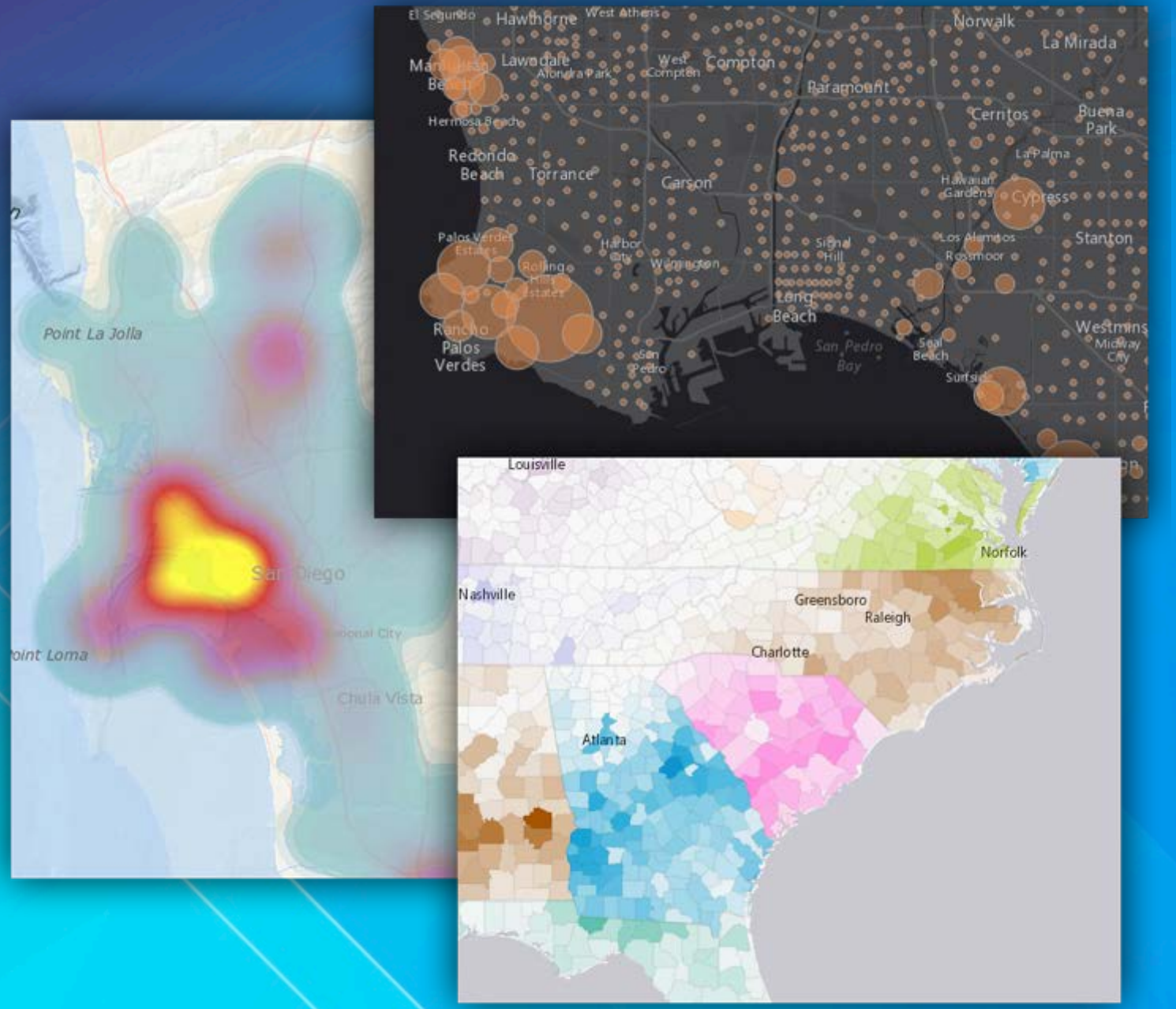
Smart Mapping - Make Brilliant Maps Quickly and With Confidence

Jim Herries and Mark Harrower



Overview

- *What* and *Why* of Smart Mapping
- Demos
- Where we are headed

esri.com/smartmapping

blogs.arcgis.com

Introducing Smart Mapping

by Mark Harrower on March 2, 2015

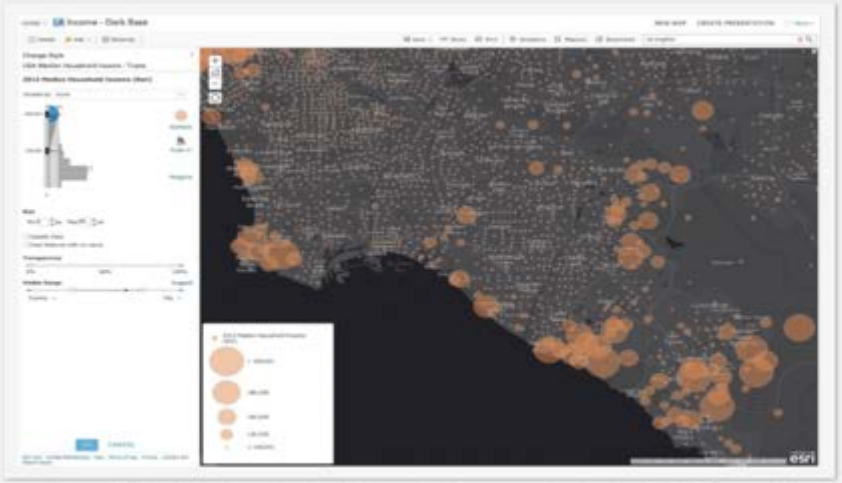
Share 194 Tweet 408 Share 1765

We want to introduce you to **Smart Mapping**, an exciting new capability built into the March 2015 update to ArcGIS Online and to the ArcGIS 10.3.1 release of Portal for ArcGIS (included with ArcGIS for Server). Smart mapping is designed to give people confidence and power to quickly make maps that are visually stunning and useful. This makes it easier than ever for you to create attractive maps, maps that tell important stories. Here's more about what we added and what you can expect when you try smart mapping.

We added new ways to symbolize your data, 'smart' defaults, and data-driven workflows to the ArcGIS Online and the Portal for ArcGIS map viewer. Continuous color ramps and proportional symbols, improved categorical mapping, heat maps, and new ways to use transparency effects to show additional details about your data are all now delivered via a streamlined and updated user interface.

But smart mapping is more than just new kinds of maps (as exciting as those are!). To power this experience, we've articulated and then programmed in deep cartographic first principles that become **a set of interconnected 'smart' defaults that create data-driven workflows**.

Unlike 'dumb' software defaults that are the same every time, with smart defaults we now offer the right choices at the right time. When we see your data in the map viewer, we analyze it very quickly in a variety of ways so that the choices you see in front of you are driven by the nature of your data, the kind of map you want to create, and the kind of story you want to tell (e.g., I want to show places that are above and below the national average).



The best thematic maps apply thoughtful analysis of the underlying data to a set of map parameters designed to bring focus and clarity to the topic. Here, the author has positioned the handles controlling symbol size (running beside the histogram) to emphasize areas with household incomes over $100,000. Great maps relate the data back to the real world, using visual cues that immediately highlight the message you want to convey.

