

**What's useful  
about mapping?**

50 0 50 100 150 200  
Yards

X Pump

• Deaths from cholera

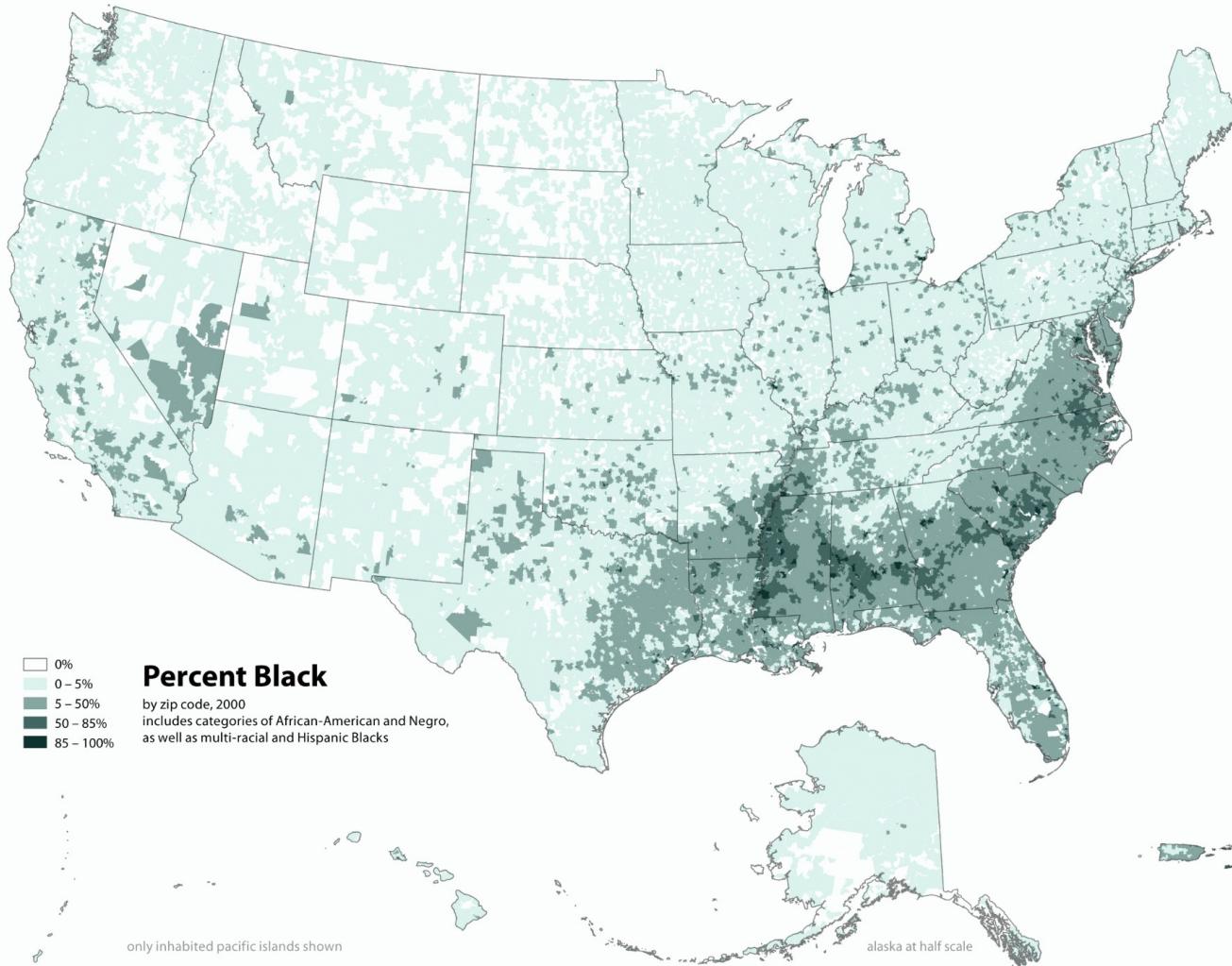


**Intent matters most in  
mapping**

**Your map form depends  
on what you want to show**

# **Common types of maps**

# Choropleth



# Choropleth

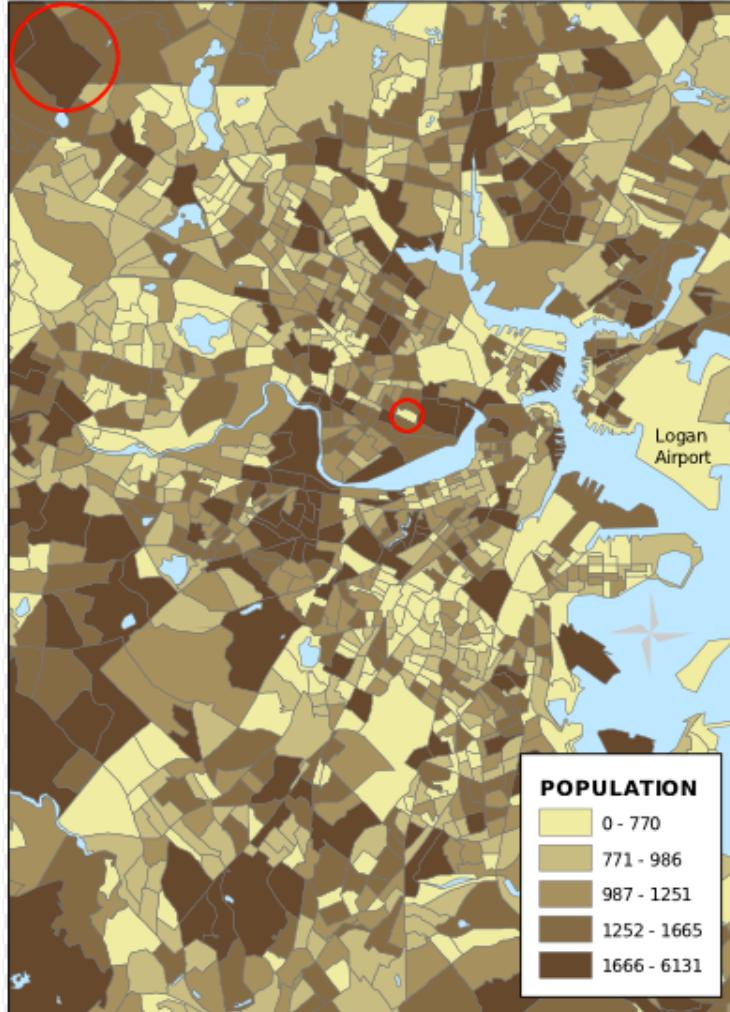
## Good for:

- Showing normalized change or variation
- Highlighting areas

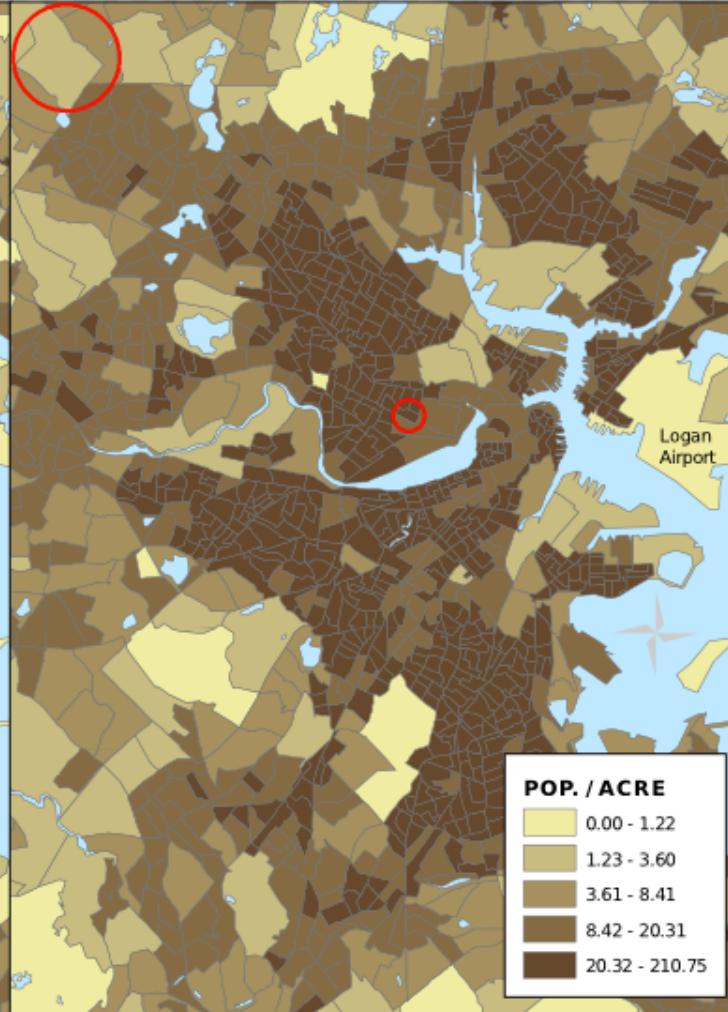
## Common mistakes:

