

DIGITAL MAPPING TECHNIQUES 2013

The following was presented at DMT'13
(June 2-5, 2013 - Colorado Geological Survey and Colorado School of Mines
Golden, CO)

The contents of this document are provisional

See Presentations and Proceedings
from the DMT Meetings (1997-2013)

<http://ngmdb.usgs.gov/info/dmt/>

Creating FGDC-Compliant Cartographic Representations



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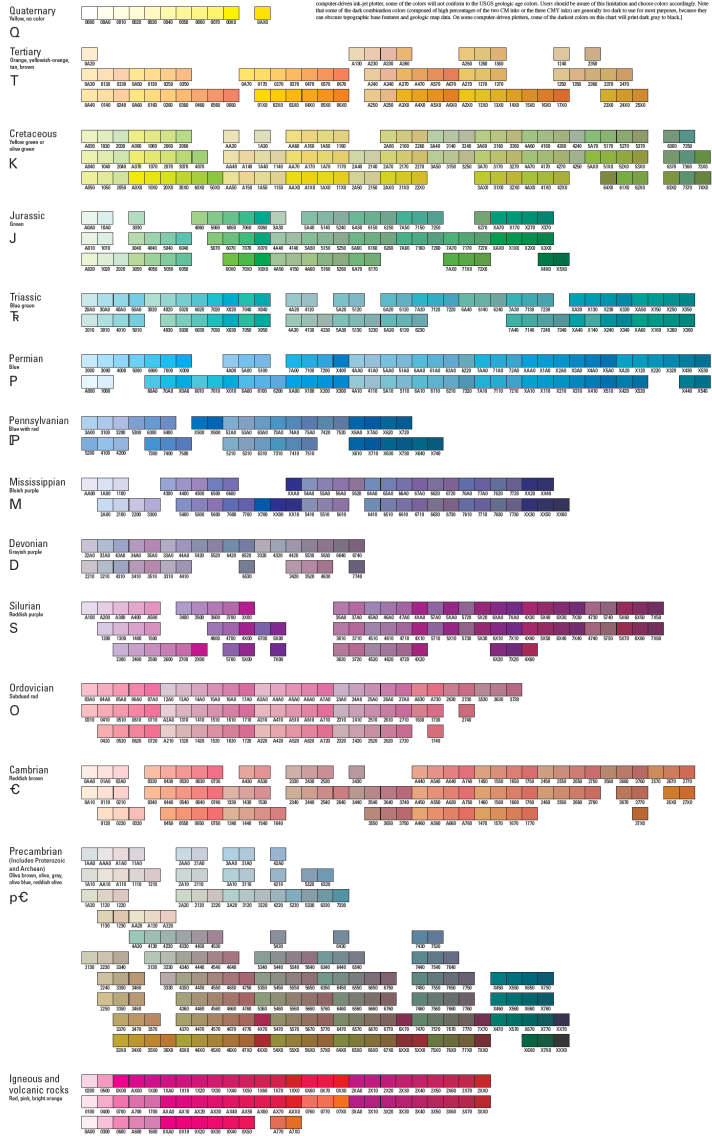
Overview of Presentation

- DGGs inclusion of USGS suggested colors into style file
- Cartographic representations and their benefits
- Translating traditional symbols into representations
- Creating pattern fill representations from scratch
- Concerns about the TM 11-B1 manual and FGDC pattern chart



Suggested Colors for Geologic Maps

Techniques and Methods 11-61
Plan



Style Manager

\\PANGEA\gis\standards\styles\DGGGS_Map_Symbolization.style

- Reference Systems
- Maplex Labels
- Shadows
- Area Patches
- Line Patches
- Labels
- Representation Markers
- North Arrows
- Scale Bars
- Legend Items
- Scale Texts
- Color Ramps
- Borders
- Backgrounds
- Colors
- Vectorization Settings
- Fill Symbols
- Line Symbols
- Marker Symbols
- Text Symbols
- Representation Rules
- Hatches

Name	Category	Tags
■ XX50	Mississippian	cmky;blue;simple
■ XX60	Mississippian	cmky;blue;simple
■ XXA0	Mississippian	cmky;blue;simple
■ 0310	Ordovician	cmky;pink;simple
■ 03A0	Ordovician	cmky;pink;simple
■ 0410	Ordovician	cmky;pink;simple
■ 0420	Ordovician	cmky;pink;simple
■ 04A0	Ordovician	cmky;pink;simple
■ 0510	Ordovician	cmky;pink;simple
■ 0520	Ordovician	cmky;pink;simple
■ 05A0	Ordovician	cmky;pink;simple
■ 0610	Ordovician	cmky;pink;simple
■ 0620	Ordovician	cmky;pink;simple
■ 06A0	Ordovician	cmky;pink;simple
■ 0710	Ordovician	cmky;pink;simple
■ 0720	Ordovician	cmky;pink;simple
■ 07A0	Ordovician	cmky;pink;simple
■ 12A0	Ordovician	cmky;purple;simple
■ 1310	Ordovician	cmky;purple;pink;simple
■ 1320	Ordovician	cmky;pink;simple
■ 13A0	Ordovician	cmky;purple;simple


Layer Properties

General Source Selection Display Symbology Fields Definition Query Labels Join

Show:

- Features
 - Single symbol
- Categories
- Quantities
- Charts
- Multiple Attributes
- Representations

Draw all features using the same symbol.