This Blog

Sign in

Subscribe to the RSS Feed

Comments RSS

Technical Communities

3D GIS (143)

Analysis & Geoprocessing (283)

ArcGIS Online (954)

Developer (487)

Editing (153)

Geodata (204)

Imagery (322)

Mapping (610)

Mobile (210)

Python (55)

Security (13)

Services (632)

Story Maps (97)

Web (260)

Industry Communities

App Developers (126)

Community Maps (230)

Theme 1:

Data-driven workflows, intelligent defaults

Change Style

Bike Parking - Number of Spots

1 **Choose an attribute to show**

NUMSPACES

2 **Select a drawing style**

Counts and Amounts (Size)

OPTIONS

Counts and Amounts (Color)

SELECT

Heat Map

SELECT

Location (Single symbol)

SELECT

Types (Unique symbols)

SELECT

Smart Field Selection

Smart Mapping:

Enable people to make brilliant maps quickly and with confidence.

Simplify the map authoring experience.

Data driven workflows = the right choices at the right time.

Bake the expertise into the tools.

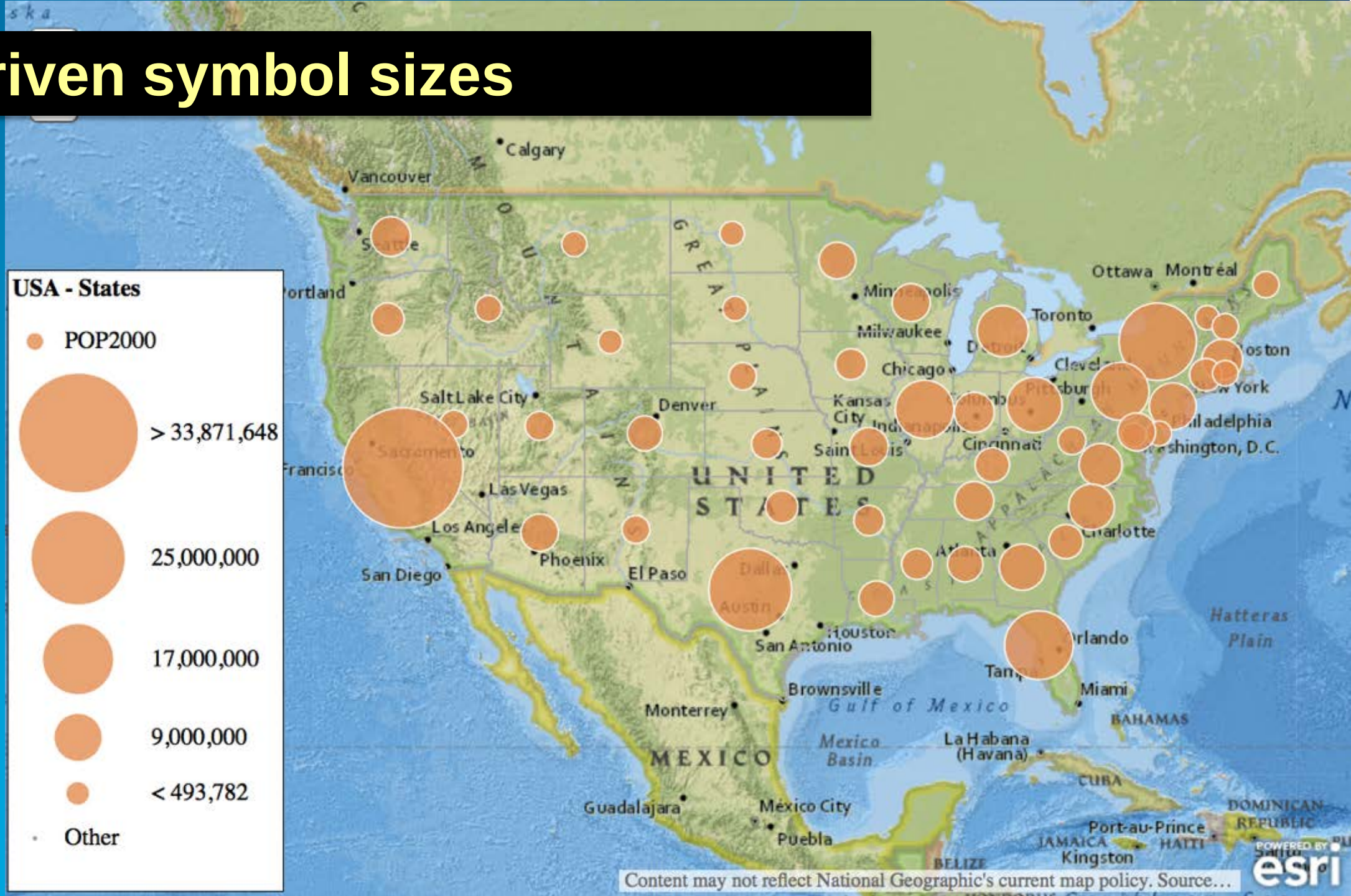
Smart Mapping

How much of the map making process can we automate? How much about your data can we infer at author-time?

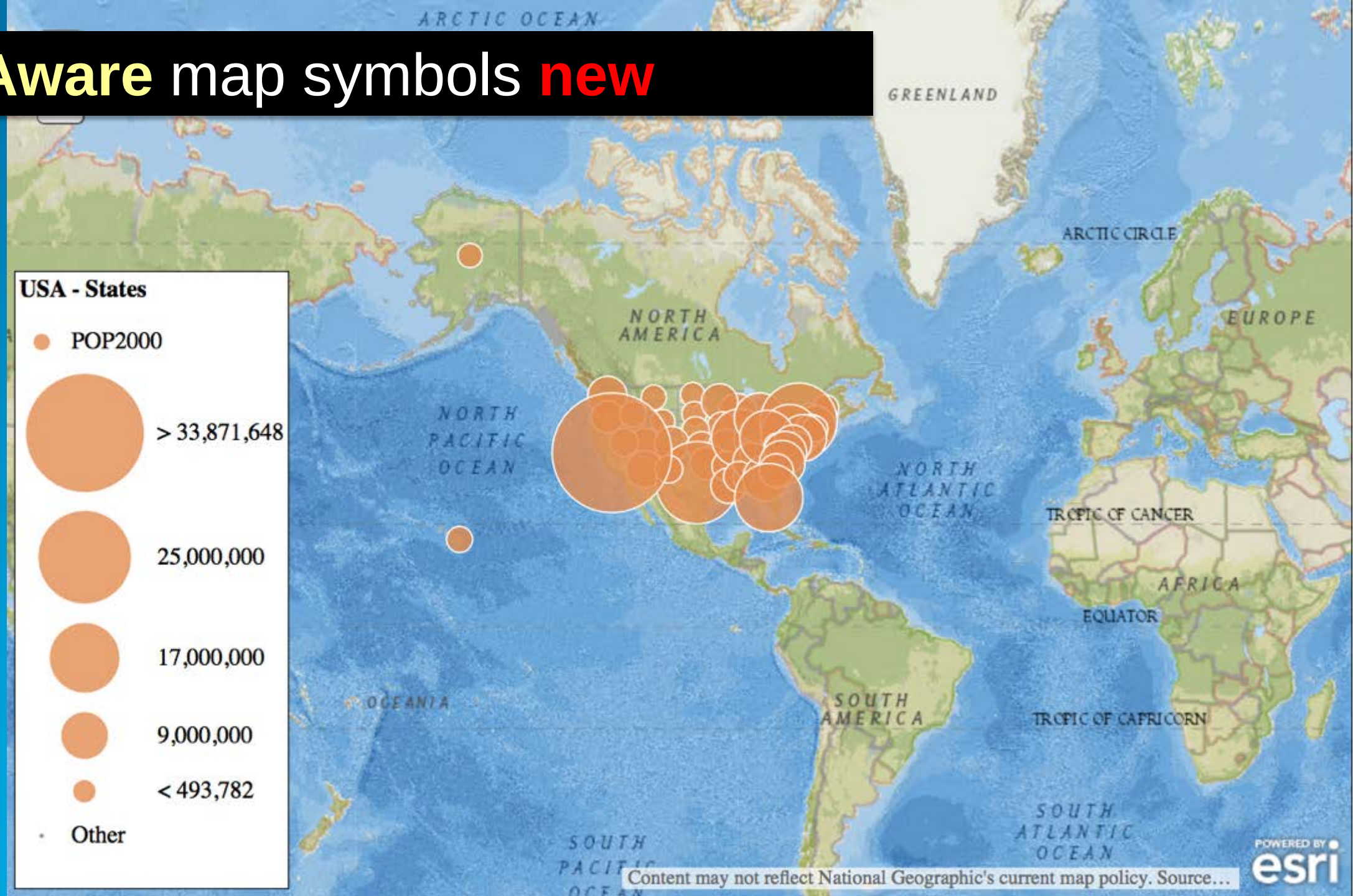
Offload work to machine, e.g., Automatic visible range, setting handles, harmonize colors with basemaps