- Not so meaningful with small geographies
- Easy to misinterpret
- Forgetting to normalize

Total Population of 2000 Census Block Groups



Population Density of 2000 Census Block Group:



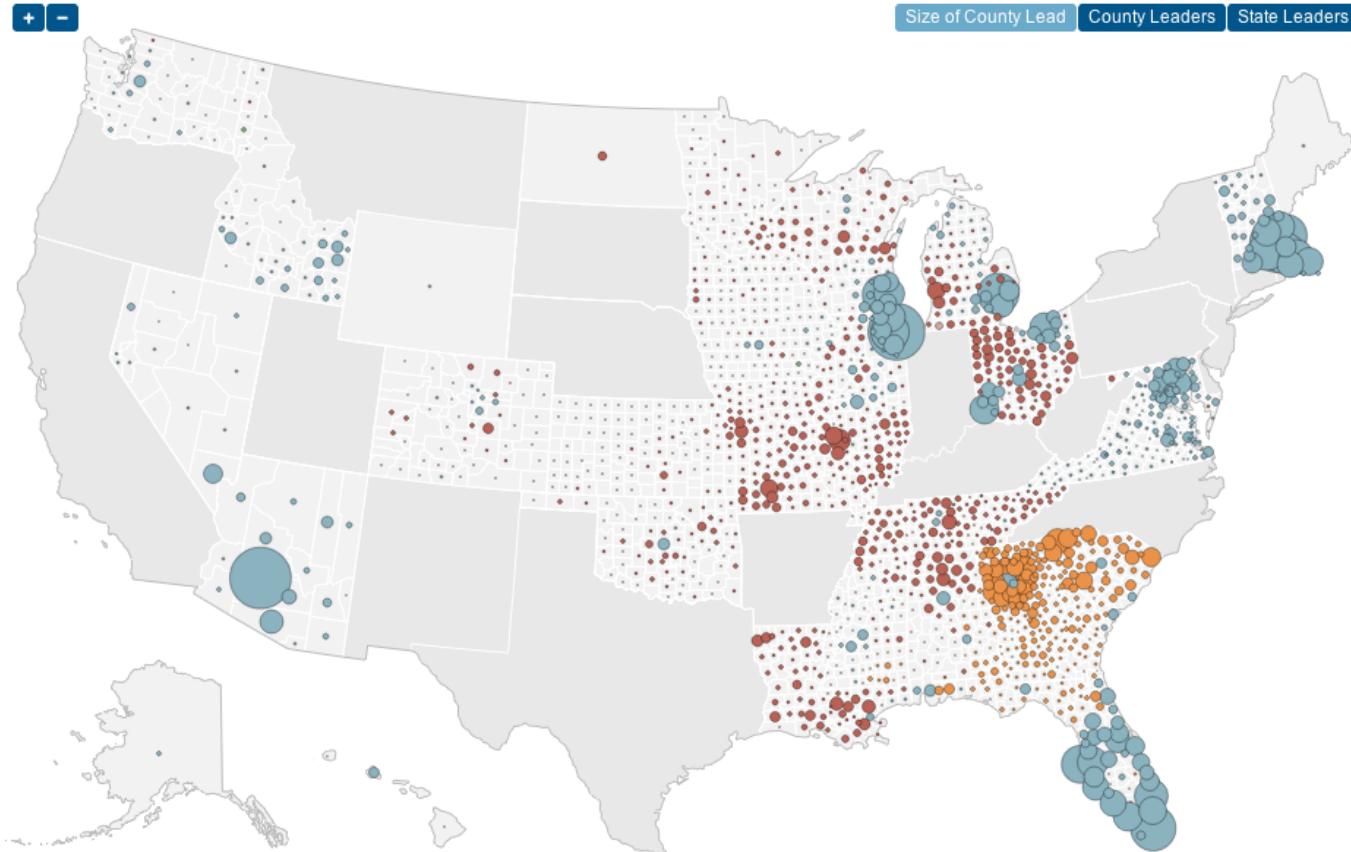
From Wikipedia.

# Proportional circles

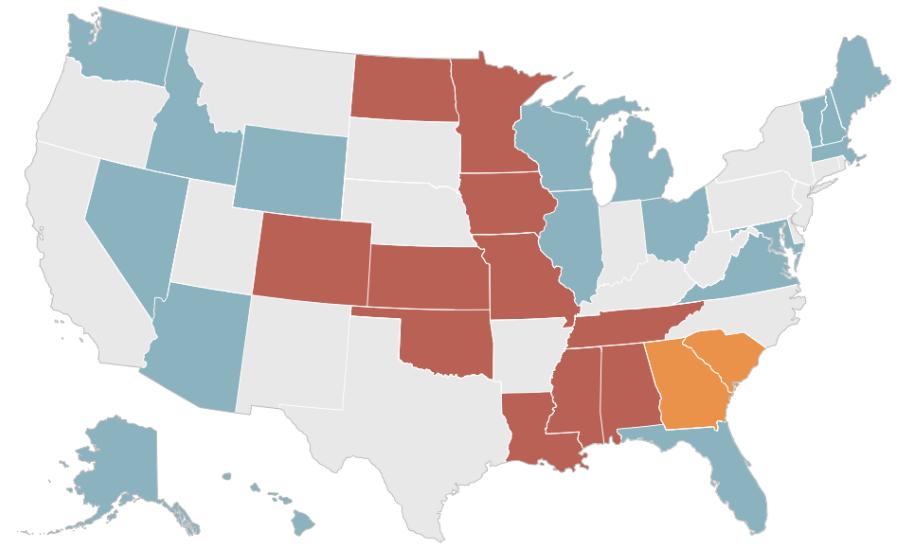
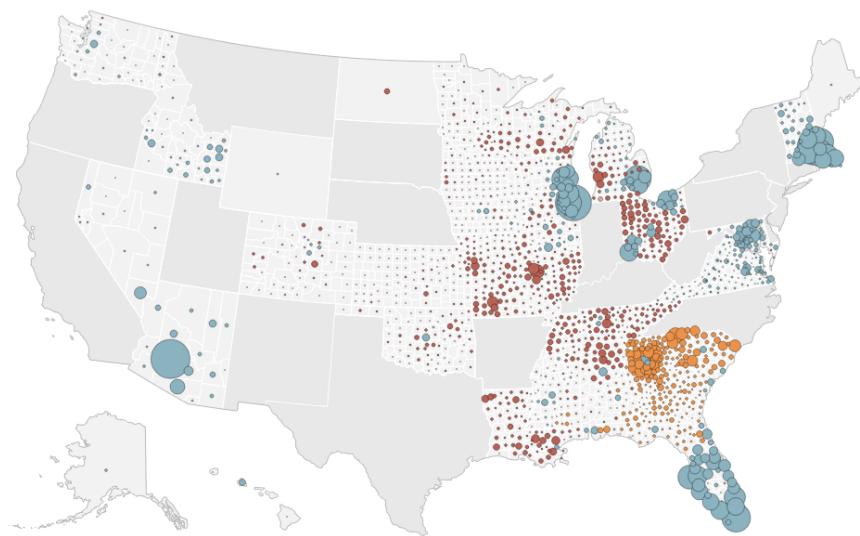
## Rick Santorum's Race

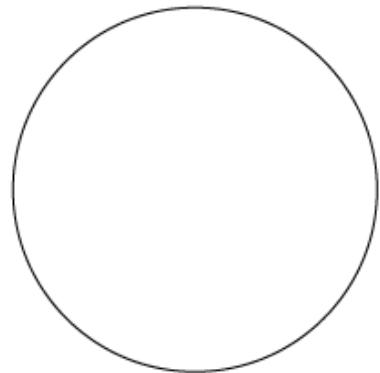
Rick Santorum suspended his campaign Tuesday. In primaries and caucuses, Mr. Santorum carried much of the rural Midwest and South, and had heavy support from evangelical voters and the most conservative voters.