Symbol: 

Legend:

Label appearing next to the symbol in table of contents:

Description...

Additional description appearing next to the symbol in your map:



OK Cancel Apply

Symbol Selector

14A0

Search: All Styles Referenced Styles

Ordovician

14A0 14A0

Current Symbol

Fill Color

Outline

Outline

Save As

Style

OK

Symbol Selector


ordovician

Search: All Styles Referenced Styles


Ordovician

03A0	0310	04A0	0410
0420	05A0	0510	0520
06A0	0610	0620	07A0
0710	0720	12A0	A2A0
A210	13A0	1310	1320

Current Symbol

Fill Color: 

Outline Width: 0.40

Outline Color: 

Edit Symbol...

Save As... Reset

Style References...

OK Cancel

Symbol Selector

Alluvial

Search: All Styles Referenced Styles

Quaternary

0020	0030	0040	0050
0060	0070	00X0	

Tertiary

0A70

Current Symbol

Fill Color:

Outline Width: 0.40

Outline Color:

Edit Symbol...

Save As... Reset

Symbol Selector

Glacial one

Search: All Styles Referenced Styles

Cretaceous

A030	A040	A050	1030
1040	1050	2030	2040
2050	A060	A070	A0X0
1060	1070	10X0	2060
2070	20X0	3060	3070
30X0			

Current Symbol

Fill Color:

Outline Width: 0.40

Outline Color:

Edit Symbol...

Save As... Reset

Symbol Selector

Colluvial

Search: All Styles Referenced Styles

Tertiary

0A20	0A30	0A40	0130
0140	0230	0240	0A50
0A60	0150	0160	0250
0260	0170	01X0	0270
02X0	0370	03X0	A360
A370	A3X0	A470	A4X0
A570	A5X0		

Current Symbol

Fill Color:

Outline Width: 0.40

Outline Color:

Edit Symbol...

Save As... Reset

Style References...

OK Cancel

Symbol Selector

glacial two

Search: All Styles Referenced Styles

Jurassic

A0A0	A010	A020	10A0
1010	1020	2020	3030
3040	3050	4040	4050
5040	5050	6040	6050

Current Symbol

Fill Color:

Outline Width: 0.40

Outline Color:

Edit Symbol...

Save As... Reset

Style References...

OK Cancel

Representations Rock!