New types of maps = New kinds of stories

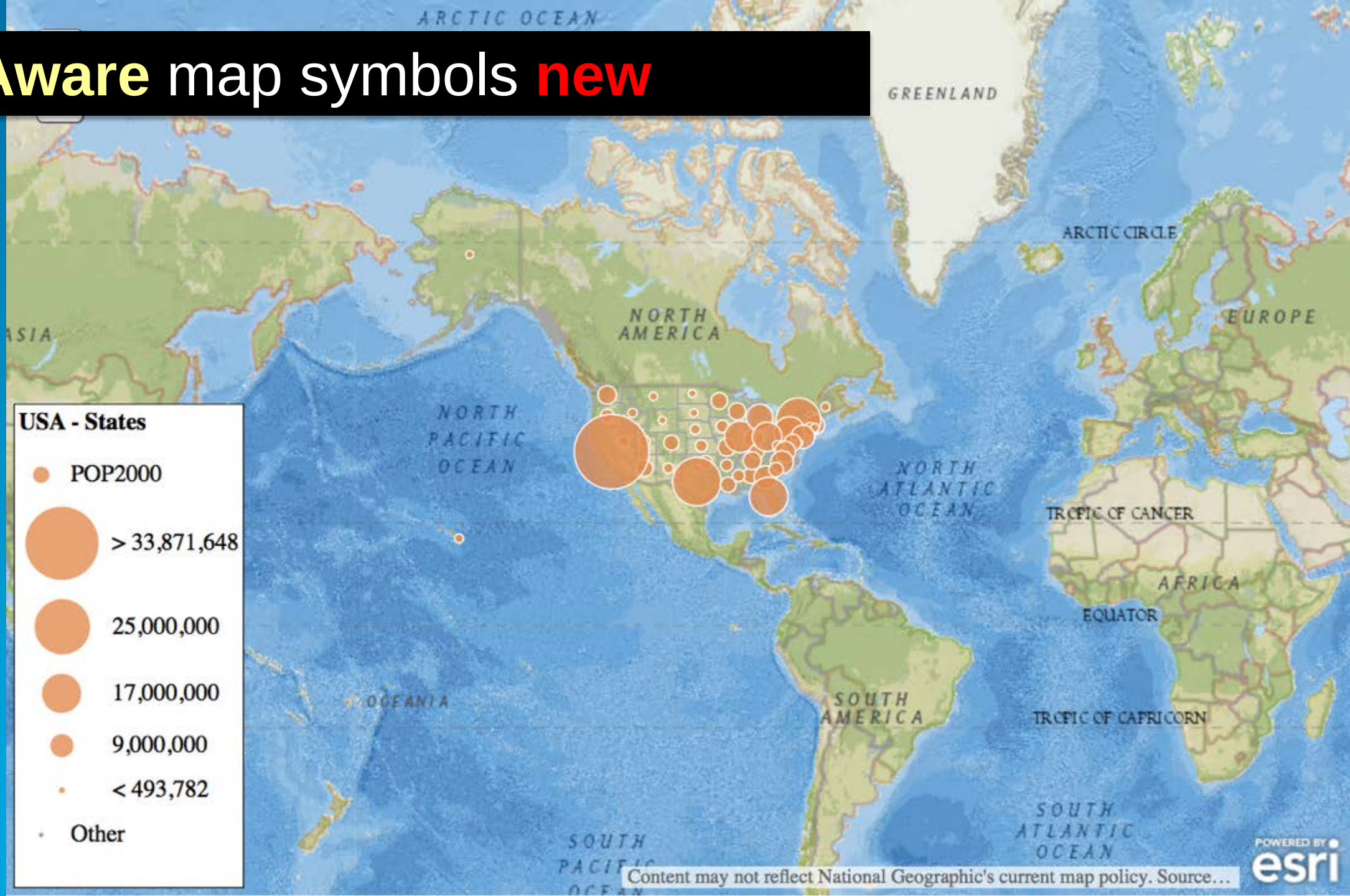
Data-driven symbol sizes



Scale-Aware map symbols new

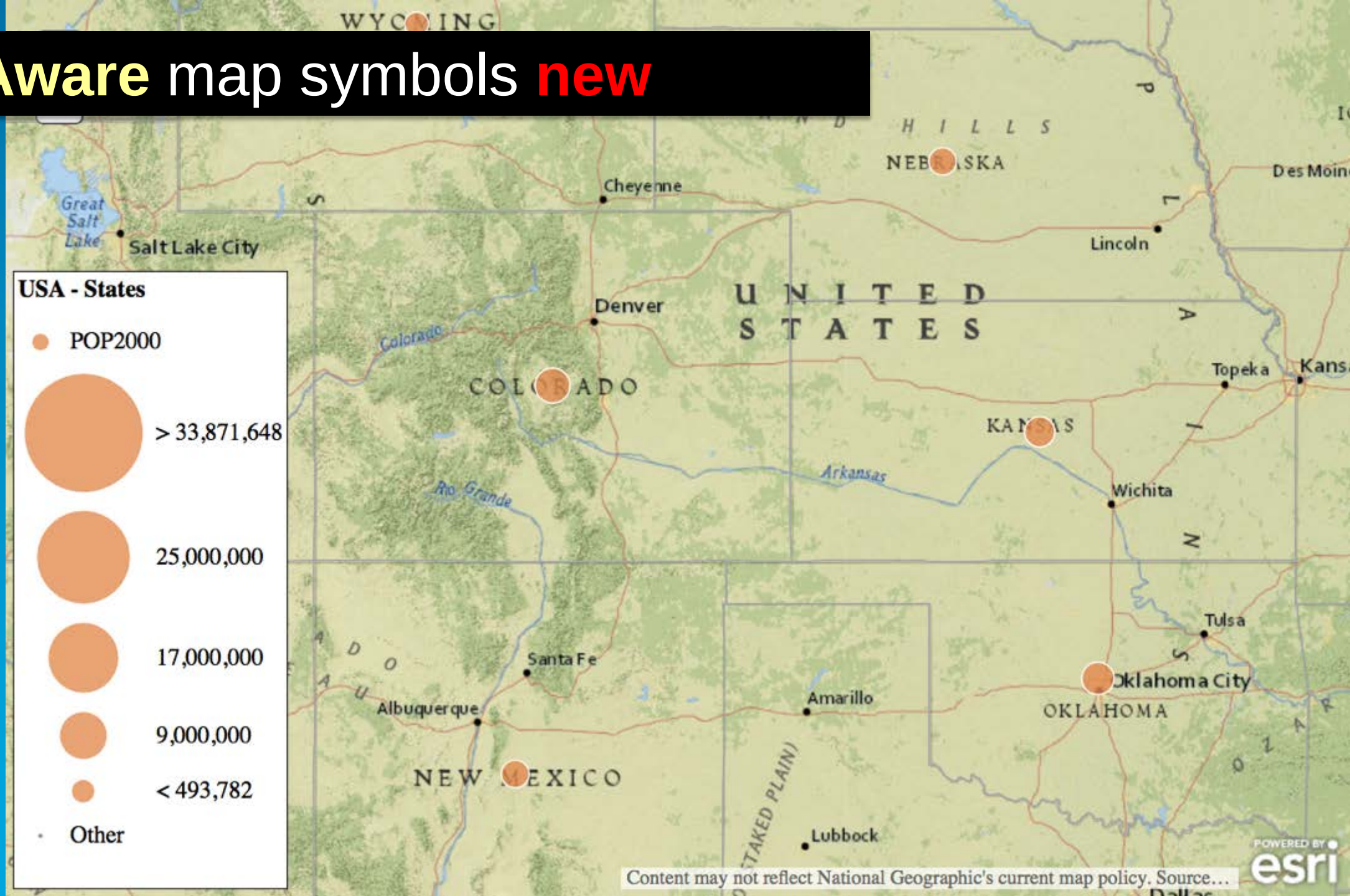


Scale-Aware map symbols new



Scale-Aware map symbols new

