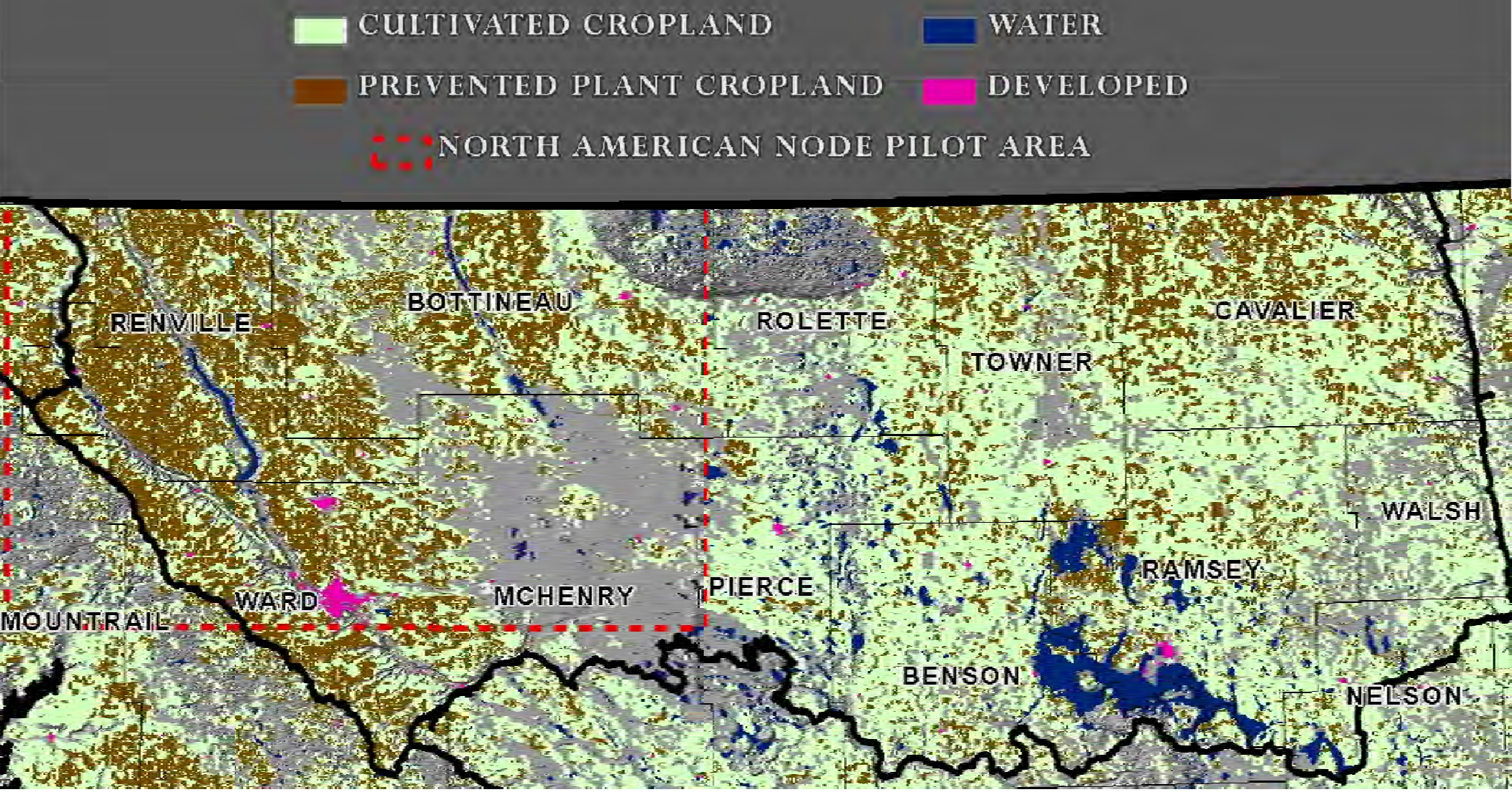

05/07/2011

MLRA 55A Prevented Plant Cropland

-Estimated 2.2 million acres prevented plant in 55A in 2011

-370,000 acres prevented planting in 2010 (also concentrated in western 55A)

-Estimated 6.3 million acres statewide (previous high 3.9 million)