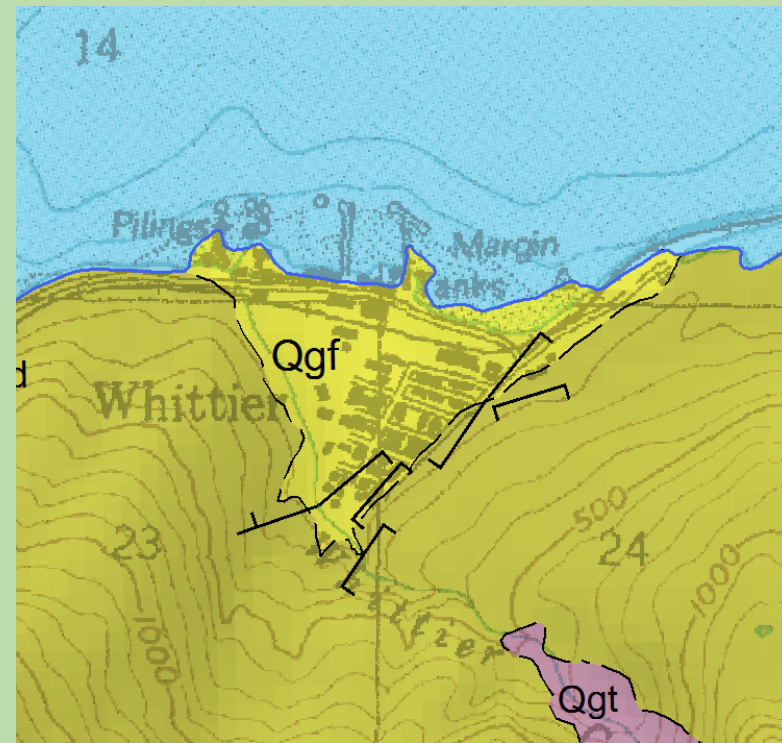


Representations help solve cartographic challenges

Provide greater flexibility and control of map symbology



Traditional Symbology



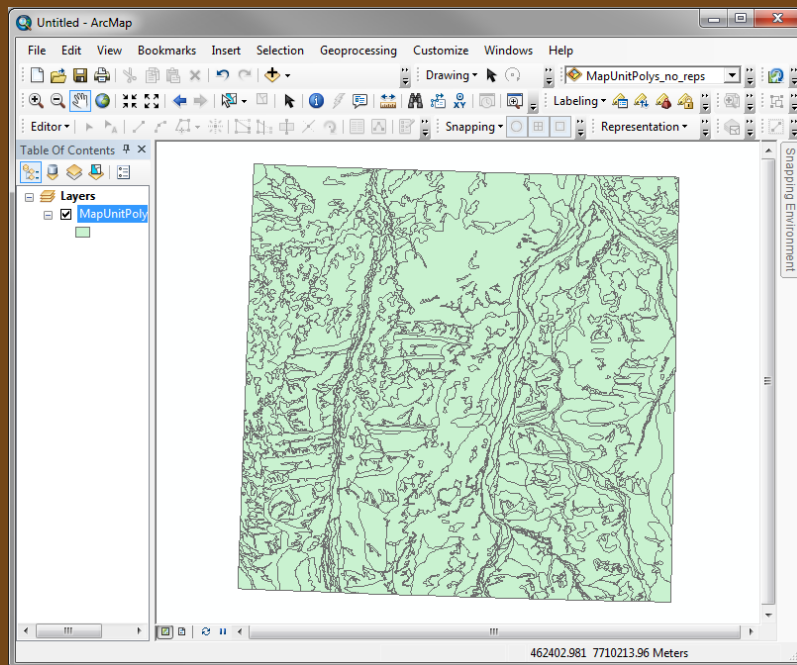
Cartographic Representations

Representations Rock!

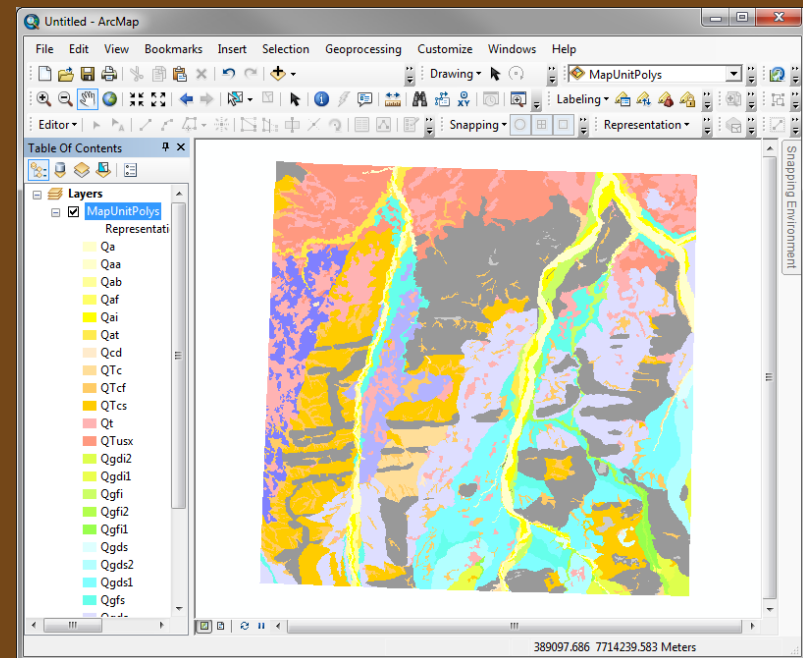


Representations help solve cartographic challenges

Store rule-based symbols in the geodatabase along with data

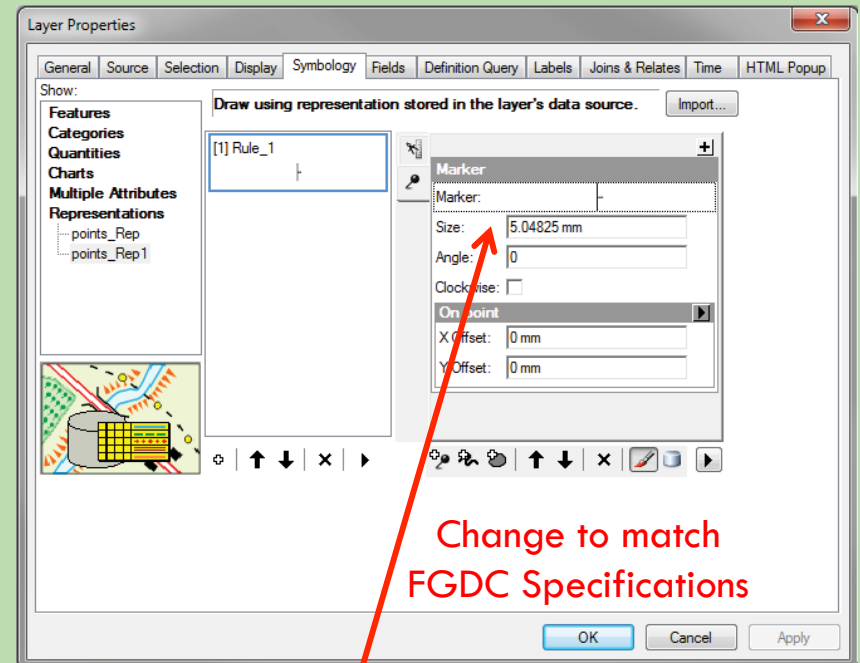
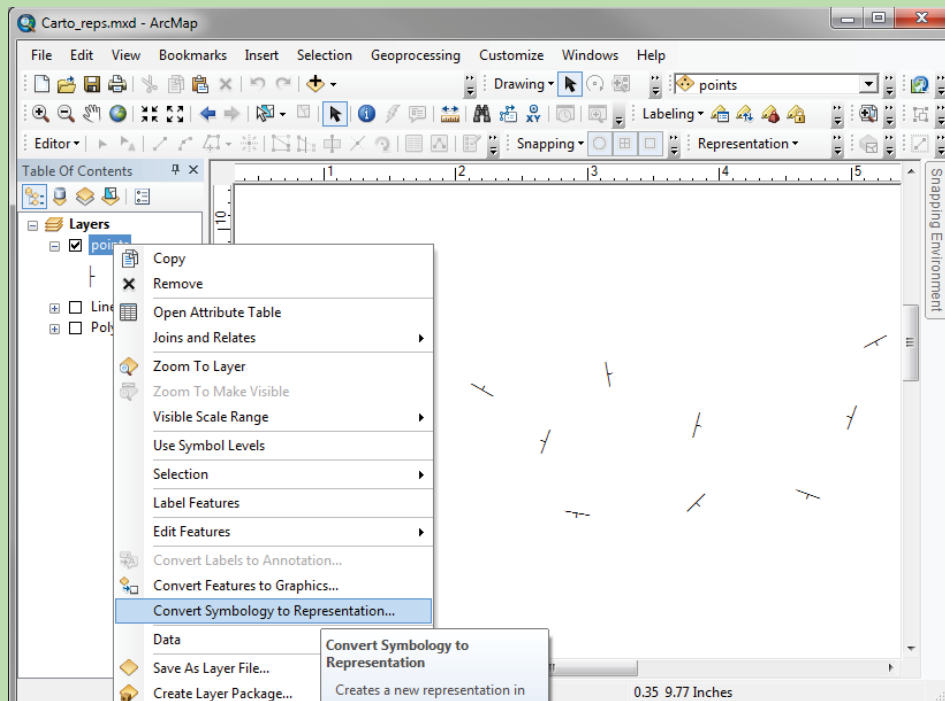


