



Data Visualization

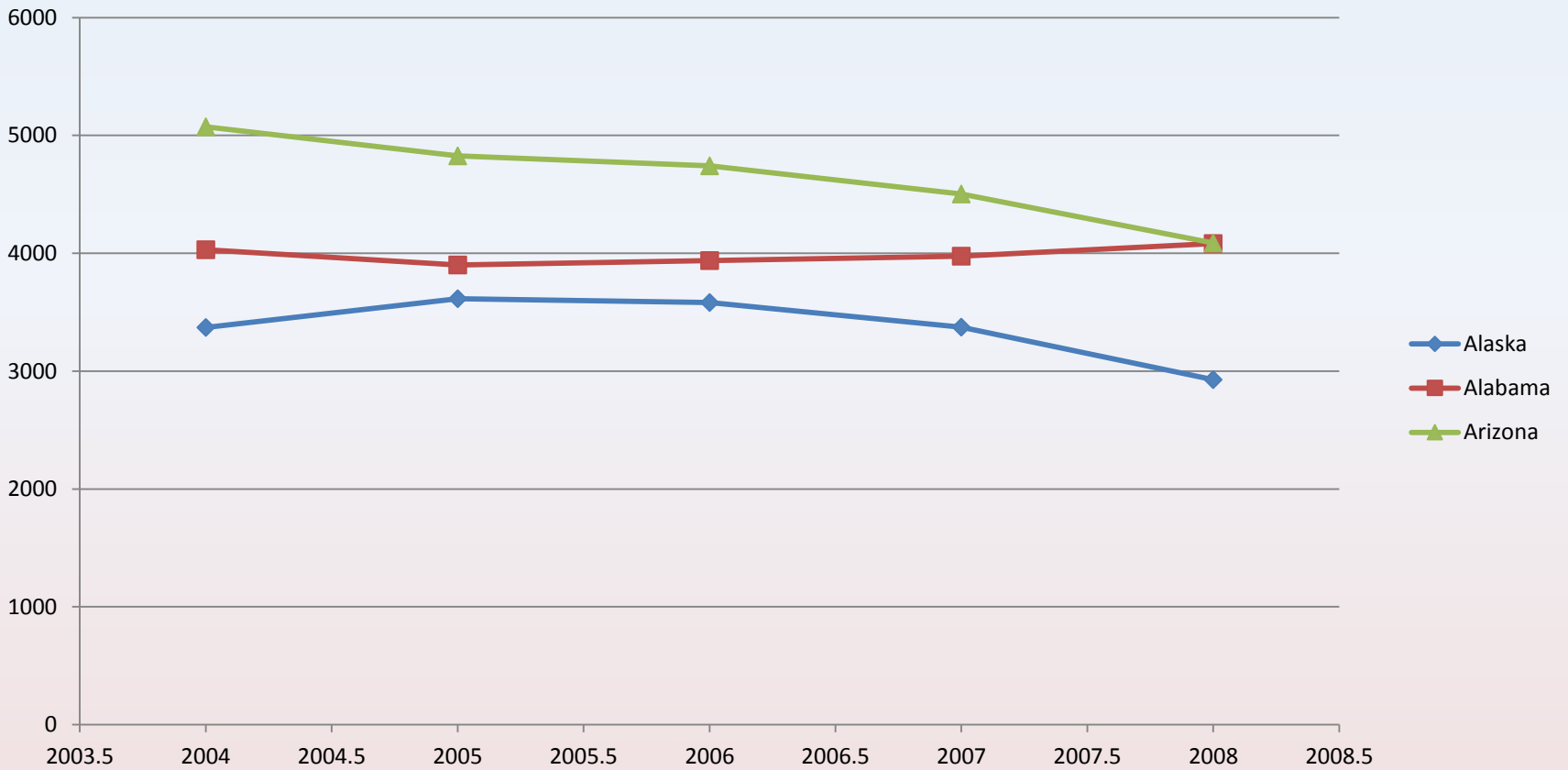
Alumni Weekend – 2015 June 13
Eric Johnson

Formatted spreadsheet

Alabama		
	2004	4029.3
	2005	3900
	2006	3937
	2007	3974.9
	2008	4081.9
Alaska		
	2004	3370.9
	2005	3615
	2006	3582
	2007	3373.9
	2008	2928.3
Arizona		
	2004	5073.3
	2005	4827
	2006	4741.6
	2007	4502.6
	2008	4087.3

Chart visualization

Reported Crime



FILE HOME INSERT PAGE LAYOUT FORMULAS DATA REVIEW VIEW

PivotTable Recommended Table Pictures Online Shapes SmartArt Screenshot Apps for Recommended Charts PivotChart Power View
Tables PivotTables Illustrations Apps Charts Reports

C1 : X ✓ fx

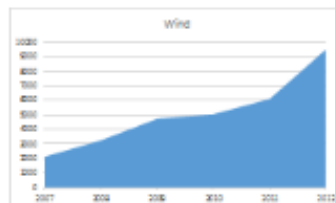
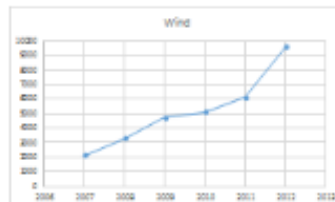
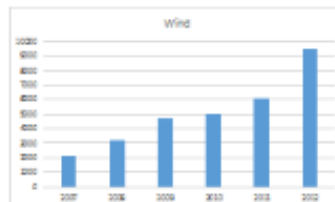
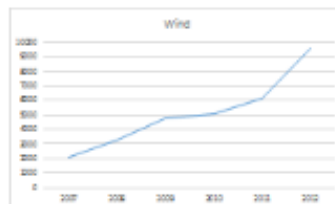
Wind

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	year	Solar	Wind		1.3	80	120						
2	2007	1000	2119.26										
3	2008	1482	3250.945										
4	2009	2119.26	4733.376										
5	2010	3250.945	5045.778										
6	2011	4733.376	6100.346										
7	2012	5045.778	9516.54										
8	2013	6100.346	13608.65										
9	2014	9516.54	15922.12										
10	2015	13608.65	18835.87										
11		15922.12											
12		18835.87											
13													
14													
15													
16													
17													

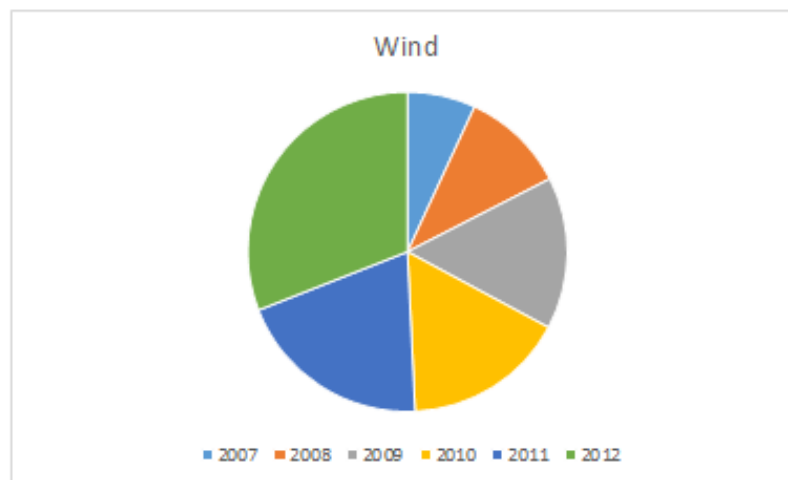
Charts are easy.
Just select the data and click on
“Recommended Charts”.

Recommended Charts

All Charts



Pie



A pie chart is used to show proportions of a whole. Use it to show numbers that relate to a larger sum and always equal 100%. Do not use this chart if it contains many slices as angles are hard to estimate.

OK

Cancel

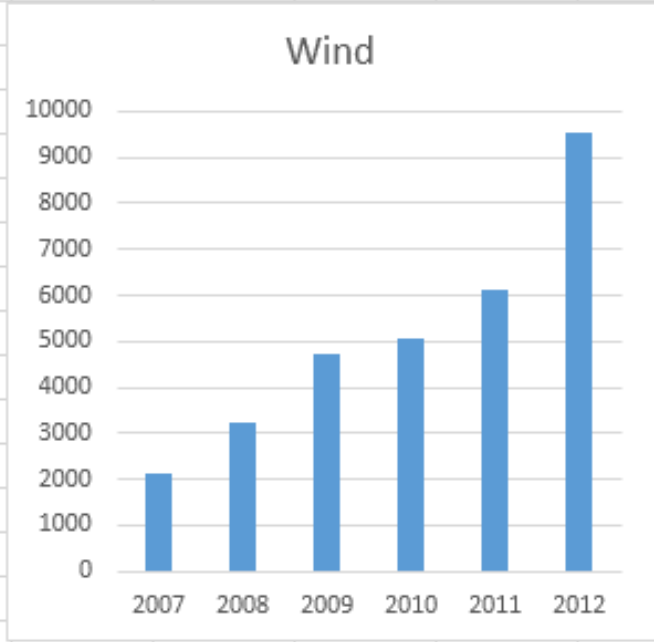
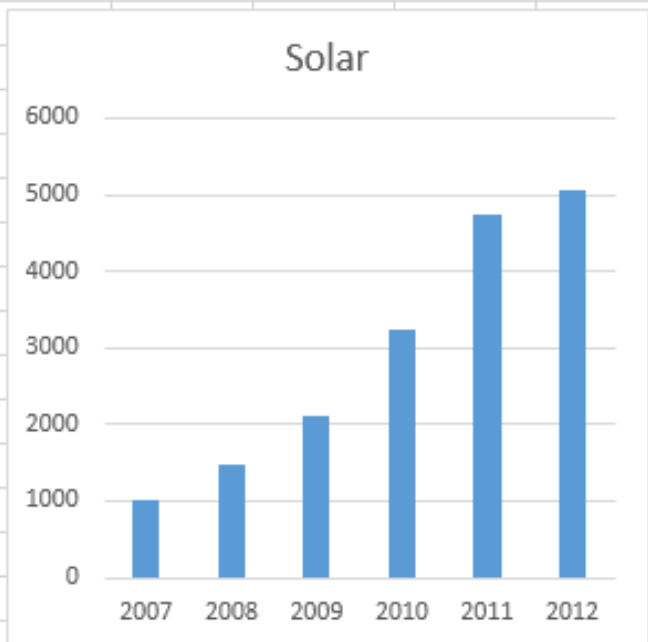
FILE HOME INSERT PAGE LAYOUT FORMULAS DATA REVIEW VIEW

PivotTable Recommended PivotTables Table Pictures Online Pictures Shapes SmartArt Screenshot Apps for Office Apps Recommended Charts Charts PivotChart Power View Reports

C1 : X ✓ fx

Wind

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	year	Solar	Wind		1.3	80	120						
2	2007	1000	2119.26										
3	2008	1482	3250.945										
4	2009	2119.26	4733.376										
5	2010	3250.945	5045.778										
6	2011	4733.376	6100.346										
7	2012	5045.778	9516.54										
8	2013	6100.346	13608.65										
9	2014	9516.54	15922.12										
10	2015	13608.65	18835.87										
11		15922.12											
12		18835.87											
13													
14													
15													
16													
17													