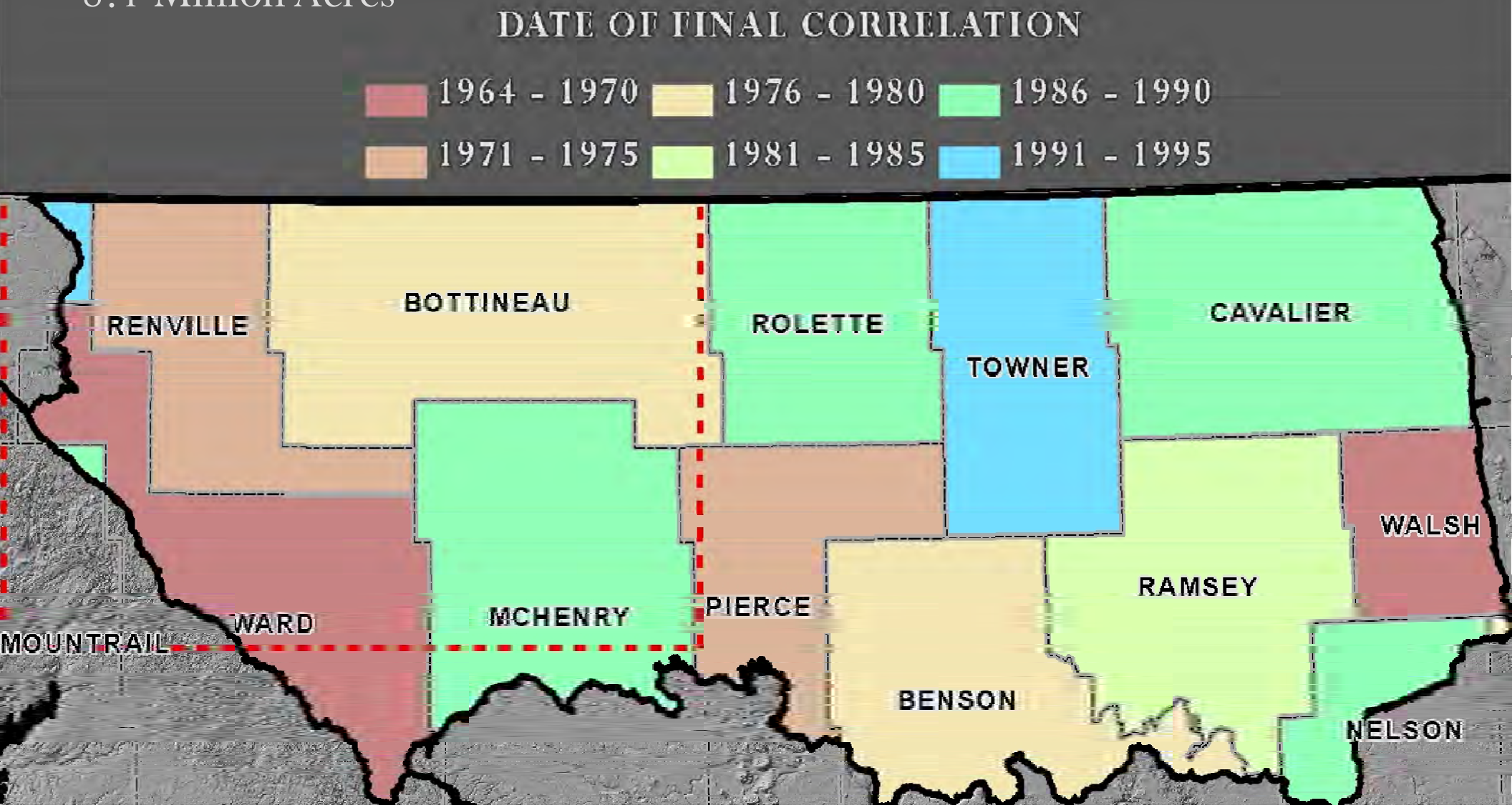


MLRA 55A Recorrelation

-16 Subset Publications (Non-MLRA Soil Surveys)

-Correlation from 1964 – 1992

-8.1 Million Acres

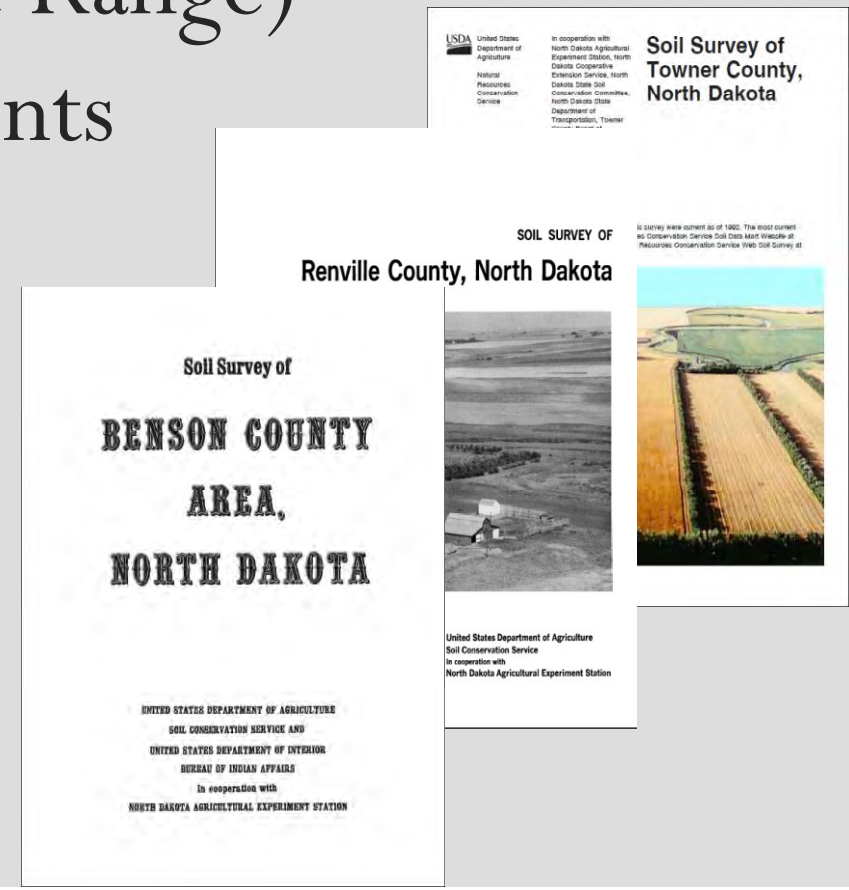


MLRA 55A Recorrelation Objectives

-Establish MLRA Legend
-Develop a Seamless Soil Survey
-Evaluate Existing Soil Survey (Data & Publication)
-Identify Data Voids, Priorities & Concerns
-Establish Data Libraries

MLRA 55A Recorrelation Process

-Based on Landscapes not Database or Names
-Based on Expert (Tacit) Knowledge
-Recognized Original Correlation & Mapping Bias
-Interpretations (Agronomic & Range)
-Establish Reference Components
-Final Report of All Decisions
-QA/QC