■ Mitt Romney **661 delegates** | ■ Rick Santorum **285** | ■ Newt Gingrich **136** | ■ Ron Paul **51**

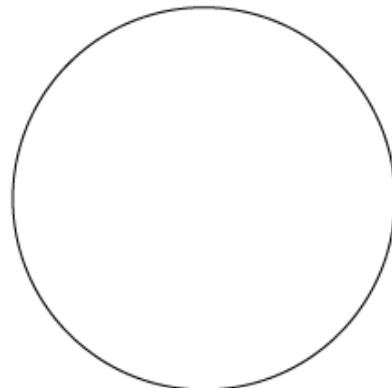


# Circles vs. choropleths

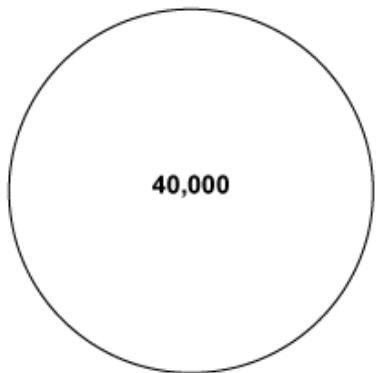




2,500



What value does each circle represent?



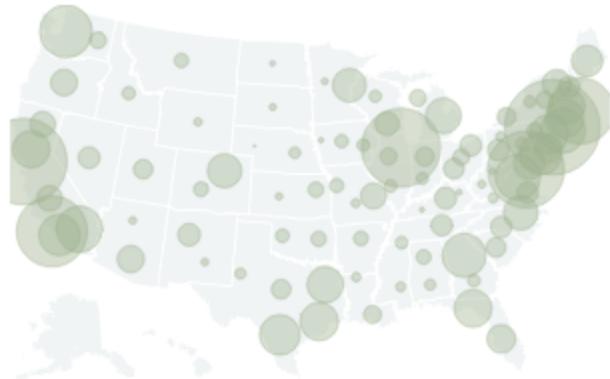
### Barack Obama

**\$196,900,097**

Mr. Obama ended March with 10 times the cash on hand as Mr. Romney.

Mr. Obama continued to bring in large totals from coastal and urban areas.

#### CONTRIBUTIONS GREATER THAN \$200 BY REGION



### Mitt Romney

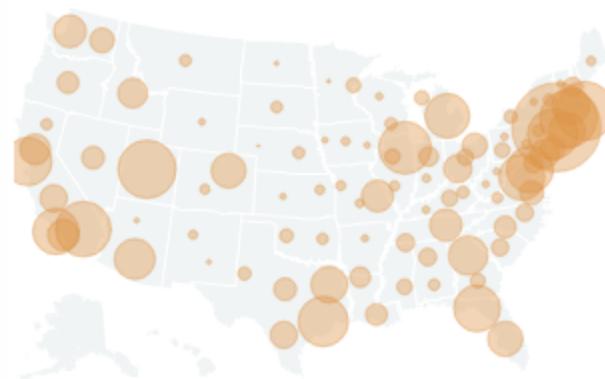
**\$87,452,399**

1st of 9 Republican Candidates\* as of March 31, 2012

The presumptive nominee, Mr. Romney ended March with \$10 million in cash.

As in 2008, Mr. Romney did well in urban area and his bases of Massachusetts and Utah.

#### CONTRIBUTIONS GREATER THAN \$200 BY REGION



# Proportional circles

## Good for:

- Accurately showing full range of data
- Geographies of varying sizes
- Raw numbers

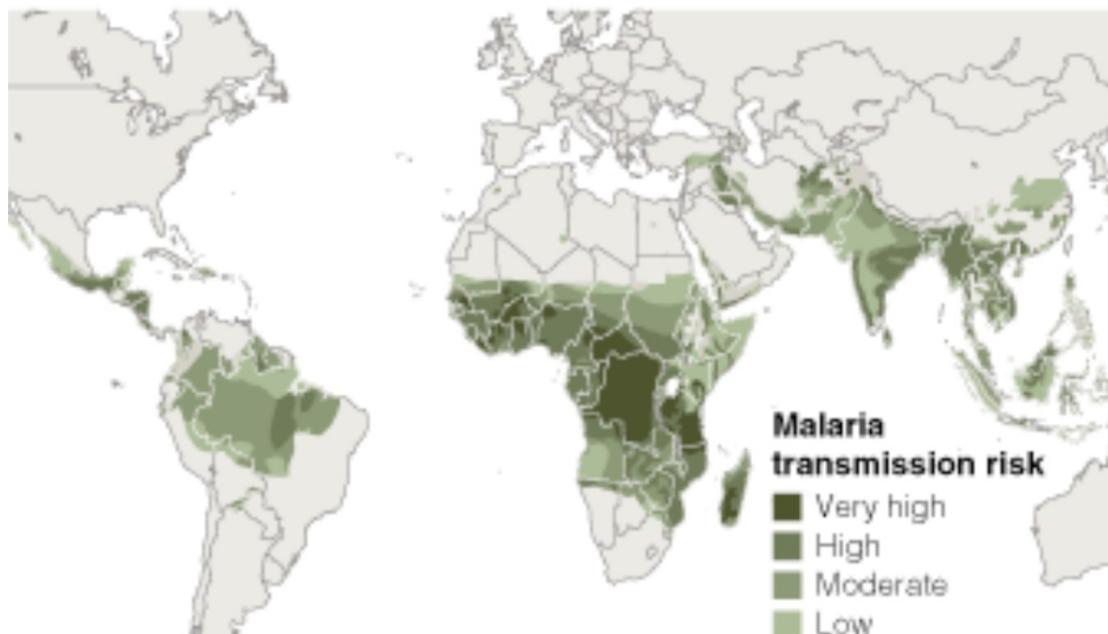
## Common mistakes:

- Hard for normals to interpret
- Can be a proxy for population
- Not so exciting without lots of variation

# "Heat" maps

## A Persistent Disease

Malaria has been squeezed globally from both north and south, but remains endemic across much of the tropics.