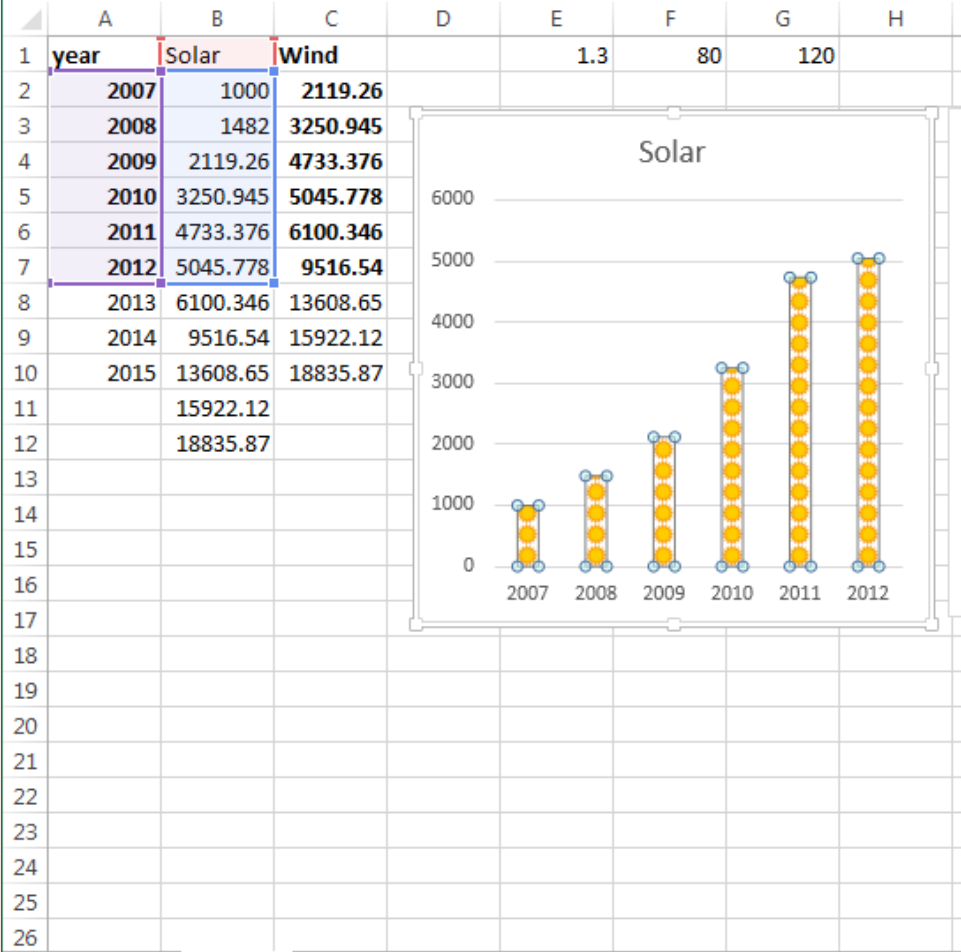
Book1 - Excel

CHART TOOLS

FILE HOME INSERT PAGE LAYOUT FORMULAS DATA REVIEW VIEW DESIGN FORMAT Johnson, E...

Tables Illustrations Apps for Office Apps Recommended Charts Charts PivotChart Power View Sparklines Filters Hyperlink Text Symbols

Chart 1 : $=SERIES(Sheet1!\$B\$1,Sheet1!\$A\$2:\$A\$7,Sheet1!\$B\$2:\$B\$7,1)$



Format Data Series

SERIES OPTIONS

- Gradient fill
- Picture or texture fill
- Pattern fill
- Automatic
- Invert if negative
- Vary colors by point

Insert picture from

File... Clipboard Onling...

Texture

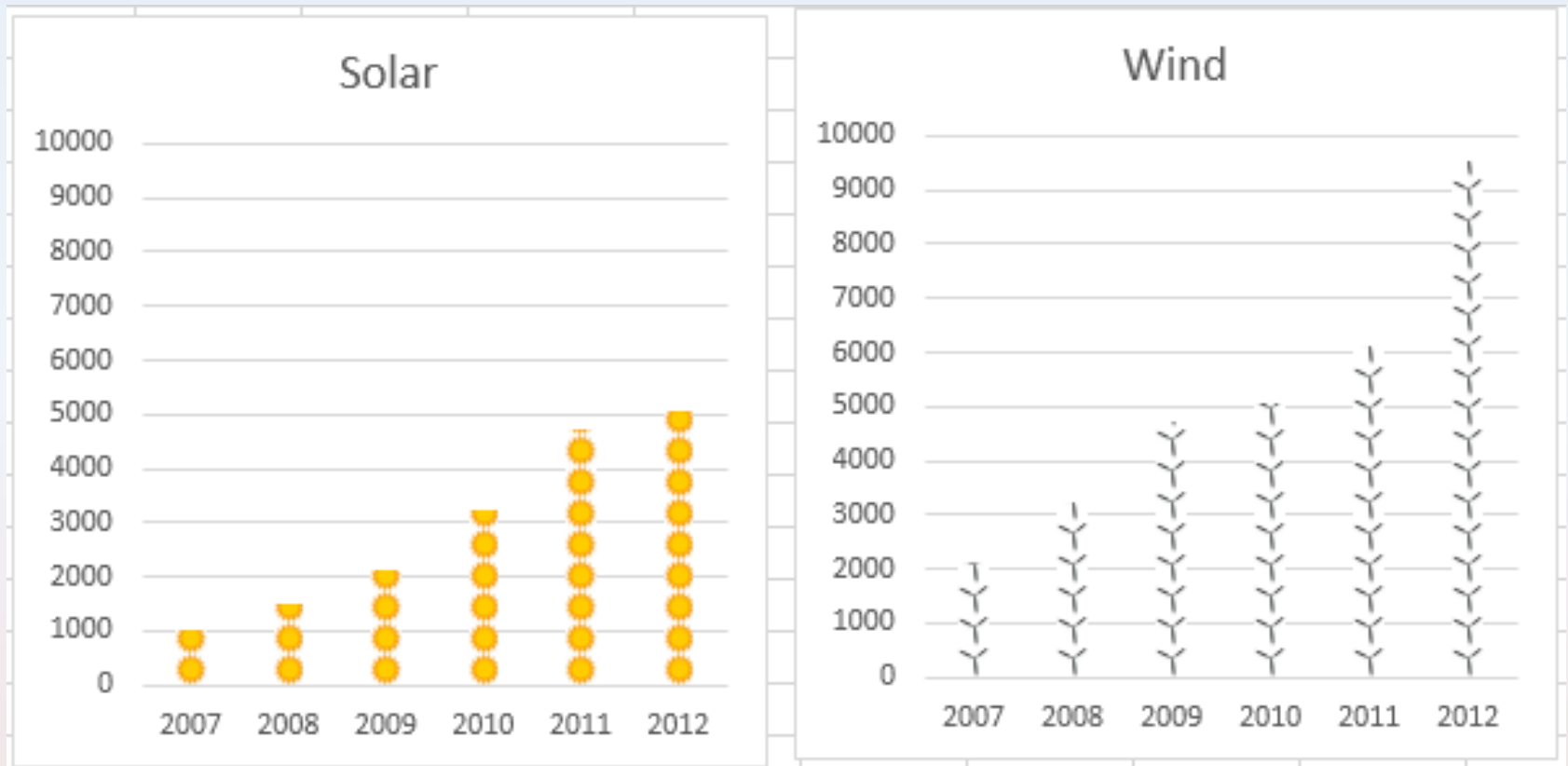
Transparency 0%

- Stretch
- Stack
- Stack and Scale with

Units/Picture 1

- Rotate with shape

Using Suns and Propellers



From Access From Web From Text From Other Sources Existing Connections Refresh All Connections Sort Filter Clear Reapply Advanced Text to Columns Flash Fill Remove Duplicates Data Validation Consolidate Wh Anal

fx hi

Remove Duplicates

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	hi	there	1				hi	there	1						
2	hi	there	2				hi	there	2						
3	hi	there	5				hi	there	5						
4	hi	Rabbit					hi	Rabbit							
5	hi	Rabbit					hi	Rabbit	1						
6	hi	Rabbit	1				hi	there	6						
7	hi	there	6				hi	there	7						
8	hi	there	7				hi	there							
9	hi	there	8				hi	there							
10	hi	there					hi	Rabbit							
11	hi	there	1				hi	Rabbit							
12	hi	there	2												
13	hi	there	5												
14	hi	Rabbit	6												
15	hi	Rabbit	8												
16	hi	Rabbit	1												
17	hi	there	6												
18	hi	there	7												
19	hi	there	8												
20	hi	there													
21															

Microsoft Excel

9 duplicate values found and removed; 11 unique values remain.

OK

Excel Macros – Automate keystrokes

The image shows the Microsoft Excel interface with the **DEVELOPER** tab selected in the ribbon. The ribbon contains several groups of icons: **Code** (Record Macro, Use Relative References, Macro Security), **Add-Ins** (Add-Ins, COM Add-Ins), **Controls** (Insert, Design Mode, View Code, Run Dialog), **XML** (Map Properties, Expansion Packs, Refresh Data, Import, Export), and **Modify** (Document Panel). The **Record Macro** dialog box is open, displaying the following fields:

- Macro name:** Macro1
- Shortcut key:** Ctrl+ [empty box]
- Store macro in:** This Workbook
- Description:** [empty text area]

At the bottom of the dialog box are **OK** and **Cancel** buttons. The background shows a spreadsheet with cell A1 selected.

BY THE YEAR

2018 **2019** 2020



COMMUNICATED



IN THIS

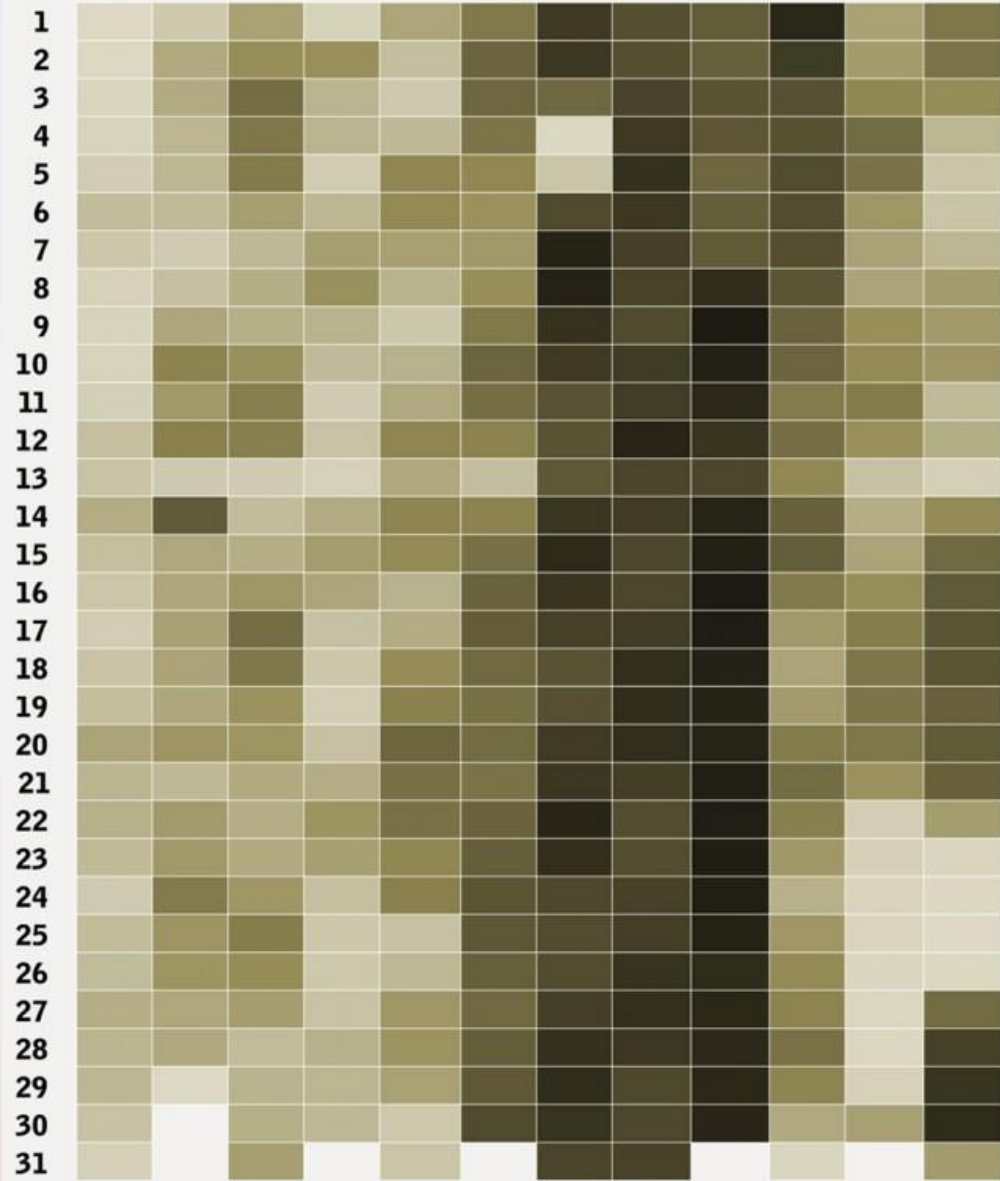


Infographics

- Pictures that show data
- Pictures relate the data to the viewer
- Most importantly:
 - an infographic tells a story
 - relates the information to the viewer in an entertaining and informative way
 - the story lets the viewer experience the data

Which Birth Dates Are Most Common?