Traditional Symbology



Cartographic Representations

Translating FGDC Symbols Into Cartographic Representations



Change to match
FGDC Specifications

Federal Geographic Data Committee
FGDC Digital Cartographic Standard for Geologic Map Symbolization

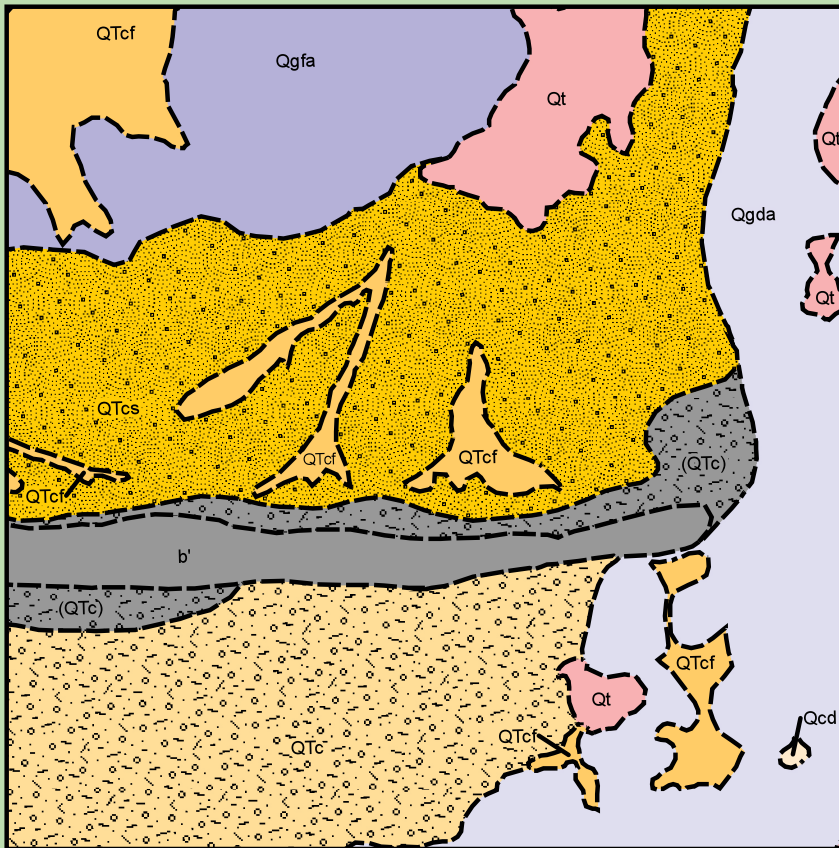
FGDC Document Number FGDC-STD-013-2006
Appendix A