Sources: World Health Organization; Roll Back Malaria Partnership

THE NEW YORK TIMES

# "Heat" maps

## triptrop NYC

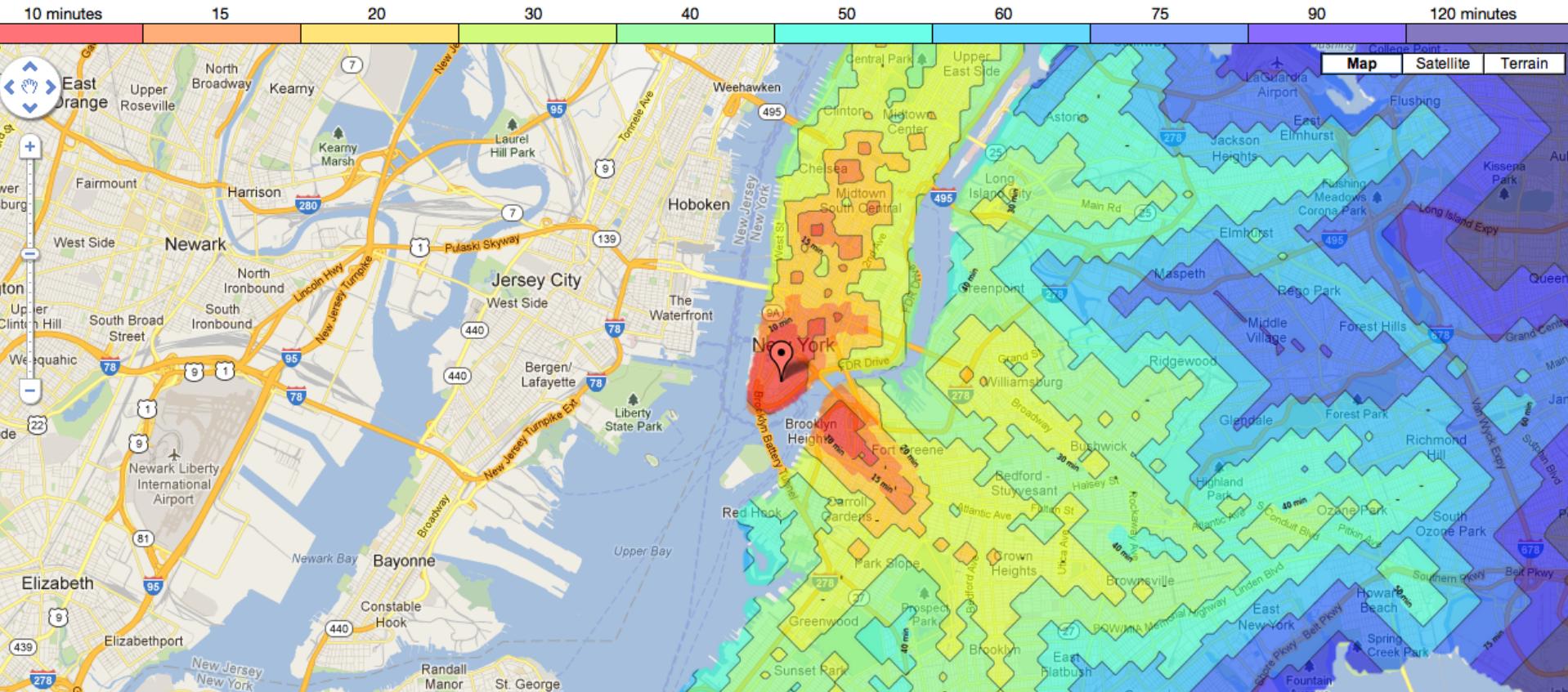
Give us an address and we'll show you how long it takes to get everywhere else in the city.

45 wall st

map it!

[link to this map](#)

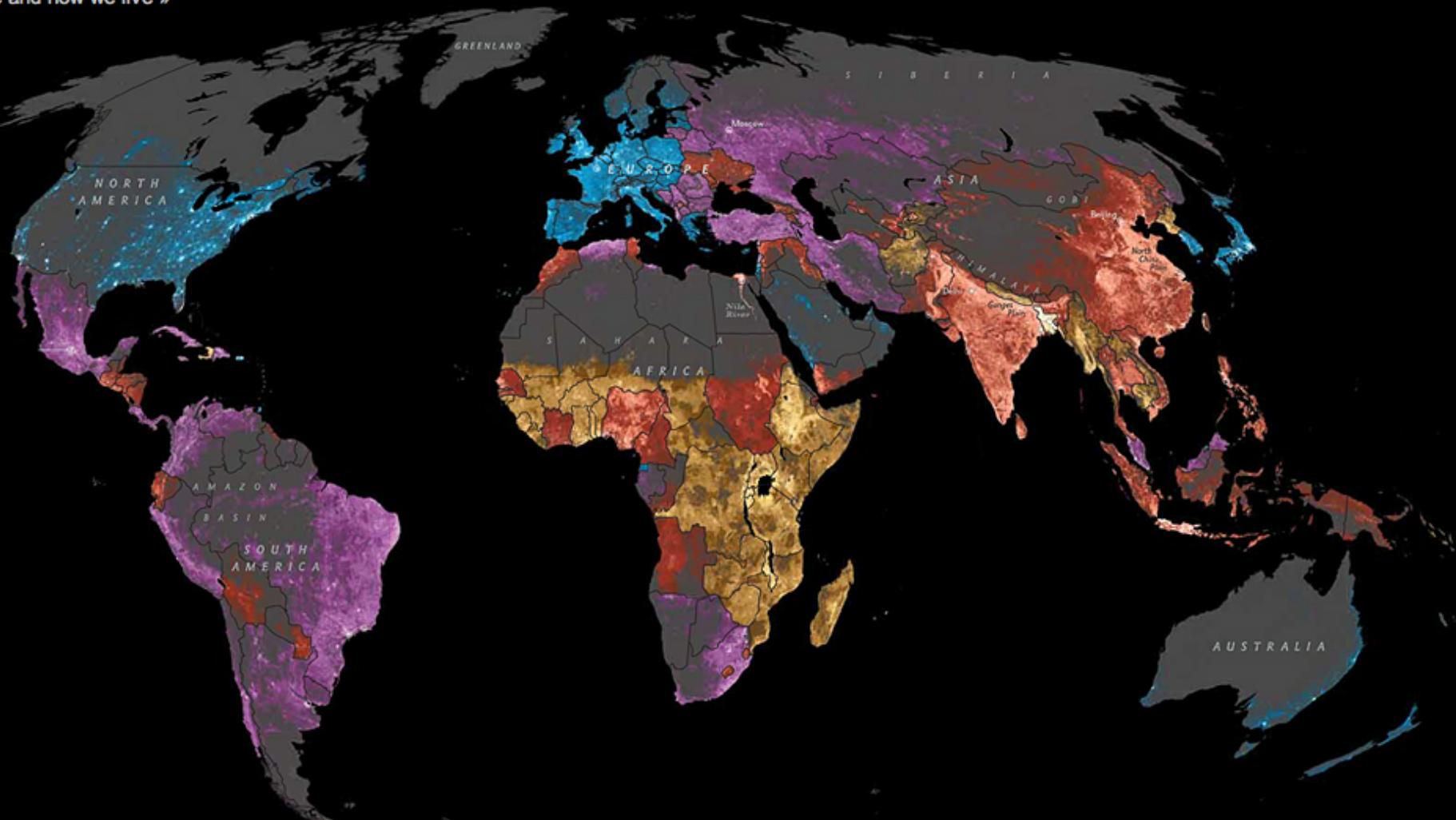
and where are you going?



# The World of Seven Billion

1 2 3 4

Where and how we live »



**LOW INCOME LEVEL**  
\$995 or less a year



**LOWER MIDDLE**  
\$996 to \$3,945



**UPPER MIDDLE**  
\$3,946 to \$12,195



**HIGH**  
\$12,196 or more



# "Heat" maps

## Good for:

- Showing concentrations
- Emphasizing the data, when data doesn't match existing boundaries

## Common mistakes:

- Make sure colors and breaks are meaningful and thought out

# Science Times

The New York Times

## EARTH ORBIT ON FEB. 6, 2007, 9 A.M. E.S.T.

Each dot represents a man-made object larger than 4 inches.

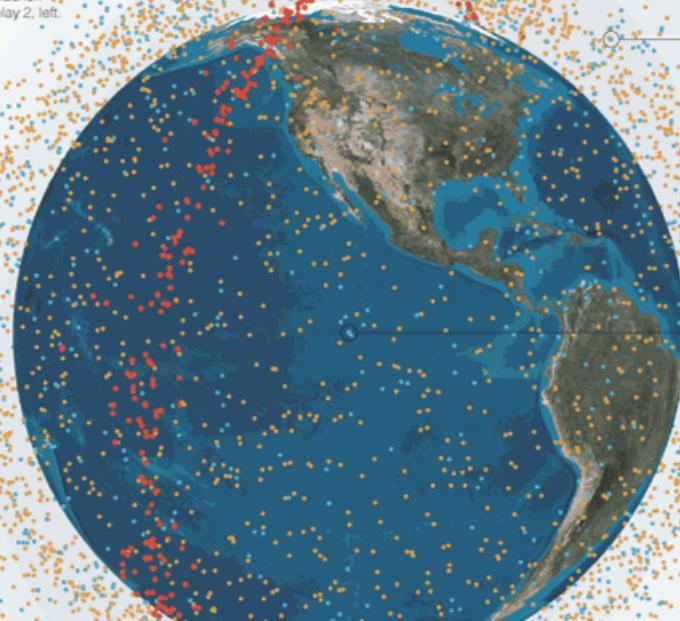
The Relay 2 communication satellite, at right, was launched by the United States on Jan. 21, 1964 and stopped working three years later.