DAY JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC



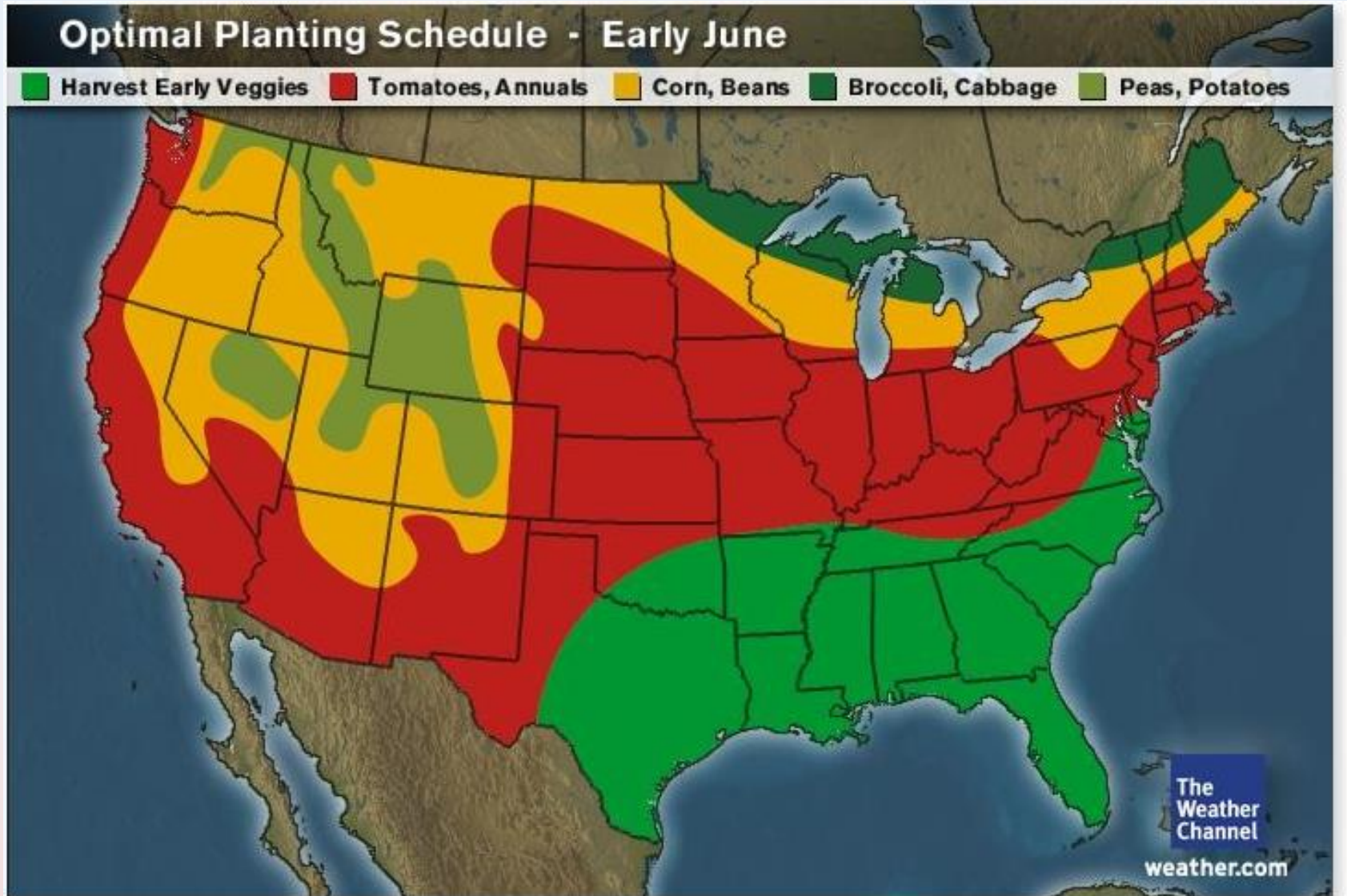
U.S. BIRTHDAY RANK

366th



1st

Weather maps



Weather maps

wind map

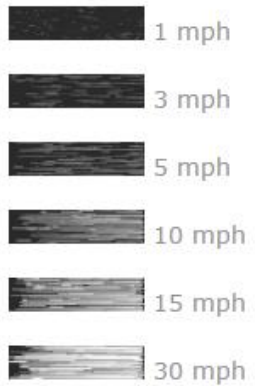
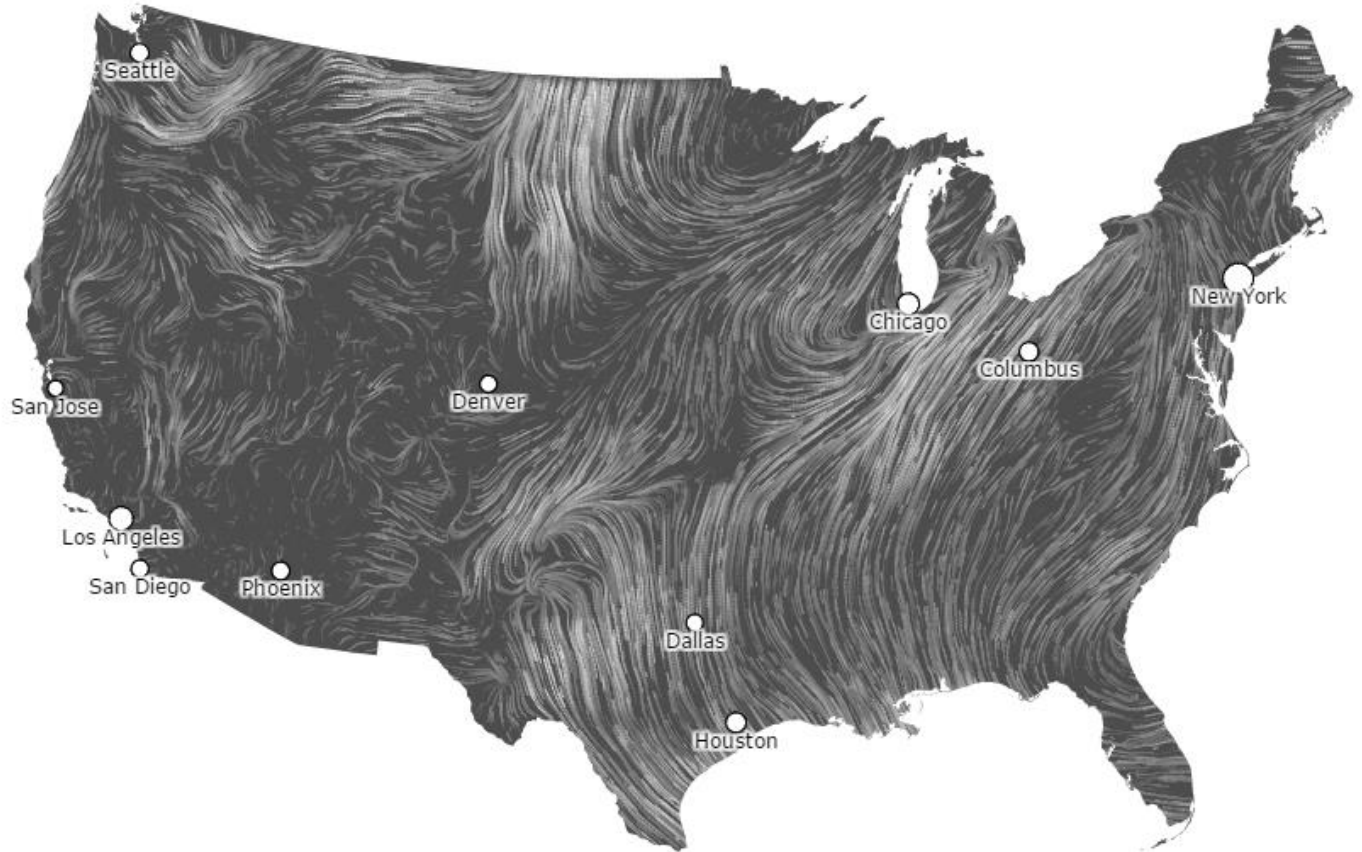
June 12, 2015

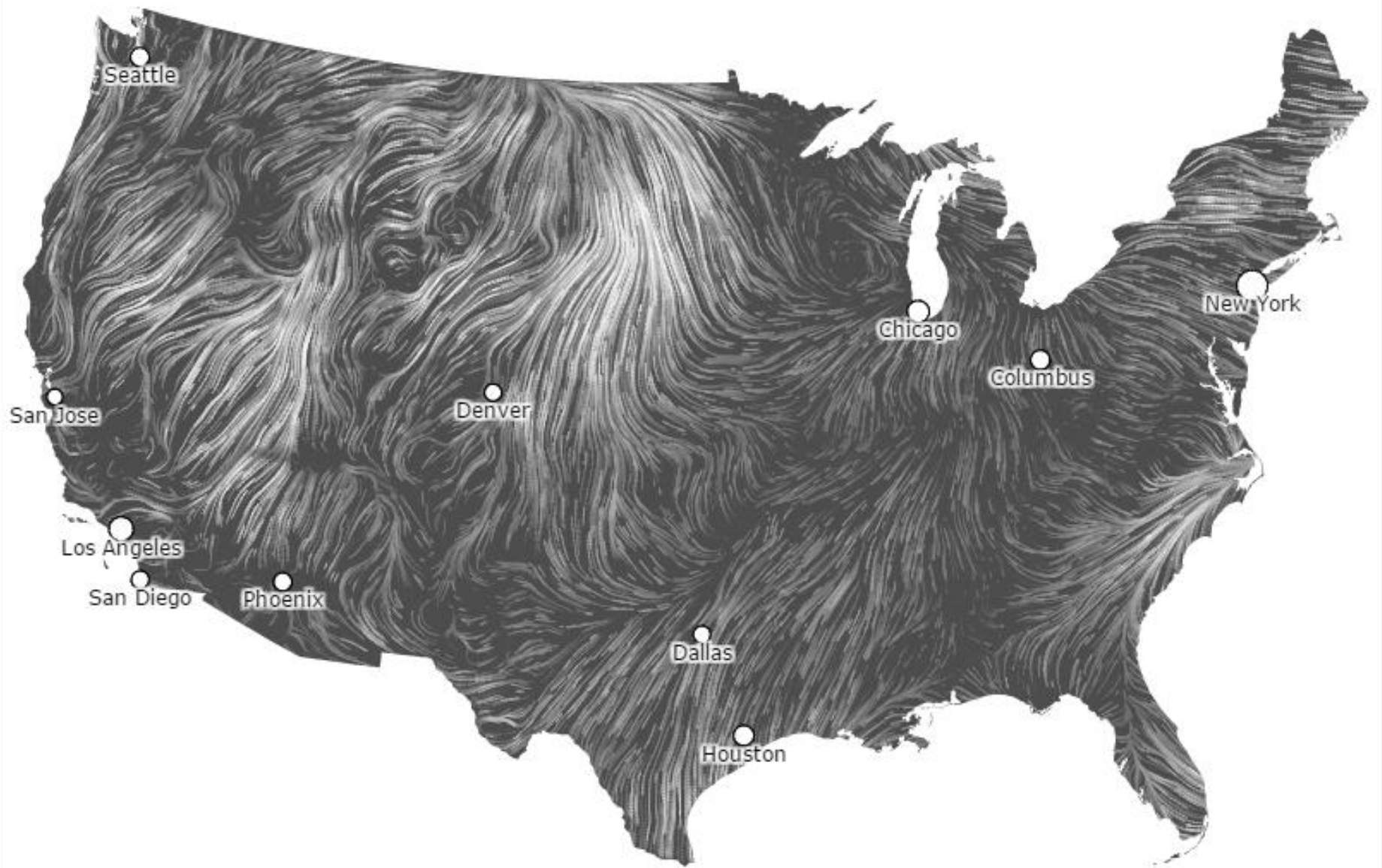
12:36 pm EST

(time of forecast download)

