



# SSURGO On-Demand Dynamic Spatial Tools

Chad Ferguson and Jason Nemecek



United States Department of Agriculture

Helping People Understand Soils





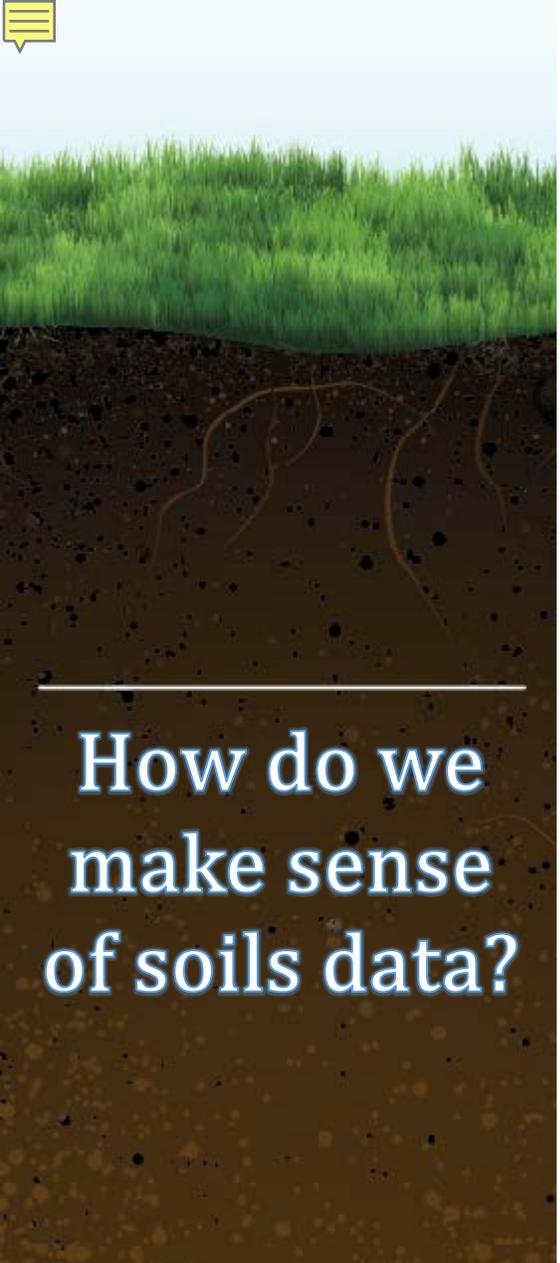
- Cloud Driven!
- Easy way to access soil data
- ArcGIS tool for generating tabular data and creating SSURGO-based thematic Maps
- Requires ArcGIS Desktop 10.1 +



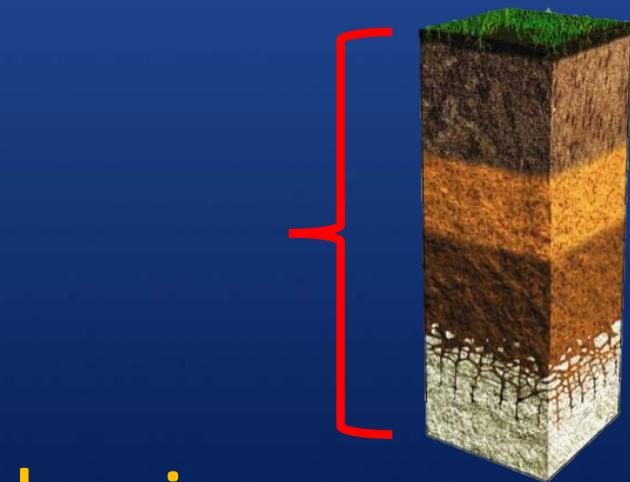
- Hits Soil Data Access in real-time
- Generates tabular data - fast!
- Automatically joins or creates lyr files against gSSURGO or SSURGO spatial data



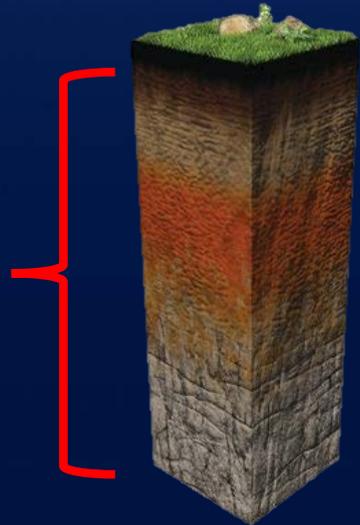
- Similar to Soil Data Viewer
- Works with large extents



How do we  
make sense  
of soils data?

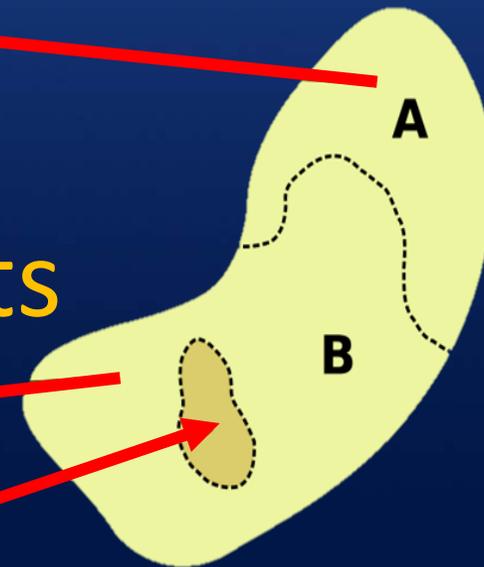


horizons

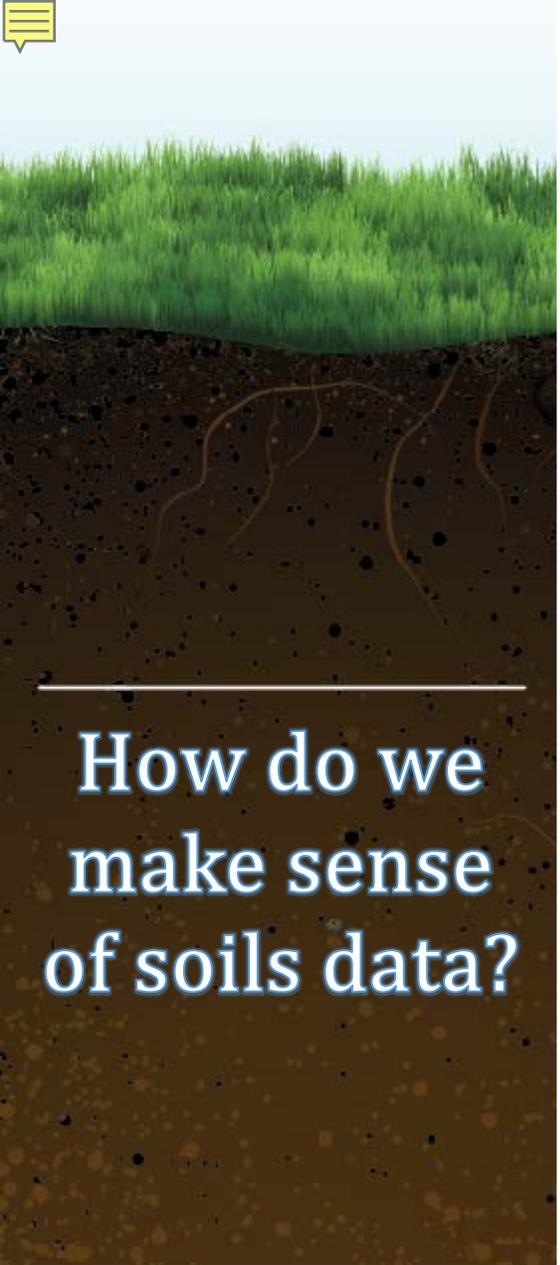


map unit polygon

major  
components



minor  
component(s)



How do we  
make sense  
of soils data?

## Aggregate / Interpretations (*component vs mapunit*)

### ***Numeric variables (i.e. Clay, Organic Matter)***

- Weighted average

### ***Categorical variables (i.e. T-factor, HSG)***

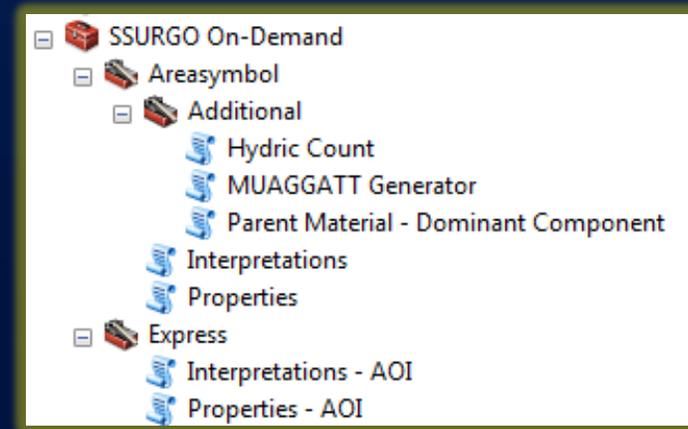
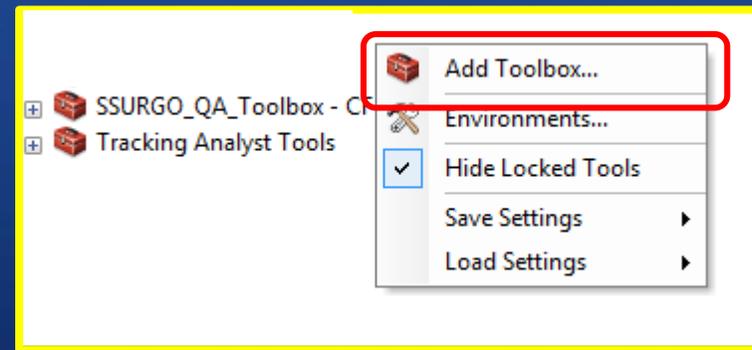
- Dominant condition

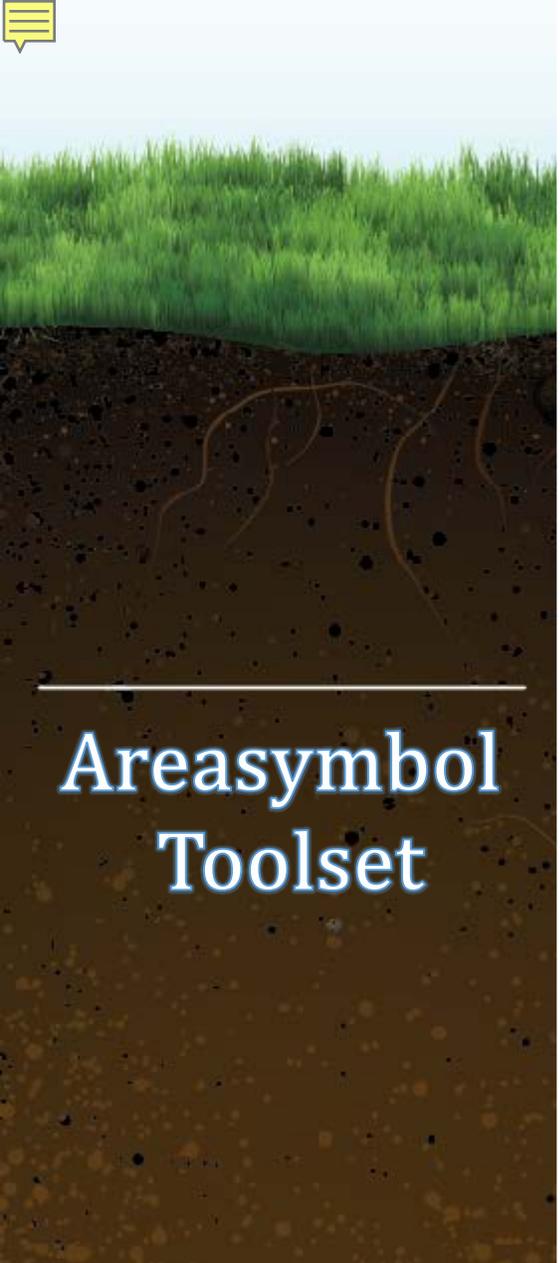
### ***Categorical or Numeric variables***

- Dominant component



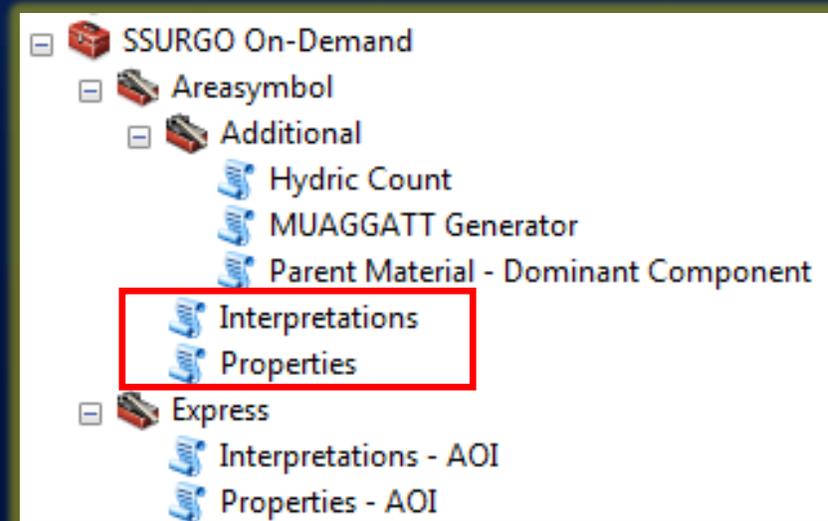
# Adding the Tools

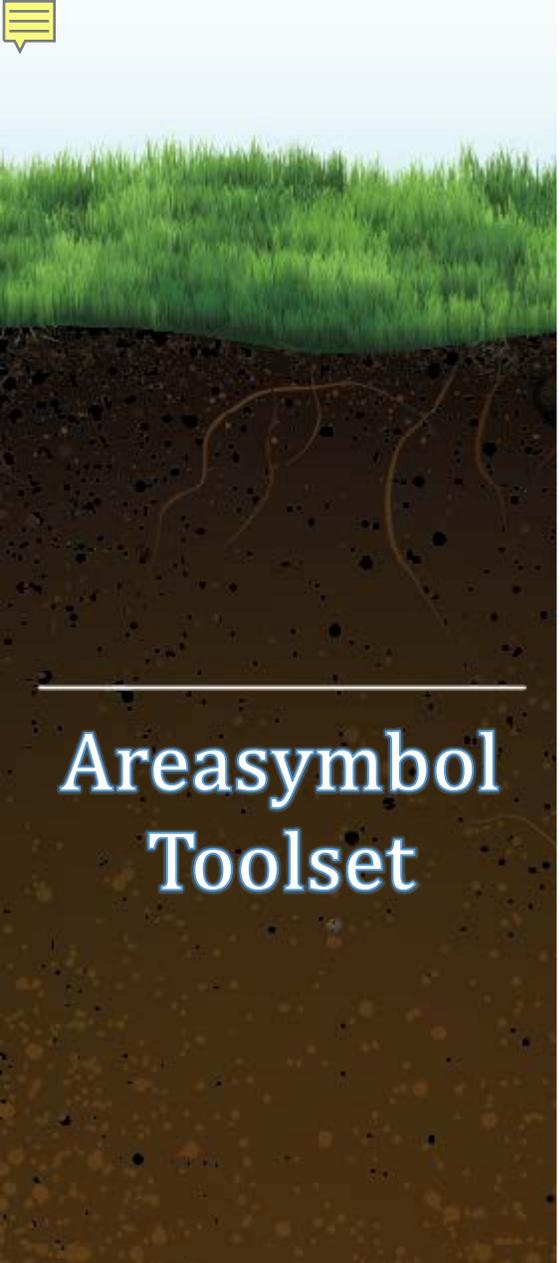




- No local tabular is needed
- Generates soil property or interpretation tabular data in ArcMap by Soil Survey Area(s)

