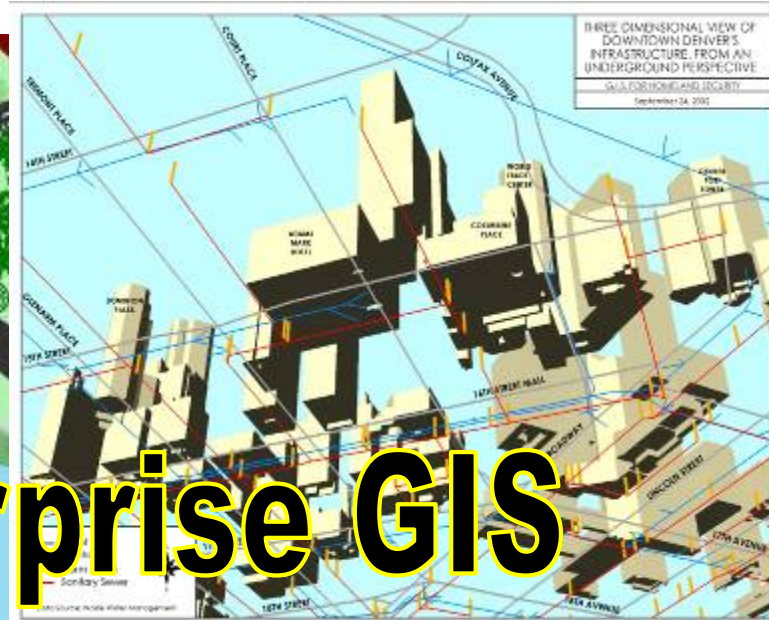


New Cartographies and Geographic Communication Today

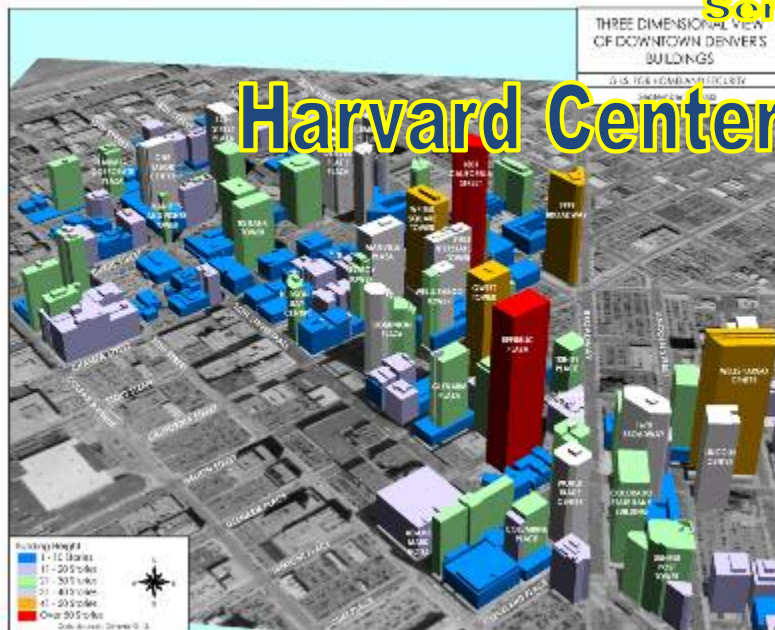
Jeff Blossom
Center for Geographic Analysis
Harvard University