6—BEDDING

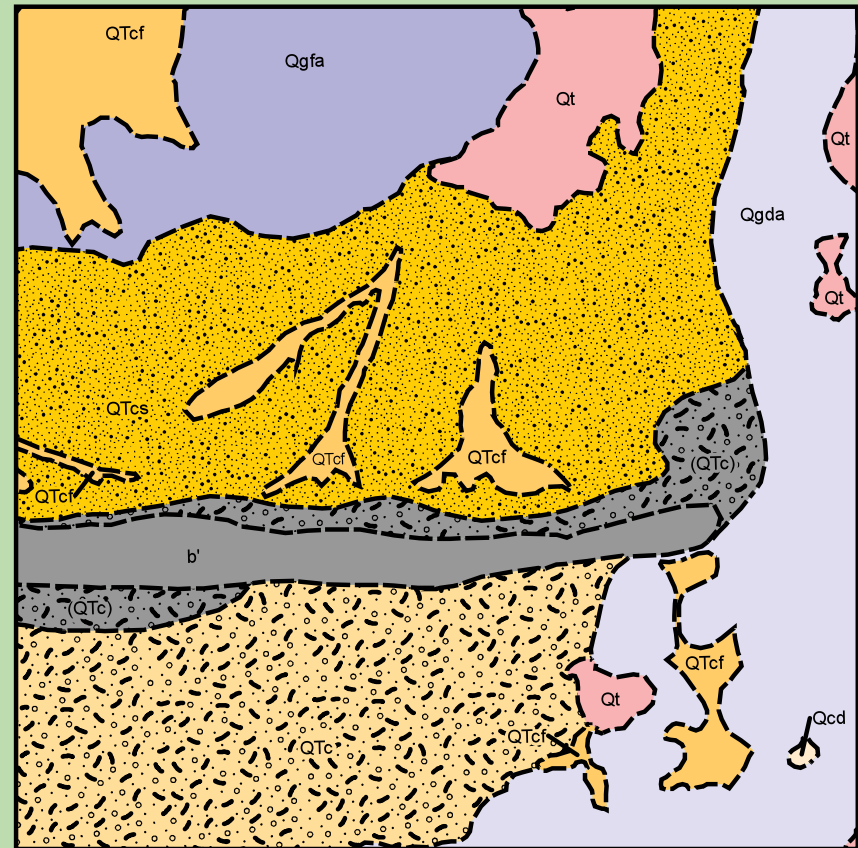
REF NO	DESCRIPTION	SYMBOL	CARTOGRAPHIC SPECIFICATIONS*	NOTES ON USAGE*
6.1	Horizontal bedding	⊕	all line weights .2 mm ⊕ circle diameter 2.5 mm	Inclined (upright) and overturned bedding symbols are used when the top direction of beds is known to a reasonable degree of certainty. On maps where determination of top direction
6.2	Inclined bedding—Showing strike and dip	40 └─┘	1.0 mm └─┘ 40 └─┘ 5.0 mm all line weights .2 mm	

Patterns as Representations

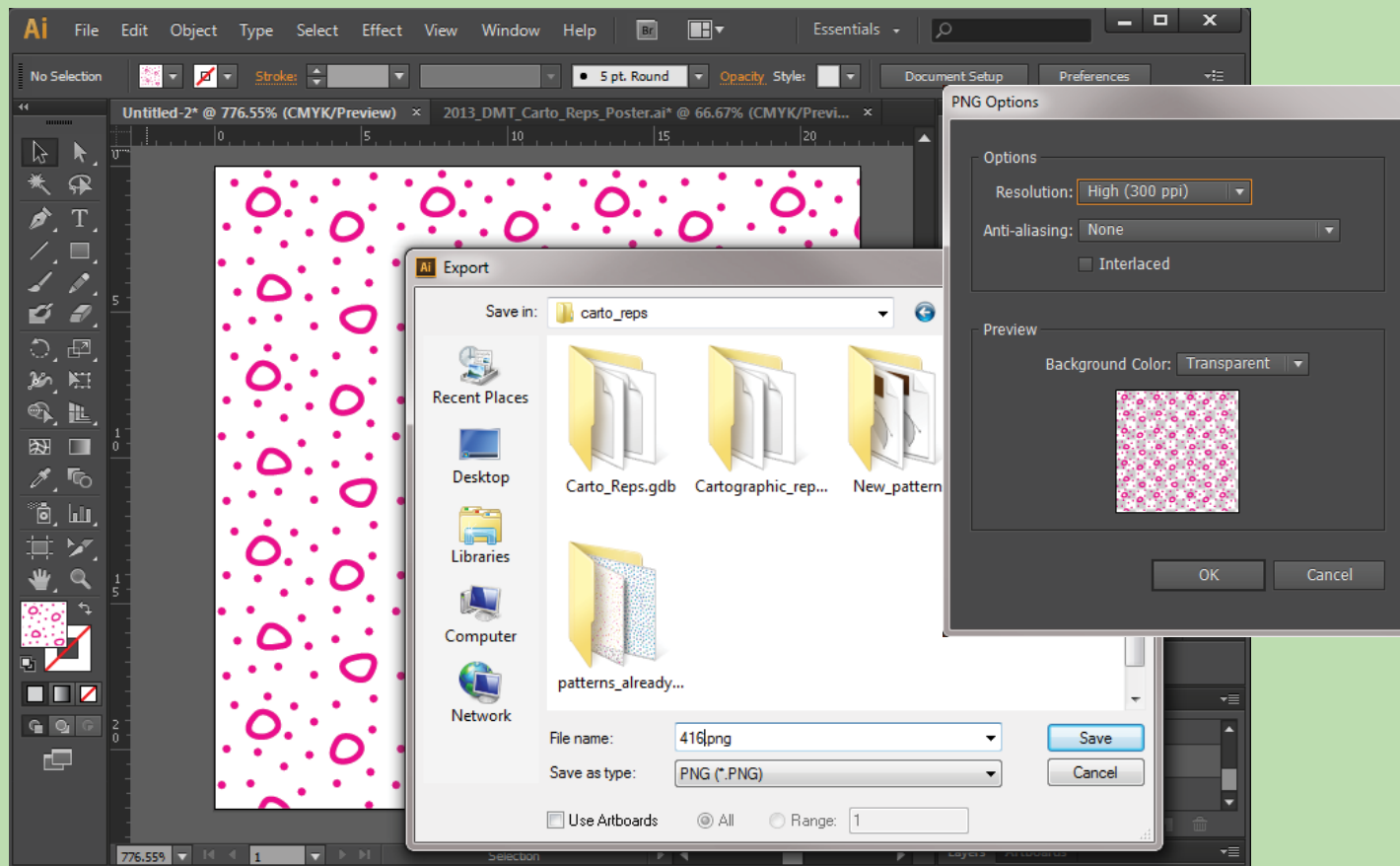
Pattern from Esri Geology 24K style file