## Areasymbol Toolset





# Areasymbol Toolset

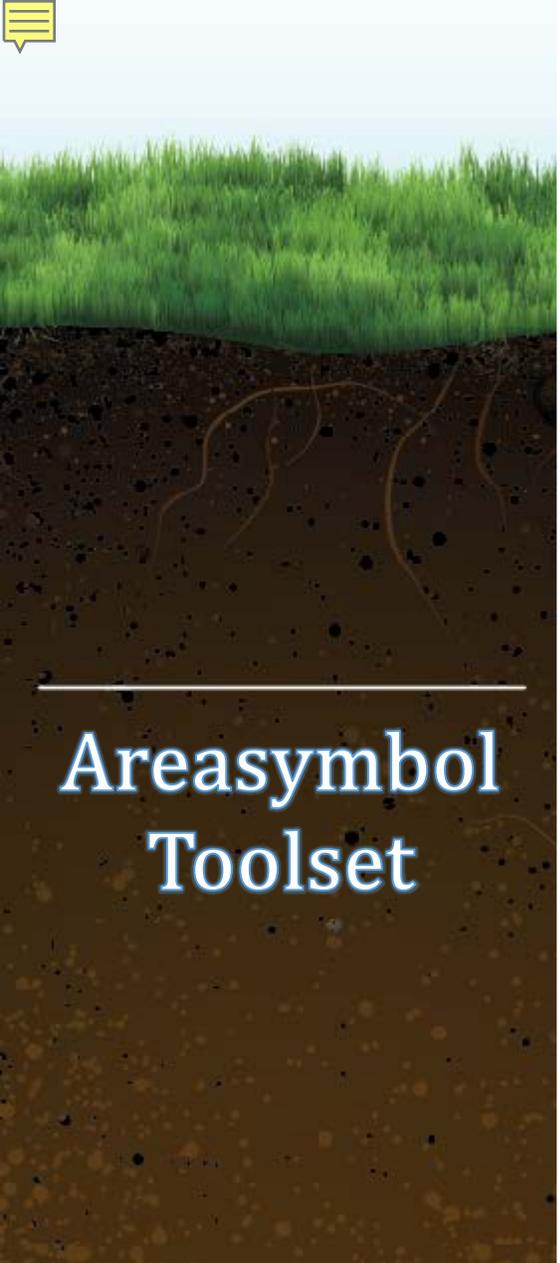
Soil Survey Areas Polygons - Layer

Soil Survey Areas Polygons – Choice List

State Interpretation List Filter  
Aggregation Method

State Interpretation Choice List

Output File Geodatabase Location  
Join Layer



# Areasymbol Toolset

Properties

Soil Survey Areas  
SAPOLYGON

Soil Survey Choicelist

- AL001
- AL003
- AL005
- AL007
- AL009
- AL011
- AL013
- AL015
- AL017

Select All Unselect All Add Value

Aggregation Method  
Weighted Average

Soil Property

- 0.1 bar H2O - Rep Value
- 0.33 bar H2O - Rep Value
- 15 bar H2O - Rep Value
- Available Water Capacity - Rep Value
- Bray 1 Phosphate - Rep Value
- Bulk Density 0.1 bar H2O - Rep Value
- Bulk Density 0.33 bar H2O - Rep Value
- Bulk Density 15 bar H2O - Rep Value
- Bulk Density oven dry - Rep Value

Select All Unselect All Add Value

Top Depth (optional)  
0 0 200

Bottom Depth (optional)  
1 1 200

Min/Max (optional)

Output File Geodatabase

Join Layer (optional)

OK Cancel Environments... Show Help >>

Soil Survey Areas Polygons - Layer

Soil Survey Areas Polygons – Choice List

Aggregation Method

Soil Property Choice List

Top Depth – cm

Bottom Depth – cm

Min\Max

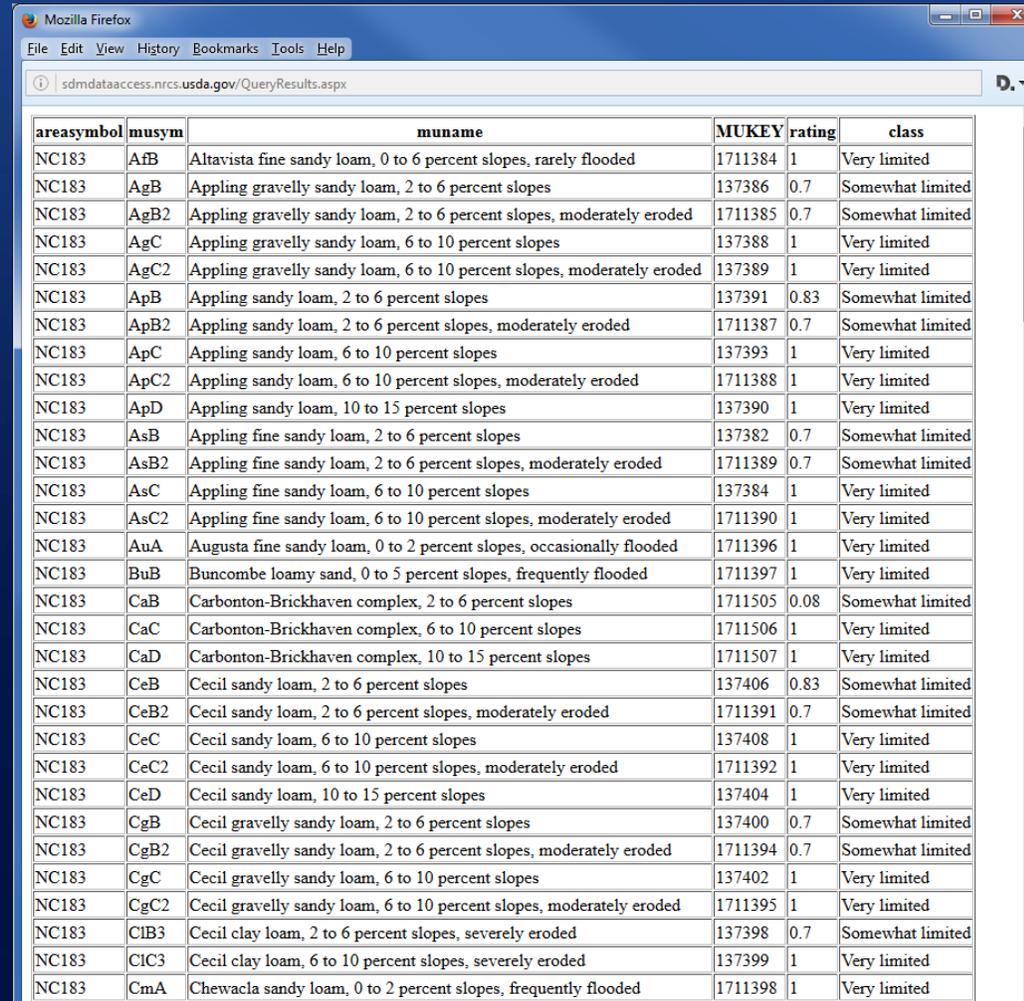
Output File Geodatabase Location

Join Layer



# Soil Data Access

## Areasymbol Toolset



areasymbol	musym	muname	MUKEY	rating	class
NC183	AfB	Altavista fine sandy loam, 0 to 6 percent slopes, rarely flooded	1711384	1	Very limited
NC183	AgB	Appling gravelly sandy loam, 2 to 6 percent slopes	137386	0.7	Somewhat limited
NC183	AgB2	Appling gravelly sandy loam, 2 to 6 percent slopes, moderately eroded	1711385	0.7	Somewhat limited
NC183	AgC	Appling gravelly sandy loam, 6 to 10 percent slopes	137388	1	Very limited
NC183	AgC2	Appling gravelly sandy loam, 6 to 10 percent slopes, moderately eroded	137389	1	Very limited
NC183	ApB	Appling sandy loam, 2 to 6 percent slopes	137391	0.83	Somewhat limited
NC183	ApB2	Appling sandy loam, 2 to 6 percent slopes, moderately eroded	1711387	0.7	Somewhat limited
NC183	ApC	Appling sandy loam, 6 to 10 percent slopes	137393	1	Very limited
NC183	ApC2	Appling sandy loam, 6 to 10 percent slopes, moderately eroded	1711388	1	Very limited
NC183	ApD	Appling sandy loam, 10 to 15 percent slopes	137390	1	Very limited
NC183	AsB	Appling fine sandy loam, 2 to 6 percent slopes	137382	0.7	Somewhat limited
NC183	AsB2	Appling fine sandy loam, 2 to 6 percent slopes, moderately eroded	1711389	0.7	Somewhat limited
NC183	AsC	Appling fine sandy loam, 6 to 10 percent slopes	137384	1	Very limited
NC183	AsC2	Appling fine sandy loam, 6 to 10 percent slopes, moderately eroded	1711390	1	Very limited
NC183	AuA	Augusta fine sandy loam, 0 to 2 percent slopes, occasionally flooded	1711396	1	Very limited
NC183	BuB	Buncombe loamy sand, 0 to 5 percent slopes, frequently flooded	1711397	1	Very limited
NC183	CaB	Carbonton-Brickhaven complex, 2 to 6 percent slopes	1711505	0.08	Somewhat limited
NC183	CaC	Carbonton-Brickhaven complex, 6 to 10 percent slopes	1711506	1	Very limited
NC183	CaD	Carbonton-Brickhaven complex, 10 to 15 percent slopes	1711507	1	Very limited
NC183	CeB	Cecil sandy loam, 2 to 6 percent slopes	137406	0.83	Somewhat limited
NC183	CeB2	Cecil sandy loam, 2 to 6 percent slopes, moderately eroded	1711391	0.7	Somewhat limited
NC183	CeC	Cecil sandy loam, 6 to 10 percent slopes	137408	1	Very limited
NC183	CeC2	Cecil sandy loam, 6 to 10 percent slopes, moderately eroded	1711392	1	Very limited
NC183	CeD	Cecil sandy loam, 10 to 15 percent slopes	137404	1	Very limited
NC183	CgB	Cecil gravelly sandy loam, 2 to 6 percent slopes	137400	0.7	Somewhat limited
NC183	CgB2	Cecil gravelly sandy loam, 2 to 6 percent slopes, moderately eroded	1711394	0.7	Somewhat limited
NC183	CgC	Cecil gravelly sandy loam, 6 to 10 percent slopes	137402	1	Very limited
NC183	CgC2	Cecil gravelly sandy loam, 6 to 10 percent slopes, moderately eroded	1711395	1	Very limited
NC183	CIB3	Cecil clay loam, 2 to 6 percent slopes, severely eroded	137398	0.7	Somewhat limited
NC183	CIC3	Cecil clay loam, 6 to 10 percent slopes, severely eroded	137399	1	Very limited
NC183	CmA	Chewacla sandy loam, 0 to 2 percent slopes, frequently flooded	1711398	1	Very limited