Scale-Aware map symbols new

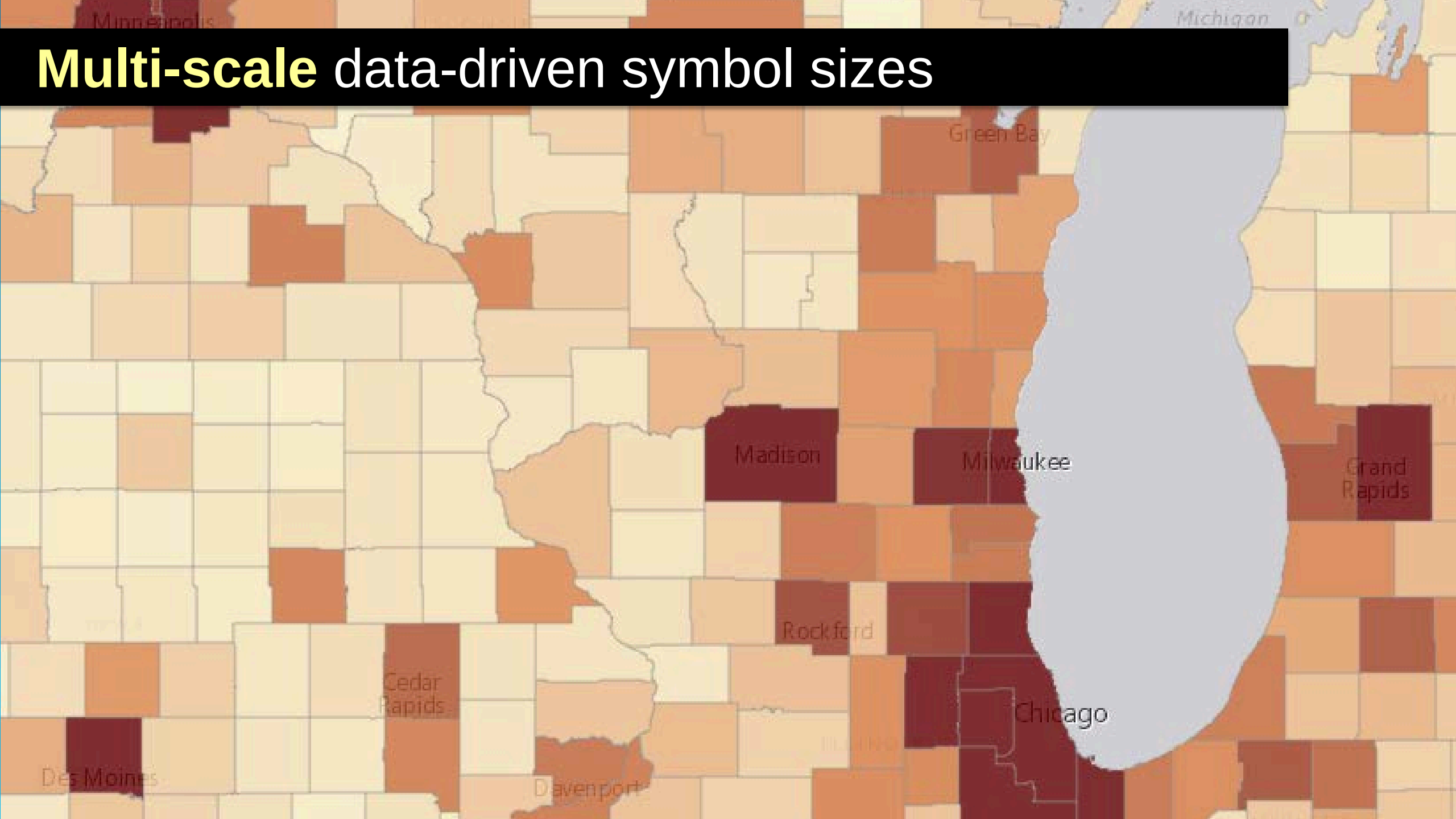


“

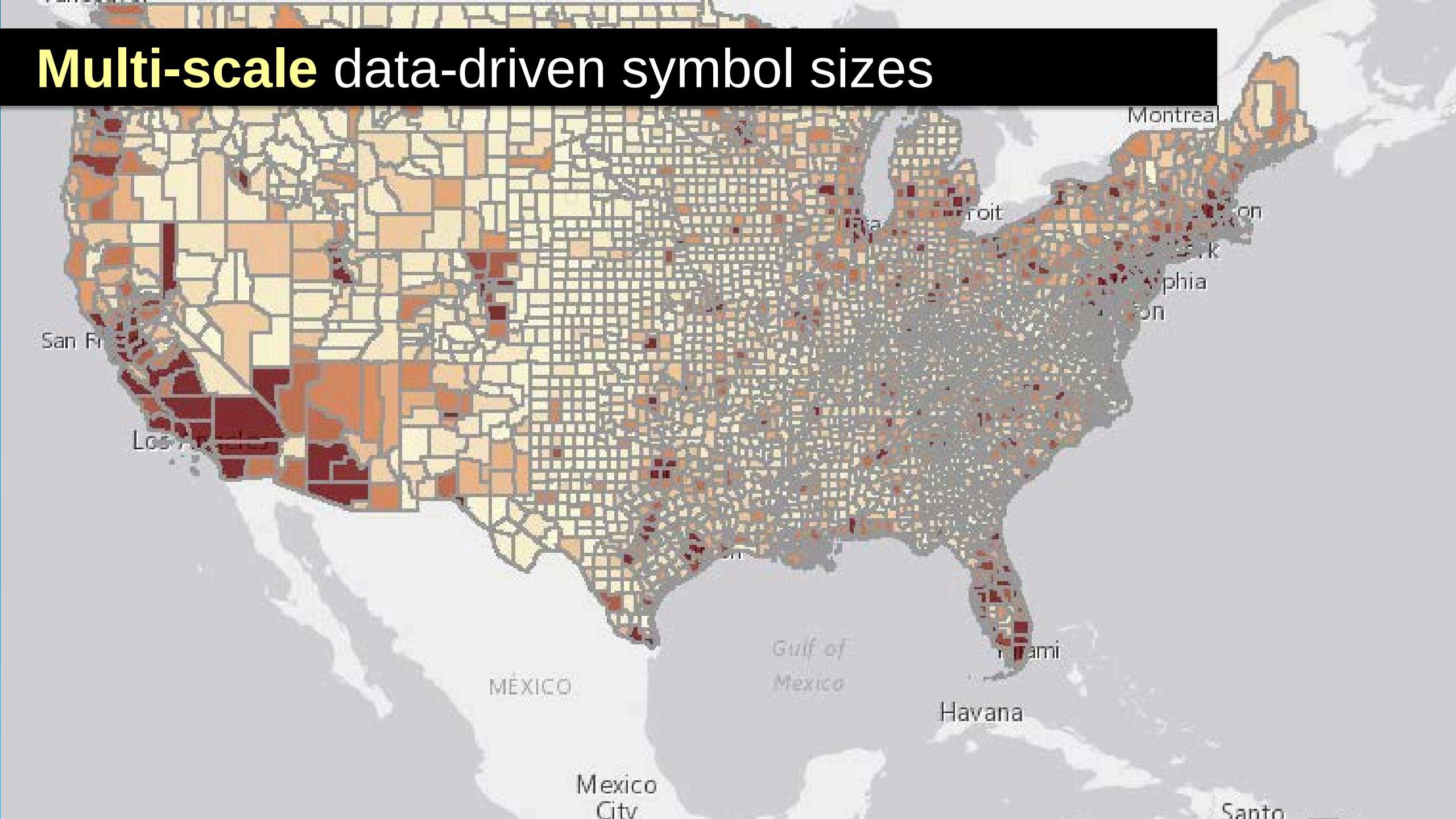
If we’ve done our job well,
people won’t even notice
what we’re doing;

The map will just look right.

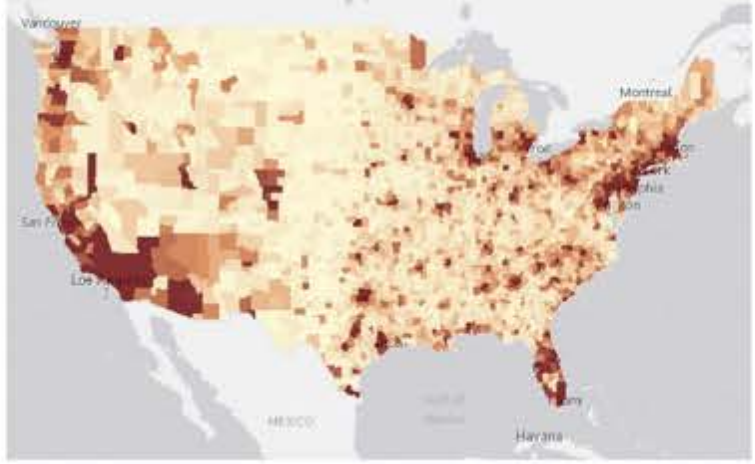
