

Soil Data Join Recorrelation (SDJR)

a.k.a. “Harmonization”

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Part 610 – Updating Soil Surveys

610.01 Policy

MLRA soil survey update activities are conducted as a series of projects developed to address update needs prioritized by the MLRA SSO management team and approved by the MO board of directors. Projects are developed in the context of the entire MLRA with ***the goal of developing a seamless national product.***

Soil survey inventories and assessments are conducted on existing soil survey products to identify deficiencies, errors, omissions, or inappropriateness in the data or maps in order to plan and prioritize soil survey activities. The inventories and assessments are completed prior to commencing update activities for the MLRA SSO area. (See General Manual GM_430_402_A_402.5_C.)

Priorities

- **Begin a multi-year initiative to complete Soil Survey Data Join Recorrelation so that soils information matches from county to county and state to state.**
- **Complete Initial Soil Survey Mapping on all lands, including federal lands.**
- **Integration of soils information and expertise into the Conservation Delivery Streamline Initiative.**
- Continuation of the Rapid Carbon Assessment.
- Implementation stage of ecological site (ES) inventory acceleration.
- Support of International Activities on Universal Soil Classification and Standards.
- Support of International Soil Survey Projects that promote sustainable agriculture
- Development of standards and sampling strategies for dynamic soil properties (DSP) inventory.



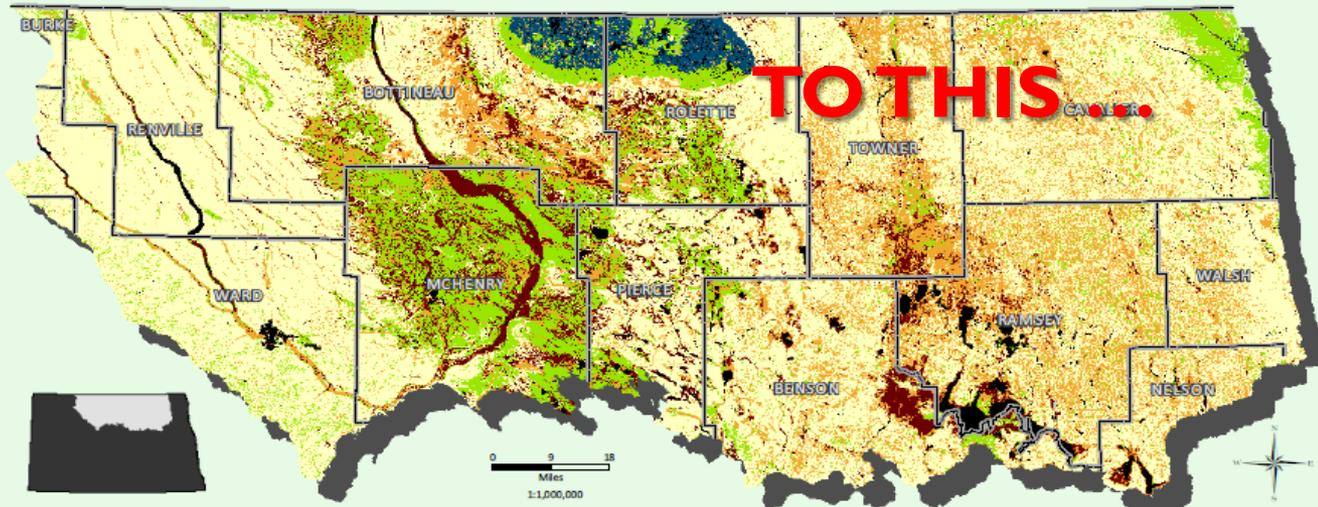
Vision

- **First Update is Attribute Database**
 - Complete map unit evaluations
 - Reconcile map units across political boundaries
 - Assign one national symbol for same map unit concepts
 - Fully populate data mapunits
 - Identify known “strongly contrasting” minor components
 - Use existing information for re-correlations
- **Second Update is Spatial Database**
 - Use a fully populated attribute database to disaggregate future raster spatial layers
 - Future GIS tools will be available to improve the spatial product

Objective

- Evaluate the map units within the MLRA
- Use existing information to update map unit composition and soil properties migrating individual survey area map unit concepts into an MLRA soil survey area map unit concept
- Document future MLRA projects

SDJR Goal?