Debris from rocket used to launch Relay 2, left.

The Hubble Space Telescope, launched in 1990, orbits at an altitude of 380 miles.

In service from 1963 to 1977, the U.S.'s Midas 6 satellite was designed to detect launched intercontinental ballistic missiles.



Commercial communications satellite launched in June 1999.

Former Soviet Union communication satellite, launched in 1986 and now broken.



International Space Station

Part of Russia's version of the Global Positioning System, this satellite was launched in 1991.



## SPACECRAFT

There are more than 3,100 spacecraft orbiting Earth. Two-thirds of these are no longer active.

## OLD DEBRIS

Nearly 7,000 pieces of man-made debris are large enough to be tracked.

## NEW DEBRIS

The satellite destroyed by China last month has left nearly 1,000 pieces of large debris.

## NEW DEBRIS ON JAN. 11, 2007

The remnants from the Chinese satellite are quickly dispersing in Earth's orbit. More than half the spacecraft in orbit now pass through its debris field.

## Orbiting Junk, Once a Nuisance, Is Now a Threat

# Dot maps

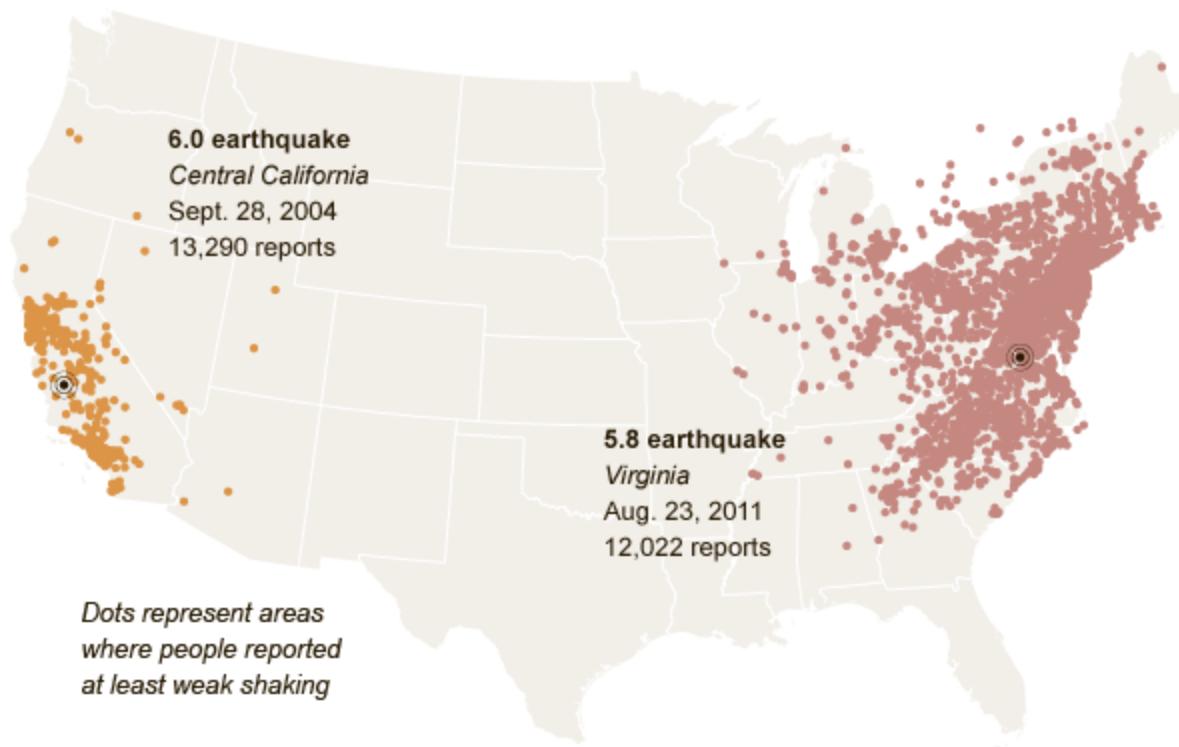
## Good for:

- Showing density and distribution
- Geography that can't be easily grouped
- Showing single incidents or events
- If exact coordinates are important to your map

# Dot maps

## Comparing the extent of the shaking

Though less frequent, earthquakes on the East Coast can typically be felt over a much larger area than those with a similar magnitude on the West Coast. The bedrock in California, for example, is fractured, causing seismic waves that travel through it to dissipate faster. In the eastern half of the United States, the bedrock is less fractured and stronger, allowing earthquake energy to travel farther.





# Toxic Waters

A series about the worsening pollution in American waters and regulators' response

[Compare enforcement records around the nation](#) | [Data and comments from the states](#) | [Feedback](#)

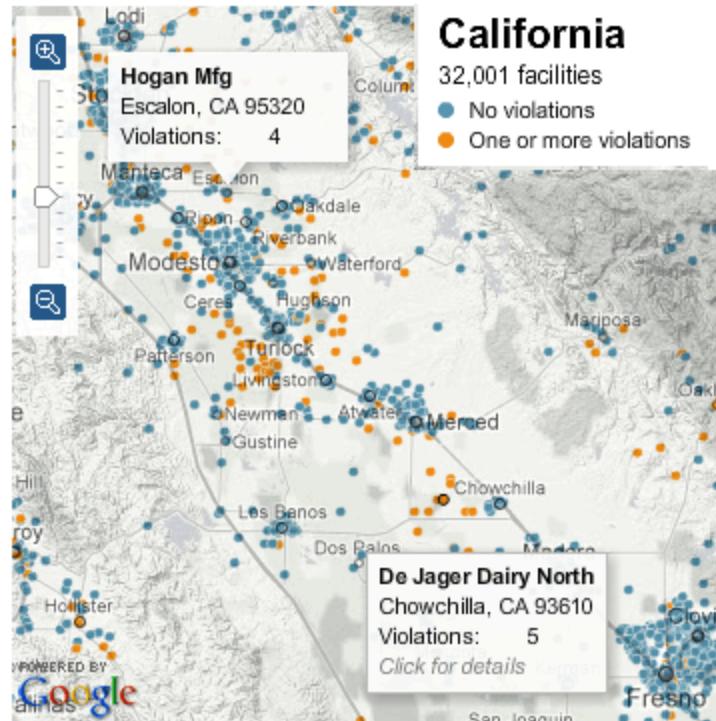
Search by city or zip code:

Search

Alabama	Missouri
Alaska	Montana
Arizona	Nebraska
Arkansas	Nevada
<b>California</b>	New Hampshire
Colorado	New Jersey
Connecticut	New Mexico
Delaware	New York
District of Columbia	North Carolina
Florida	North Dakota
Georgia	Ohio
Hawaii	Oklahoma
Idaho	Oregon
Illinois	Pennsylvania
Indiana	Rhode Island
Iowa	South Carolina
Kansas	South Dakota
Kentucky	Tennessee
Louisiana	Texas
Maine	Utah
Maryland	Vermont
Massachusetts	Virginia
Michigan	Washington
Minnesota	West Virginia
Mississippi	Wisconsin
	Wyoming

[About This Data](#)

[State Resources and](#)