Multi-scale data-driven symbol sizes



Multi-scale data-driven symbol sizes

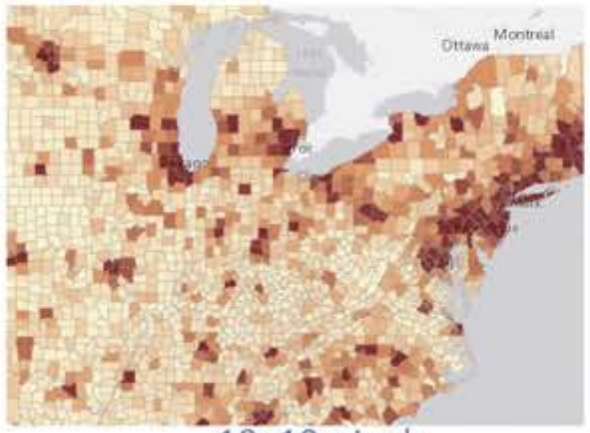


No stroke

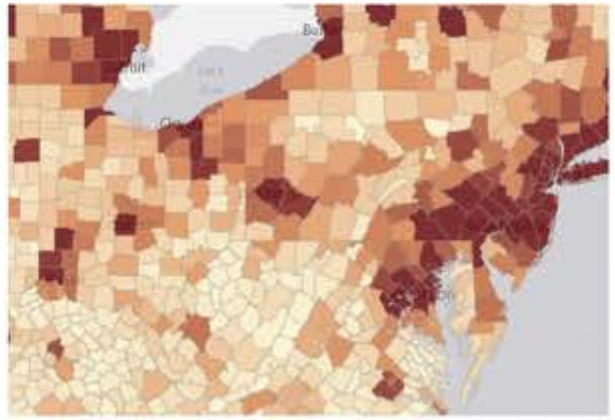


Drop the stroke automatically when the avg poly size is 5x5 pixels (or smaller)