# Output

## Areasymbol Toolset

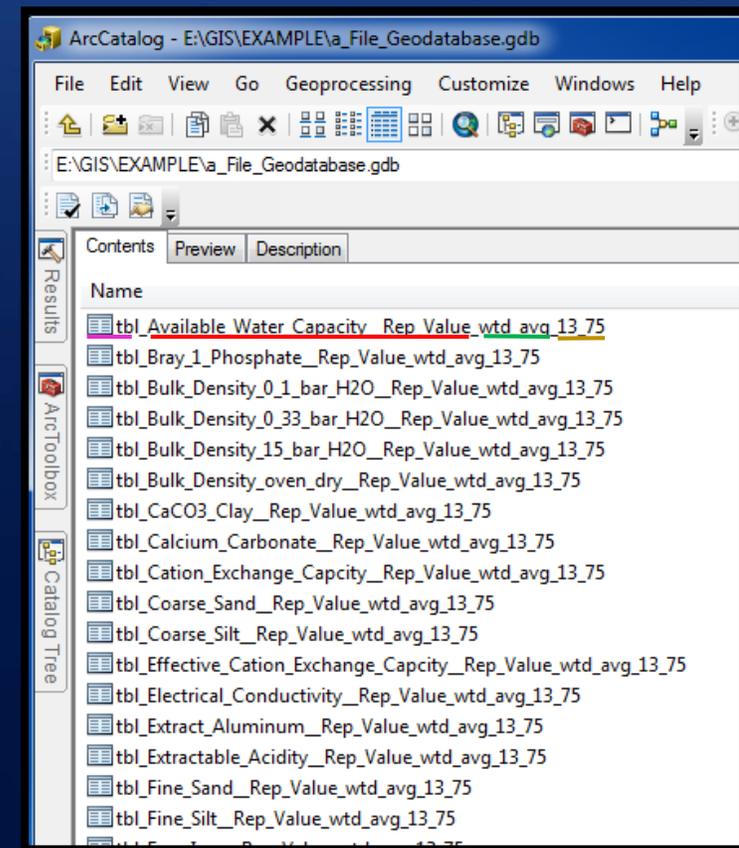
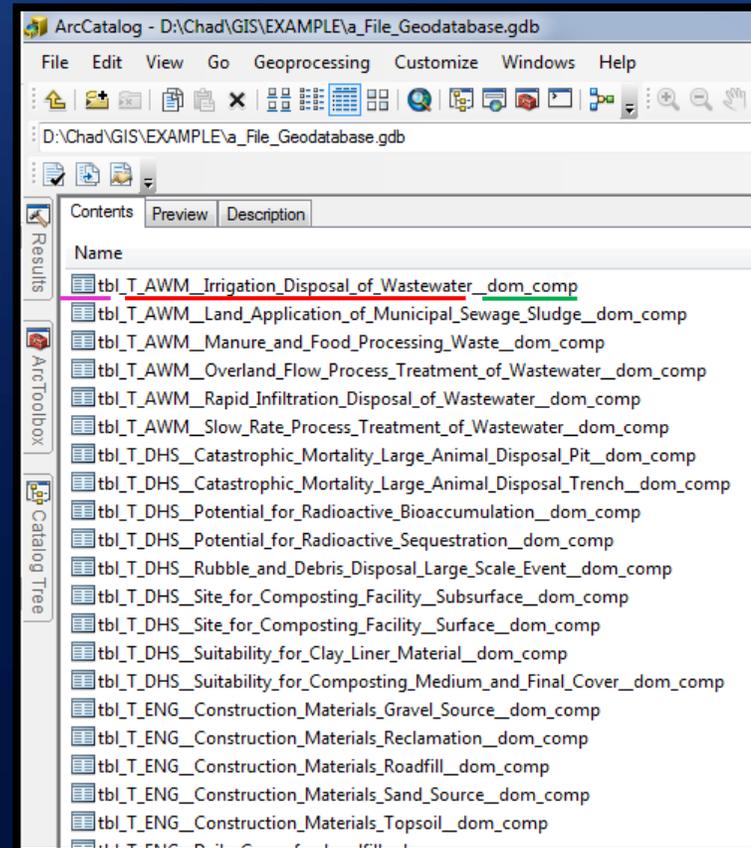
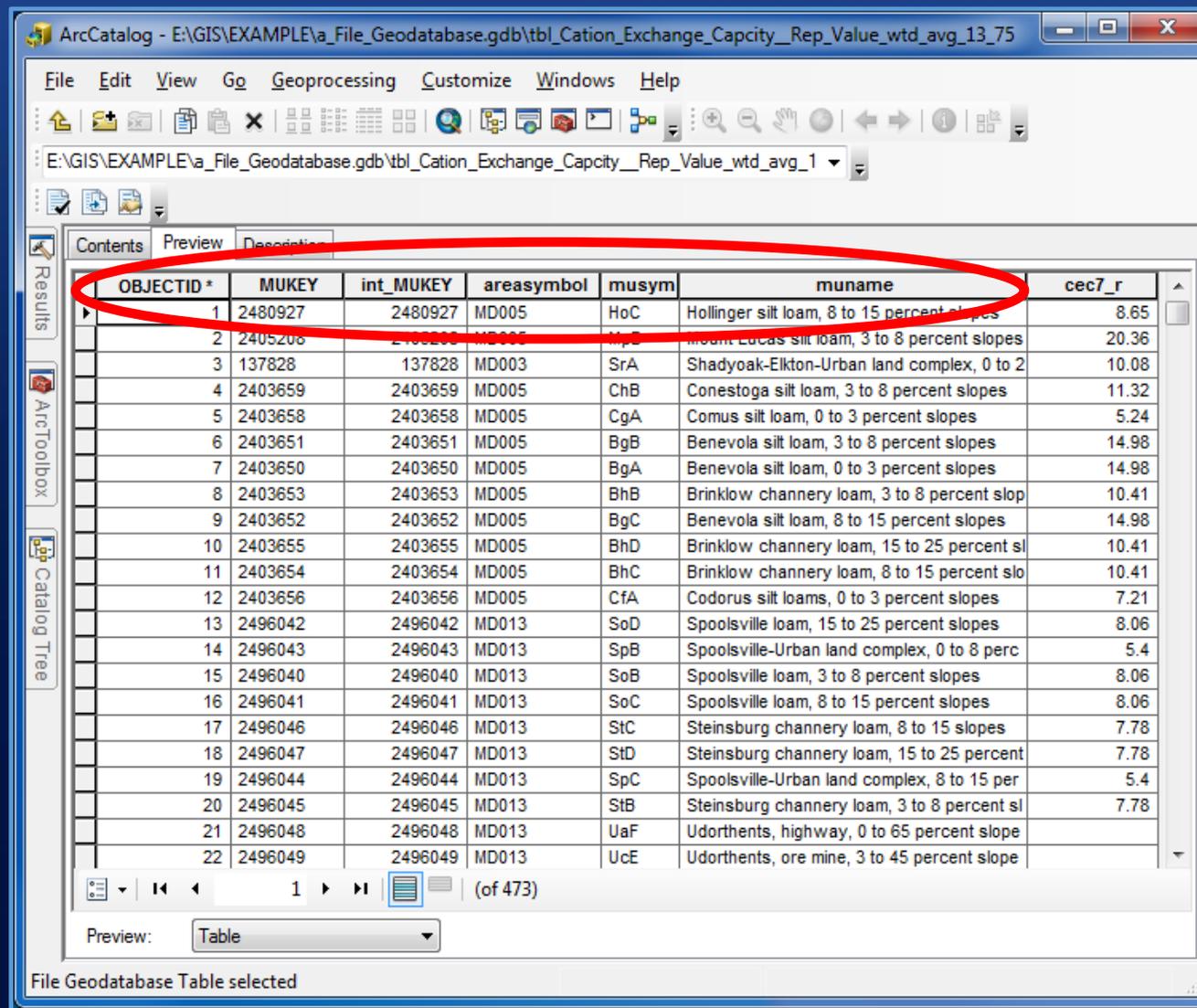


Table Name Aggregation Method Depth

# Example of Properties Output

## Areasymbol Toolset



ArcCatalog - E:\GIS\EXAMPLE\A\_File\_Geodatabase.gdb\tbl\_Cation\_Exchange\_Capcity\_Rep\_Value\_wtd\_avg\_13\_75

File Edit View Go Geoprocessing Customize Windows Help

E:\GIS\EXAMPLE\A\_File\_Geodatabase.gdb\tbl\_Cation\_Exchange\_Capcity\_Rep\_Value\_wtd\_avg\_1

OBJECTID *	MUKEY	int_MUKEY	areasymbol	musym	muname	cec7_r
1	2480927	2480927	MD005	HoC	Hollinger silt loam, 8 to 15 percent slopes	8.65
2	2405208	2405208	MD005	MpD	Mount Lucas silt loam, 3 to 8 percent slopes	20.36
3	137828	137828	MD003	SrA	Shadyoak-Elkton-Urban land complex, 0 to 2	10.08
4	2403659	2403659	MD005	ChB	Conestoga silt loam, 3 to 8 percent slopes	11.32
5	2403658	2403658	MD005	CgA	Comus silt loam, 0 to 3 percent slopes	5.24
6	2403651	2403651	MD005	BgB	Benevola silt loam, 3 to 8 percent slopes	14.98
7	2403650	2403650	MD005	BgA	Benevola silt loam, 0 to 3 percent slopes	14.98
8	2403653	2403653	MD005	BhB	Brinklow channery loam, 3 to 8 percent slope	10.41
9	2403652	2403652	MD005	BgC	Benevola silt loam, 8 to 15 percent slopes	14.98
10	2403655	2403655	MD005	BhD	Brinklow channery loam, 15 to 25 percent sl	10.41
11	2403654	2403654	MD005	BhC	Brinklow channery loam, 8 to 15 percent slo	10.41
12	2403656	2403656	MD005	CfA	Codorus silt loams, 0 to 3 percent slopes	7.21
13	2496042	2496042	MD013	SoD	Spoolsville loam, 15 to 25 percent slopes	8.06
14	2496043	2496043	MD013	SpB	Spoolsville-Urban land complex, 0 to 8 perc	5.4
15	2496040	2496040	MD013	SoB	Spoolsville loam, 3 to 8 percent slopes	8.06
16	2496041	2496041	MD013	SoC	Spoolsville loam, 8 to 15 percent slopes	8.06
17	2496046	2496046	MD013	StC	Steinsburg channery loam, 8 to 15 slopes	7.78
18	2496047	2496047	MD013	StD	Steinsburg channery loam, 15 to 25 percent	7.78
19	2496044	2496044	MD013	SpC	Spoolsville-Urban land complex, 8 to 15 per	5.4
20	2496045	2496045	MD013	StB	Steinsburg channery loam, 3 to 8 percent sl	7.78
21	2496048	2496048	MD013	UaF	Udorhents, highway, 0 to 65 percent slope	
22	2496049	2496049	MD013	UcE	Udorhents, ore mine, 3 to 45 percent slope	

Preview: Table

File Geodatabase Table selected

# Output

## Areasymbol Toolset

# Interpretations

ArcCatalog - D:\Chad\GIS\EXAMPLE\A\_File\_Geodatabase.gdb\tbl\_T\_ENG\_Dwellings\_W\_O\_Basements\_\_dom\_comp

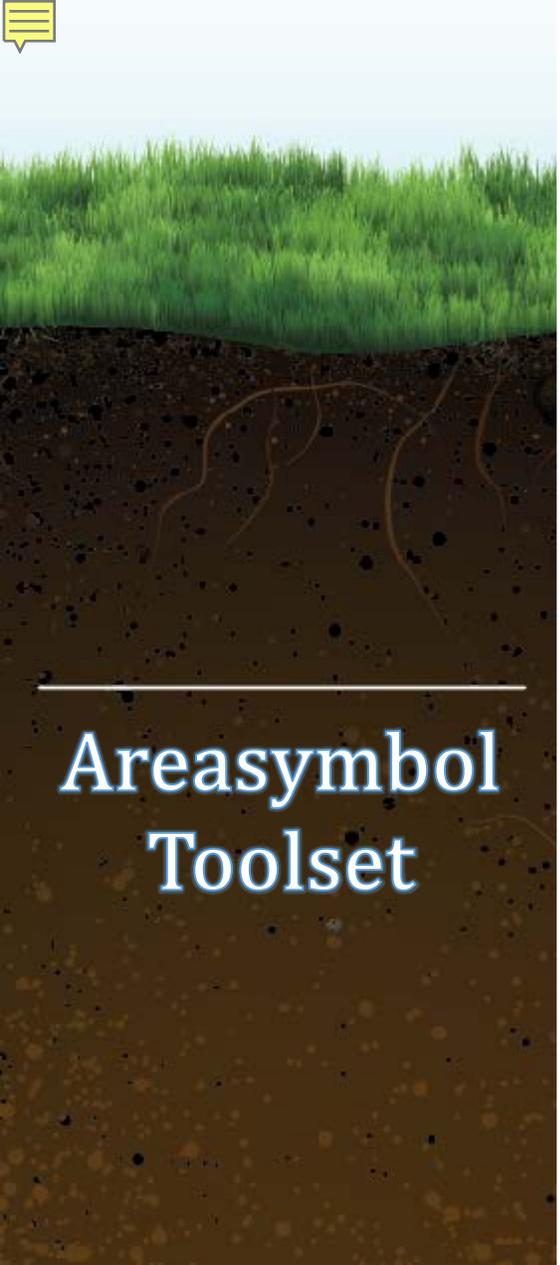
File Edit View Gg Geoprocessing Customize Windows Help

D:\Chad\GIS\EXAMPLE\A\_File\_Geodatabase.gdb\tbl\_T\_ENG\_Dwellings\_W\_O\_Basements\_\_dom\_