ABCD-GIS Presentation Series
May 29, 2015

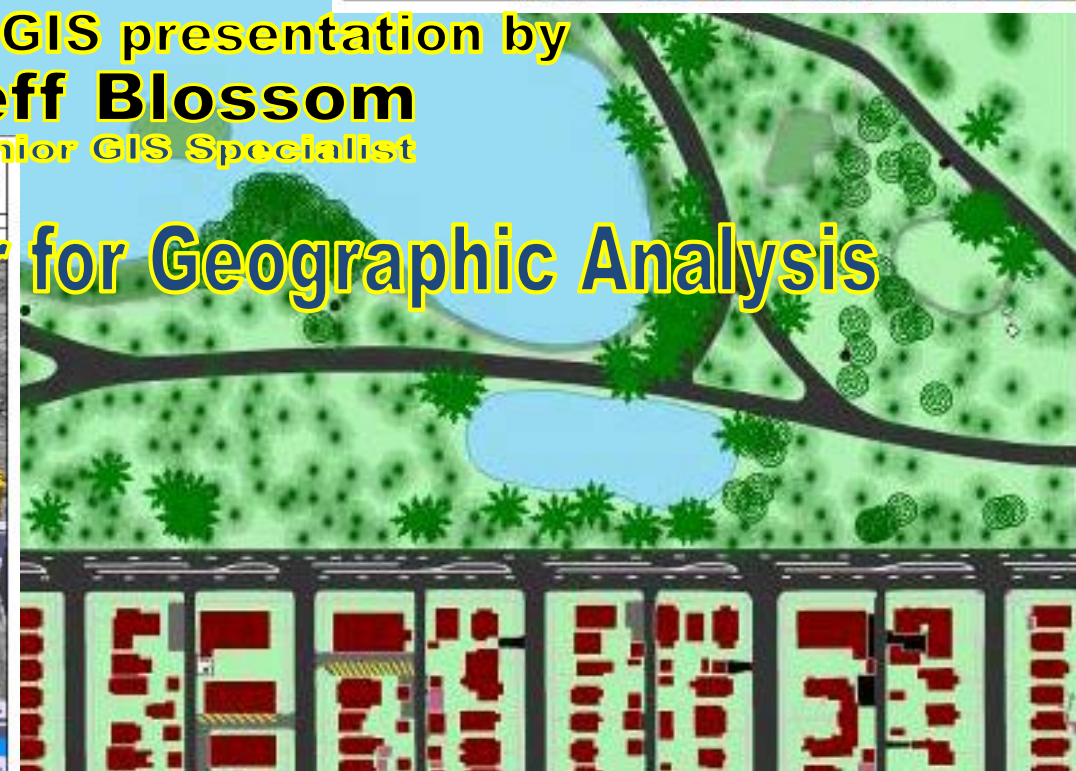


Denver's Enterprise GIS

ABCD – GIS presentation by
Jeff Blossom
 Senior GIS Specialist



Harvard Center for Geographic Analysis





CAVRVS CHORIS VELL IAPVS SIVE ARGESTES

CIRCIVS VELL TRESIAS

SEPTENTRIO VELL APARTIAS

AVSTIO VELL BOREAS

CECIAS APELIOTES

FAVONIUS VELL EPHEIUS

SYPHOLAVS

AFRICVS VELL LIBS

LIBIOTVS EVROAV STER

AVSTRA VELL PHOIVS

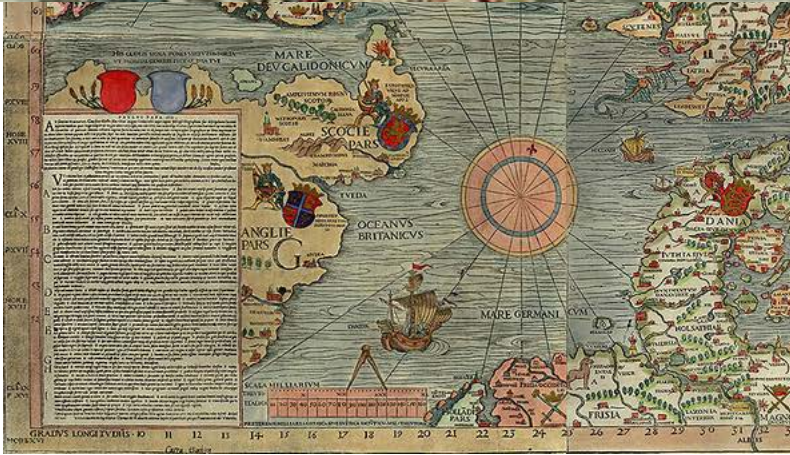
EVROIVS

VLTRIVS EVRVS

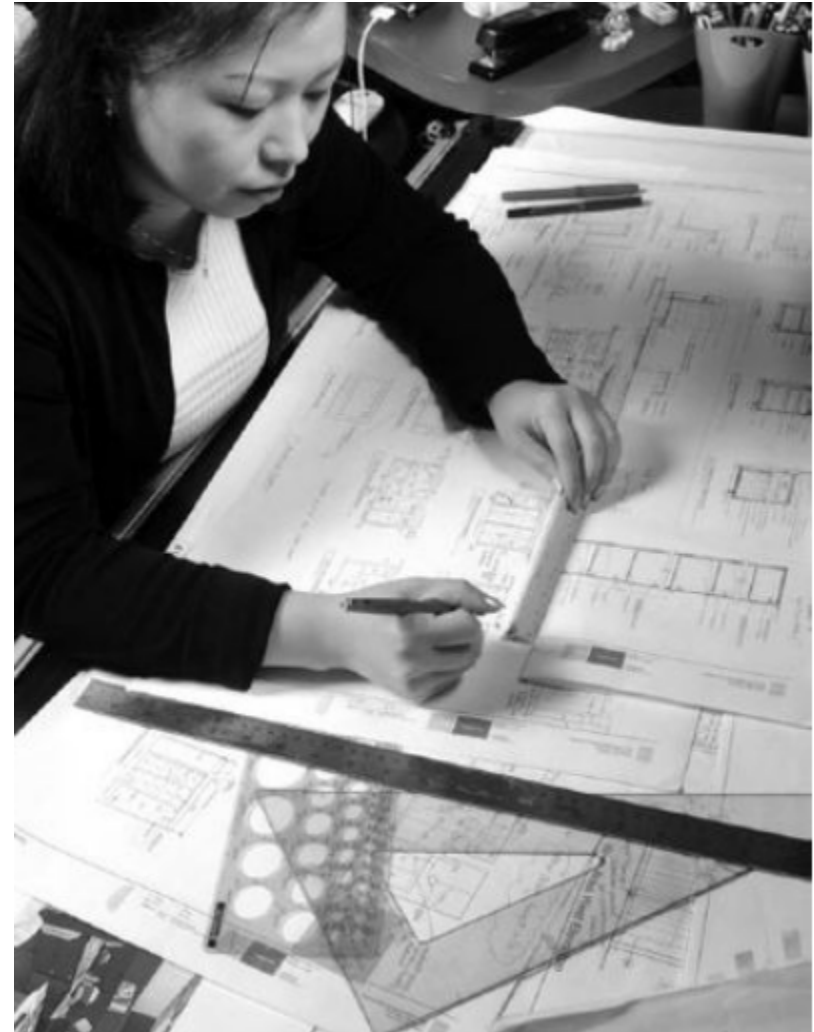
Mappa Mundi et per Johann Schönerer de Nürnberg