1 pt, 50% transparency



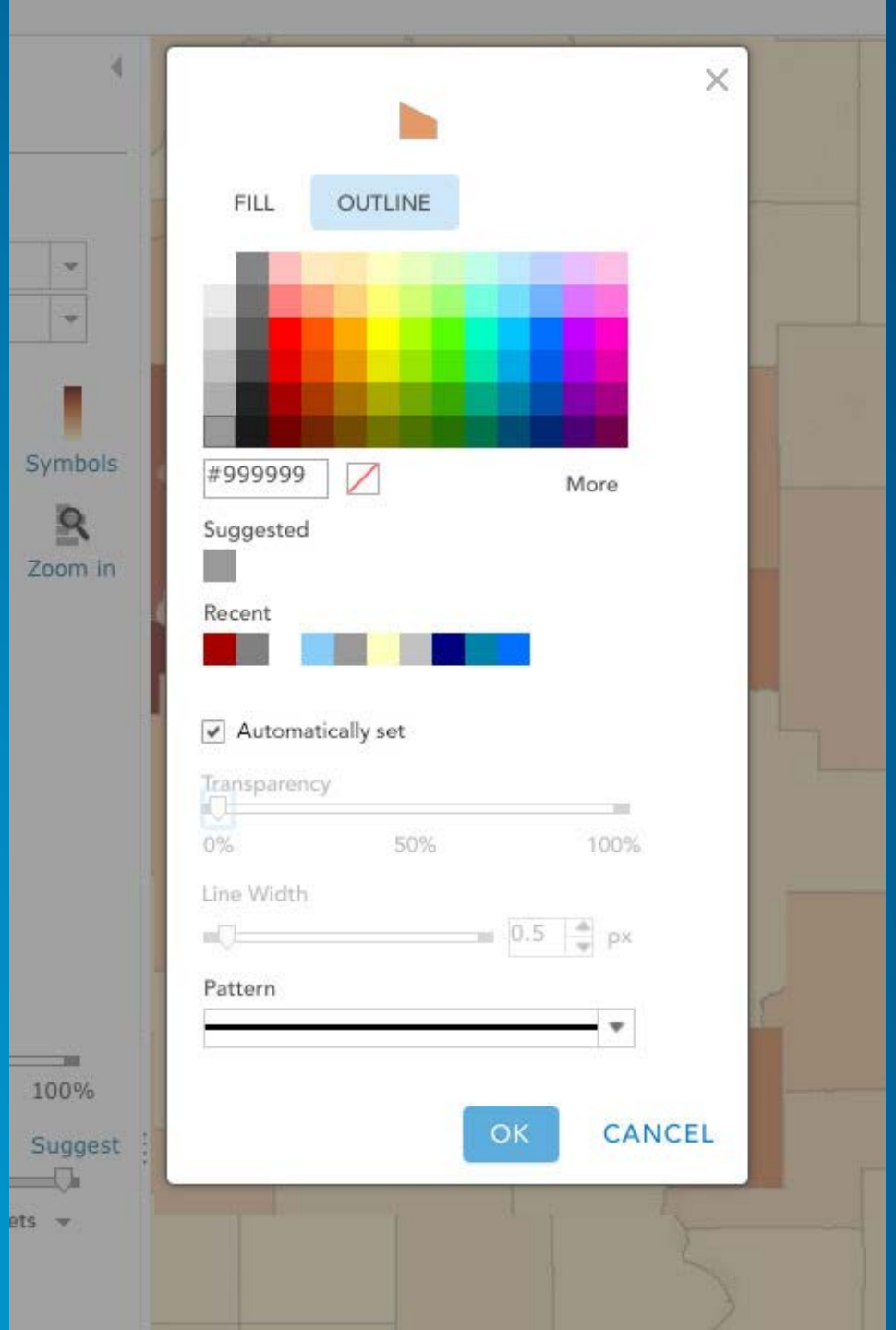
10x10 pixels



40x40 pixels average

2 pt 50% transparency

Switch to 2 pixel stroke when the average polygon
greater than ~ 250x250 pixels


Symbols
Zoom in
100%
Suggest
FILL
OUTLINE
#999999
More
Suggested
Recent
Automatically set
Transparency
0%
50%
100%
Line Width
0.5
px
Pattern
OK
CANCEL

Static styling across multiple map zoom levels is just never going to work.

Vector Base Maps and Tiles

20th century cartography

Rules for a single scale

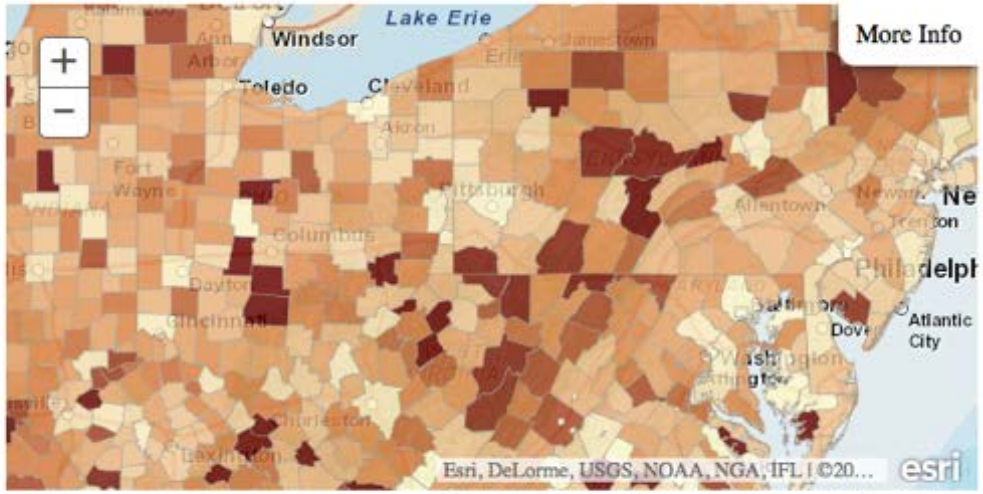
21st century mapping

Self-governing maps that look good across a range of scales

Sequential Choropleth

Streets

Areas Lines Points



Primary Color Scheme	Border Color	Fill Opacity
seq-yellow-orange-red	rgba(153,153,153,1.0) @ 0.5px	0.80

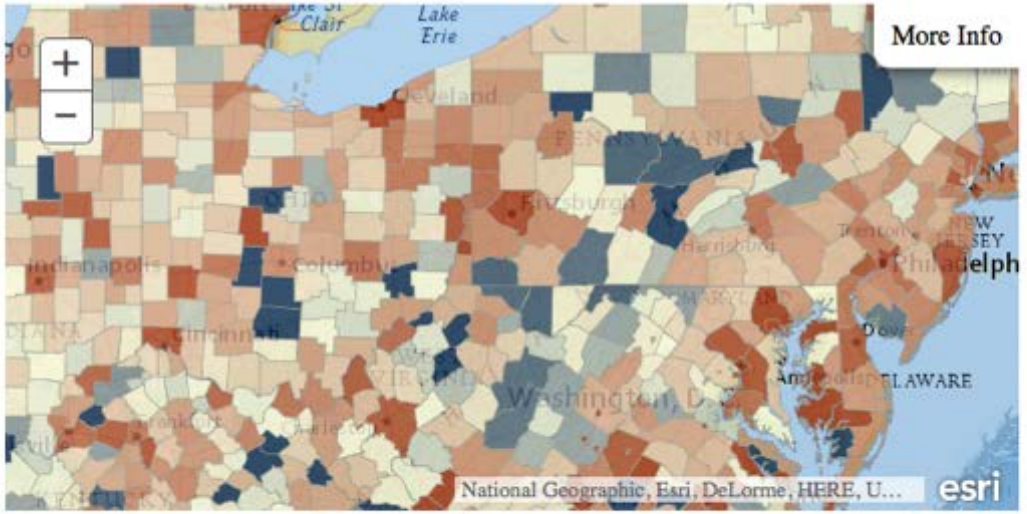
Unclassed Ramp

Classed Ramps

Diverging Choropleth

National Geographic

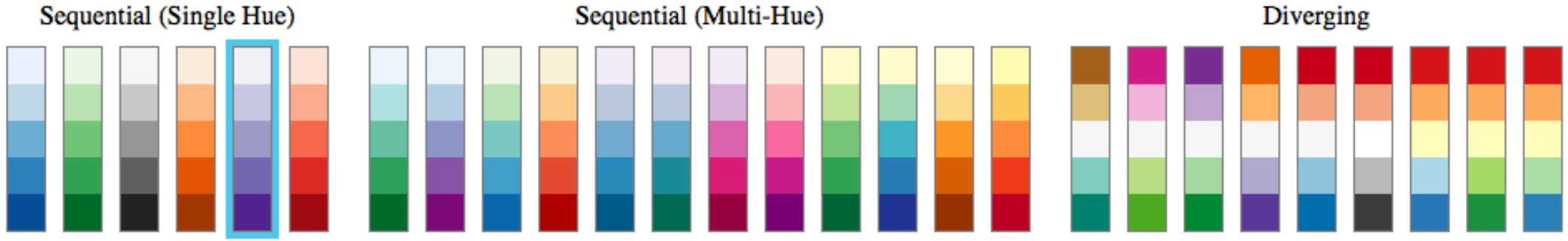
Areas Lines Points



Primary Color Scheme	Border Color	Fill Opacity
div-orange-yellow-blue-light	rgba(153,153,153,1.0) @ 0.5px	0.80