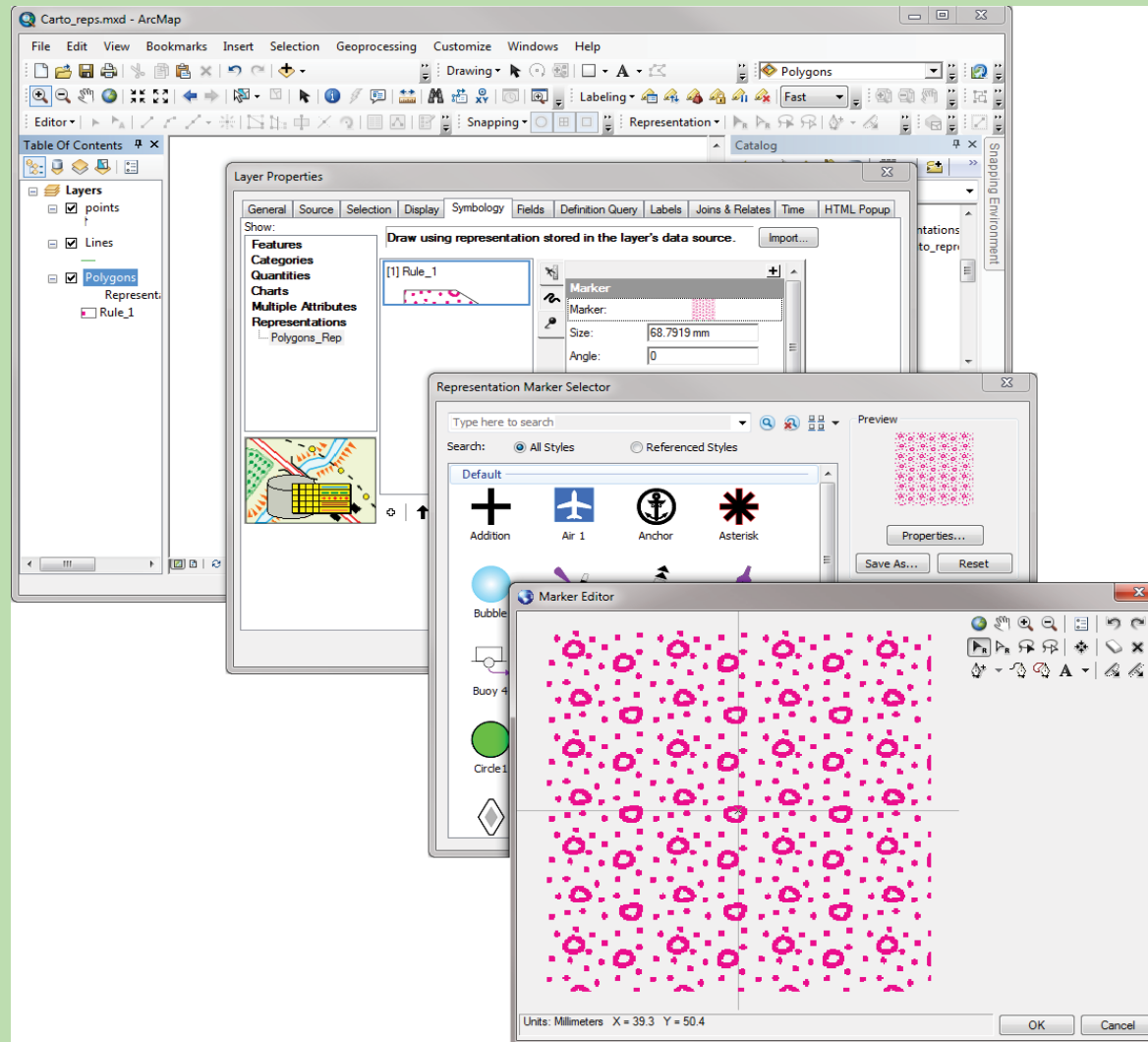
Patterns as cartographic representations