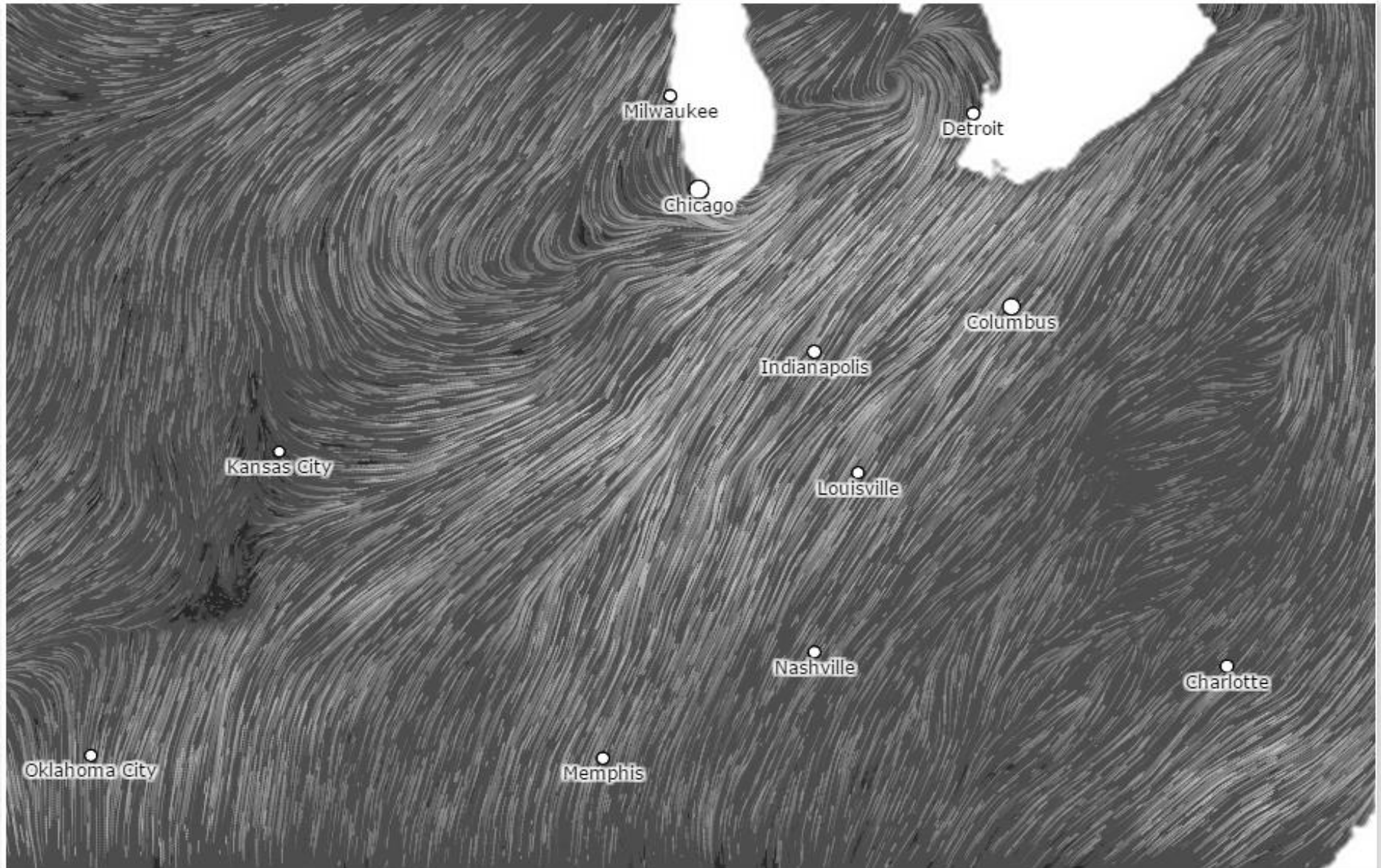
top speed: 33.9 mph

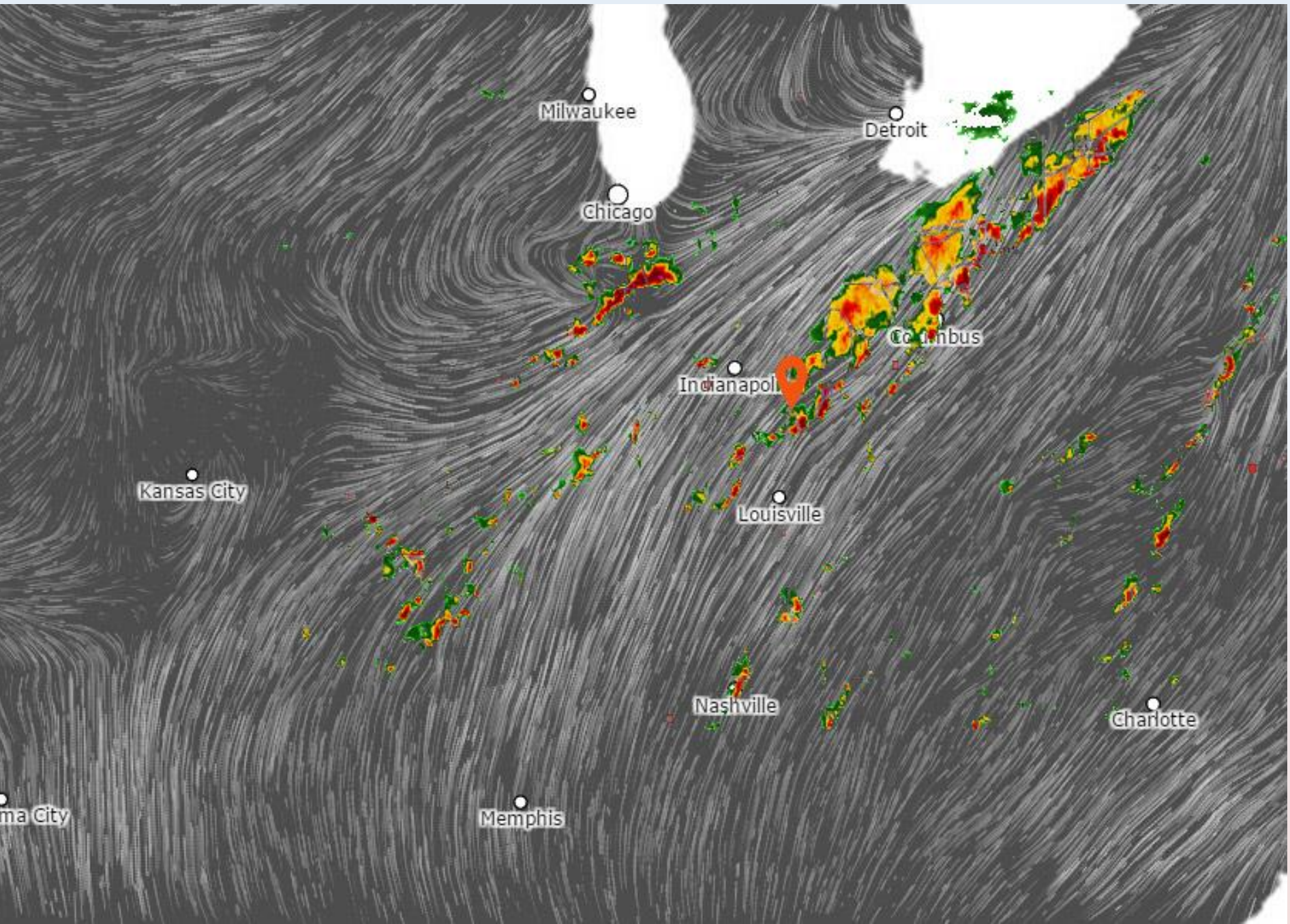
average: 8.2 mph





Weather maps

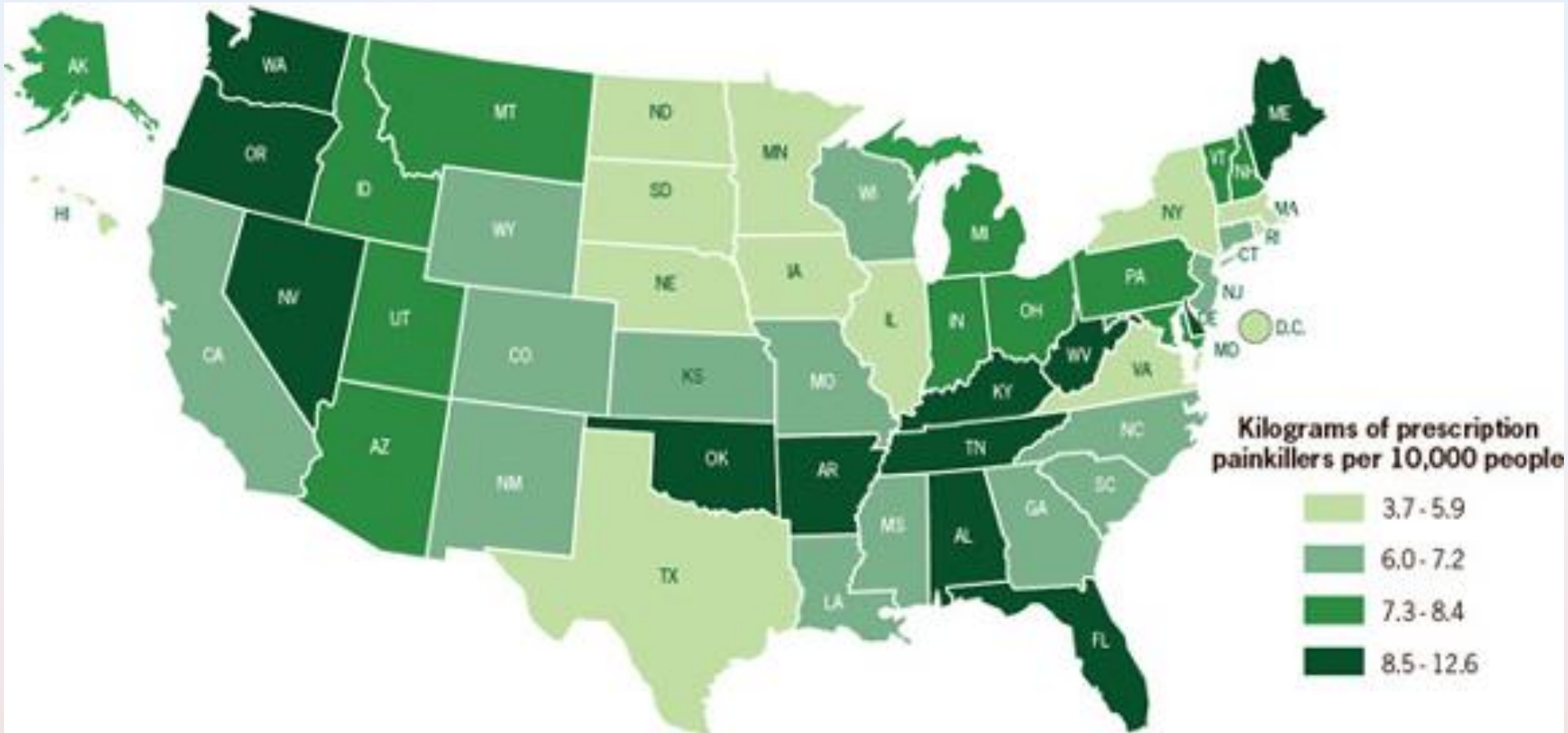




The United States redrawn as Fifty States with Equal Population