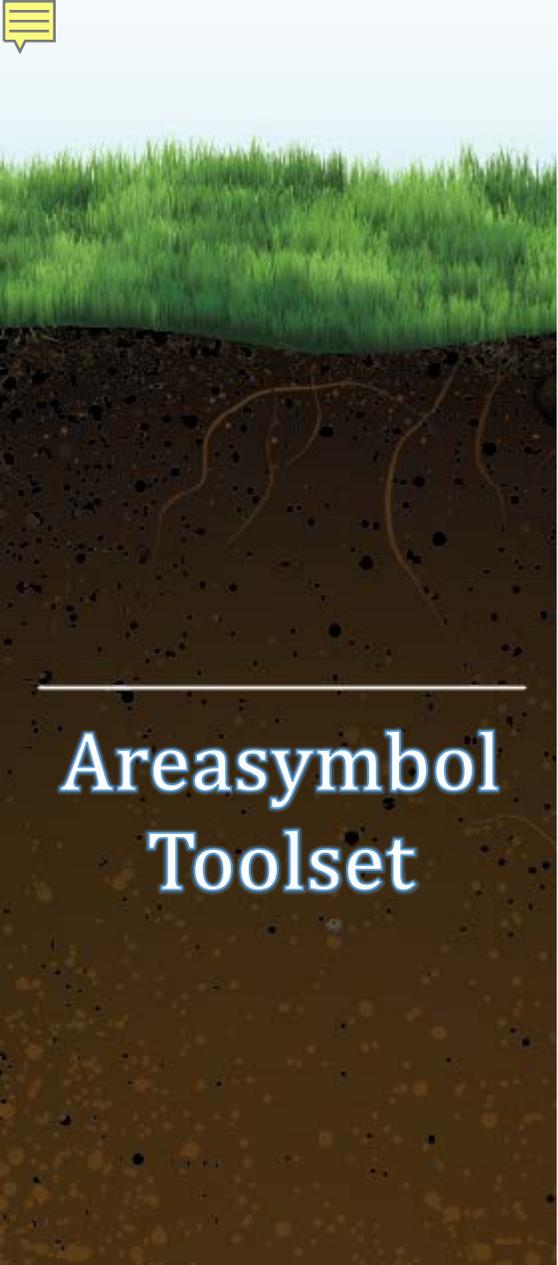
MUKEY	int_MUKEY	areasymbol	musym	muname	class	rating	reason
114989	114989	NC159	lrB	Iredell loam, 1 to 8 percent slop	Very limited	1	Shrink-swell; Depth to saturated zone
2422578	2422578	NC159	UwB2	Uwharrie silty clay loam, 2 to 8	Somewhat limited	0.373	Shrink-swell
114991	114991	NC159	LgA	Lignum silt loam, 0 to 3 percent	Somewhat limited	0.386	Depth to saturated zone; Shrink-swell
679202	679202	NC159	DAM	Dam	Not rated	-1	None
115025	115025	NC159	UhC	Uwharrie loam, 2 to 15 percent	Somewhat limited	0.212	Shrink-swell; Slope
114980	114980	NC159	EnB	Enon fine sandy loam, 2 to 8 p	Very limited	1	Shrink-swell
2422573	2422573	NC159	PcC2	Pacolet sandy clay loam, 8 to 1	Somewhat limited	0.633	Slope
114982	114982	NC159	EsC	Enon very cobbly loam, 4 to 15	Very limited	1	Shrink-swell; Slope
2422575	2422575	NC159	MeC2	Mecklenburg clay loam, 8 to 15	Somewhat limited	0.633	Slope; Shrink-swell
114984	114984	NC159	EuB	Enon-Urban land complex, 2 to	Very limited	1	Shrink-swell
115023	115023	NC159	Ud	Udorthents, loamy	Somewhat limited	0.497	Shrink-swell
2422576	2422576	NC159	VnB2	Vance sandy clay loam, 2 to 8	Somewhat limited	0.42	Shrink-swell
114999	114999	NC159	PaC	Pacolet sandy loam, 8 to 15 pe	Somewhat limited	0.633	Slope
114968	114968	NC159	BaD	Badin channery silt loam, 15 to	Very limited	1	Slope; Shrink-swell
2422582	2422582	NC159	LdB2	Lloyd clay loam, 2 to 8 percent	Not limited	0	None
2424751	2424751	NC159	PxE	Poindexter-Rowan complex, 2	Very limited	1	Slope
2424750	2424750	NC159	PxD	Poindexter-Rowan complex, 1	Very limited	1	Slope
114996	114996	NC159	MkB	Misenheimer-Kirksey complex,	Very limited	1	Depth to saturated zone; Depth to hard bedro
114978	114978	NC159	DoA	Dorian fine sandy loam, 0 to 2	Very limited	1	Flooding; Depth to saturated zone; Shrink-swe
2422583	2422583	NC159	LdC2	Lloyd clay loam, 8 to 15 perce	Somewhat limited	0.633	Slope
2422567	2422567	NC159	TaC	Tarrus-Badin complex, 8 to 15	Somewhat limited	0.633	Slope; Shrink-swell
114992	114992	NC159	MbB	Mecklenburg loam, 2 to 8 perc	Somewhat limited	0.329	Shrink-swell
114997	114997	NC159	OkA	Oakboro silt loam, 0 to 2 perce	Very limited	1	Flooding; Depth to saturated zone
2422566	2422566	NC159	TaB	Tarrus-Badin complex, 2 to 8 p	Somewhat limited	0.497	Shrink-swell
114981	114981	NC159	EnC	Enon fine sandy loam, 8 to 15	Very limited	1	Shrink-swell; Slope
2422564	2422564	NC159	Pt	Pits, quarry	Not rated	-1	None
2422562	2422562	NC159	CeB2	Cecil sandy clay loam, 2 to 8 p	Not limited	0	None
2422563	2422563	NC159	CeC2	Cecil sandy clay loam, 8 to 15	Somewhat limited	0.633	Slope
2422579	2422579	NC159	UwC2	Uwharrie silty clay loam, 8 to 1	Somewhat limited	0.633	Slope; Shrink-swell

Preview: Table

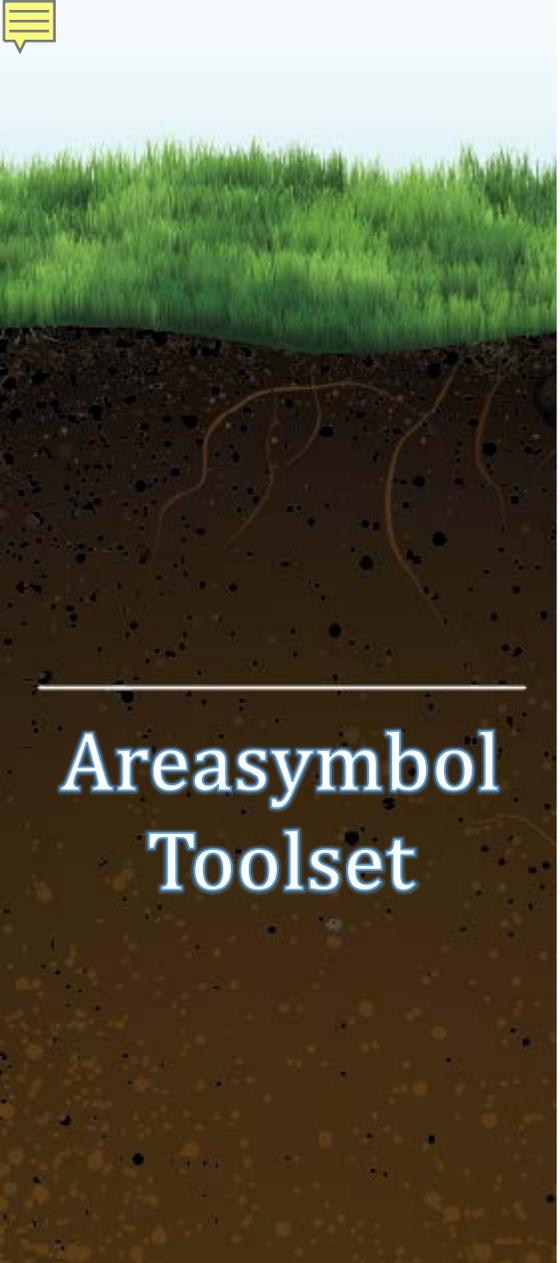
File Geodatabase Table selected



- ✓ Append 101 Survey Areas to single shapefile
- ✓ Load 101 Survey Areas to NASIS for SSURGO export
- ✓ Import into SSURGO template
- ✗ 4 Soil Data Viewer Queries



- ✓ Append 101 Survey Areas to 2 shapefiles
- ✓ Load 101 Survey Areas to NASIS for 2 SSURGO exports
- ✓ Import into 2 SSURGO templates
- ✓ 8 Soil Data Viewer Queries



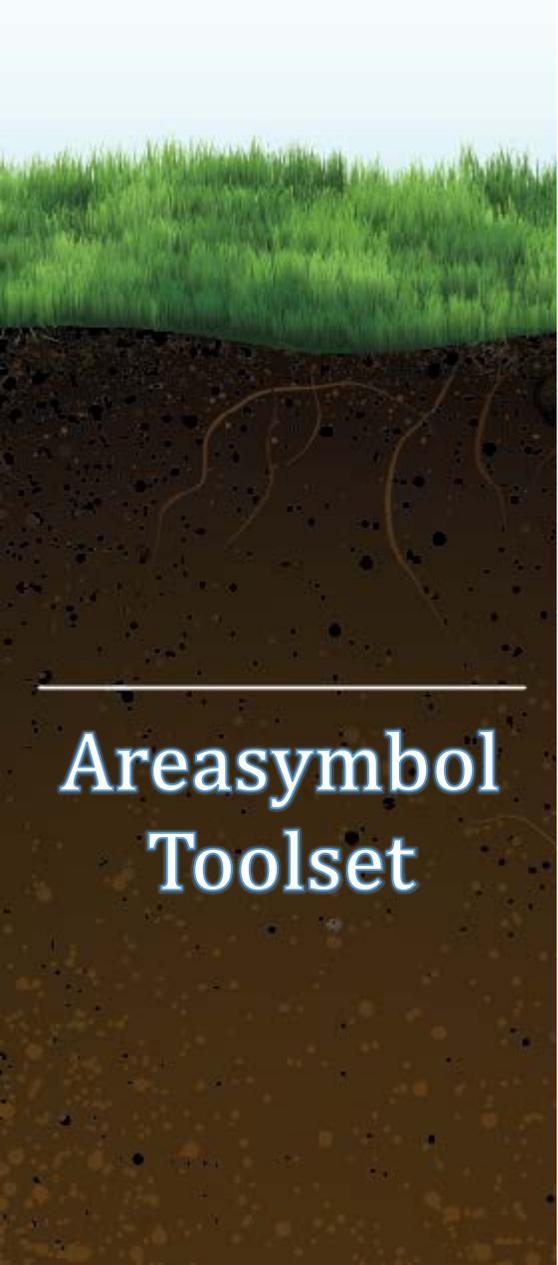
# Areasymbol Toolset

```
Properties
Completed
Close
<<Details
 Close this dialog when completed successfully

Response for om_r on NC193 = OK
Response for om_r on NC195 = OK
Response for om_r on NC197 = OK
Response for om_r on NC199 = OK
Response for om_r on NC605 = OK
Response for om_r on NC606 = OK
Response for om_r on TN640 = OK

Completed script SDAPROPERTIES2...
Succeeded at Mon Oct 10 12:27:14 2016 (Elapsed Time: 1 minutes 17
seconds)
```