Mapping Bias
Map Unit Concepts

-Cavalier 1987

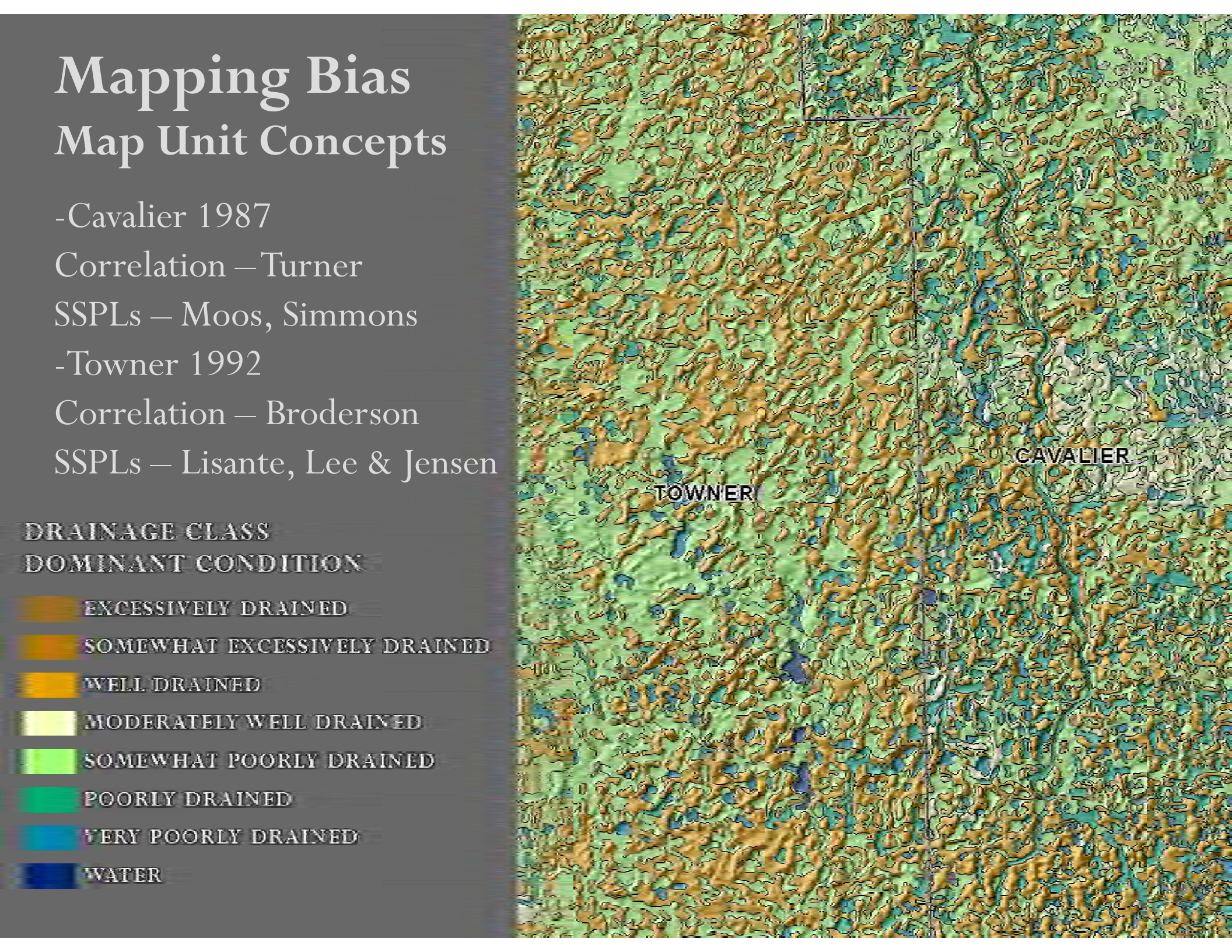
Correlation – Turner

SSPLs – Moos, Simmons

-Towner 1992

Correlation – Broderson

SSPLs – Lisante, Lee & Jensen



Mapping Bias
Map Unit Concepts

USE OF BARNES SERIES NON-MLRA MAPUNITS

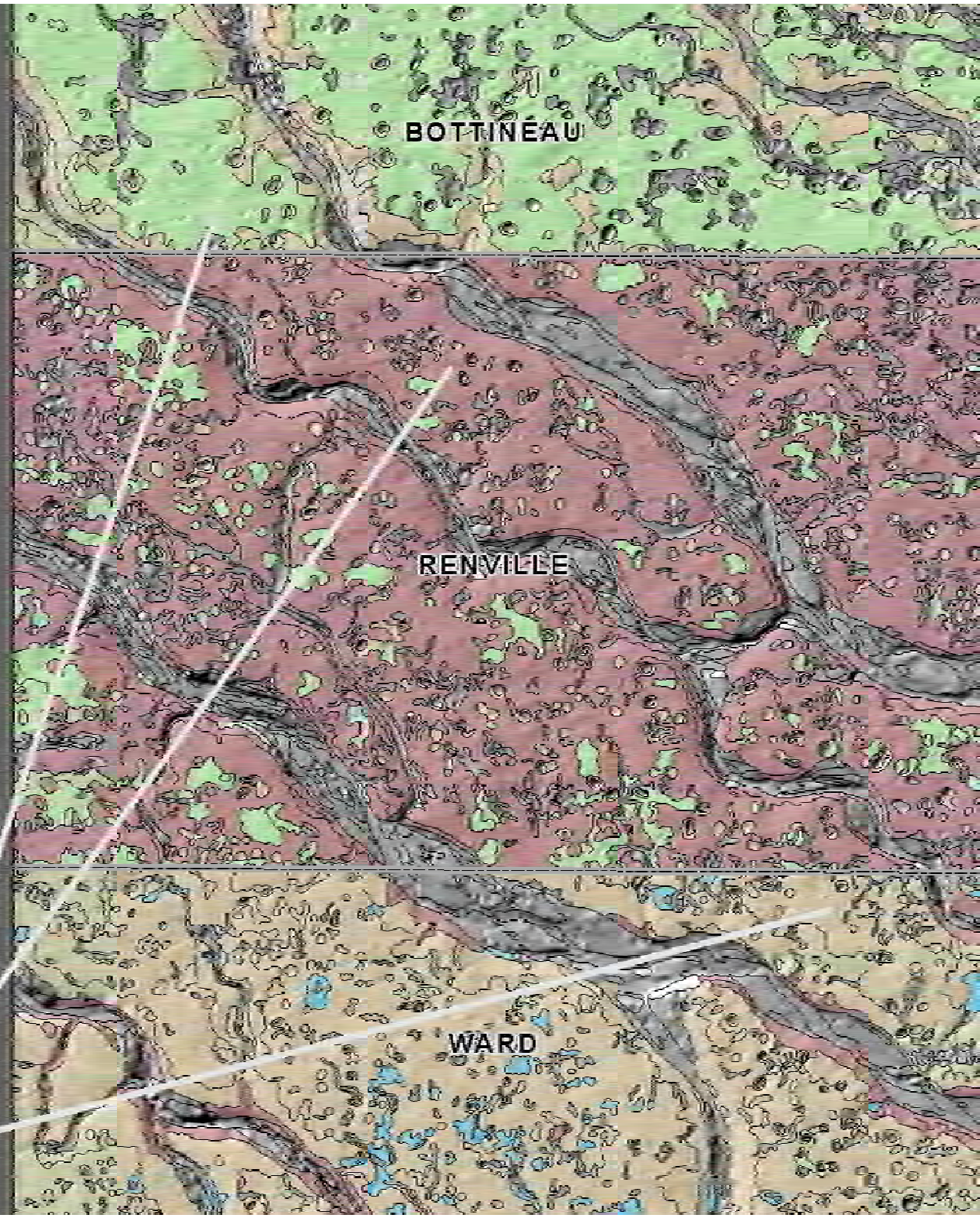
SERIES COMPOSITION

- 15% OR LESS
- 16 - 50%
- 51 - 84%
- 85% OR GREATER
- SERIES NOT USED
- SSURGO LINES

BARNES-SVEA-TONKA COMPLEX, 0 TO 3 PERCENT SLOPES

BARNES LOAM, 1 TO 3 PERCENT SLOPES

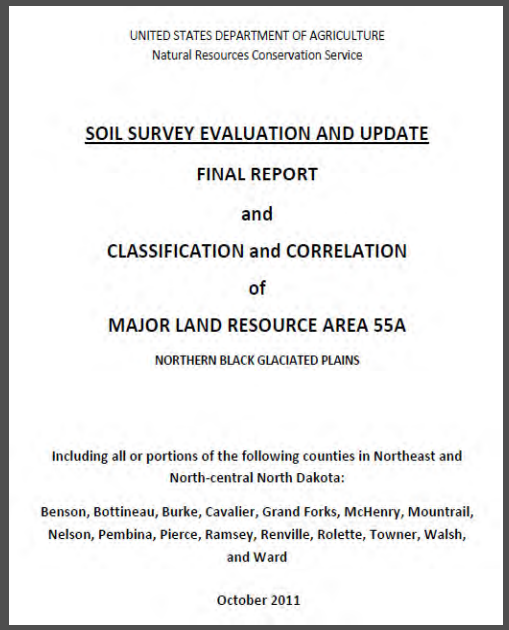
BARNES-SVEA LOAMS, NEARLY LEVEL



MLRA 55A Recorrelation Products

MLRA Legend

-Unique Mapunit Symbols & Map Unit Names
-Organized by Physiographic Groups and Subgroups
-Map Units in 55A Reduced from 900 to 320 (65%)
-Seamless Joins between Non-MLRA Subsets (Counties)
-Completed Evaluation with Projects Identified
-Comprehensive Final Report
-SSURGO Download (First Quarter FY12)



UNITED STATES DEPARTMENT OF AGRICULTURE
Natural Resources Conservation Service

SOIL SURVEY EVALUATION AND UPDATE

FINAL REPORT

and

CLASSIFICATION and CORRELATION

of

MAJOR LAND RESOURCE AREA 55A

NORTHERN BLACK GLACIATED PLAINS

Including all or portions of the following counties in Northeast and North-central North Dakota:

Benson, Bottineau, Burke, Cavalier, Grand Forks, McHenry, Mountrail, Nelson, Pembina, Pierce, Ramsey, Renville, Rolette, Towner, Walsh, and Ward

October 2011

MLRA 55A Recorrelation Products

MLRA Reference Component Legend

-List of Unique Soils Used in MLRA Data Map Units

-Modal Pedons for Series, Miscellaneous Land Types & Higher Taxa managed independent of Map Units

-Reference Components justified by slope and local phase

-Local phases represent:

- Unique Geographic Location (Western Phase)
- Land Cover (Wooded)
- Contrasting Drainage Condition (Undrained, Ponded, Very Poorly Drained)
- Parent Materials(Shaly, Granitic)
- Soil Properties (Slightly Saline, Clayey Substratum, Surface Texture)
- Inherent Management Limitations (Very Stony, Channeled)

-Inserted into Appropriate MLRA Data Map Units for download

-Unique Components used reduced from 3000 to 550 (80%)

- Original Barnes Series – 129 uniquely populated components
- Updated Barnes Series – 12 unique reference components