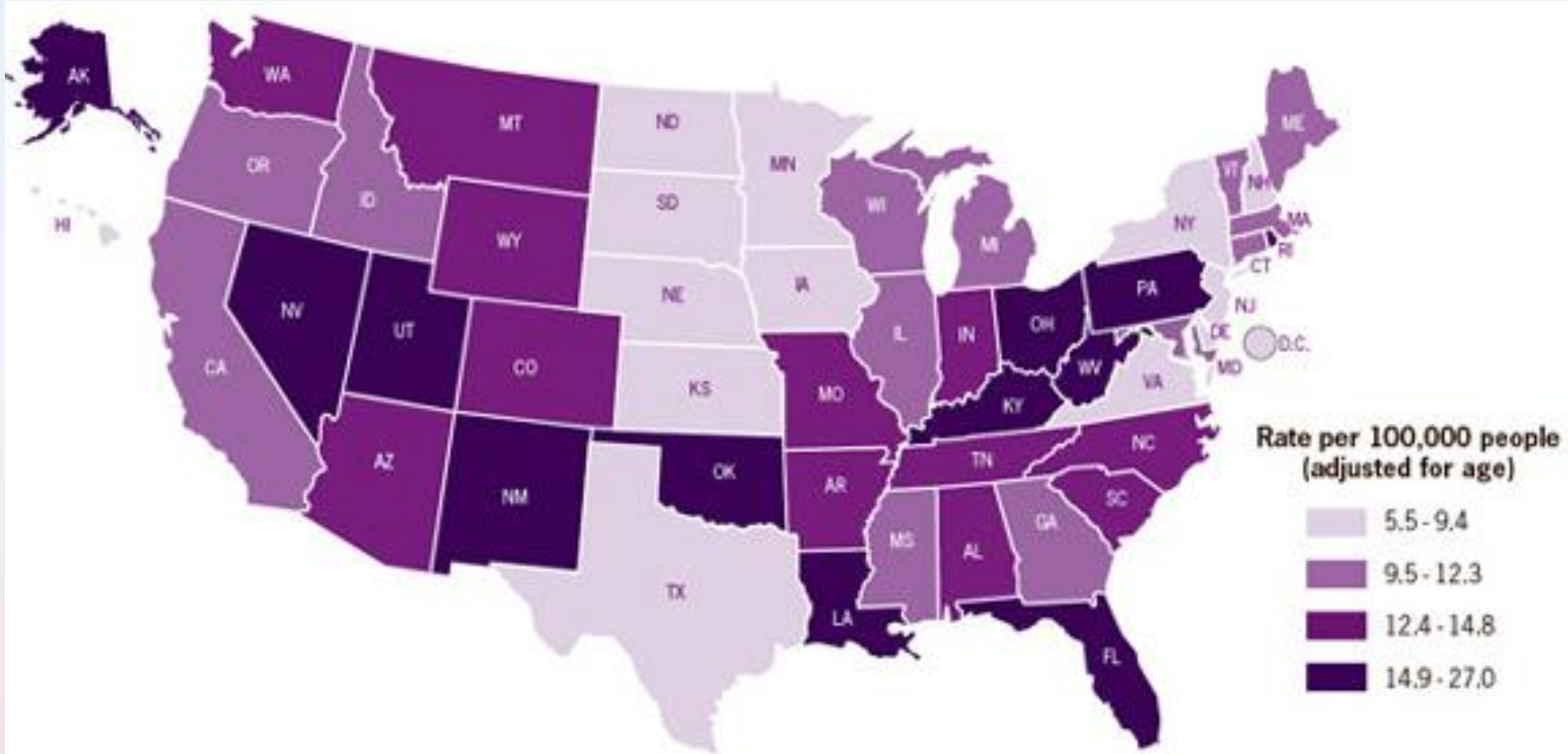
Prescription Painkillers



<http://www.cdc.gov/VitalSigns/PainkillerOverdoses/>

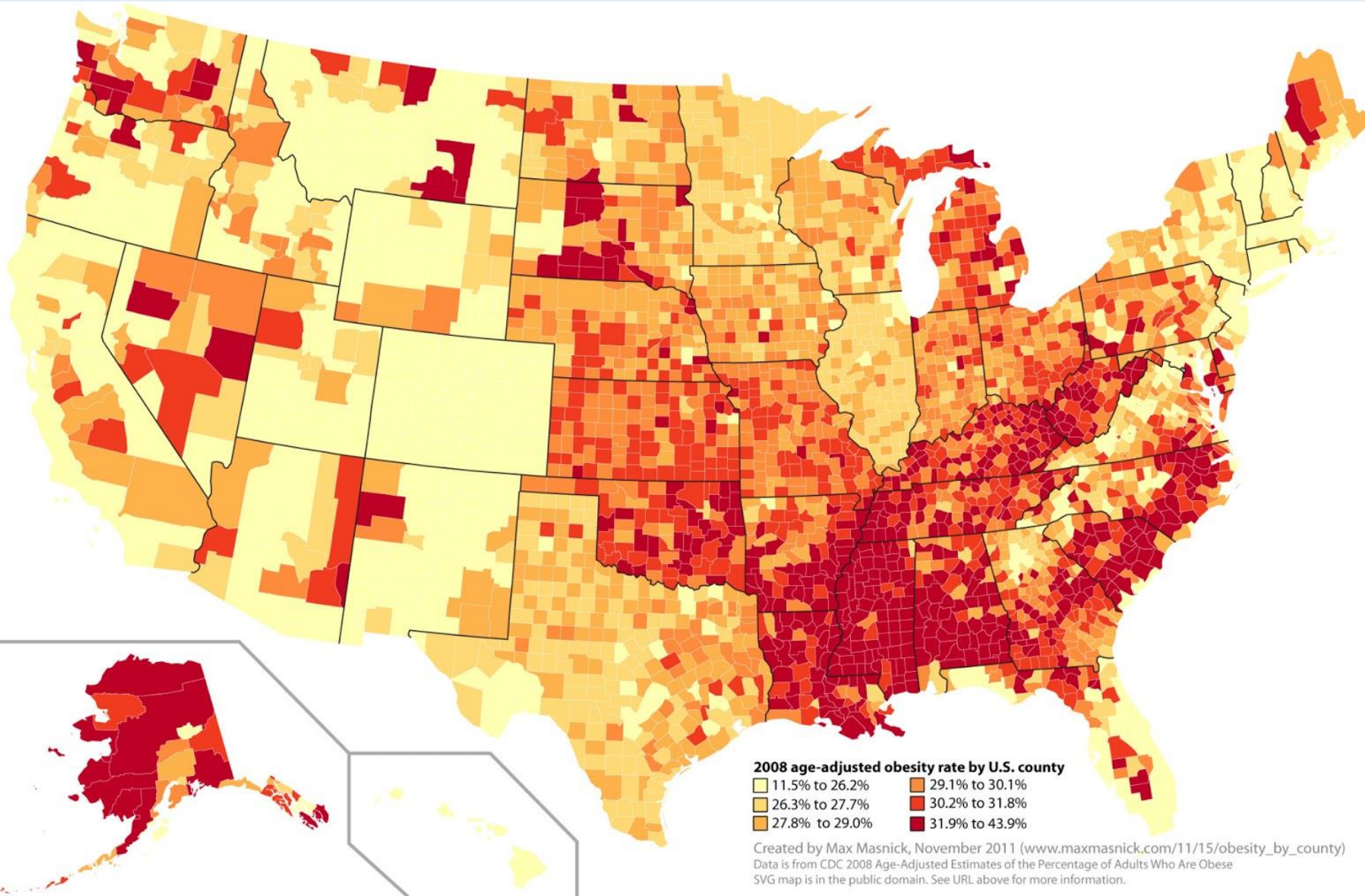
SOURCE: Automation of Reports and Consolidated Orders System (ARCOS) of the Drug Enforcement Administration (DEA), 2010