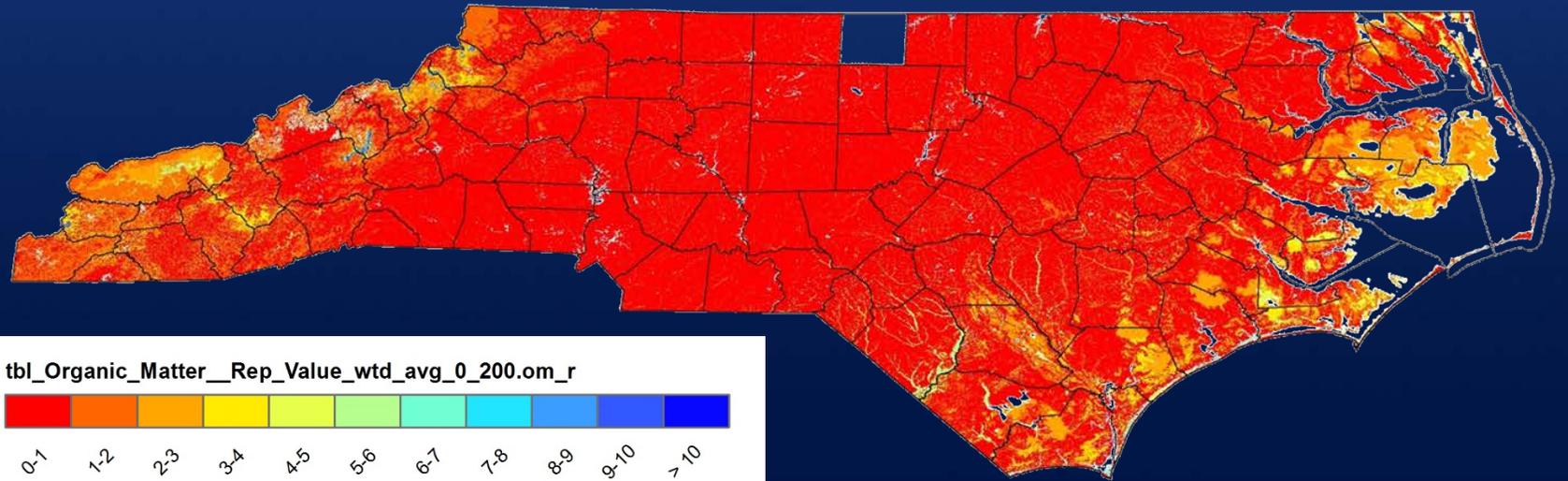




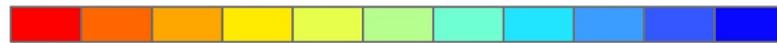
# Areasymbol Toolset

## North Carolina - % Organic Matter

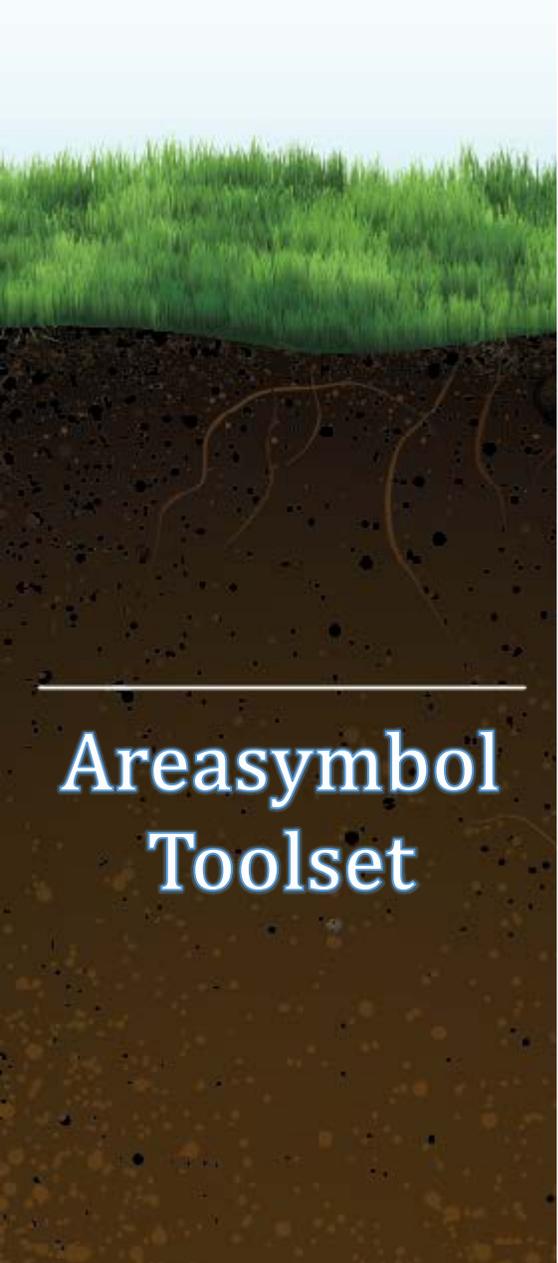
Weighted Average - 0 – 200 cm



tbl\_Organic\_Matter\_Rep\_Value\_wtd\_avg\_0\_200.om\_r



0-1 1-2 2-3 3-4 4-5 5-6 6-7 7-8 8-9 9-10 >10

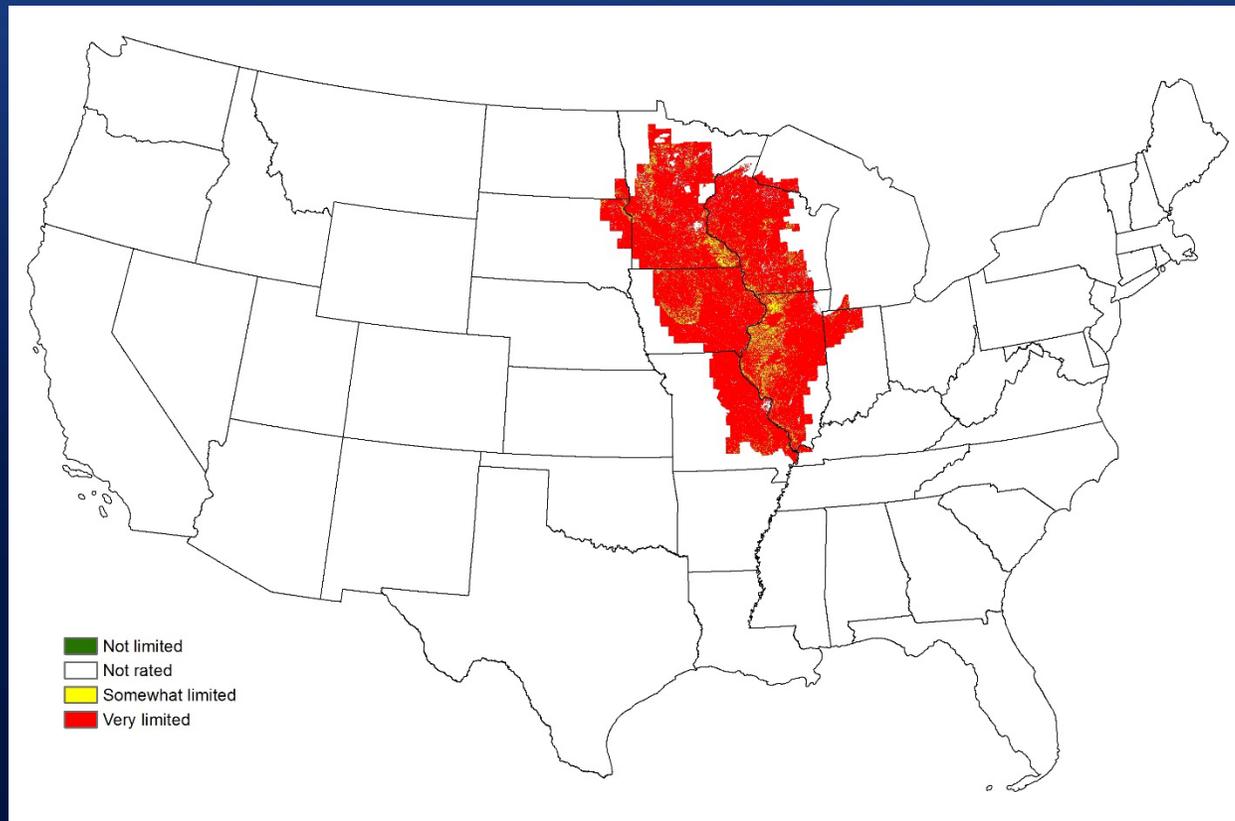


# Areasymbol Toolset

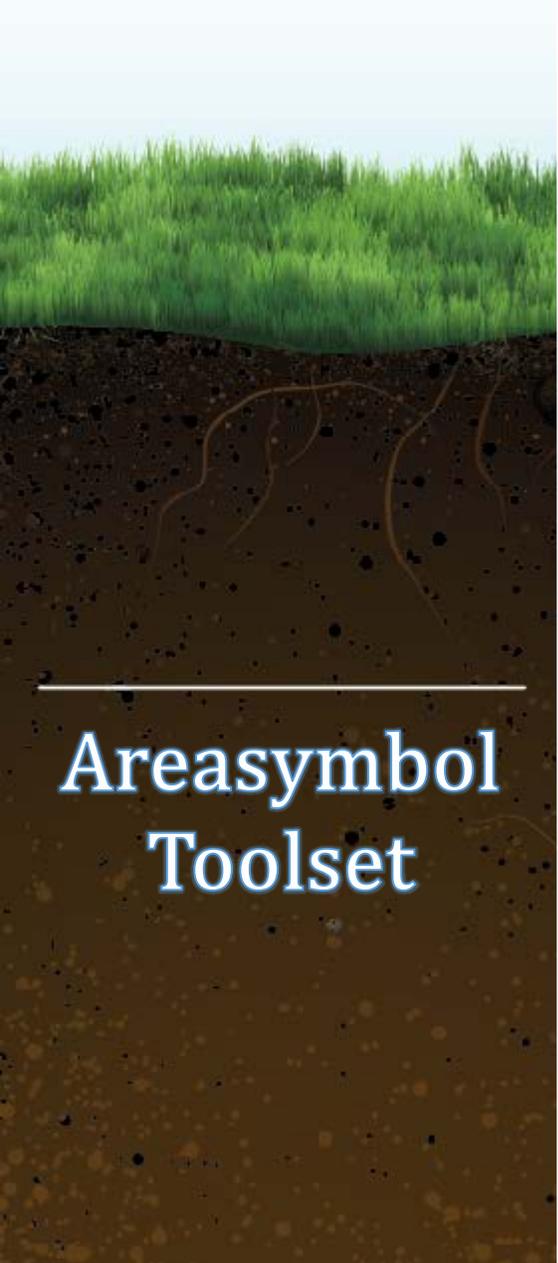
358 SSA

## Upper Mississippi River Watershed

Septic Tank Absorption Fields – Dominant Component



Succeeded at Mon Oct 10 11:06:32 2016  
(Elapsed Time: 9 minutes 28 seconds)

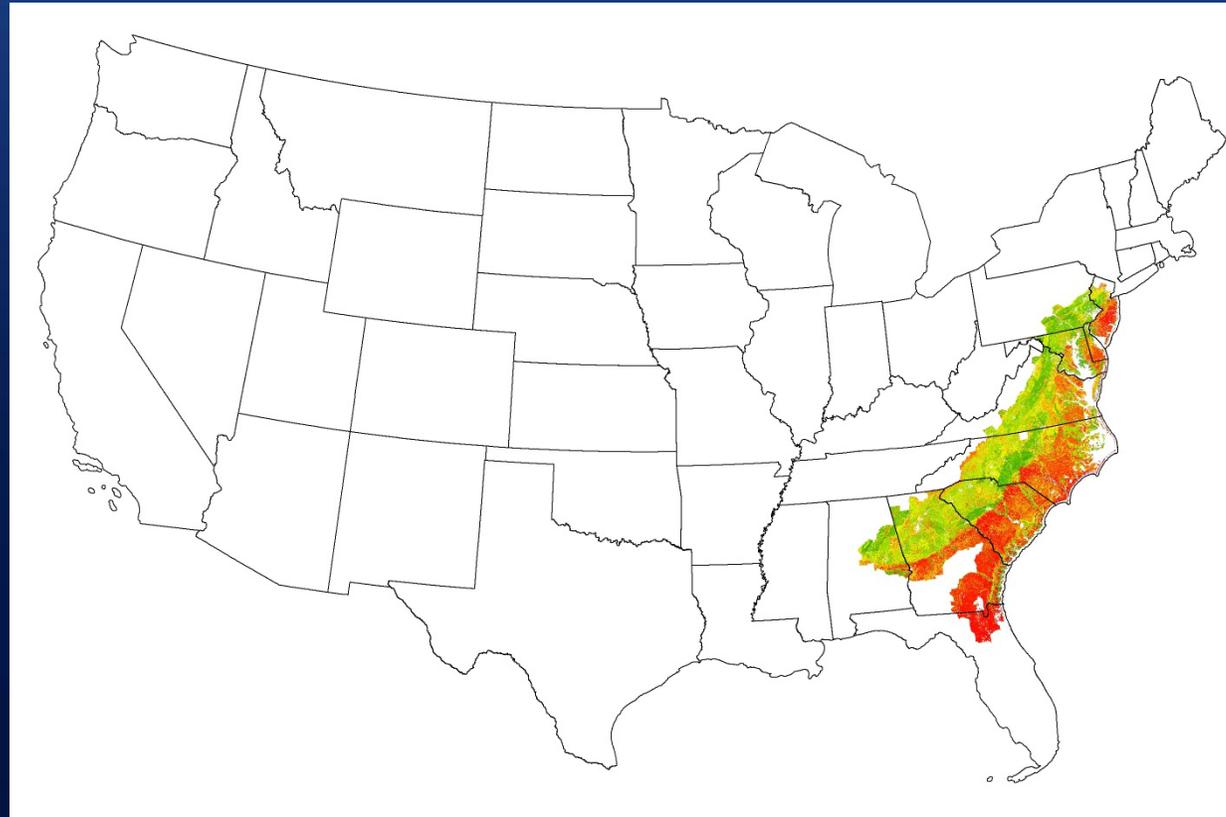


Areasymbol  
Toolset

353 SSA

## Soil Survey Division – Region 3

Percent sand 10 - 40 cm – Weighted Average



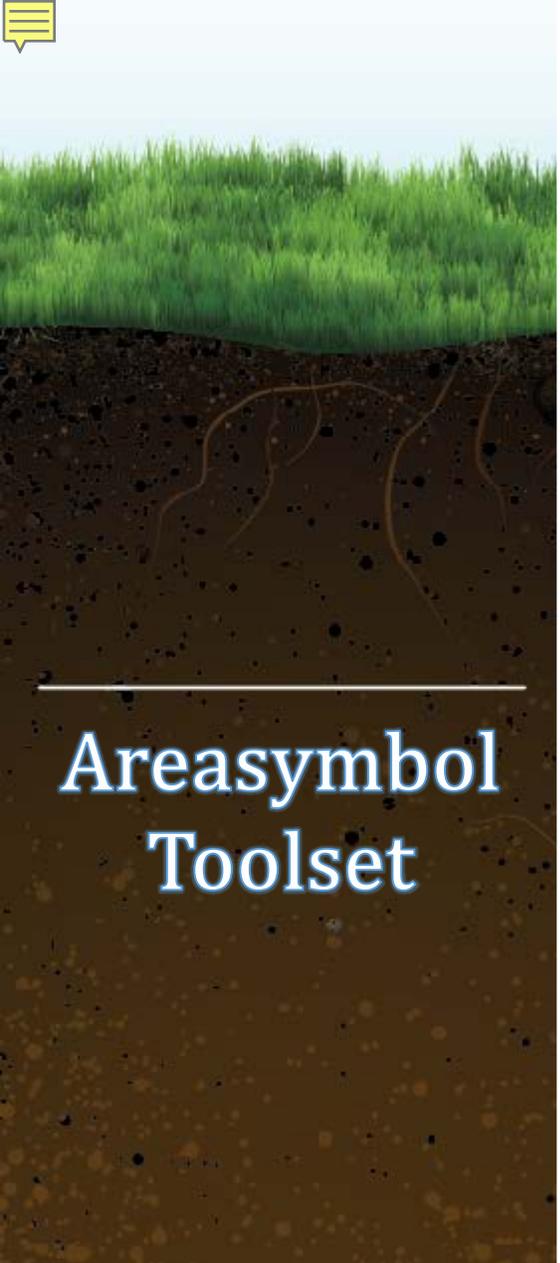
Succeeded at Mon Oct 10 10:36:38 2016  
(Elapsed Time: 4 minutes 38 seconds)



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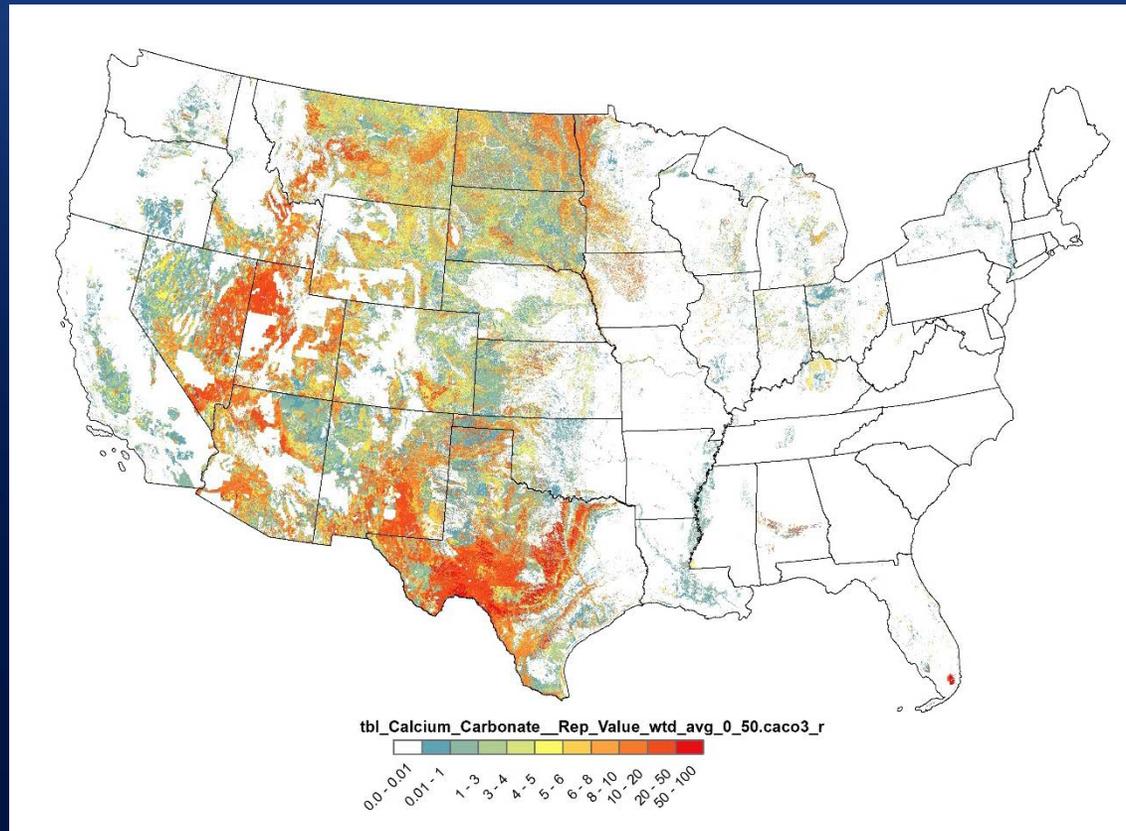