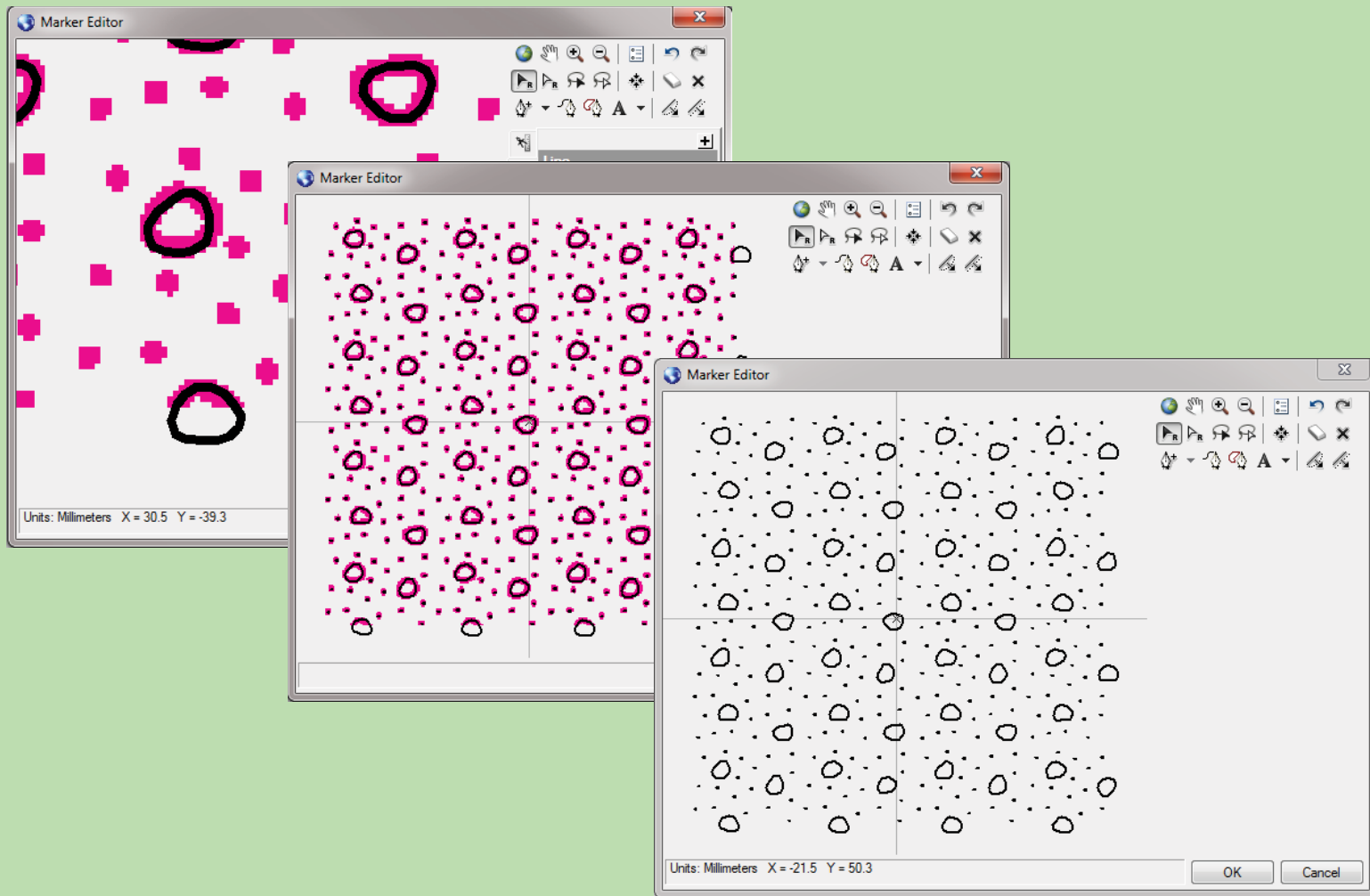
Creating Pattern Fill Representations From Scratch