NORTHERN BLACK GLACIATED PLAINS, MLRA 55A SOIL REACTION (PH)

Soil reaction is a numerical expression of the relative acidity or alkalinity of a soil.
pH (Map Unit Weighted Average, Top 30 Inches of Soil Surface)

6.51 And Less 6.51 - 7.30 7.31 - 7.55

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NRCS Natural Resources Conservation Service
"Helping People Help the Land"
USDA is an equal opportunity provider and employer.

2011

Universal Transverse Mercator Projection
Data Source: Soil Survey Geographic Database (SSURGO)

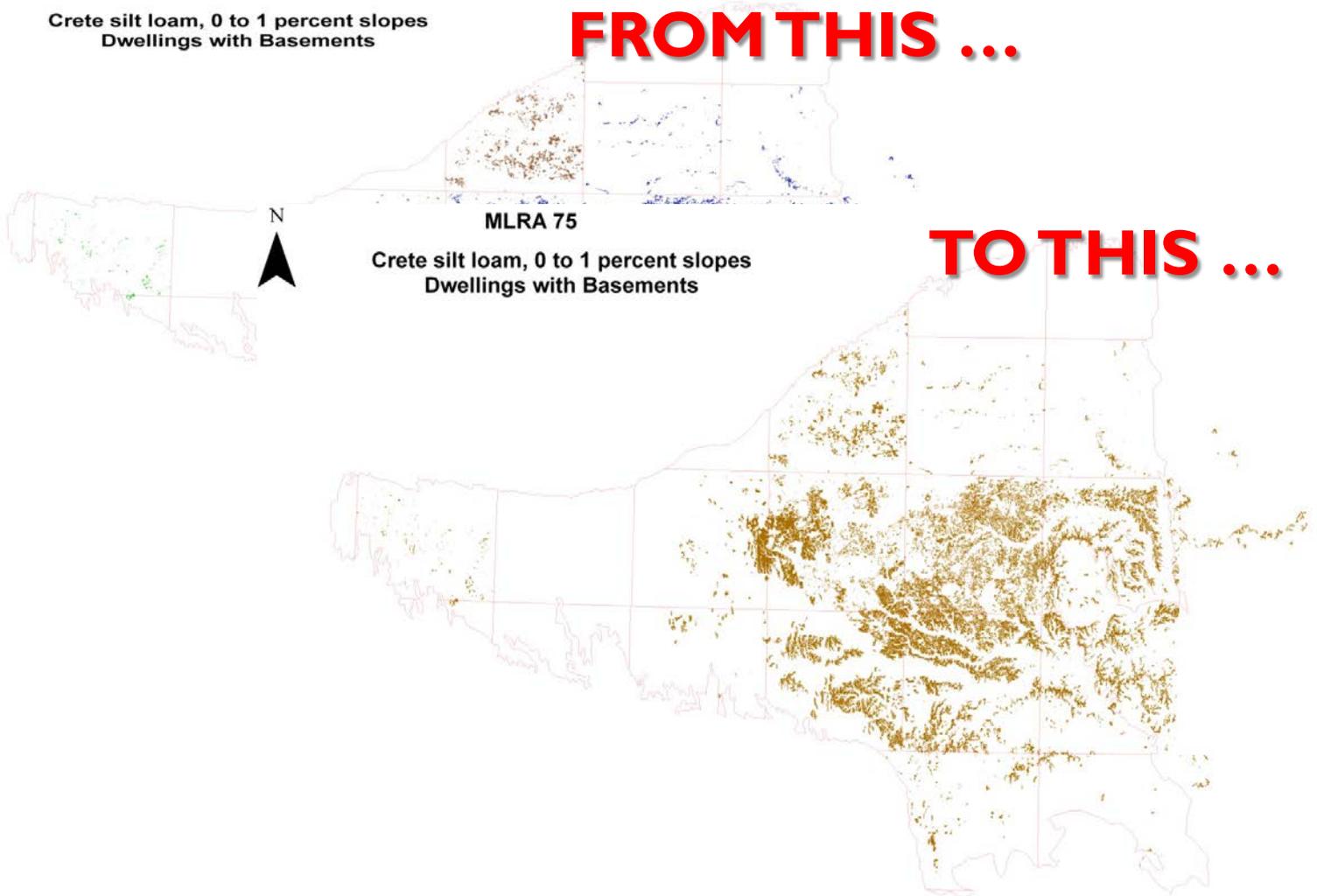
SDJR Goal?