# Areasymbol Toolset

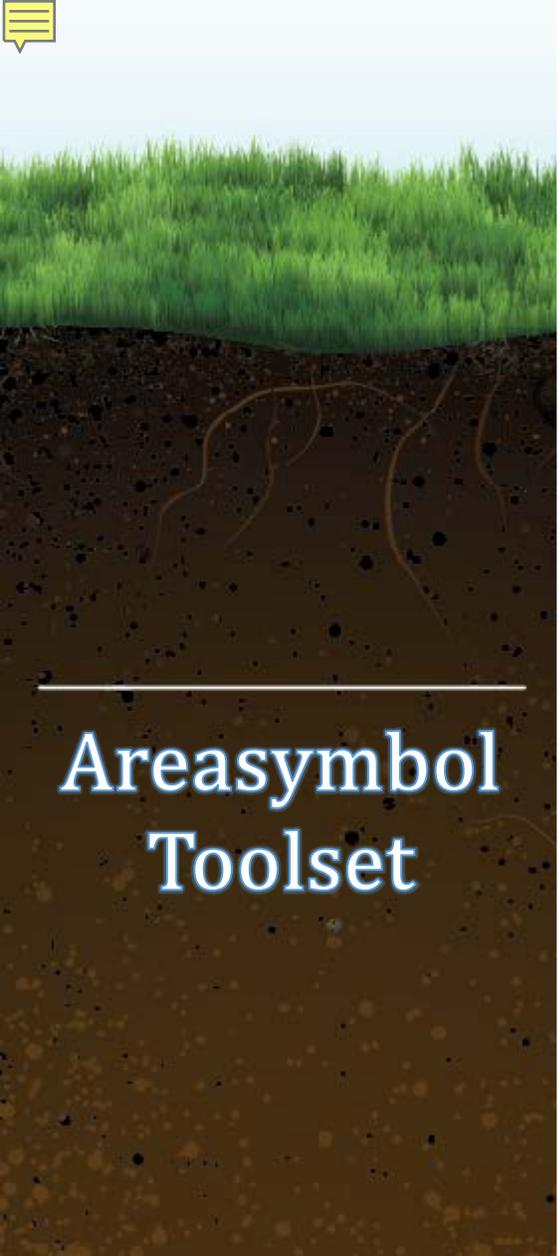
3208 SSA

## CONUS

CaCO<sub>3</sub> Equivalent 10 - 50 cm – Weighted Average



Succeeded at Tue Oct 11 11:24:01 2016  
(Elapsed Time: 33 minutes 29 seconds)



# Areasymbol Toolset

# Soil Survey Area Layer Sources

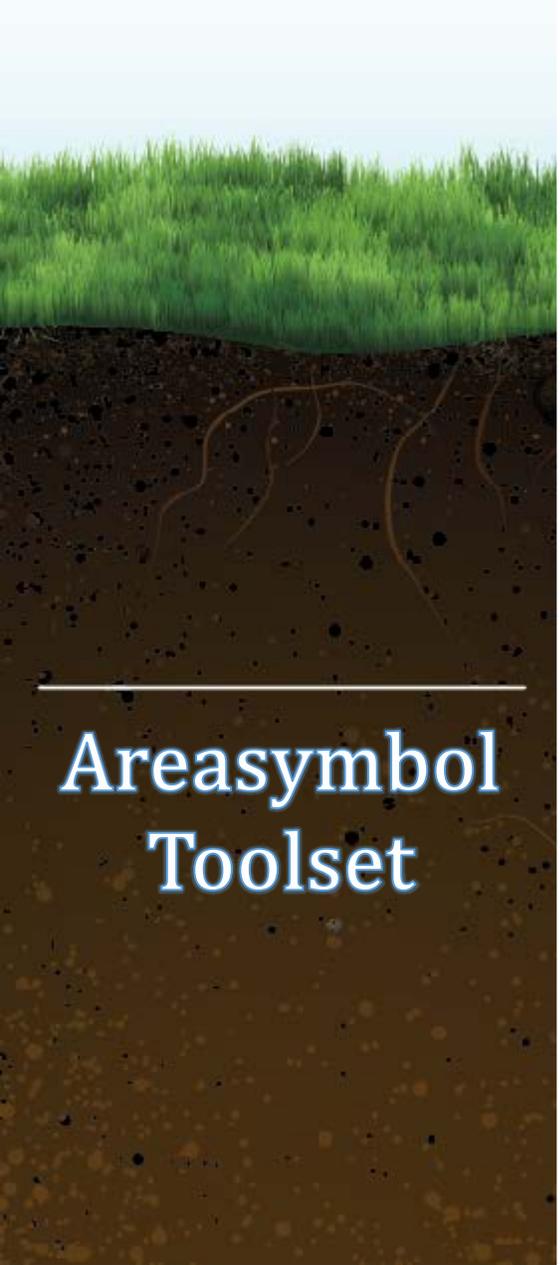
## Web Soil Survey

<http://websoilsurvey.sc.egov.usda.gov/DataAvailability/SoilDataAvailabilityShapefile.zip>



## gSSURGO, Soil Data Development, QA-SSURGO

- SAPOLGON layer



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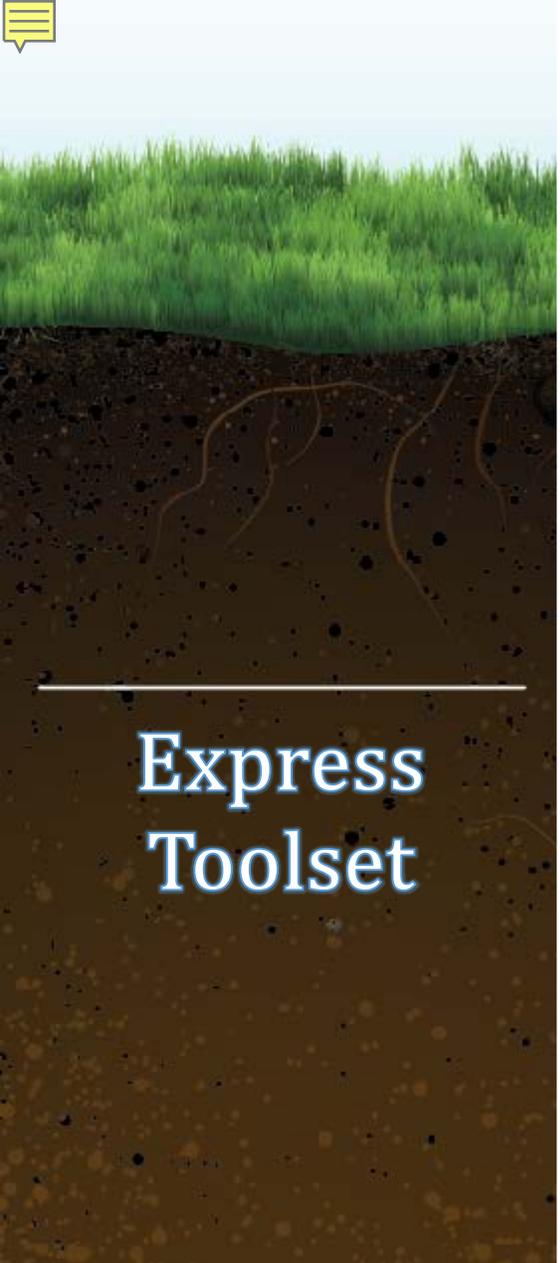
# Areasymbol Toolset



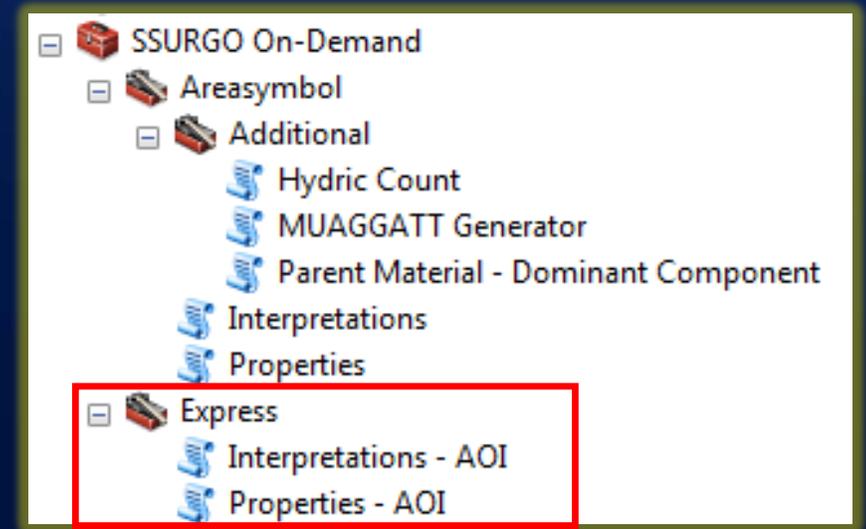
United States Department of Agriculture

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- No local tabular or spatial data is needed
- Generates data from desired area





# Express Toolset

Interpretations - AOI

Feature Set  
xprsInterps::Feature\_Set  
Feature\_Set

Aggregation Method

Interpretations

- AGR - Pesticide Loss Potential-Leaching
- AGR - Pesticide Loss Potential-Soil Surface Runoff
- AWM - Irrigation Disposal of Wastewater
- AWM - Land Application of Municipal Sewage Sludge
- AWM - Manure and Food Processing Waste
- AWM - Overland Flow Process Treatment of Wastewater
- AWM - Rapid Infiltration Disposal of Wastewater
- AWM - Slow Rate Process Treatment of Wastewater
- DHS - Catastrophic Mortality, Large Animal Disposal, Pit

Select All Unselect All Add Value

Output Workspace

Create Layer Files (optional)

OK Cancel Environments... Show Help >>

Properties - AOI

Feature Set  
xprsProperties::Feature\_Set  
Feature\_Set

Aggregation Method

Soil Property

Select All Unselect All Add Value

Top Depth (optional)  
0 0 200

Bottom Depth (optional)  
1 1 200

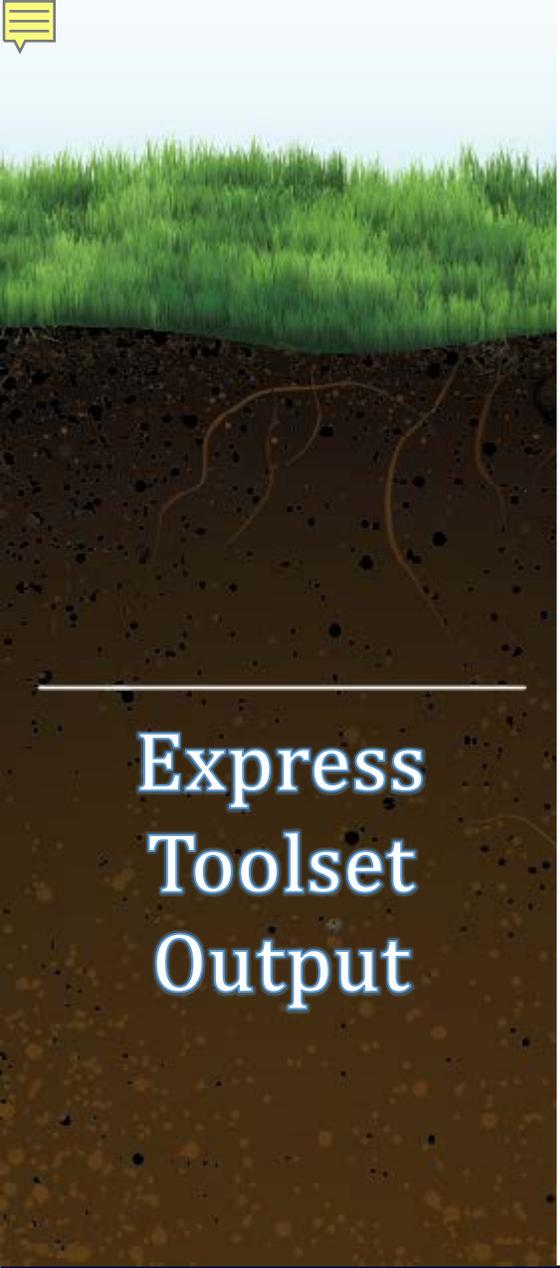
Min/Max (optional)

Output Location

Create Layer Files (optional)

Single Table (optional)

OK Cancel Environments... Show Help >>



# Express Toolset Output

## Output

### Interpretations

- a\_File\_Geodatabase.gdb
  - SSURGO\_express\_polys
  - SSURGO\_express\_tbl\_ENG\_Construction\_Materials\_Gravel\_Source\_Dominant\_Component
  - SSURGO\_express\_tbl\_ENG\_Septic\_Tank\_Absorption\_Fields\_Dominant\_Component
  - SSURGO\_express\_tbl\_WMS\_Pond\_Reservoir\_Area\_Dominant\_Component
- SSURGO\_express\_polys\_ENG\_Construction\_Materials\_Gravel\_Source\_Dominant\_Component.lyr
- SSURGO\_express\_polys\_ENG\_Septic\_Tank\_Absorption\_Fields\_Dominant\_Component.lyr
- SSURGO\_express\_polys\_WMS\_Pond\_Reservoir\_Area\_Dominant\_Component.lyr