Drug Overdoses



<http://www.cdc.gov/VitalSigns/PainkillerOverdoses/>

SOURCE: National Vital Statistics System, 2008

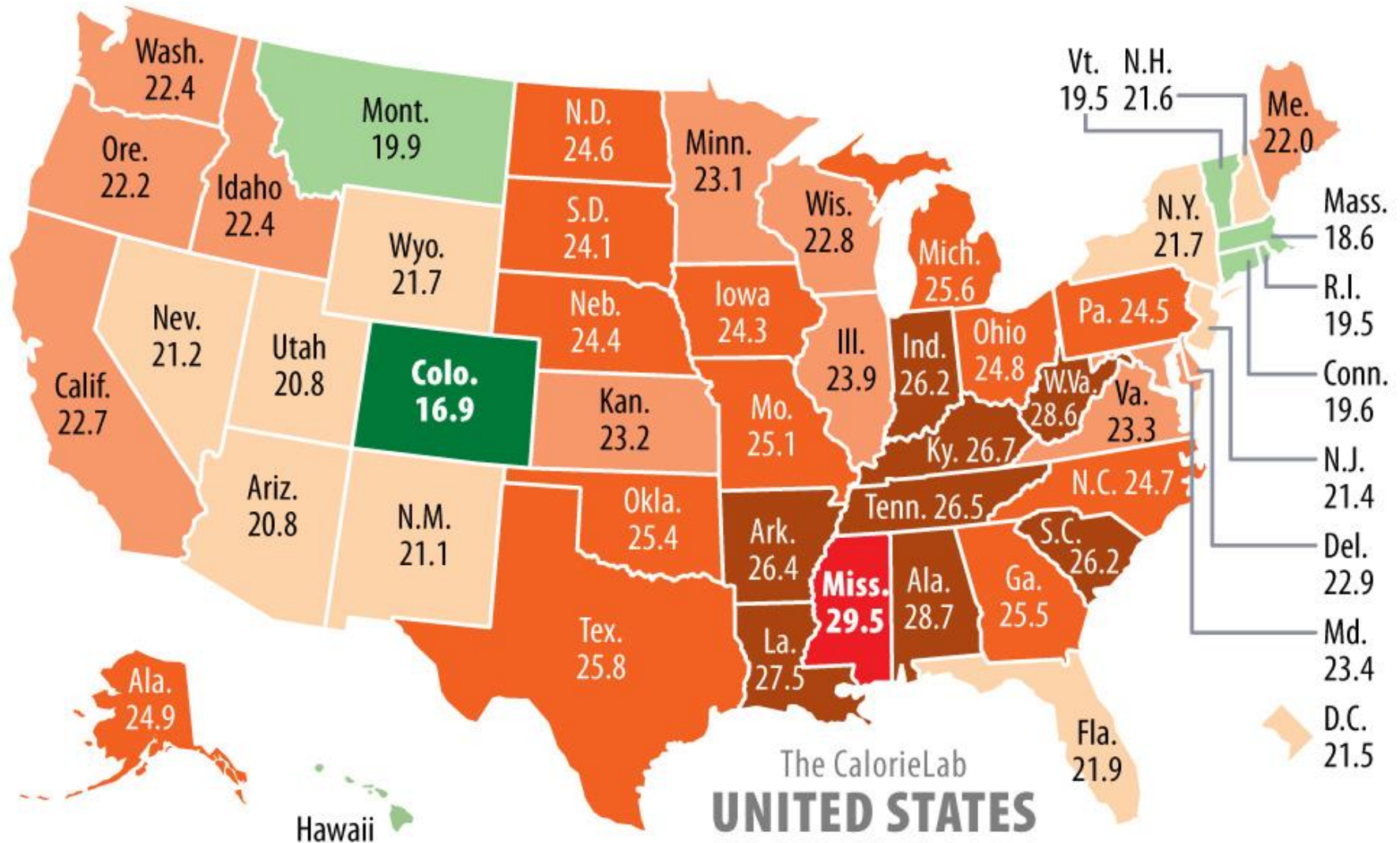


Leanest State
Colorado

Percentage of Obese Adult Population

Fattest State
Mississippi

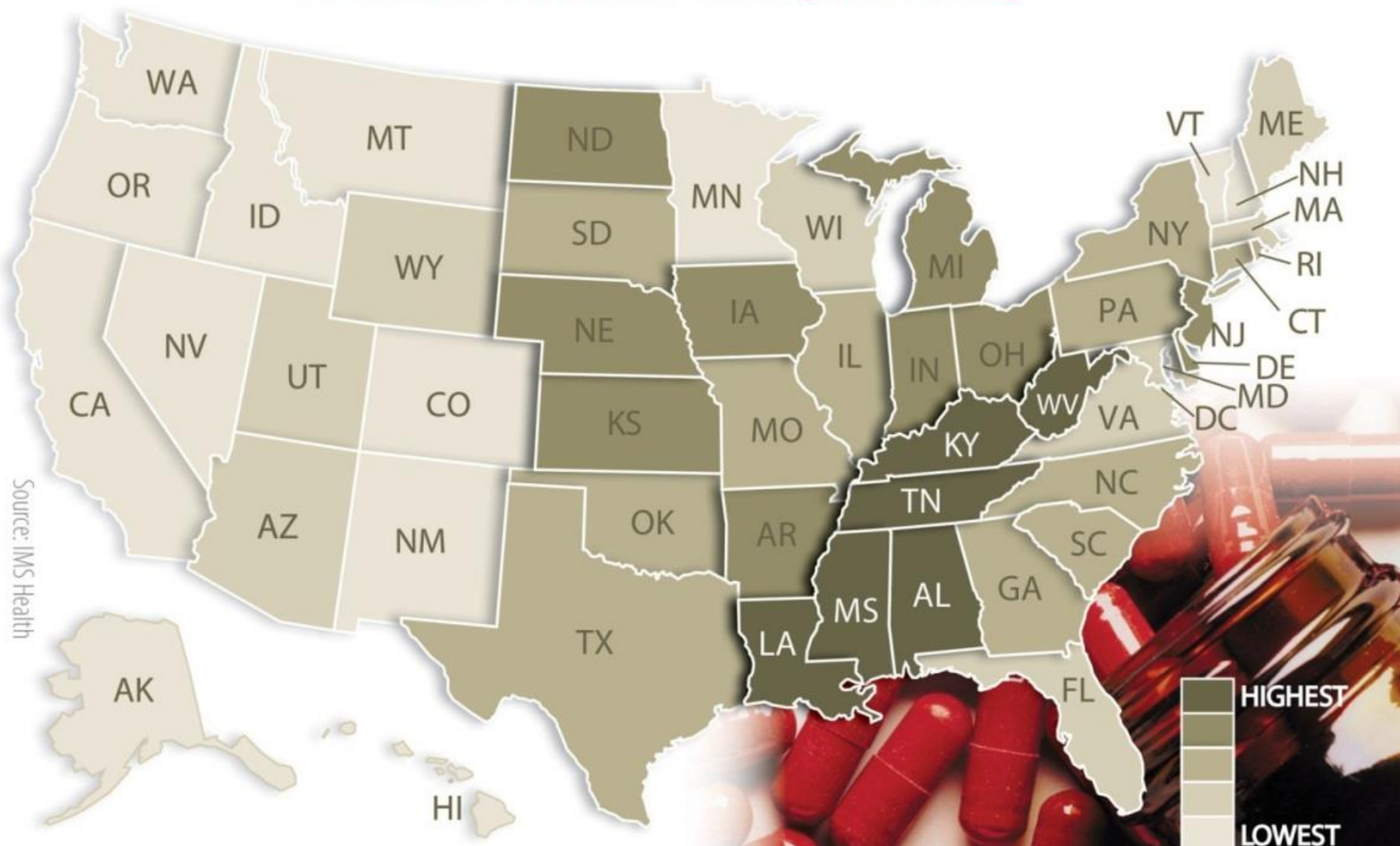
(3-year average from 2003–05 CDC Behavioral Risk Factor Surveillance System data)



(Data not collected in 2004; Average of 2003 & 2005 is 18.1)

The CalorieLab
**UNITED STATES
OF OBESITY 2006**

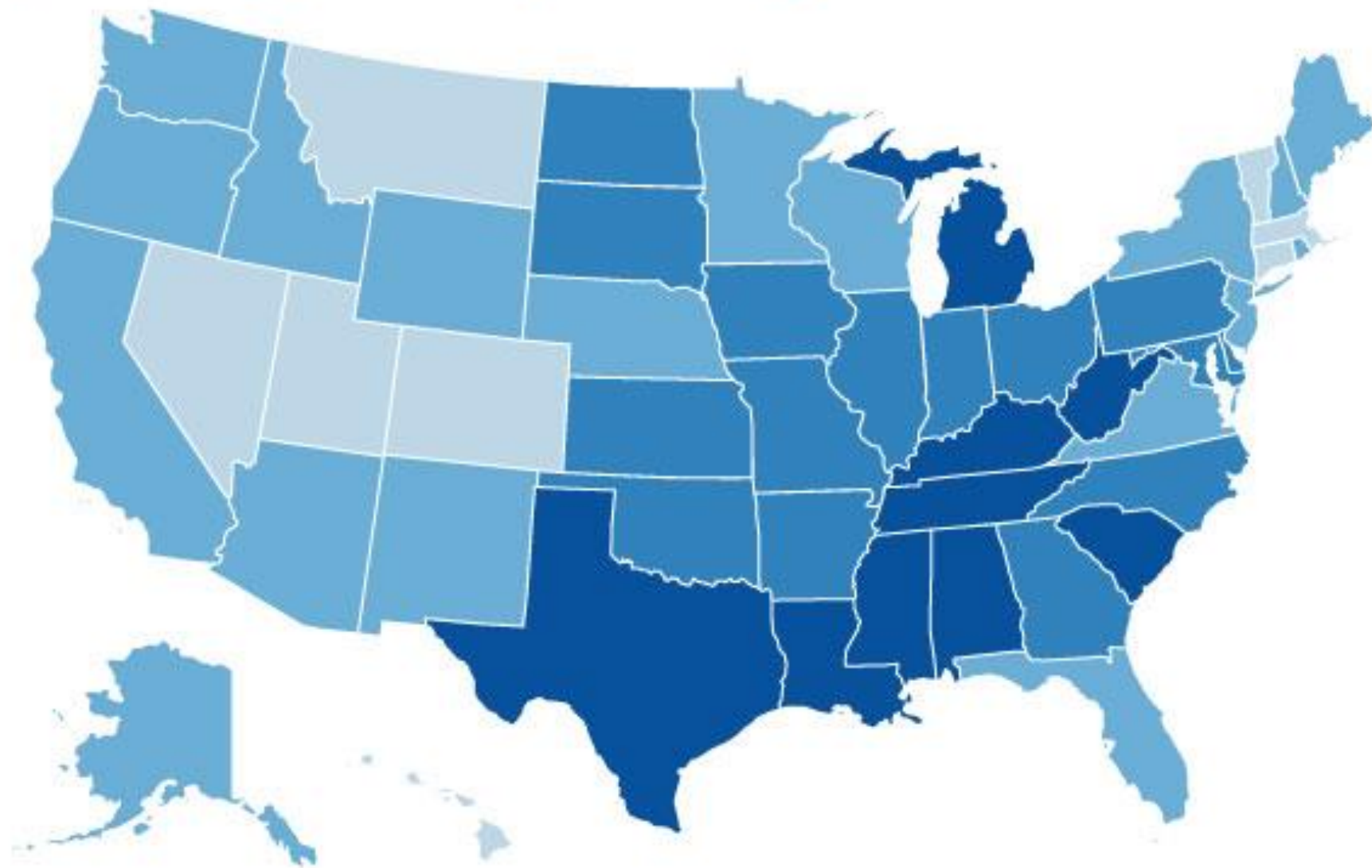
Antibiotic prescribing rates by state across the U.S. (2011/12)*