MLRA 75

Crete silt loam, 0 to 1 percent slopes
Dwellings with Basements

FROM THIS ...



N

MLRA 75

Crete silt loam, 0 to 1 percent slopes
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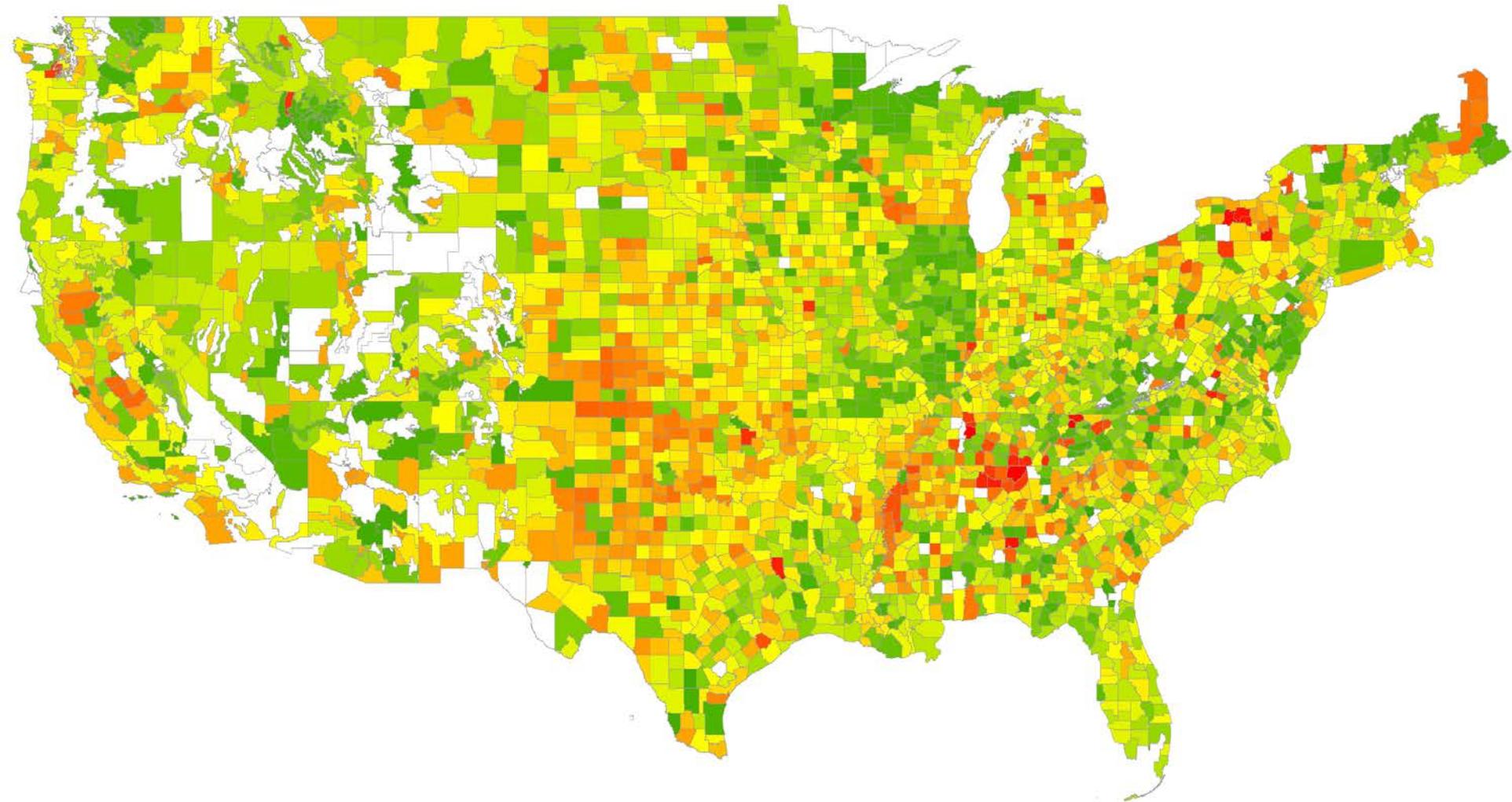
TO THIS ...