No options

Create Layer Files

### Properties

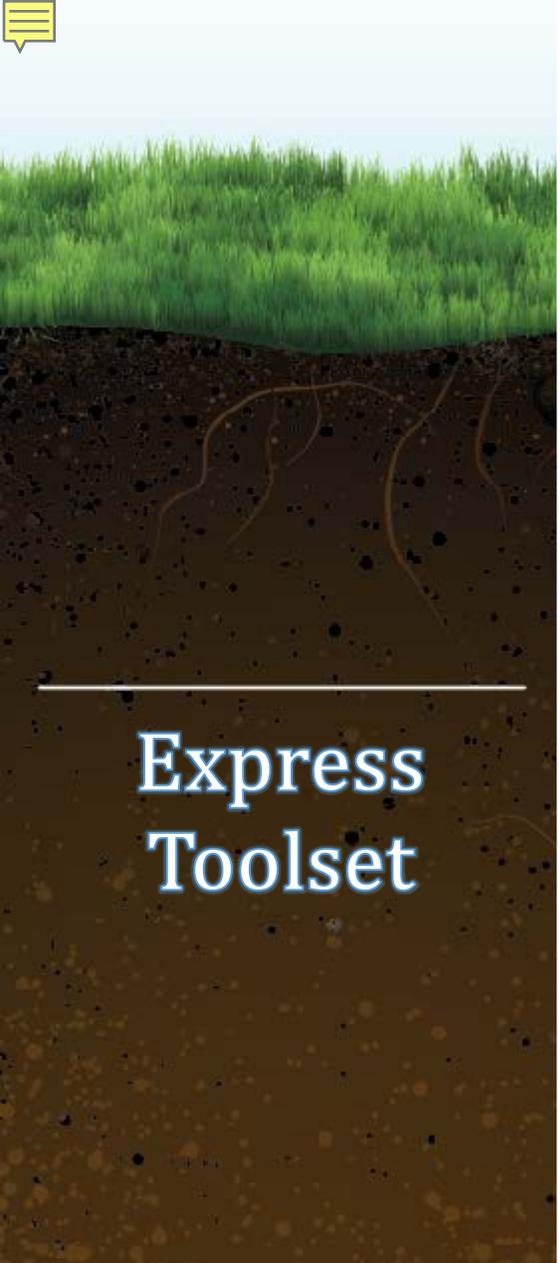
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    - SSURGO\_express\_prop\_polys
    - SSURGO\_express\_tbl\_claytotal\_r\_wtd\_avg\_0\_27
    - SSURGO\_express\_tbl\_sandtotal\_r\_wtd\_avg\_0\_27
    - SSURGO\_express\_tbl\_silttotal\_r\_wtd\_avg\_0\_27
  - SSURGO\_express\_polys\_claytotal\_r\_wtd\_avg\_0\_27.lyr
  - SSURGO\_express\_polys\_sandtotal\_r\_wtd\_avg\_0\_27.lyr
  - SSURGO\_express\_polys\_silttotal\_r\_wtd\_avg\_0\_27.lyr

No options

Create Layer Files

- a\_File\_Geodatabase.gdb
  - SSURGO\_express\_prop\_polys
  - SSURGO\_express\_tbl\_multiprops\_wtd\_avg\_0\_27
- SSURGO\_express\_polys\_multiprops\_wtd\_avg\_0\_27.lyr

Single Table

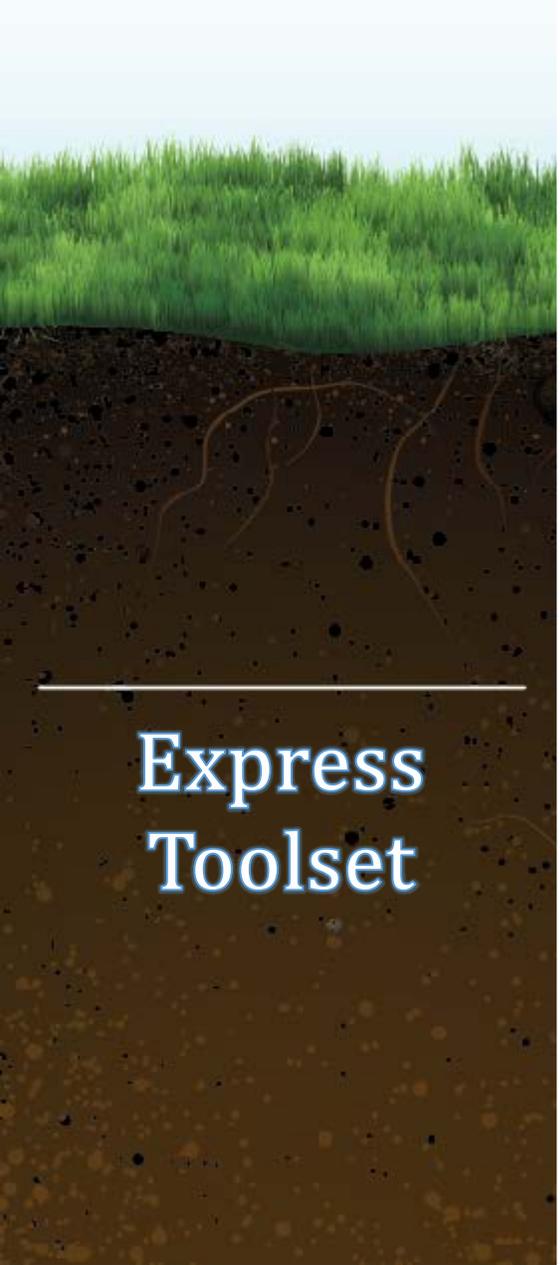


# Express Toolset

# Output

## Single Table

area symbol	musym	muname	wtenthbar_r	wthirdbar_r	wfifteenbar_r	awc_r	pbray1_r	dbtenthbar_r	dbthirdbar_r	dbfifteenbar_r	dbovendry_r	claysizedcarb
VA033	2B	Appling sandy loam, 2 to 7 percent slopes	0	36.83	23.74	0.16	0	0	1.36	0	1.42	
VA033	2C	Appling sandy loam, 7 to 15 percent slopes	0	36.83	23.74	0.16	0	0	1.36	0	1.42	
VA033	6B	Cecil sandy loam, 2 to 7 percent slopes	0	34.28	24.54	0.14	0	0	1.4	0	1.47	
VA033	28A	Wehadkee silt loam, 0 to 2 percent slopes, f	0	27.42	11.82	0.18	0	0	1.4	0	1.46	
VA033	17D	Rion sandy loam, 15 to 25 percent slopes	0	23.5	15.8	0.12	0	0	1.45	0	1.52	
VA033	W	Water										



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# Express Toolset



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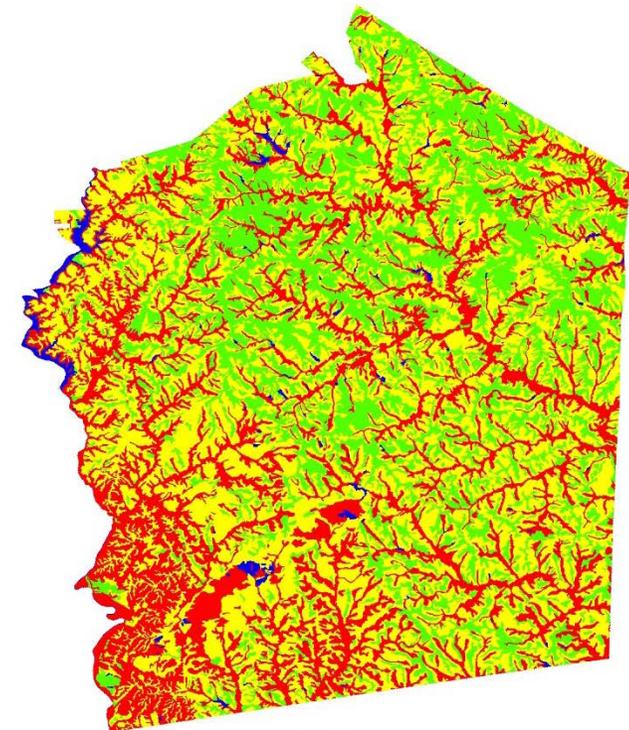
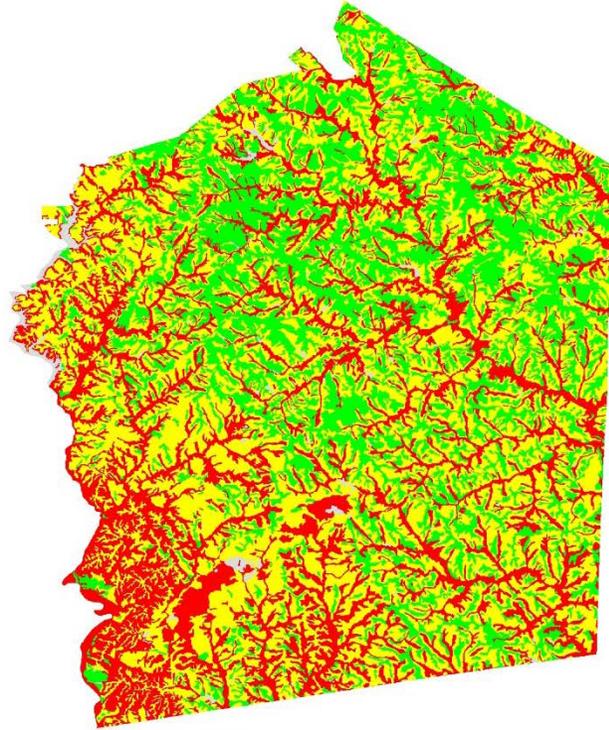


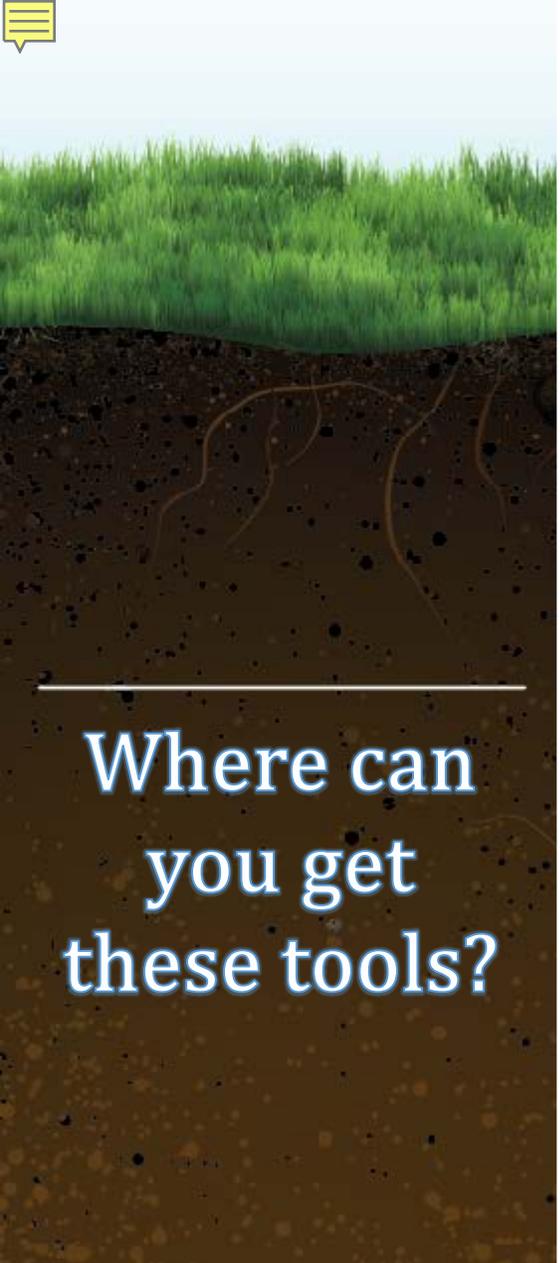
# Comparing Results

INTERPRETATIONS

## SDV

## SOD

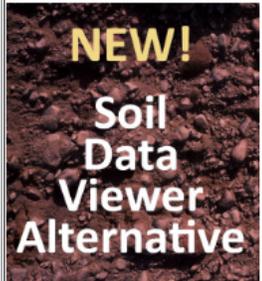


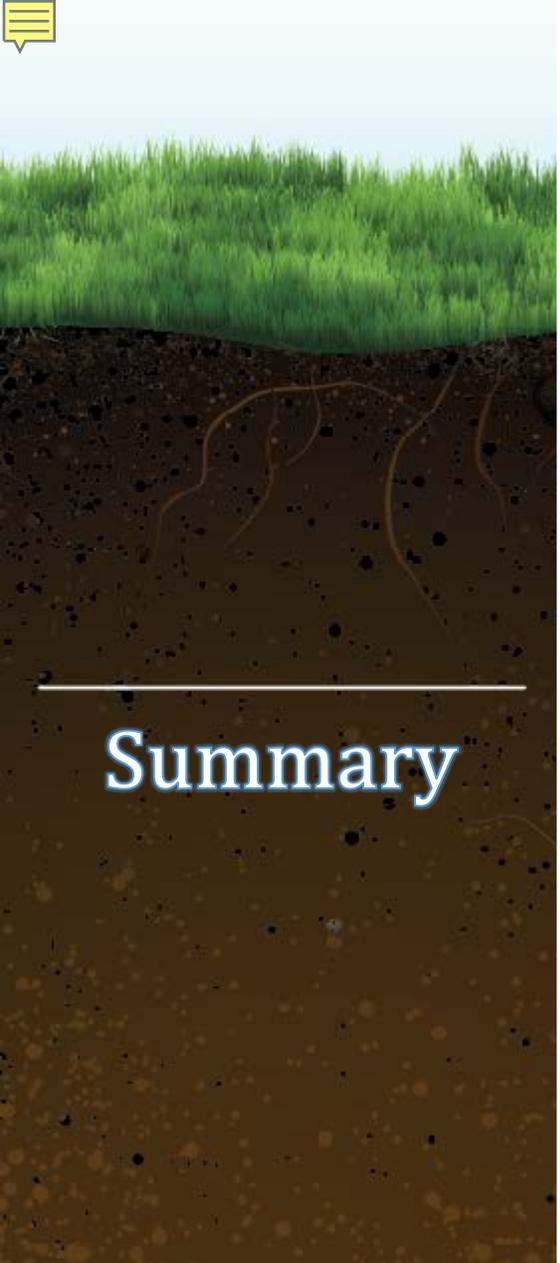


Where can  
you get  
these tools?