-All Components Populated to a Common Standard

Recorrelation Products

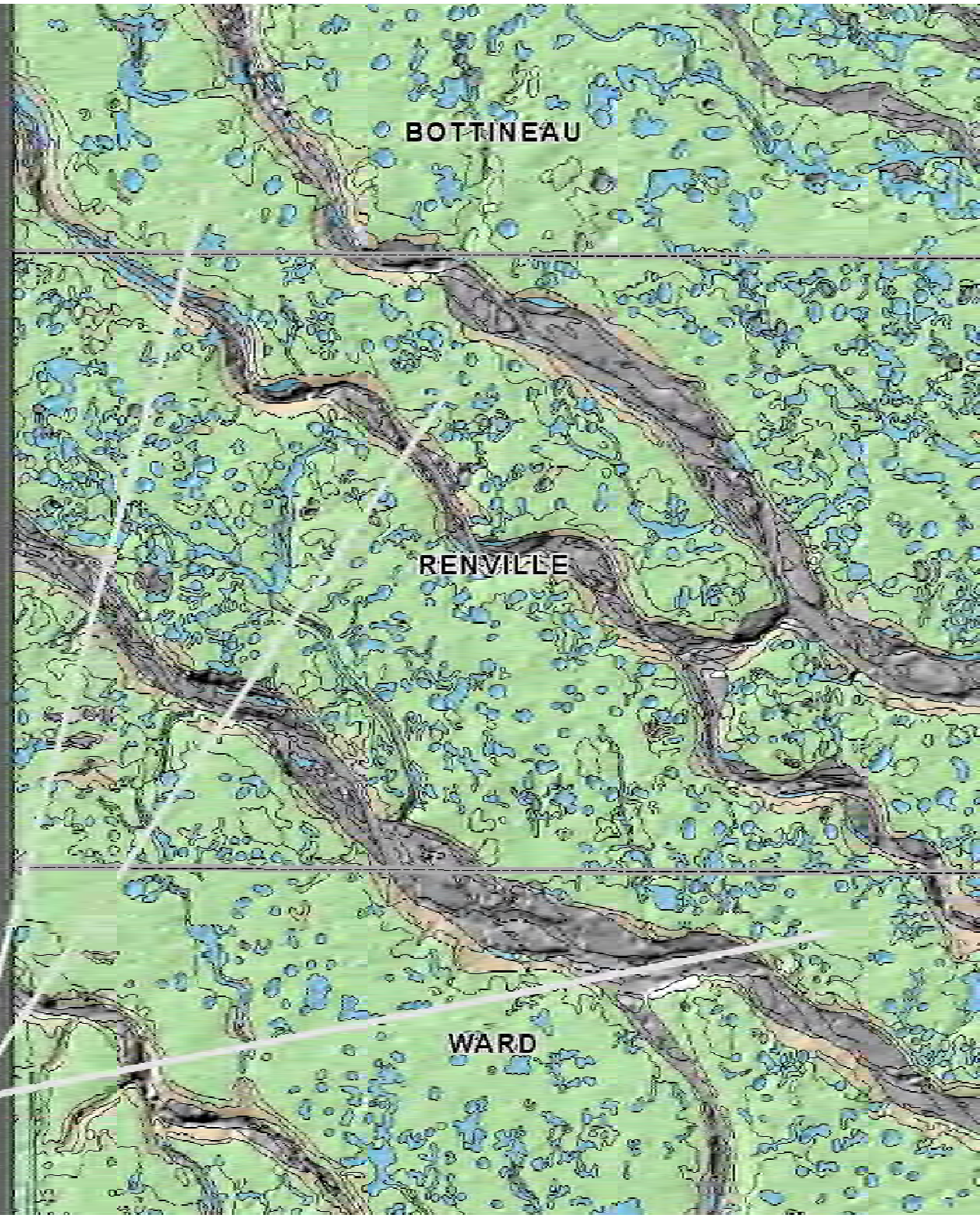
Consistent Map Unit Concepts

USE OF BARNES SERIES MLRA MAPUNITS

SERIES COMPOSITION

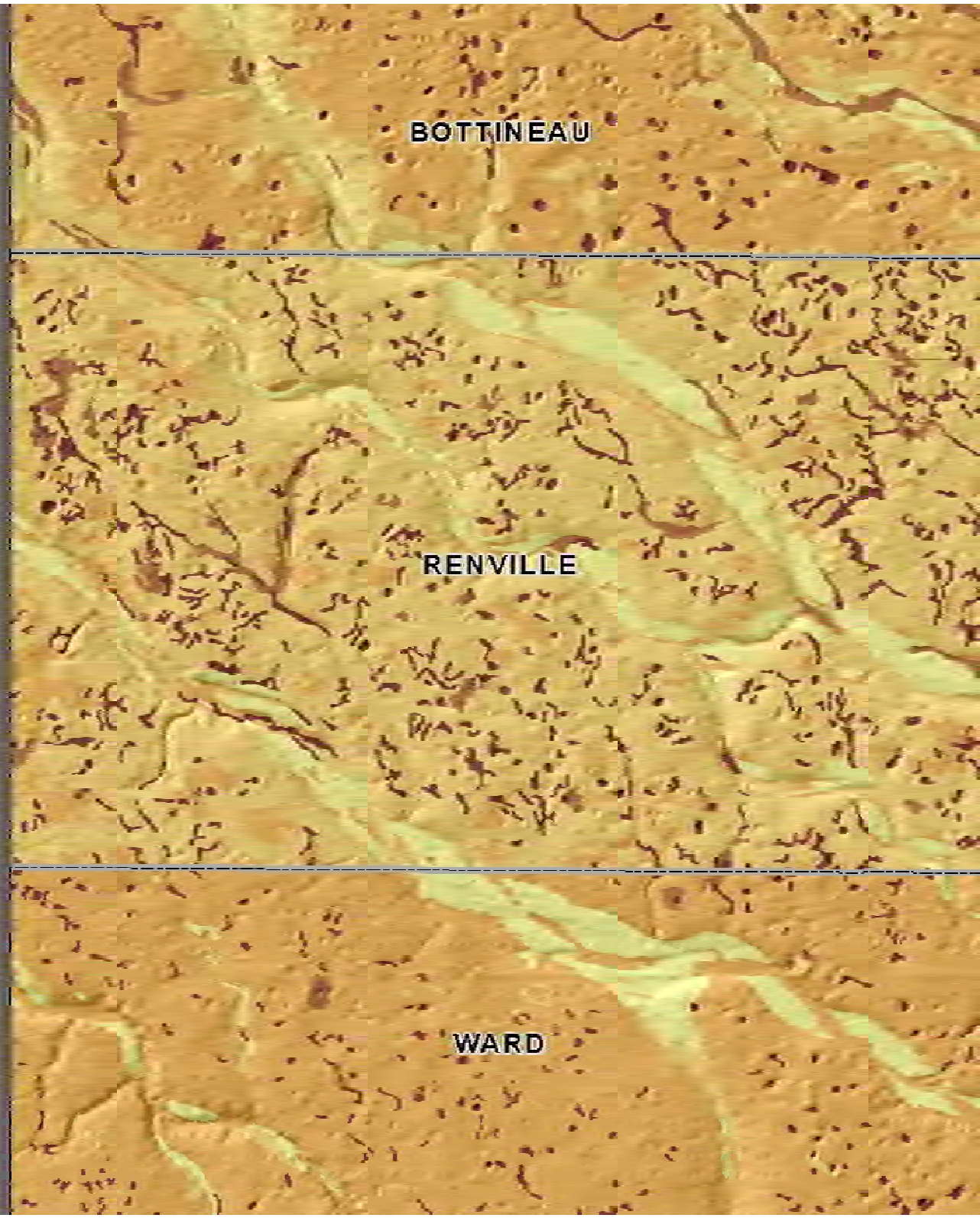
- 15% OR LESS
- 16 - 50%
- 51 - 84%
- 85% OR GREATER
- SERIES NOT USED
- SSURGO LINES