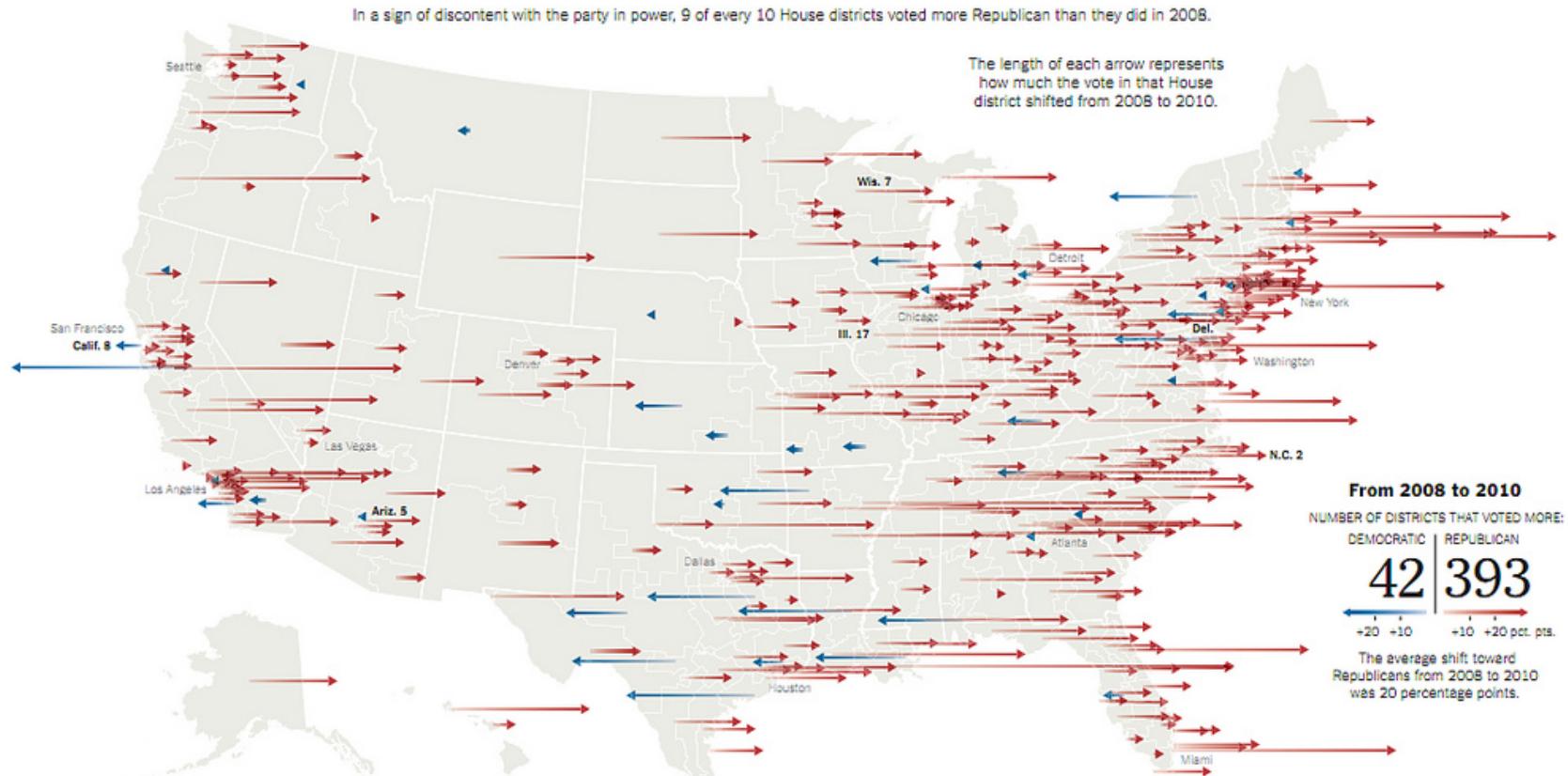


## California

FACILITY NAME	CITY
<a href="#">Radisson Hotel at Los Angeles Airport</a>	Los Angeles
<a href="#">Haynes Generating Station</a>	Long Beach
<a href="#">Townhomes at The River, Tract No 5353</a>	Fillmore
<a href="#">California Credit Union</a>	Los Angeles

# Other types of maps

## Districts Across the Country Shift to the Right



While Republicans increased their share of the vote in **California 8**, Nancy Pelosi's lead still increased in the absence of a strong third-party candidate.

**Arizona 5** shifted right about 20 points — enough to switch the seat to Republicans. David Schweikert defeated the Democrat he lost to in 2008.

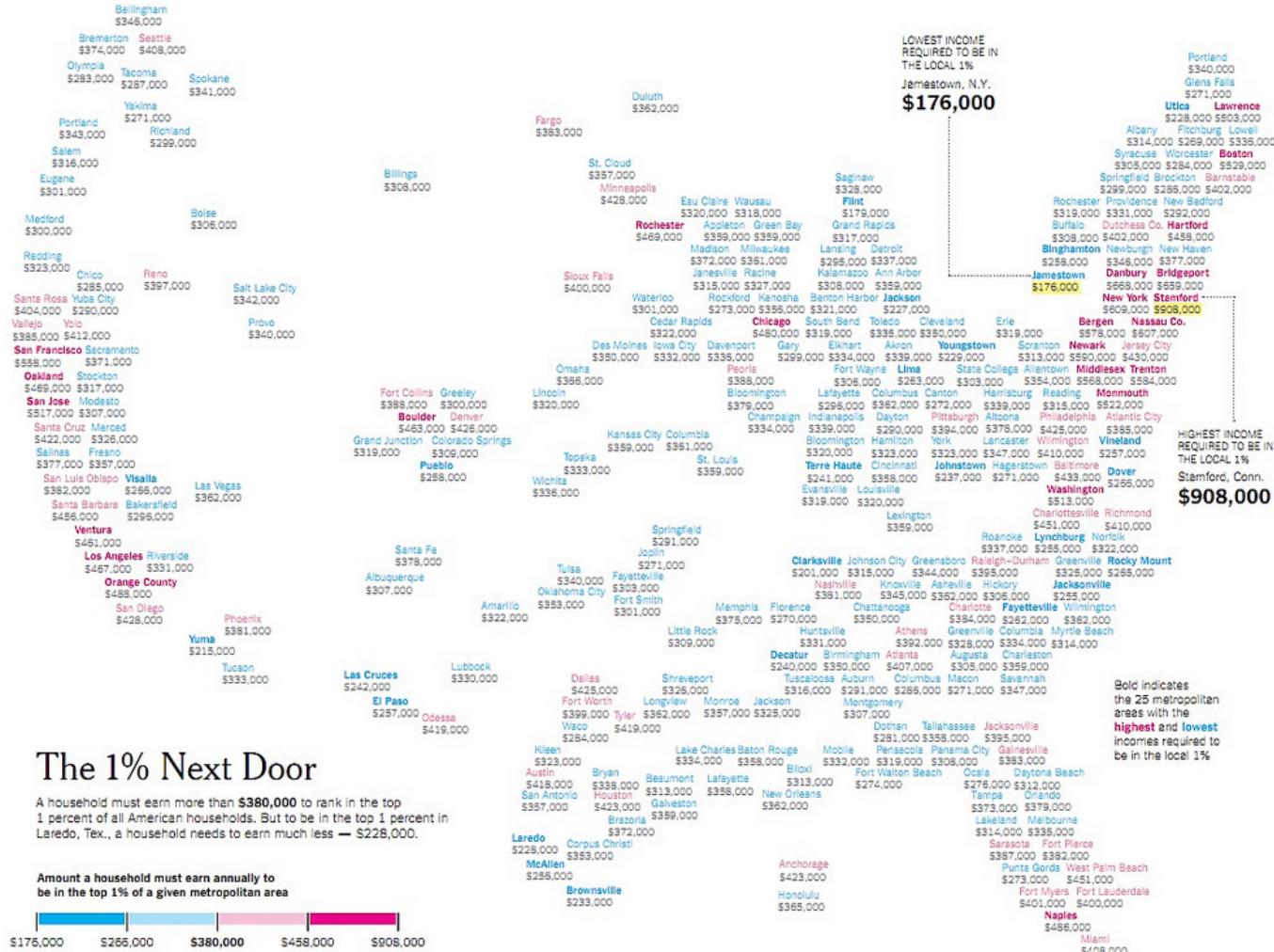
The shift in **Wisconsin 7** was about average for an open race. Here, Sean P. Duffy, a Republican district attorney, won by 8 percentage points.

One of the largest shifts was in **Illinois 17**, where Republican Bobby Schilling, a pizza business owner, beat Phil Hare, a two-term Democratic incumbent.

Only a few districts voted more Democratic. In **Delaware**, the shift helped John Carney defeat Glen Urquhart for the seat held by Michael N. Castle since 1993.

Renee Eilmers delivered one of the Republican Party's narrowest gains in **North Carolina 2**, a district that Democrats won by 36 percentage points in 2008.