- **NRCS WI Soils Webpage**

<http://www.nrcs.usda.gov/wps/portal/nrcs/main/wi/soils/>

	<p><b>NEW Soil Data Viewer Alternative!</b></p> <p>The SSURGO OnDemand Dynamic Spatial Interpretations Tool can process soils data from large geographic areas rapidly and is a one-stop shop for any number of soil survey areas at once for any and all interpretations or properties. It accesses authoritative soils data without the need for downloading external tabular data sets. Please direct questions and comments to Chad Ferguson at <a href="mailto:charles.ferguson@nc.usda.gov">charles.ferguson@nc.usda.gov</a> or Jason Nemecek at <a href="mailto:jason.nemecek@wi.usda.gov">jason.nemecek@wi.usda.gov</a>.</p> <p>Download the tool below and directions:</p> <p>Python scripts and ArcGIS SSURGO OnDemand toolbox (676 KB ZIP) (updated 9/12/2016)</p> <p>SSURGO OnDemand Dynamic Spatial Interpretations Tool (documentation and instructions) (215 KB)</p>
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# SSURGO On–Demand Toolbox

- Soil Data Viewer ‘like’ set of tools
- Return tabular AND vector data
- Gather WSS Stored data
- Hit NRCS web services in real-time
- Extend the functionality of existing NRCS tools and datasets
- Additional SSURGO interpretation information
- Accepts user defined AOI
- Continued development



# Questions



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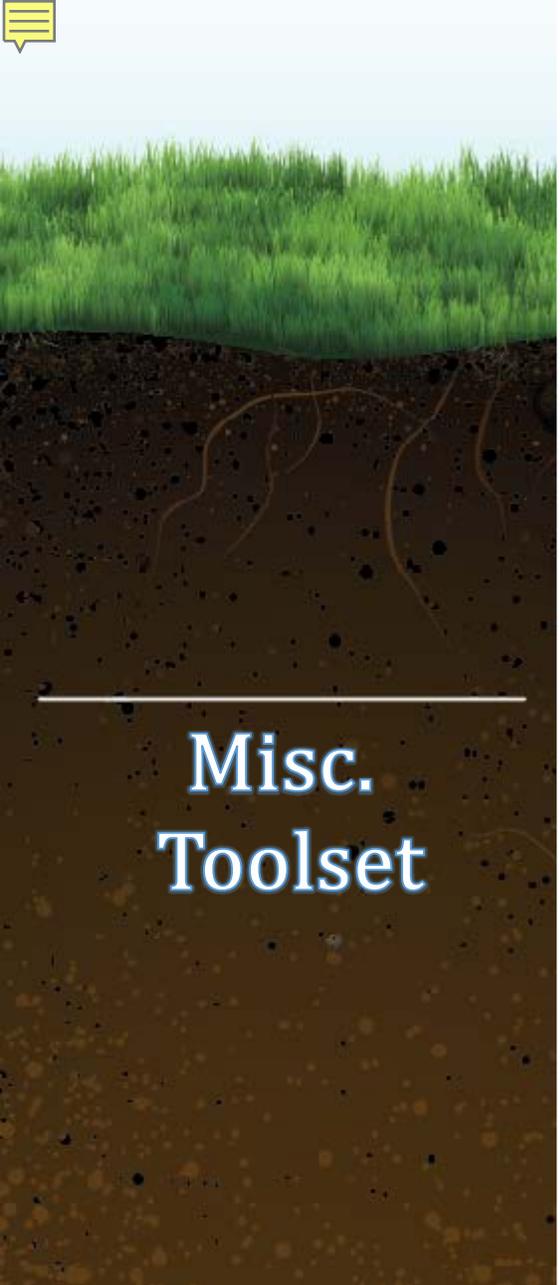
USDA is an equal opportunity provider, employer and lender



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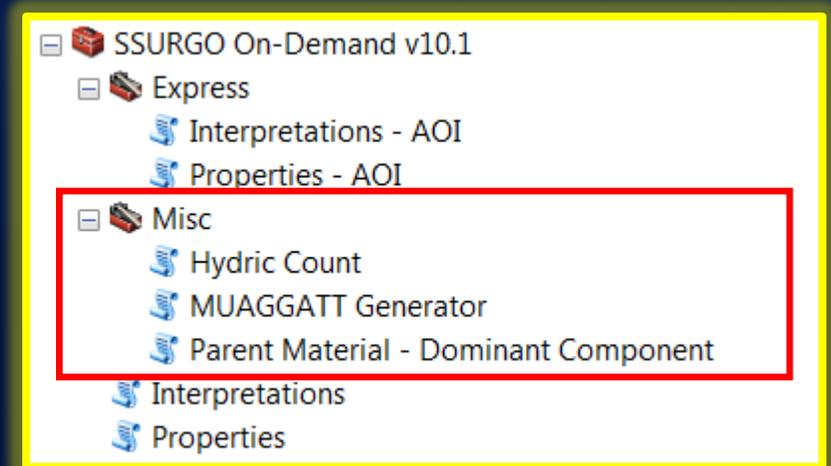
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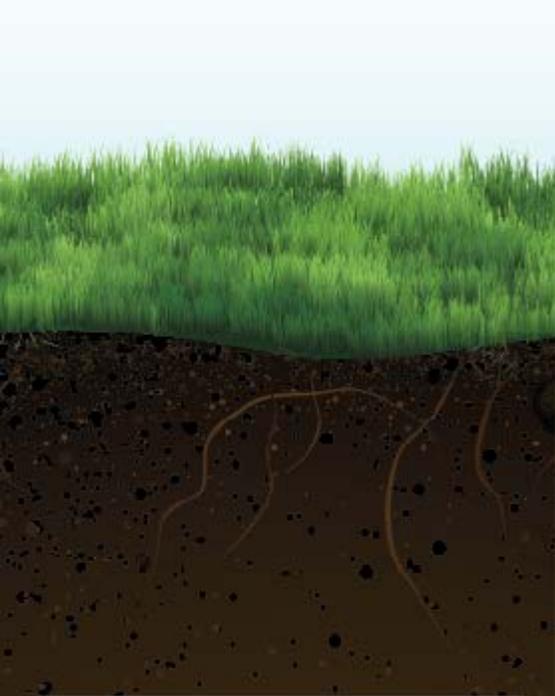




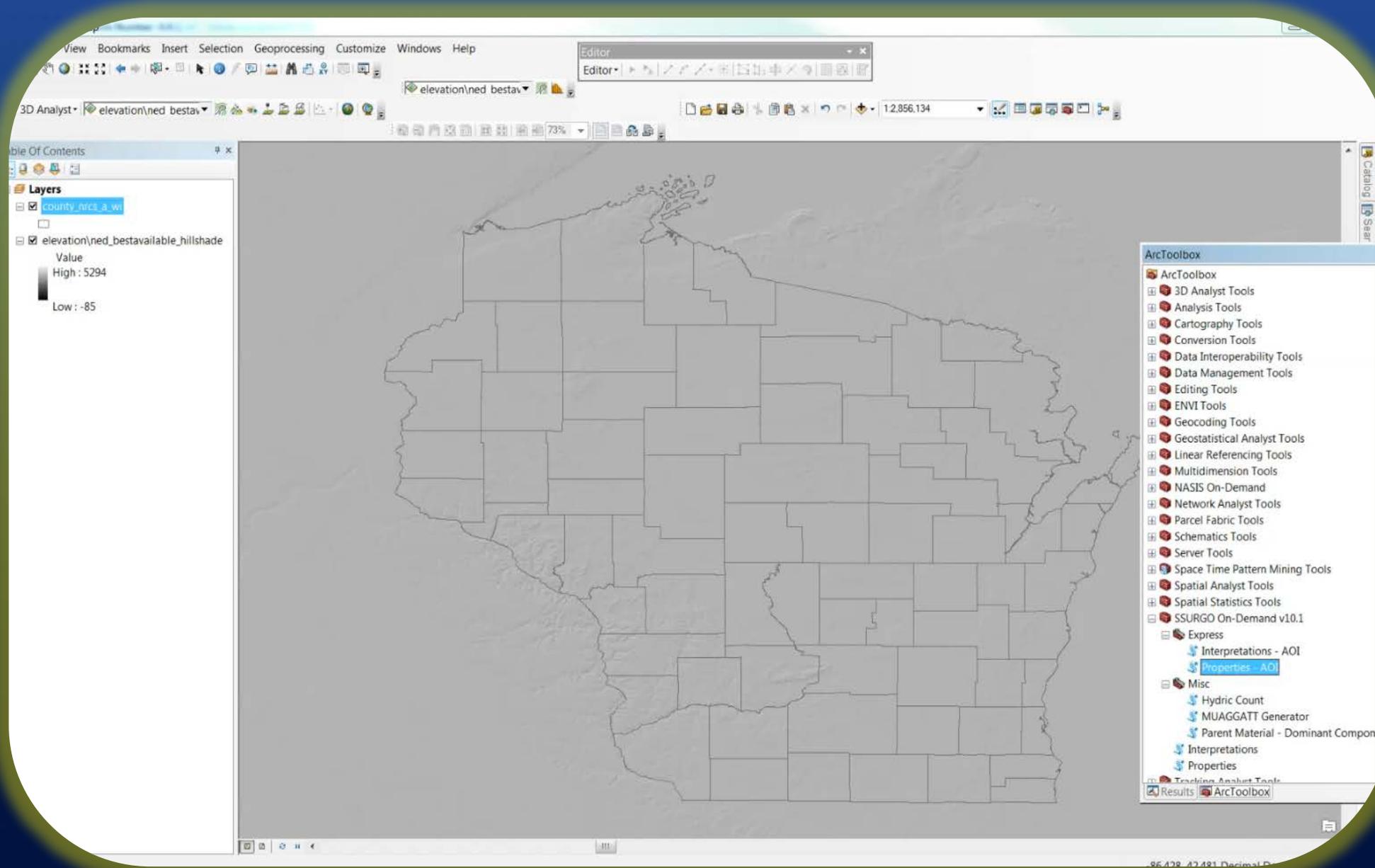
- aggregated in order to express a consolidated value or interpretation

Misc.  
Toolset





# Express Toolset



85428.42481 Decimal D



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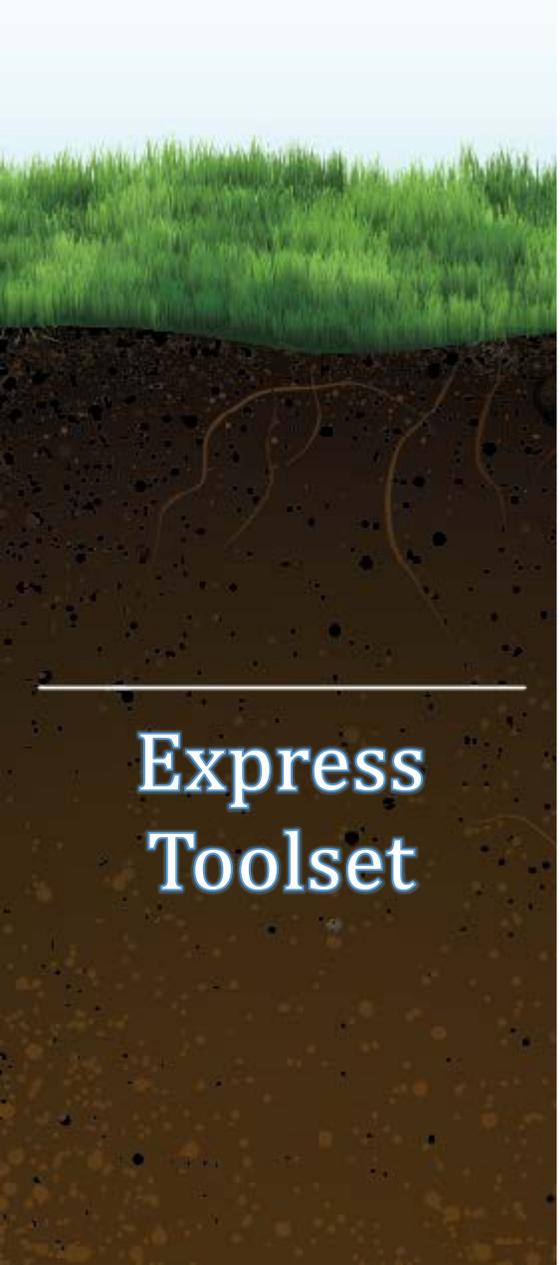




# Main Toolset

A screenshot of the ArcGIS software interface. The main window displays a map of Wisconsin with a soil classification overlay in various colors (orange, yellow, green, blue). The interface includes a menu bar at the top with options like View, Bookmarks, Insert, Selection, Geoprocessing, Customize, Windows, and Help. Below the menu is a toolbar with various icons. On the left, there is a 'Table Of Contents' pane showing a list of layers, including 'MaupunitRaster\_WI\_10m' which is checked. Below this is a legend for soil types with color-coded boxes: Anthropogenic Deposits (red), Eolian Deposits (nonvolcanic) (orange), Glacial and Periglacial Deposits (yellow), In-Place Deposits (nontransported) (light green), Mass Movement Deposits (green), Miscoded - should be pmorigin (dark green), NULL (blue), Organic Deposits (teal), and Waterlaid (or Transported) Deposits (dark blue). In the center, an 'ArcToolbox' window is open, displaying a list of toolsets such as Data Interoperability Tools, Data Management Tools, Editing Tools, ENVI Tools, Geocoding Tools, Geostatistical Analyst Tools, Linear Referencing Tools, Multidimension Tools, NASIS On-Demand, Network Analyst Tools, Parcel Fabric Tools, Schematics Tools, Server Tools, Soil Data Development Toolbox, Space Time Pattern Mining Tools, Spatial Analyst Tools, Spatial Statistics Tools, SSURGO Download Toolbox, Download SSURGO Toolset, gSSURGO Toolset, SSURGO Management Toolset, SSURGO On-Demand v10.1, Misc, MUAGGATT Generator, Parent Material - Dominant Component, and Interpretations. The bottom status bar shows coordinates: 241631.599 276300.514 Meters.





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# Express Toolset



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