BARNES-SVEA-TONKA COMPLEX, 0 TO 3 PERCENT SLOPES



Original Subset

Inconsistencies & Data Voids



BEFORE MLRA RECORRELATION

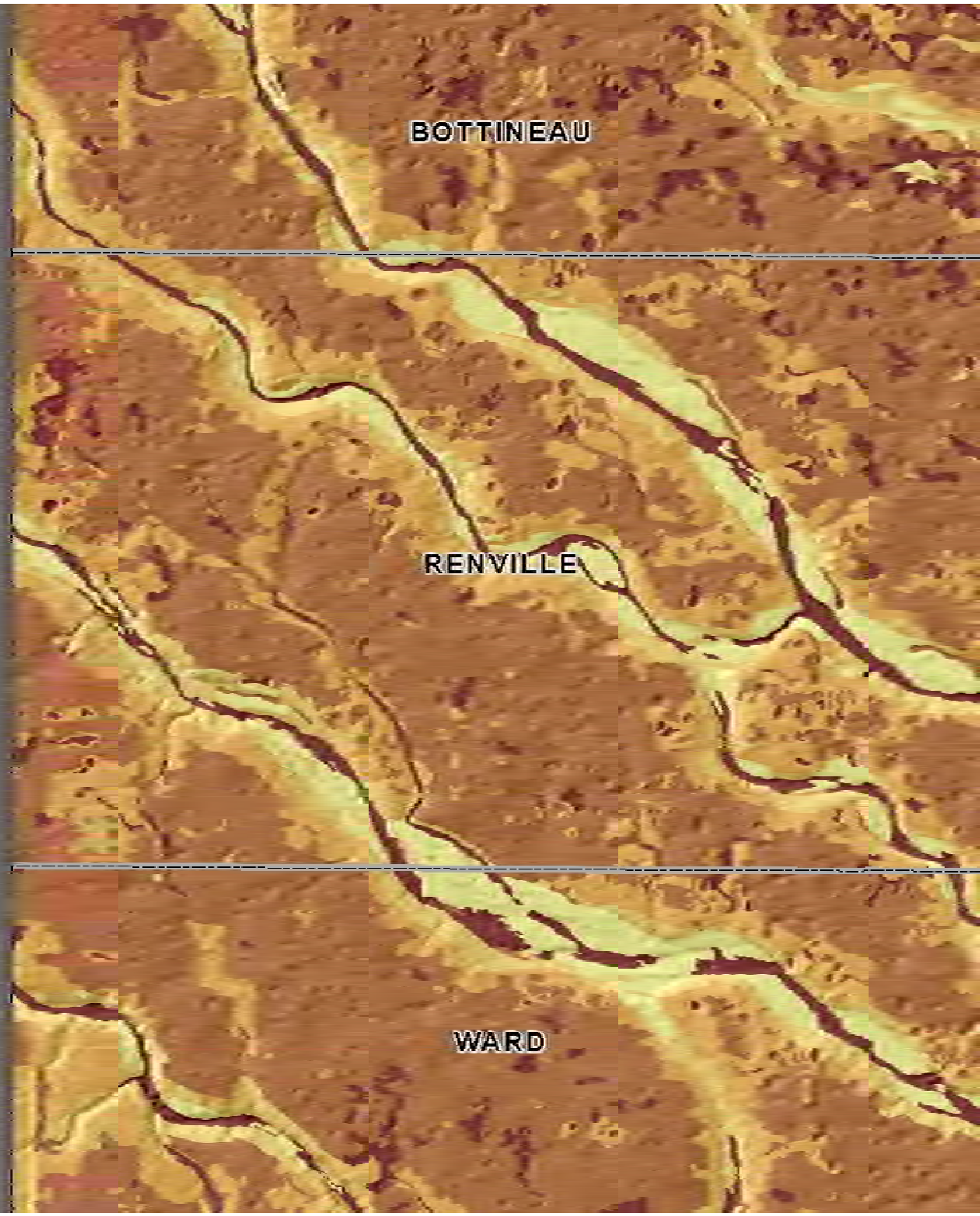
ORGANIC CARBON (KG/SQ. M)