*Prescribing data from July 2011 through June 2012; population data from 2011

Obesity rate by state, 2010

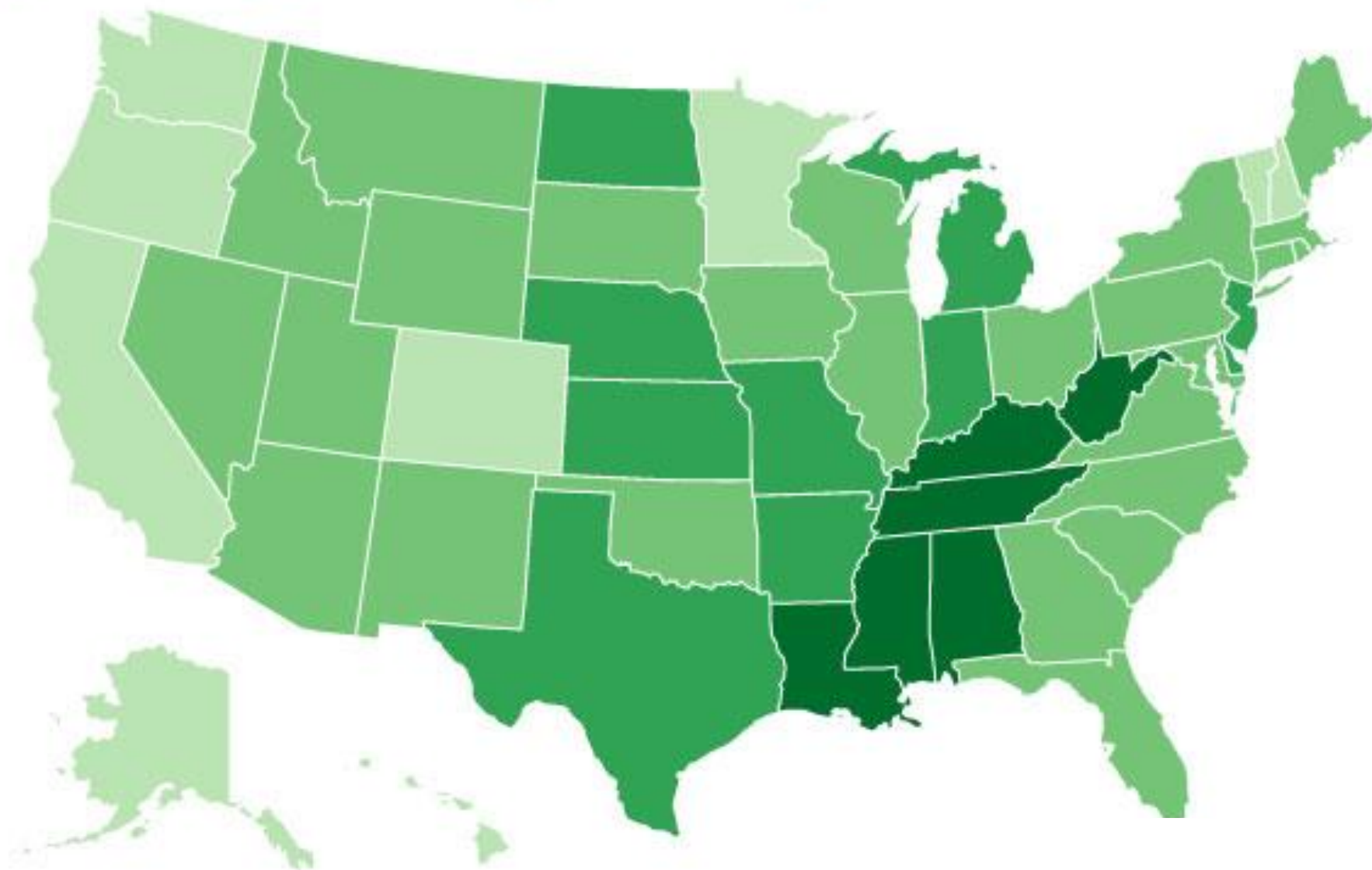
20%-23.5% 23.5%-27% 27%-30.5% 30.5%-34%



Source: CDC

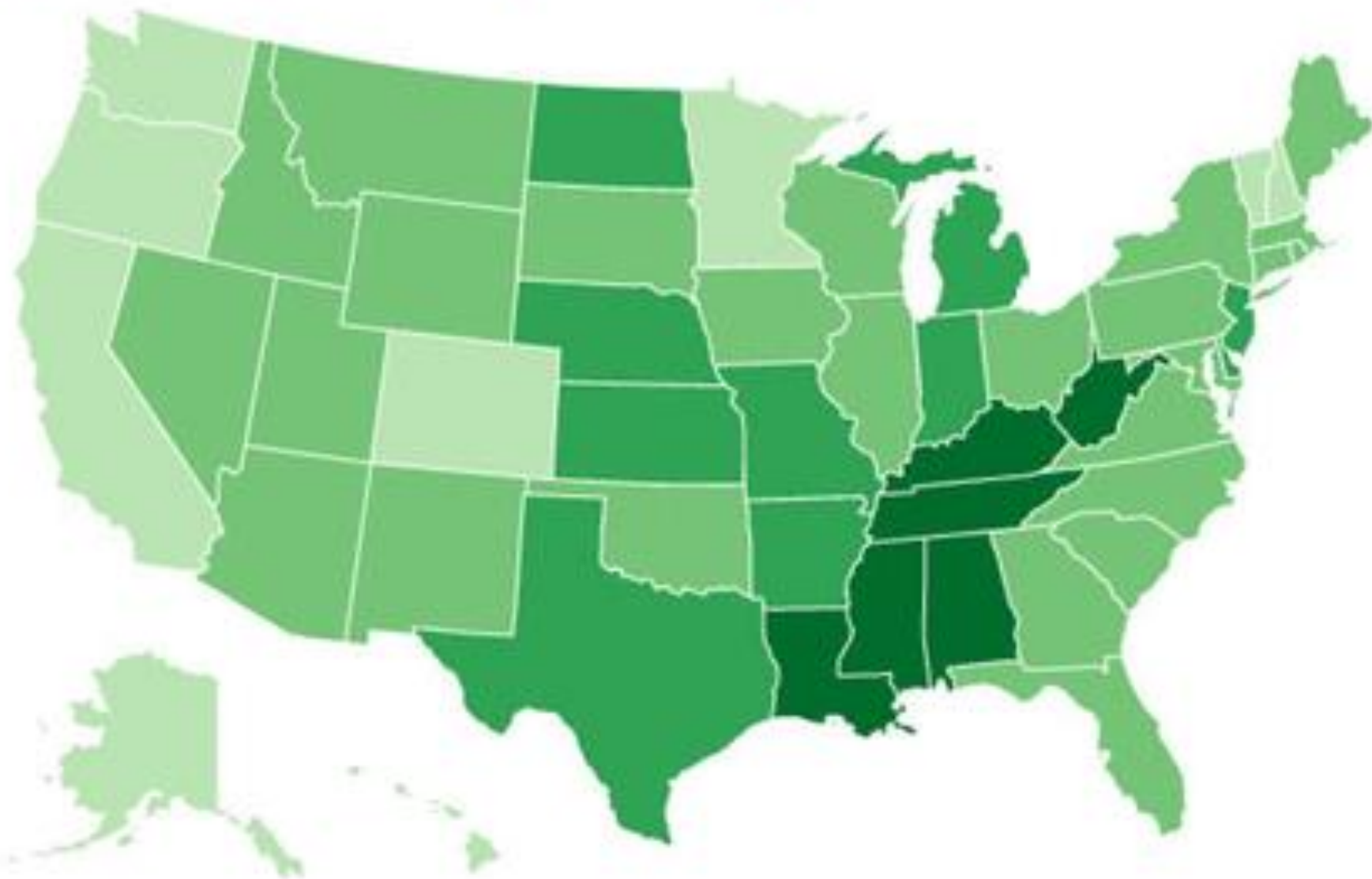
Antibiotic prescriptions per 1,000 people, 2010

500-699 700-899 900-1,099 1,100-1,299



Antibiotic prescriptions per 1,000 people, 2010

500-699 700-899 900-1,099 1,100-1,299



Source: CDC

Making Simple Infographics Online

- visual.ly - some background about Infographics and a template after logging in
- piktochart.com - create simple Infographics
- www.easel.ly – create simple infographics
- infogr.am – includes spreadsheet

Making Maps Online

- [Simply Map](#) - easy to use, make maps of marketing, census and other data
- ChartsBin – create interactive maps
- StatSilk – maps from spreadsheets
- Scribblemaps – draw your own features on a map

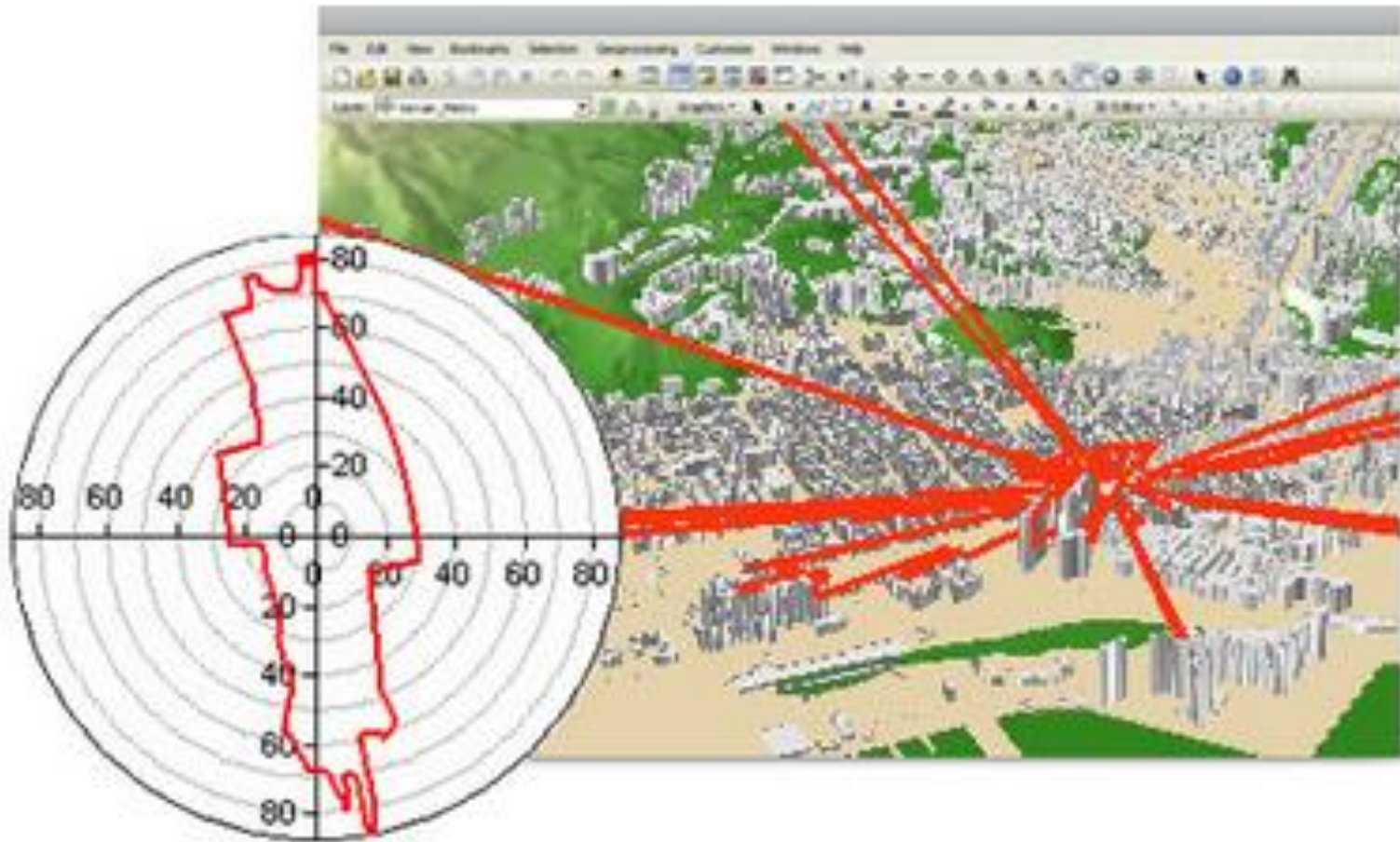
Making Timelines Online

- [Dipity.com](https://dipity.com)
- [Timeline.knightlab.com](https://timeline.knightlab.com) – can be used in your own web pages

Making Flowcharts and Diagrams

- Excel – makes many types of charts from spreadsheet data
- lucidchart.com – multi-person collaboration, diagramming
- Live.amcharts.com - charts
- Creately.com - diagramming
- Gliffy.com - diagramming
- [Venngage.com](https://venngage.com) - charts

ArcMap



I want to...

Variables

Locations

Businesses

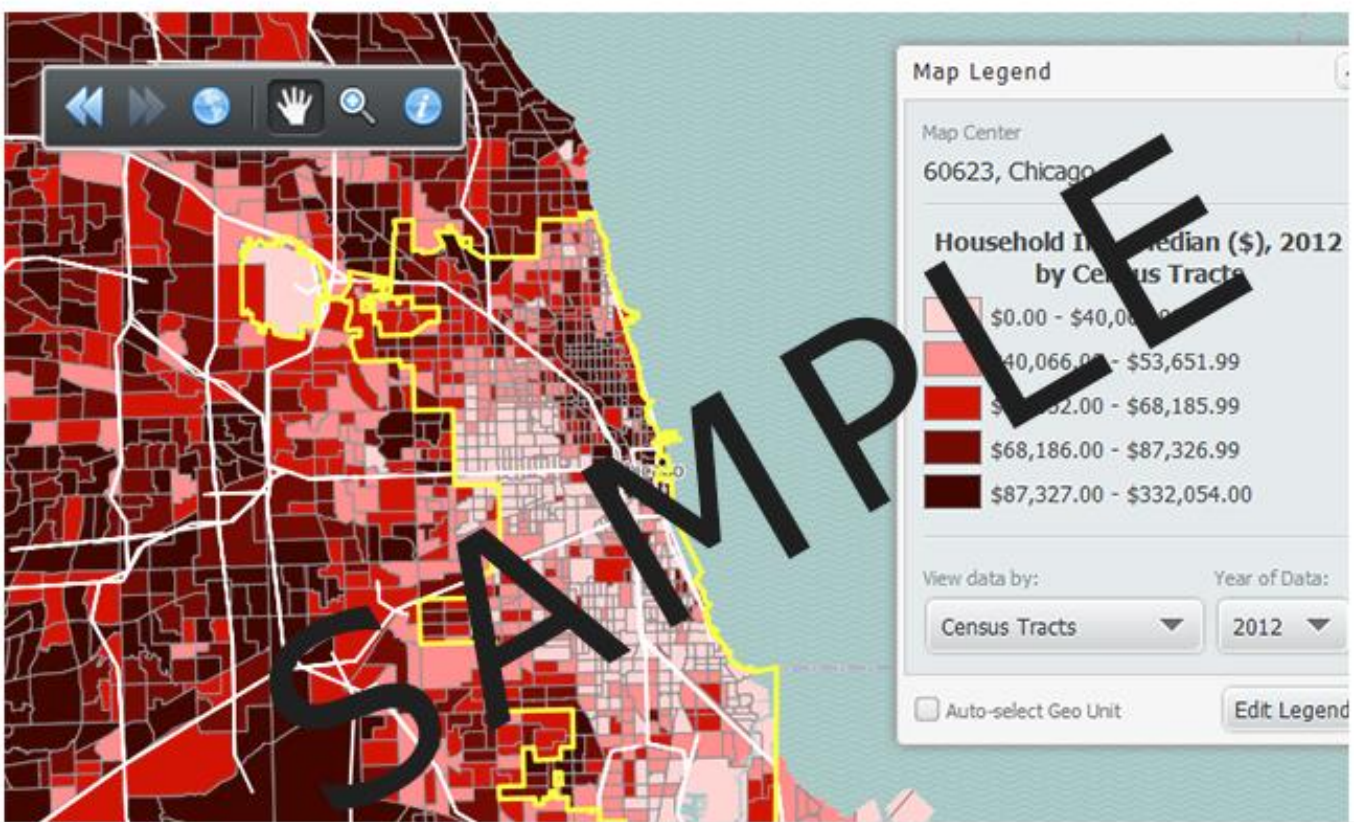
Support

Start Here

Start creating your map by selecting a variable. You can see an example of what your map will look like below.