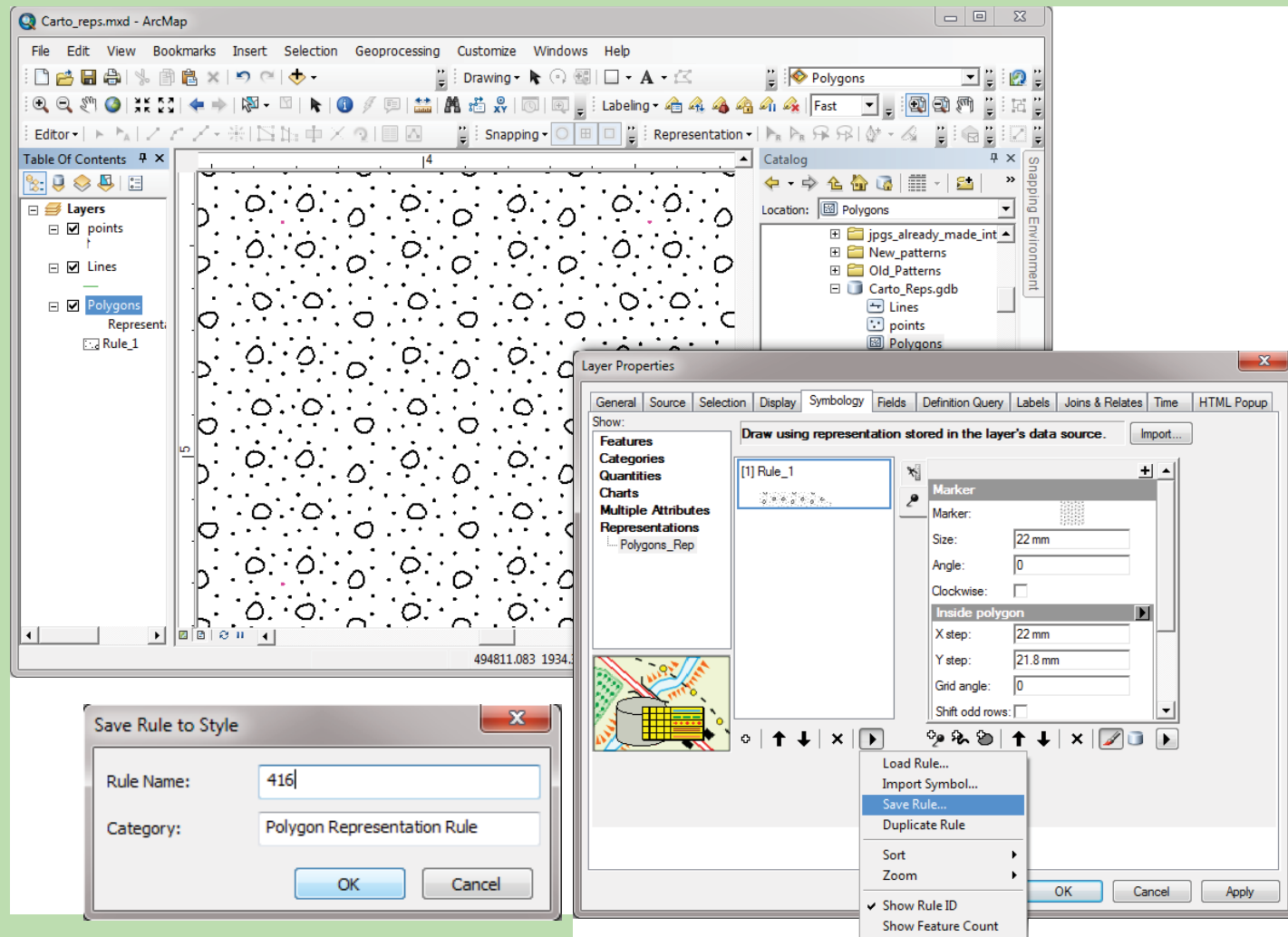
Creating Pattern Fill Representations From Scratch



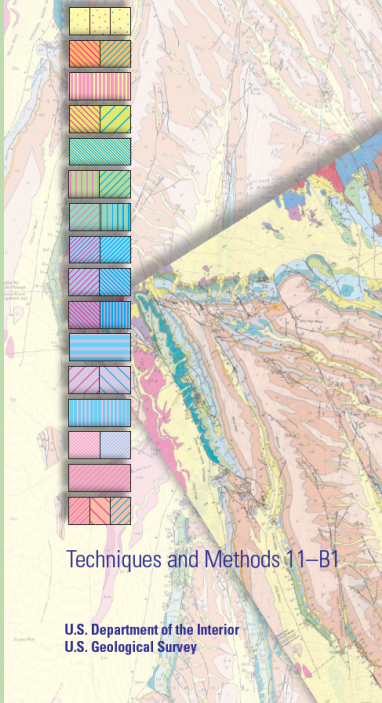
Creating Pattern Fill Representations From Scratch



Creating Pattern Fill Representations From Scratch



Selection of Colors and Patterns for Geologic Maps of the U.S. Geological Survey



4 Selection of Colors and Patterns for Geologic Maps of the U.S. Geological Survey

Recommended Geologic Patterns

Patterns tend to obscure the base map and should be used only when necessary. The patterns shown in the following paragraphs are those most frequently used by map designers in the USGS. These patterns and many others that are less frequently used are shown on plate B of the Digital Cartographic Standard (see <http://pubs.usgs.gov/of/1999/of99-430/>). The pattern numbers in the following paragraphs refer to that plate.

Patterns are used when they help to maintain the basic color scheme on complex maps; they often can effectively show relationships between units as well as imply the type of rock being represented. Patterns are most often used for surficial and for igneous and volcanic units.

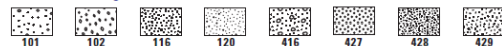
Surficial Patterns

Stipple and circular patterns are used to show surficial deposits. Normally these patterns have a random arrangement of stipples and circles; however, regularly spaced patterns may be used to create contrast among units. Generally, the spacing of the patterns should correspond to the relative size and to the character of the material being represented. For example, a fine stipple pattern should be used for sand while a coarser stipple pattern with or without circles indicates a coarse gravel or conglomerate. Patterns are generally used as follows:

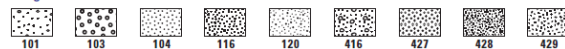
Sand



Gravel, sand and gravel



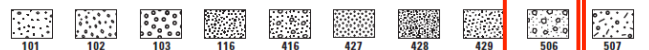
Conglomerate



Talus, breccia, landslides

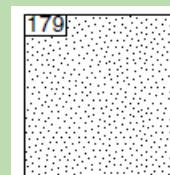


Glacial moraine

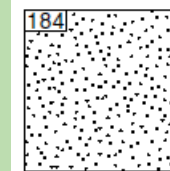


595

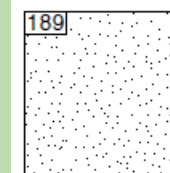
591



135-K



136-K



137-K

QUESTIONS



This geocaching corgi can't wait to get home and turn his data into a map with a standardized format!

Thank you DMT organizers and participants!