TOP 1 METER OF PROFILE

- LESS THAN 10
- 10 - 15
- 15 - 20
- 20 - 25
- OVER 25

Recorrelation Products

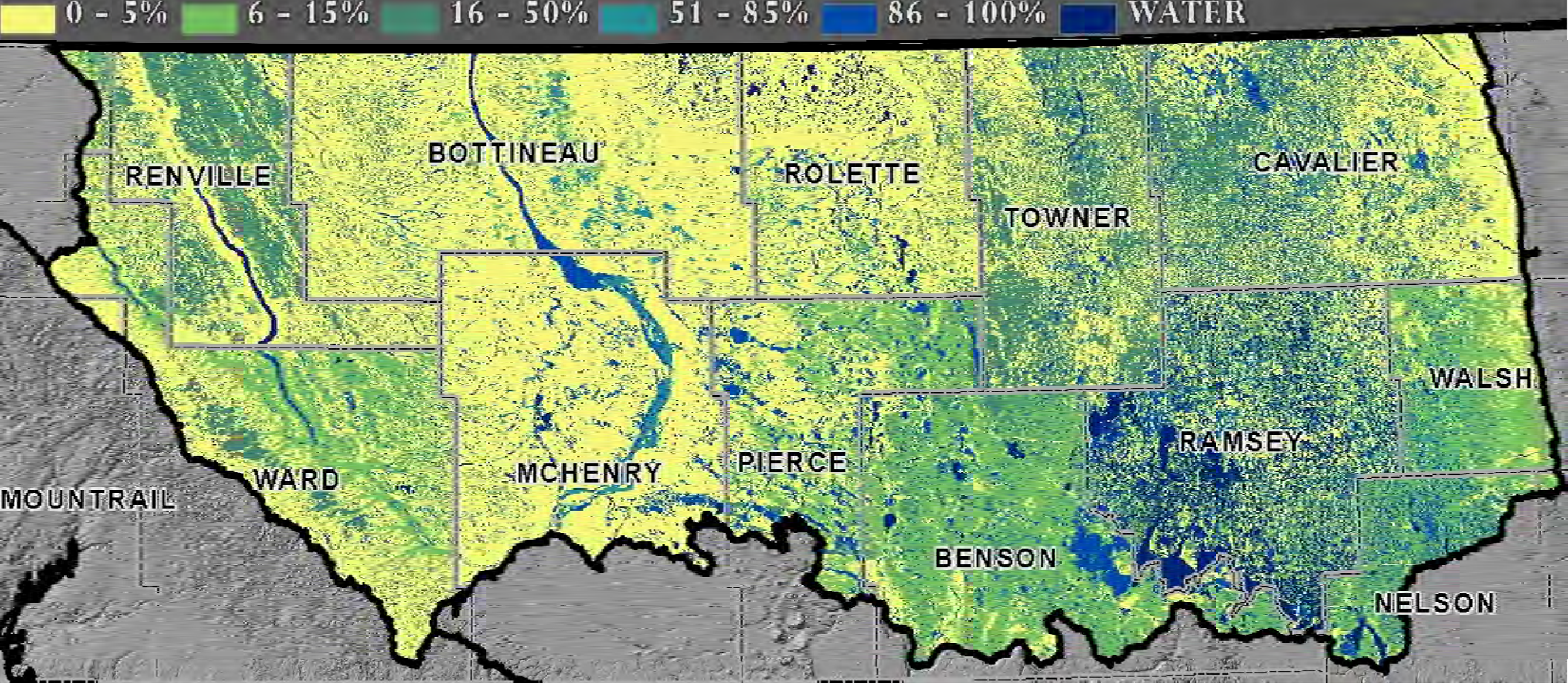
Consistent & Fully Populated Soil Data Products