# Text maps



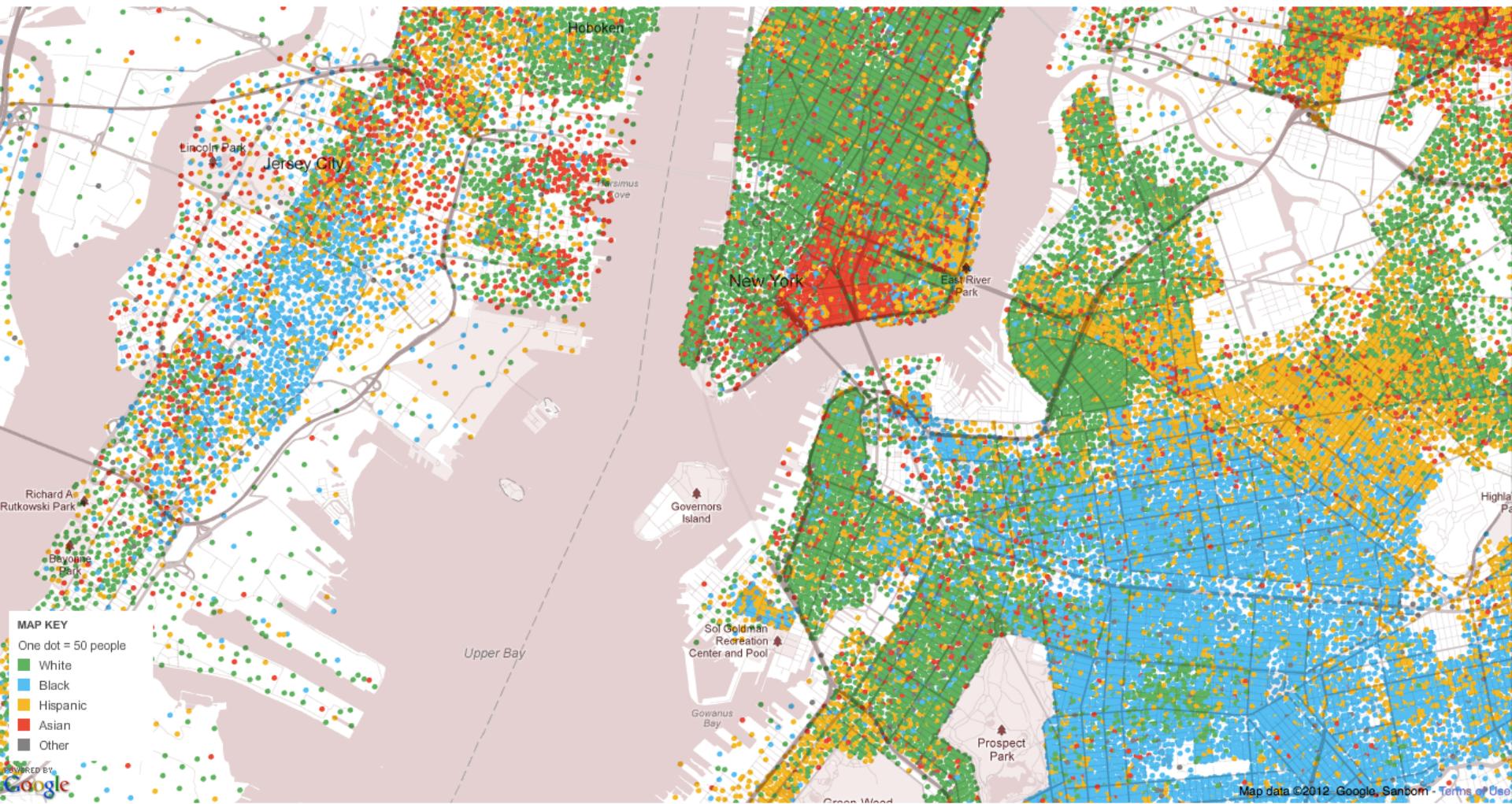
# The 1% Next Door

A household must earn more than \$380,000 to rank in the top 1 percent of all American households. But to be in the top 1 percent in Laredo, Tex., a household needs to earn much less — \$228,000.

Amount a household must earn annually to be in the top 1% of a given metropolitan area

ROBERT GEBELOFF, FORD FESSENDEN AND ALICIA D'ANTIS/THE NEW YORK TIMES

# Dot-density maps



# How Much Oil Is on the Gulf Coast

WHERE OIL IS IN THE GULF

WHERE OIL HAS MADE LANDFALL

EFFORTS TO STOP THE LEAK

EFFECTS ON WILDLIFE

INVESTIGATING THE BLOWOUT

FINAL MOMENTS ON THE RIG

Play

5/24

8/7

Aug. 7



Map key

Amount of oil found in federal surveys on each day  
— Heavy — Moderate — Light

Combined oil slick areas May 8 to Aug. 7  
Marshes Urban areas

For updates, follow us on Twitter @nyoilspillmap.

# MAPPING GENERIC TERMS FOR STREAMS IN THE CONTIGUOUS UNITED STATES

Toponyms, or the names given to places, carry cultural information in their etymology and patterns of use. Generic toponyms, used to describe a general type of feature such as a *lake* or *pond*, tend to change more slowly than specific names. This map shows the distribution of the most popular\* generic toponyms for streams in the United States. These names vary widely across America in their etymological roots, the types of features they refer to, and their cultural patterns of use. These variations reflect the interplay of cultural and physical factors that have influenced naming practices across the country.