Unclassed Ramp

Classed Ramps

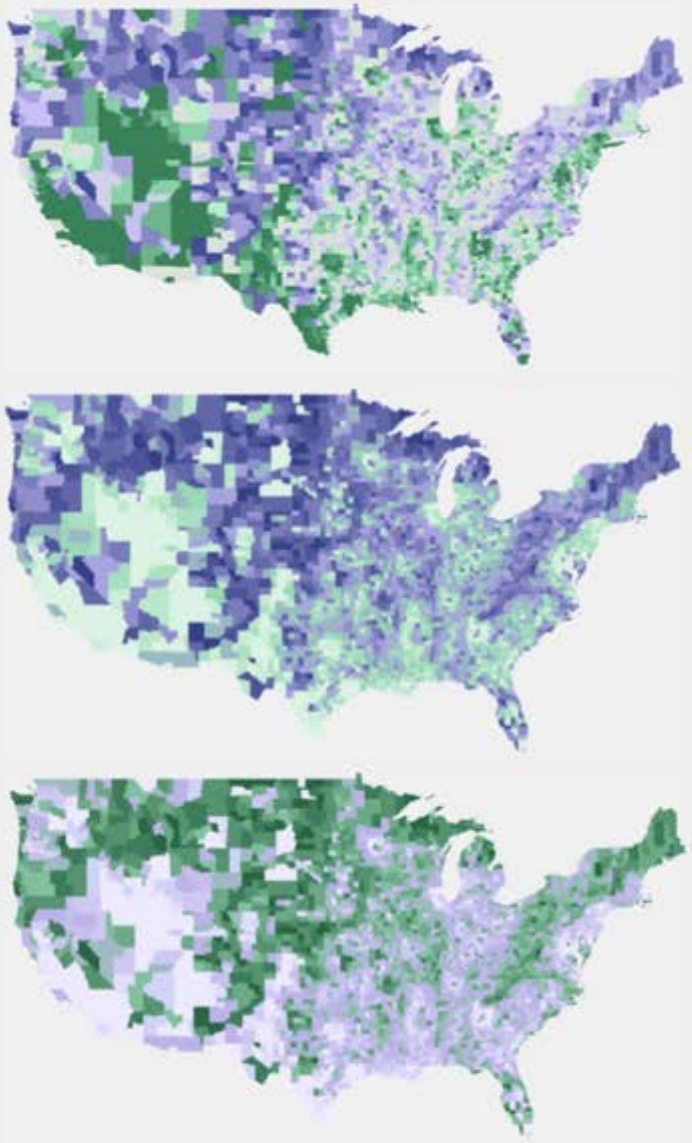


seq-single-purples

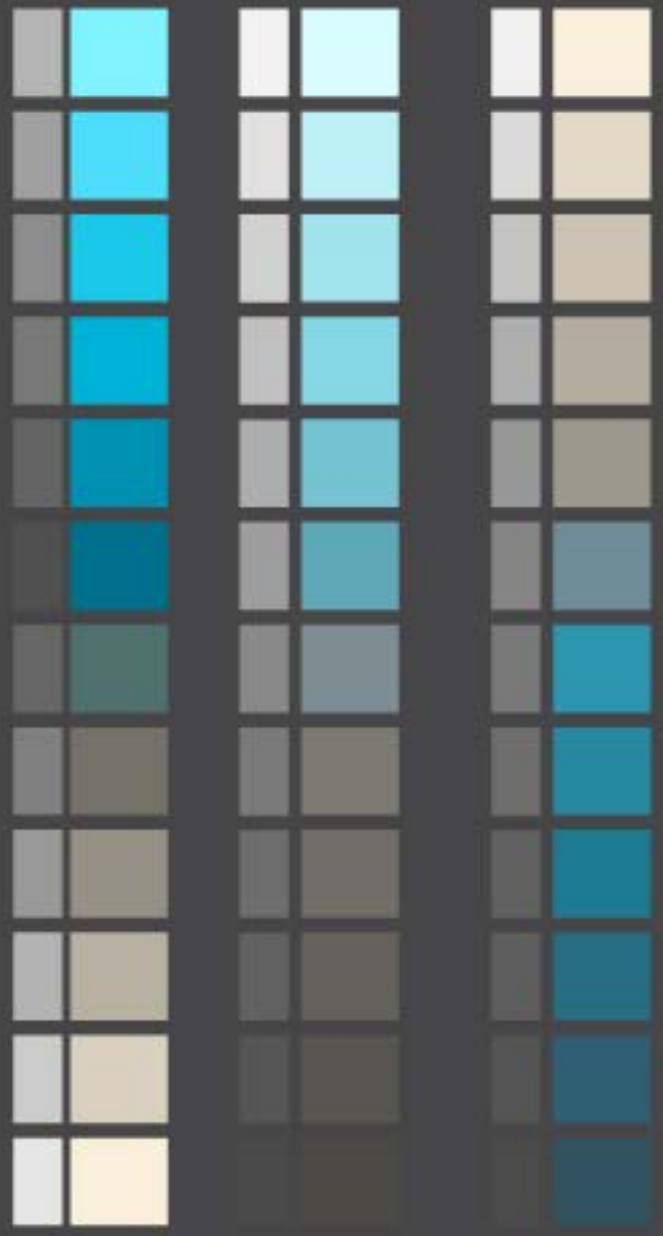
hex rgb

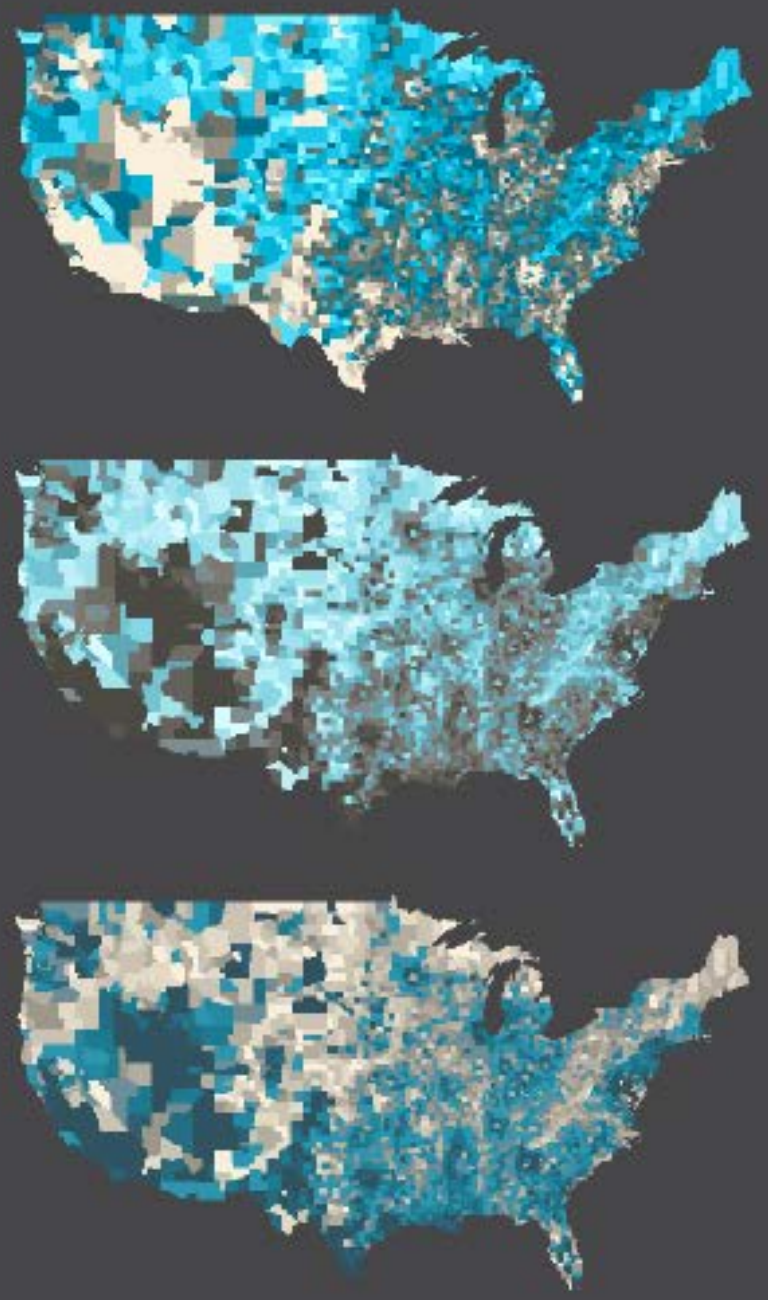
Unclassed	1	2	3	4	5	6	7	8	9	10
#F2F0F7	#BCBDDC	#CBC9E2	#EFEDF5	#F2F0F7	#F2F0F7	#F2F0F7	#F2F0F7	#FCFBFD	#FCFBFD	#FCFBFD
#CBC9E2		#9E9AC8	#BCBDDC	#CBC9E2	#CBC9E2	#DADAEB	#DADAEB	#EFEDF5	#EFEDF5	#EFEDF5
#9E9AC8			#756BB1	#9E9AC8	#9E9AC8	#BCBDDC	#BCBDDC	#DADAEB	#DADAEB	#DADAEB
#756BB1			#54278F	#6A51A3	#756BB1	#9E9AC8	#9E9AC8	#BCBDDC	#BCBDDC	#BCBDDC
#54278F				#54278F	#54278F	#756BB1	#807DBA	#9E9AC8	#9E9AC8	#9E9AC8
						#54278F	#6A51A3	#807DBA	#807DBA	#807DBA
							#4A1486	#6A51A3	#6A51A3	#6A51A3
								#4A1486	#54278F	#54278F