Launch Map Wizard

SimplyMap's instructional wizards walk you step-by-step tutorial of each feature and how to use it.



The Easiest Way to Draw and Share Maps!

Used by students, hobbyists, governments, and even the military.
Easily create embeds, images, and map data for free.

CREATE YOUR MAP NOW

(Desktop or Mobile)

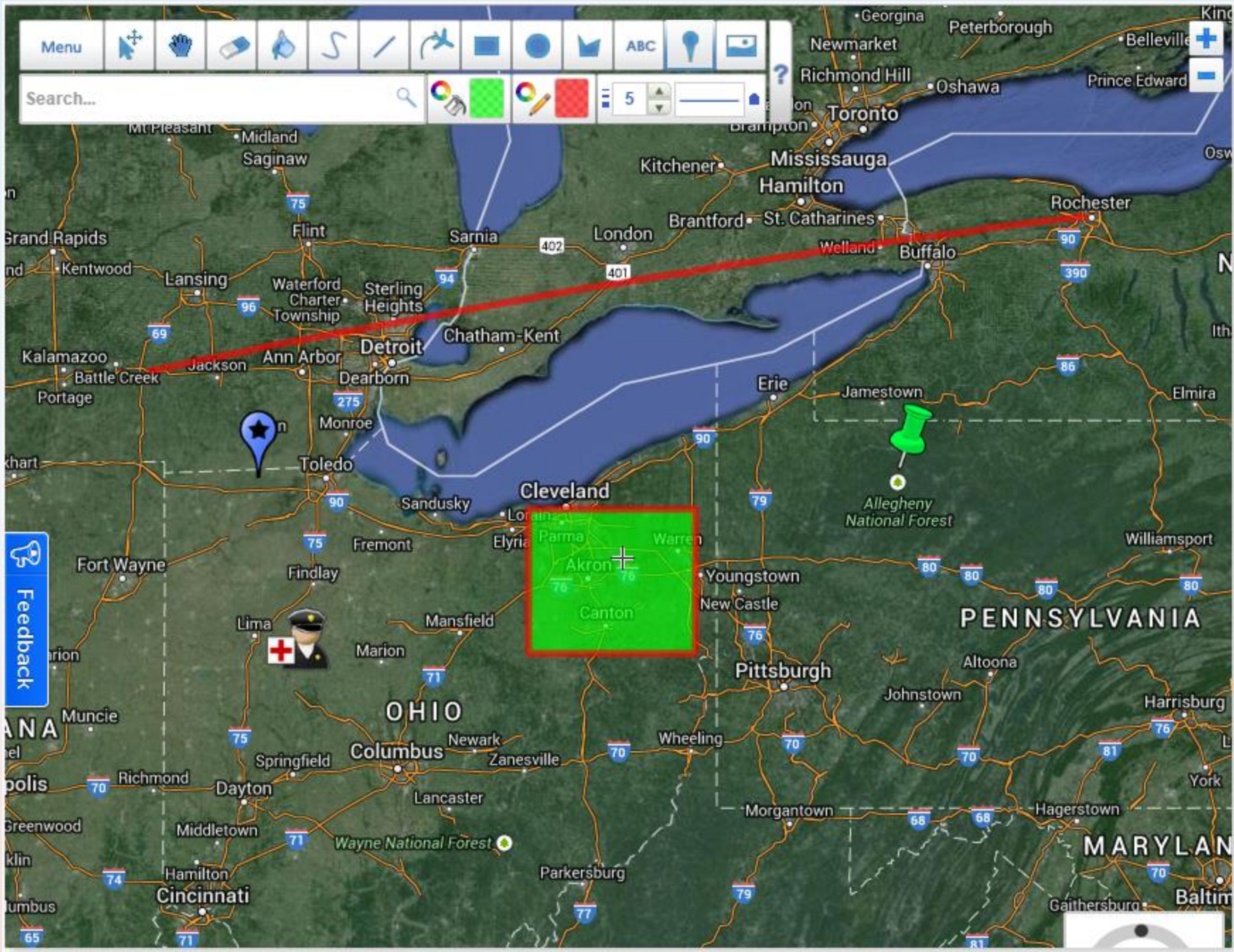


NEW!

Wordpress Plugin
Create & Embed Maps

Get The Plugin!





Neatline allows scholars, students, and curators to tell stories with maps and timelines. As a suite of add-on tools for [Omeka](#), it opens new possibilities for hand-crafted, interactive spatial and temporal interpretation.

The screenshot displays the Neatline interface for the Battle of Chancellorsville. At the top, a timeline shows dates from May 1 to May 4, 1863. The main map area shows a historical map with red and blue lines indicating military movements. A semi-transparent overlay box in the center of the map contains the title "Jedediah Hotchkiss and the Battle of Chancellorsville" and a progress indicator consisting of a row of seven circles, with the first one filled. To the right of the map, a vertical timeline lists key events:

- April 27 - 30**
Hooker splits his army and tries to "double envelop" Lee with two forces, one approaching from the north by way of Chancellorsville and the other from the east at Fredericksburg.
- April 30**
Lee splits his army, sending Jubal Early to hold off Sedgwick at Fredericksburg and moving the rest of his force west to engage Hooker at Chancellorsville.
- May 2, 7:30 a.m.**
Lee splits his army again, sending Jackson's Second Corps on a 12-mile, 10-hour flanking march around the Union positions around Chancellorsville and the Wilderness.
- May 2, 11:00 a.m.**
Sickles sees columns of Jackson's Second Corps marching along Furnace Road, alerts Hooker at CHC in

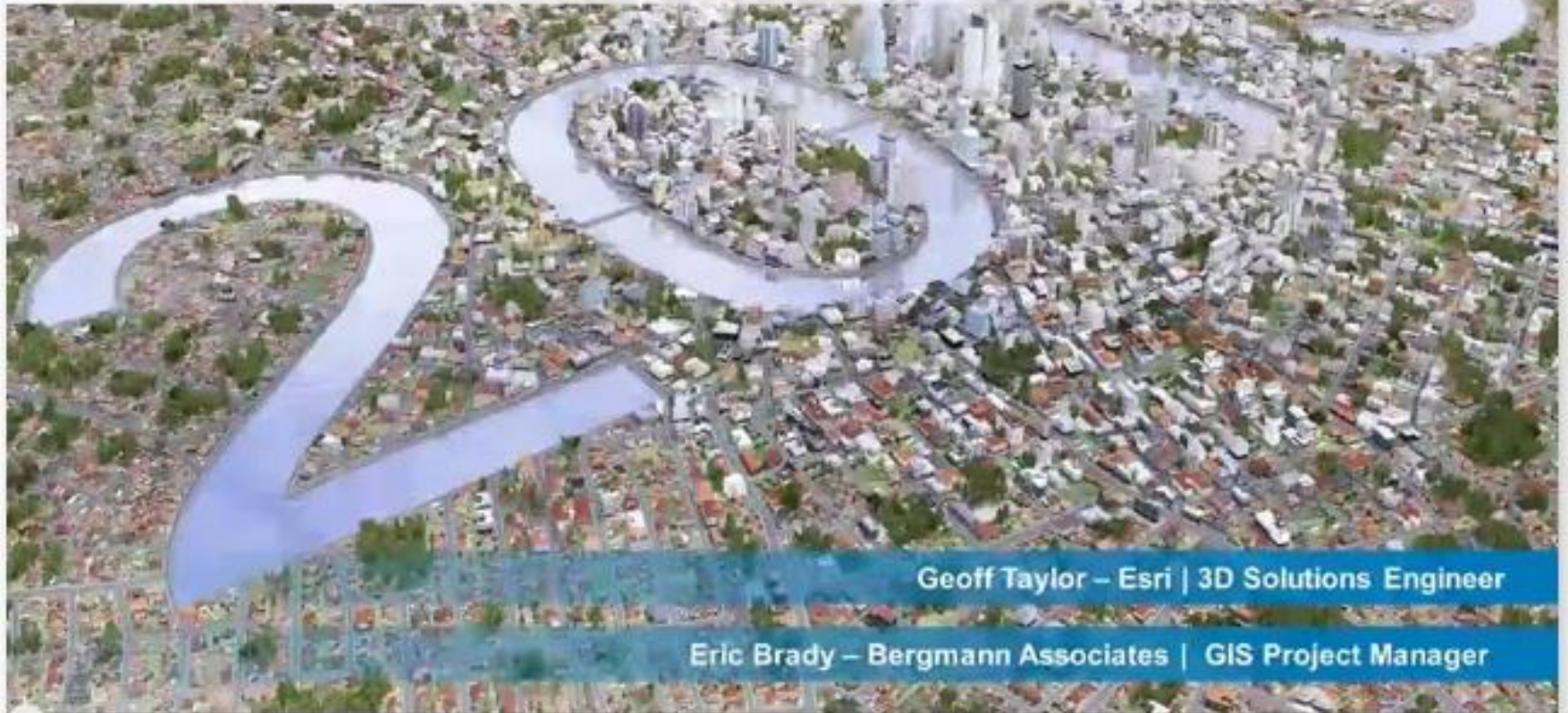
At the bottom left of the map, there is a legend titled "ARMY OF NORTHERN VIRGINIA COMMANDER: GEN. ROBERT E. LEE" and "Part of the Corps of Engineers" listing various units and their commanders.

Build your own map

- <http://www.simplymap.com/login.html>
- <http://scribblemaps.com/create>
- Game- Find this place-
<http://www.placespotting.com/solve.php>
- Omeka Neatline - <http://neatline.org/>

CityEngine

What's New in CityEngine 2013



Geoff Taylor – Esri | 3D Solutions Engineer

Eric Brady – Bergmann Associates | GIS Project Manager

Visualizations of historic places



Compare current to historic landscape



Making a medieval city



City Engine Links

- Trimmed City Engine Overview-6 min -
- City Engine Highlights-2:15 -
<https://www.youtube.com/watch?v=MaLetILba5c>
- City Engine medieval city-3:08-
<https://www.youtube.com/watch?v=WZFaoF5zdq4>



MIAMI UNIVERSITY


LIBRARIES

Center for Digital Scholarship



303 KING LIBRARY

CDS provides facilities and services to support digital initiatives that enhances the research, teaching, and learning mission of Miami University.

 (513) 529-2871