BRANCH

RUN

FORK

BROOK

KILL

STREAM

BAYOU

SWAMP

SLOUGH

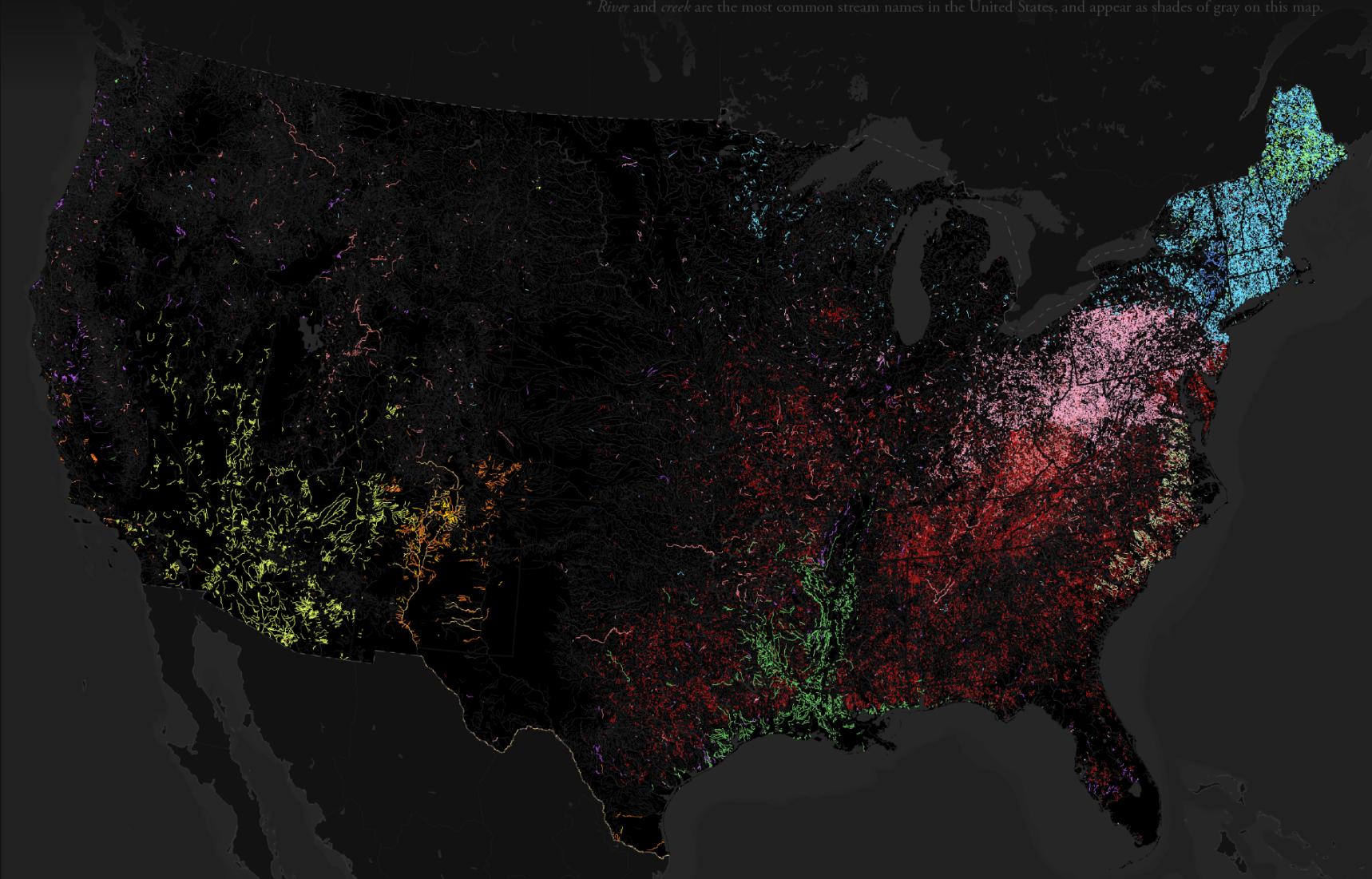
WASH

CAÑADA

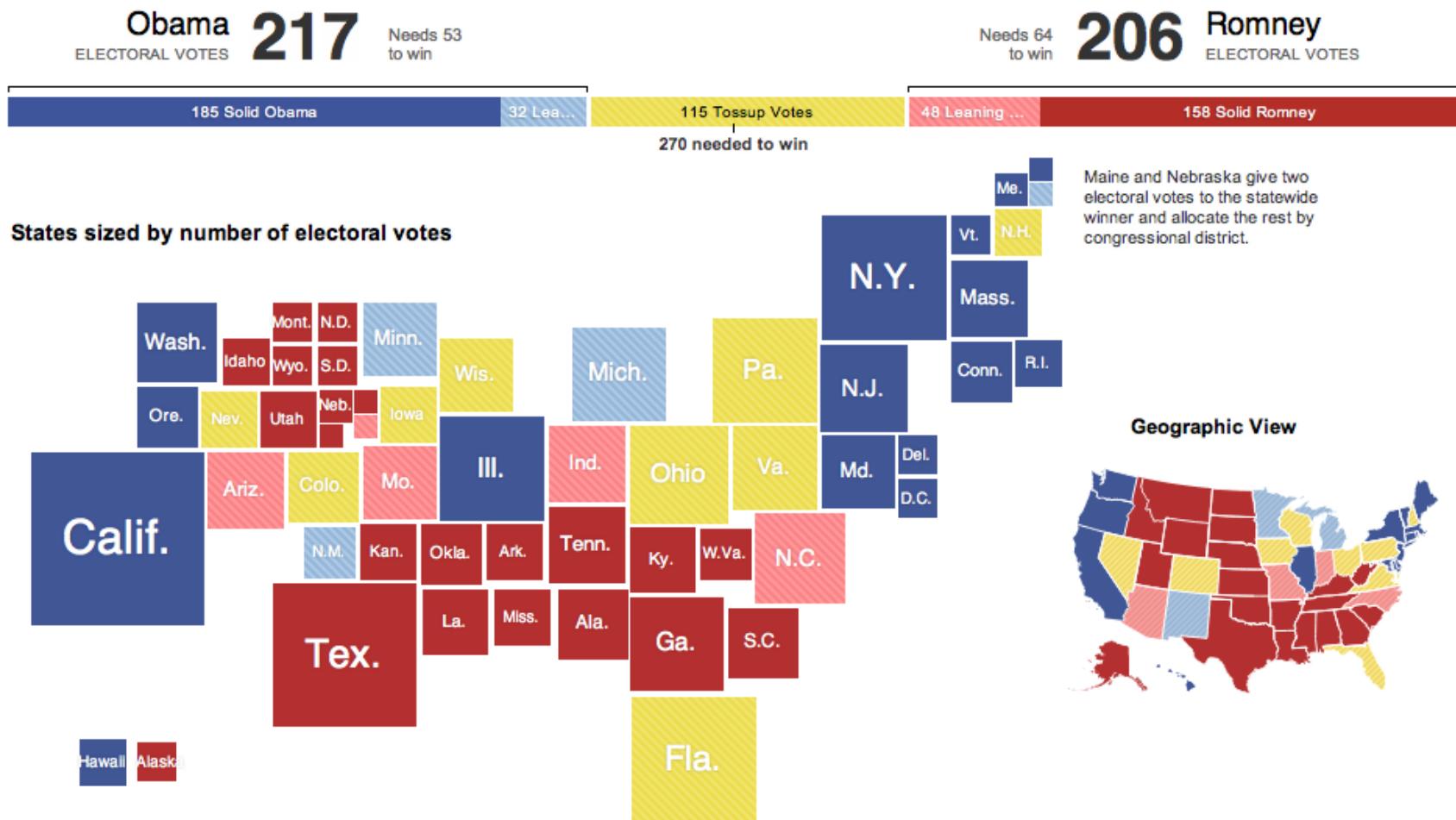
ARROYO

RIO

\* River and creek are the most common stream names in the United States, and appear as shades of gray on this map.



# Cartograms

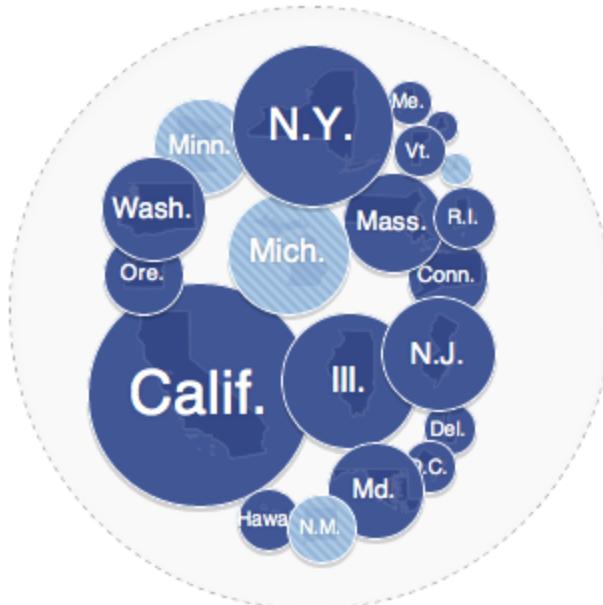


**Maps don't have  
to be maps**

**The Tossups** | If you put the solid and leaning Democratic or Republican states into opposing bins, there are nine states where the election is likely to be decided.

Obama **217**  
ELECTORAL VOTES

Needs 53  
to win



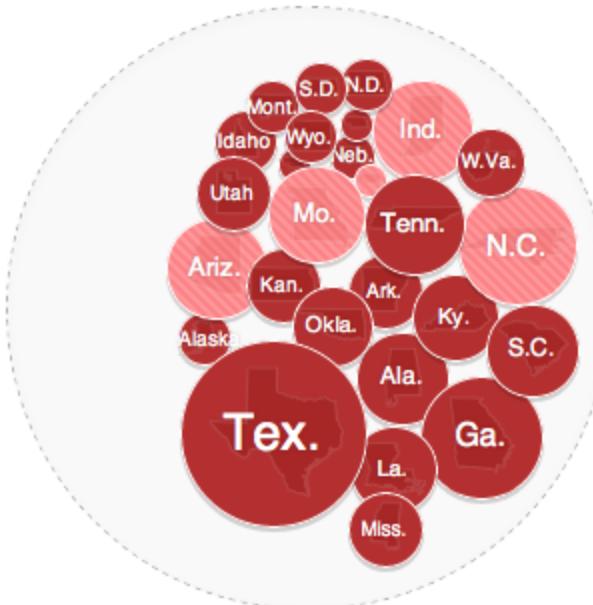
**115**  
Undecided

← Drag circles →



Romney **206**  
ELECTORAL VOTES

Needs 64  
to win



COLOR KEY ■ Solid Obama ■ Leaning Obama ■ Tossup ■ Leaning Romney ■ Solid Romney