									#3F007D	#3F007D
										#2D0059

Blue-Green



Blue-Gray





Theme 2:

New ways of seeing; new map types

Bounded Unclassed = new map type, solves long-standing issues

Transparency Maps (value-by-alpha) = show two things, condition the data, e.g., uncertainty

New Themes = Centered on and extremes

“

The marriage of ***data-driven defaults*** ***+ scale aware styling*** = new and very powerful type of cartography

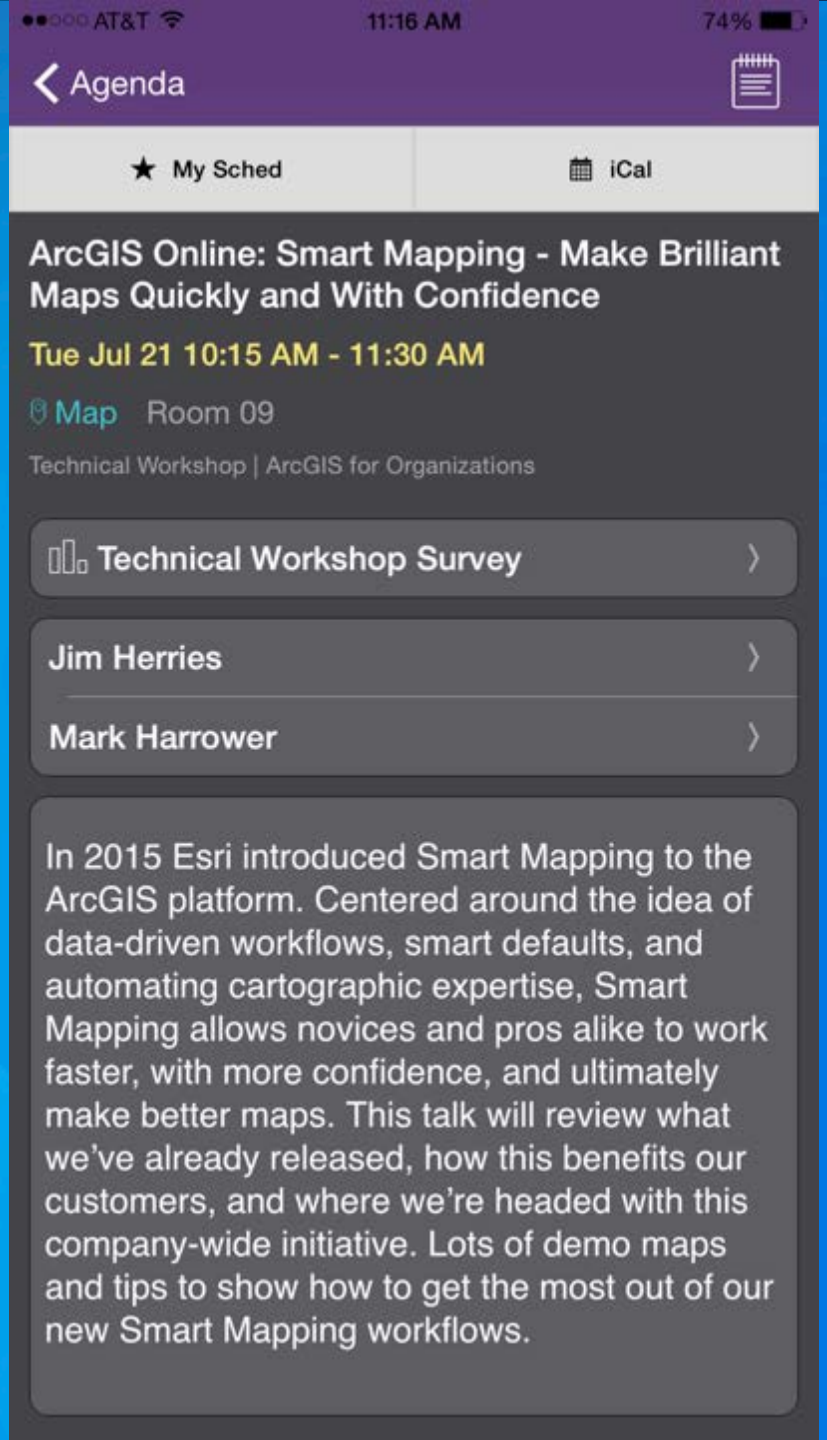
Our Bottom-line Goal:

You don’t need to hire devs / hackers to make amazing maps.

You can do this in 30 seconds yourself.

Live Demos!

Rate this Session



Questions?

Jim Herries - jherries@esri.com
Mark Harrower - mharrower@esri.com