Interpretive Products Before

-Data Available Upon SSURGO Certification

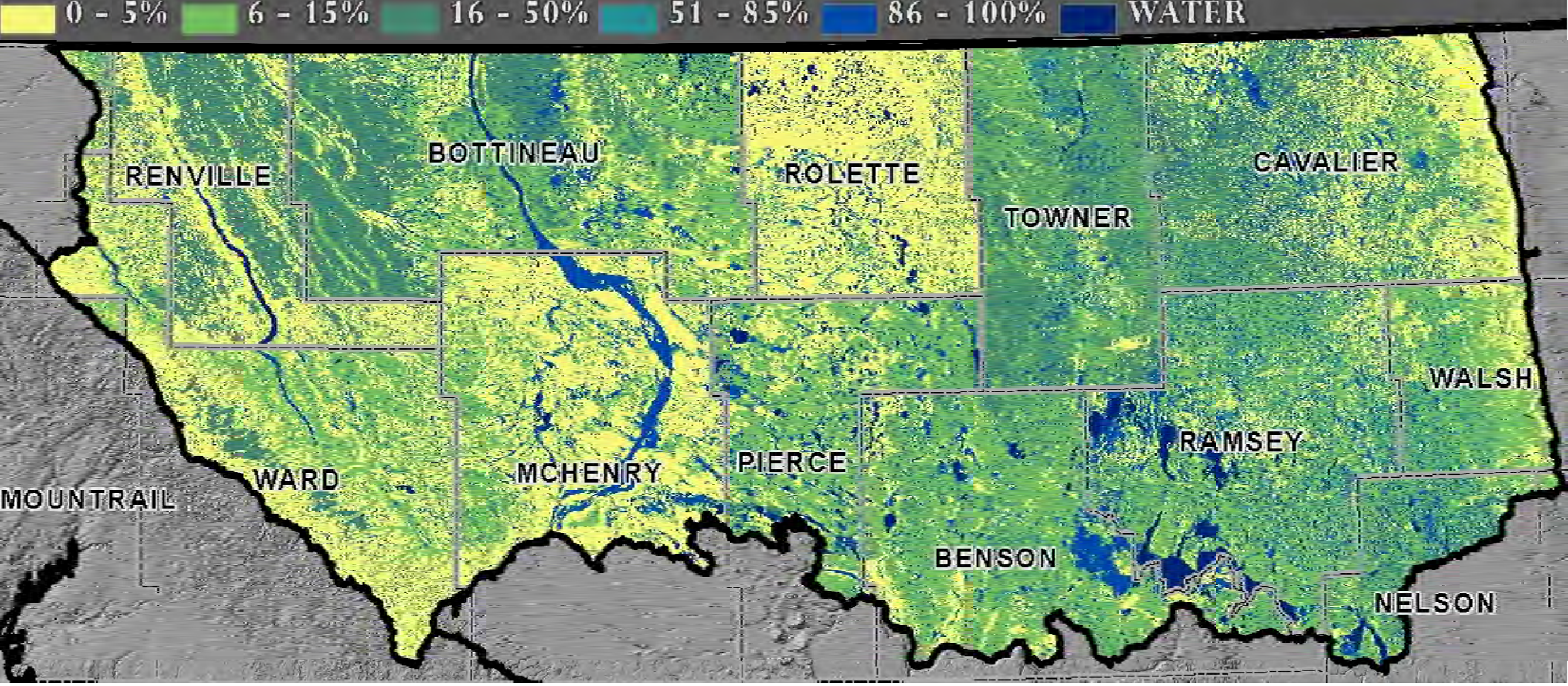
-14 Original Correlations & 2 Extensive Revisions



Interpretive Products During

-Reference Components Established for All of MLRA 55A

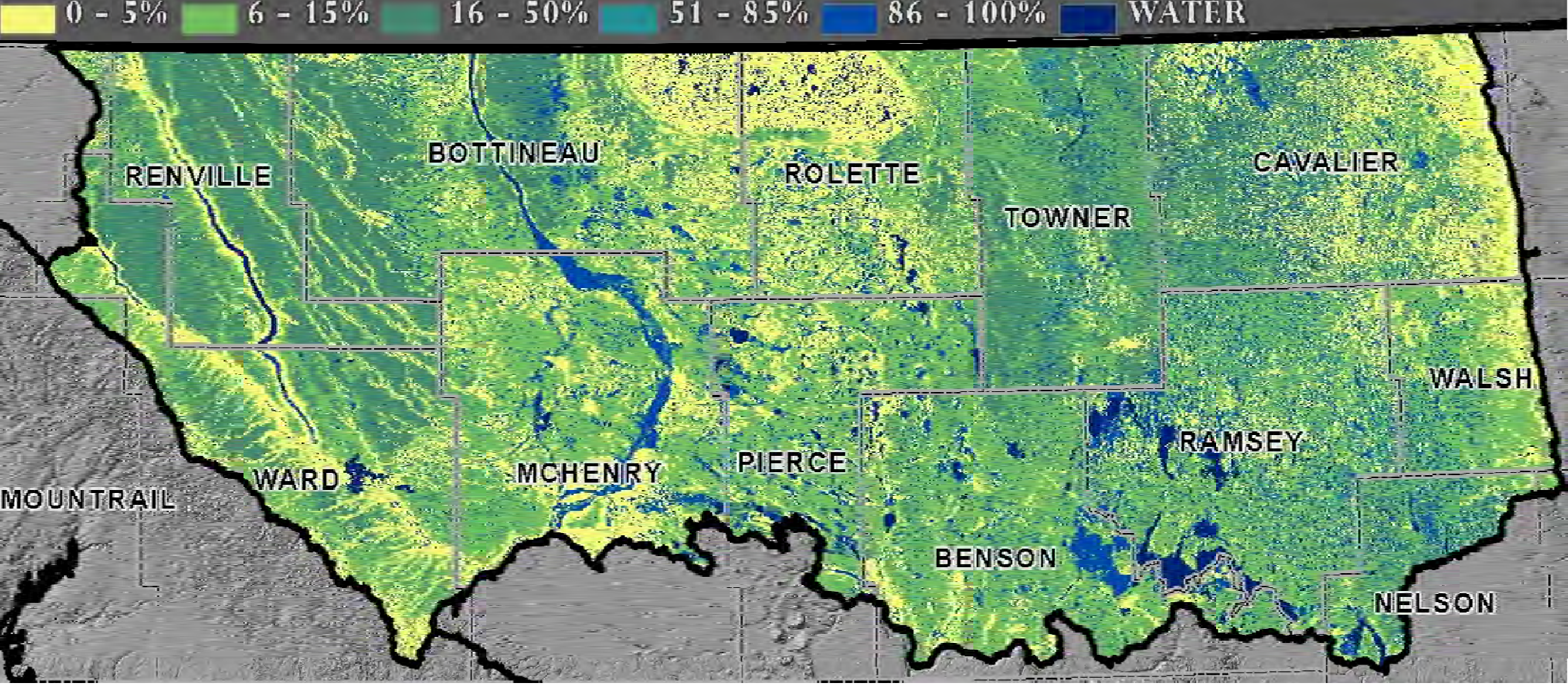
-7 County Update in Eastern MLRA 55A



Interpretive Products After

-MLRA Legend & Evaluation Completed

-All 16 Counties Recorrelated



MLRA 55A Prevented Plant Cropland

-Estimated 2.2 million acres prevented plant in 55A in 2011

-370,000 acres prevented planting in 2010 (also concentrated in western 55A)

-Estimated 6.3 million acres statewide (previous high 3.9 million)