Why are there mis-joins?

- Survey History
 - Various survey ages (vintages)
 - Surveys historically mapped as islands
 - Database history
 - SOI-5 data (series/phase concepts)
 - SOI-6 data (survey area TUD layer depths)
 - State Soil Survey Database developed from SOI5/SOI6 data
 - NASIS data contains SSSD

What are the issues?

Soil Survey Correlation Dates
Gradation 1940s Red to 2000s Green

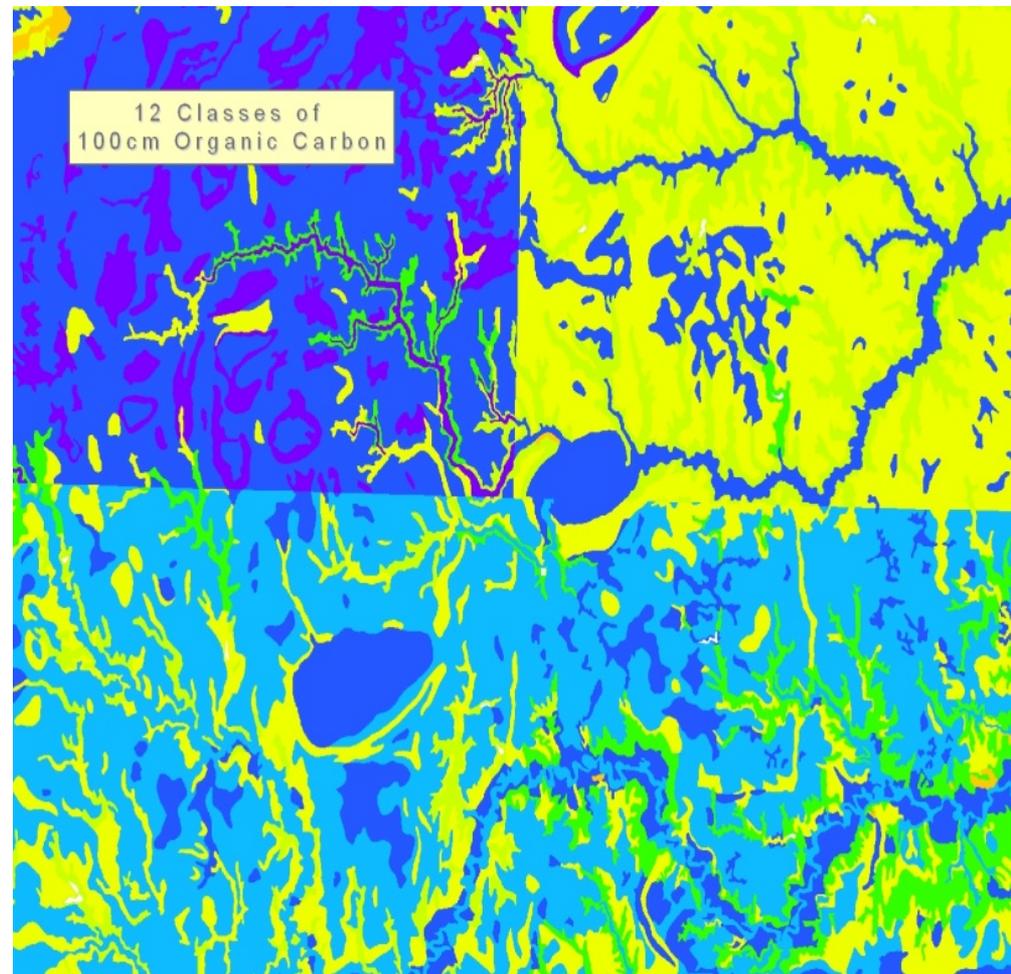


Soil Depth

What are the issues?

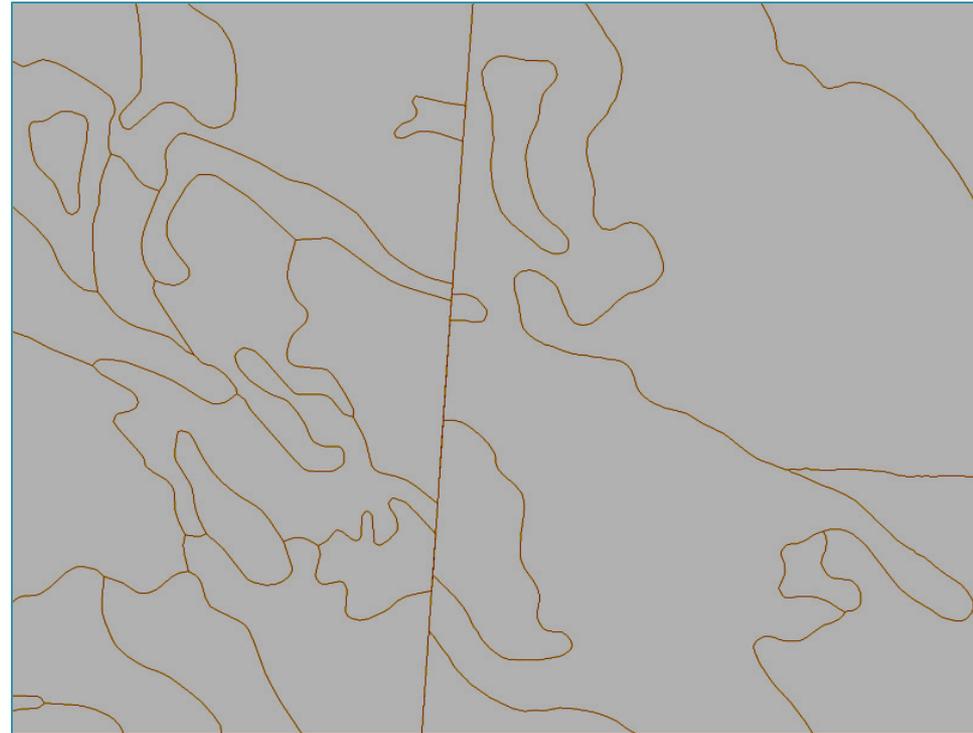
Weighted OC data

- A component may have the same OM by layer across political boundaries, however horizon depths are based on the county (survey) Taxonomic Unit Description.
- When aggregated to the map unit, these differences in horizon depths create a perceived difference in horizon properties.



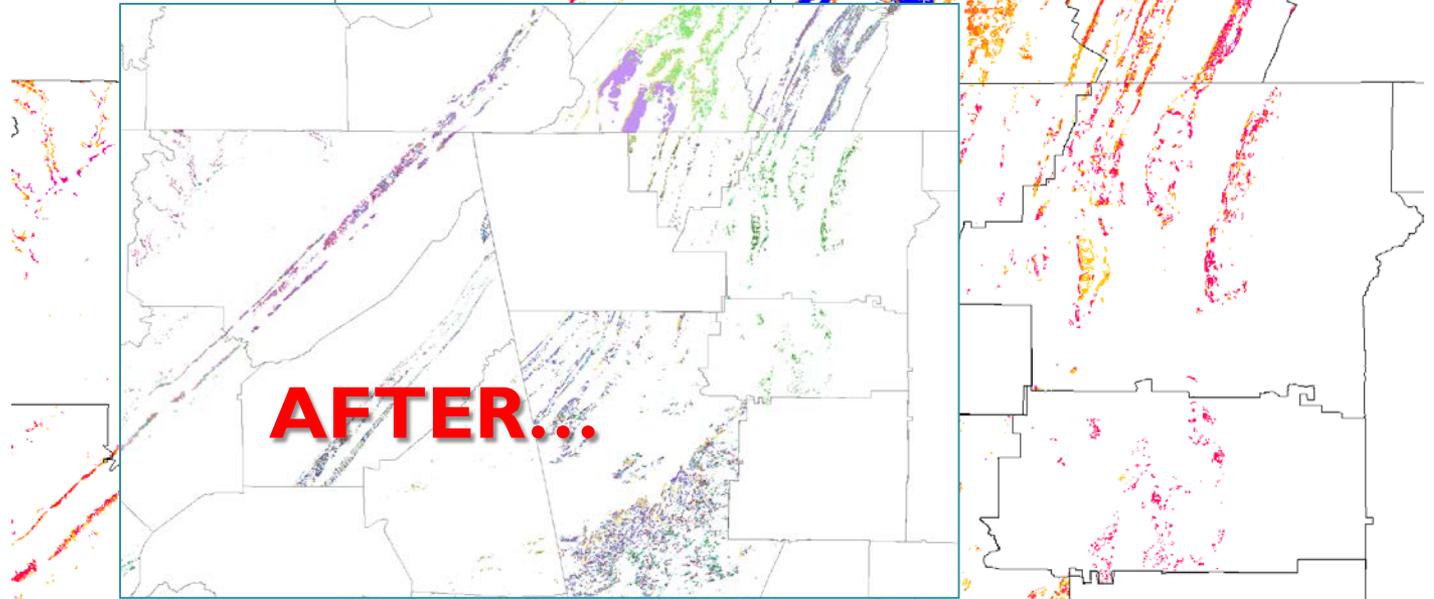
What are the issues?

- 'line for line' mis-joins
- Editing lines is not part of the SDJR initiative.
- Polygon issues will be flagged as future projects
- Complete population of the map unit composition will aid in component disaggregation of future 'raster' based maps



What are the issues? Missing map units

BEFORE MAP UNITS RECONCILED...



Even with reconciled map unit names there will still be future projects needed to identify landform, map unit and county line join issues



Soil Survey Data Join Recorrelation

- Purpose:
 - Provide mapunit information that flows across political boundaries
 - reduce the total number of mapunits, components, and horizons in the database
 - develop a complete set of soil horizon depths and properties for the map unit component
 - soil properties based on analyzed data
 - document map unit decisions and deficiencies
 - identify future field projects

SDJR Process

- Create spatial distribution maps
- Compile historical information
- Populate Project Mapunit table
- Enter Pedons into NASIS
- Review historical mapunits and DMUs
- Create a new MLRA map unit and DMU
- Document the MLRA map unit
- Identify future field projects
- Official series description and NSSL data
- QC/QA/Publish

OSD and Lab data

- Survey office will review and update the OSD
- Lab data site, name and taxonomy information will be reviewed and updated
- All updates are forwarded to the MLRA Regional Office

Summary

- QC completed by SSL
- QA completed by SDQS
- Correlate new map unit into Legends
- If it can't be harmonized using existing data, create a future MLRA project and move on



Questions