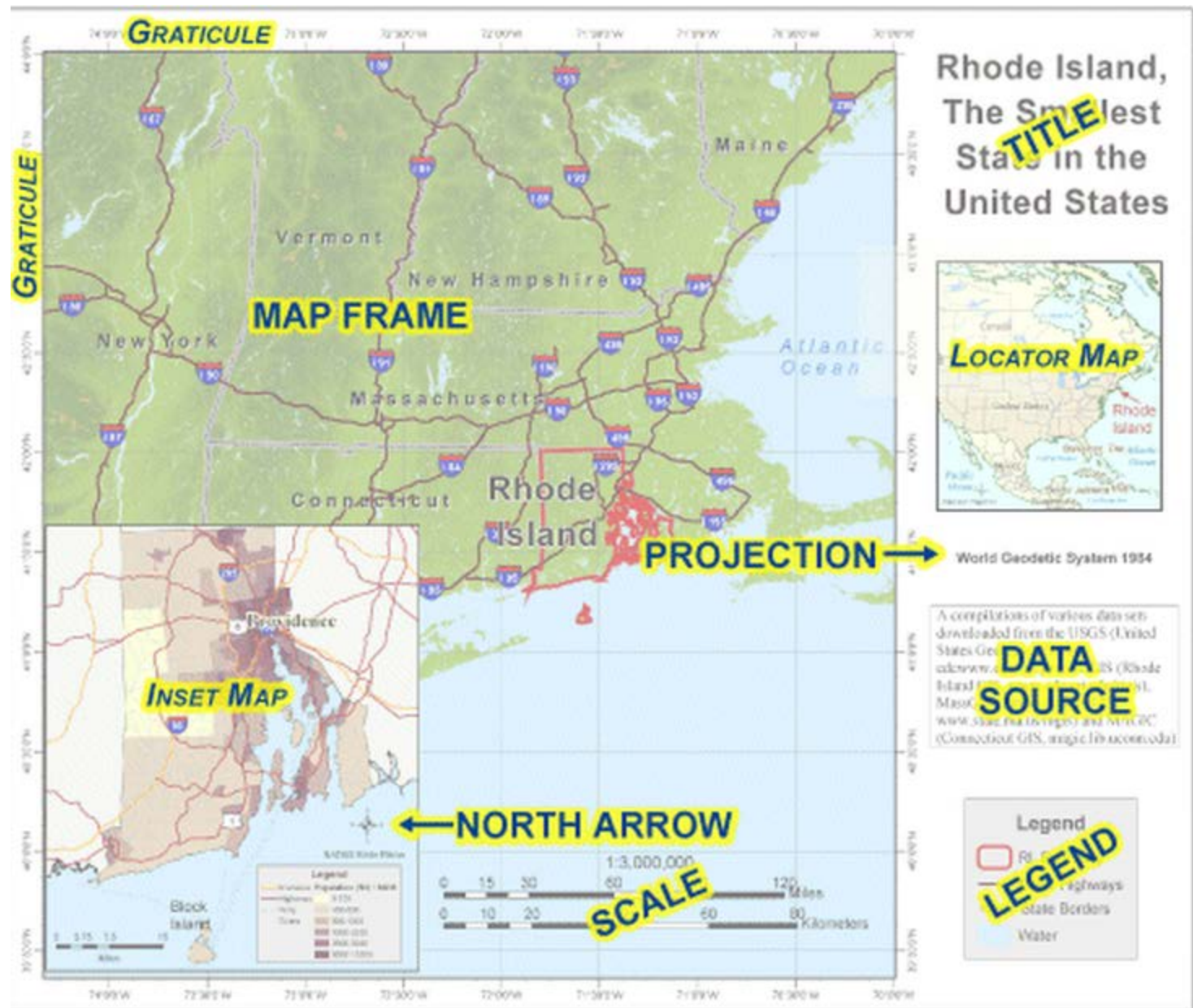
Europa
Asia
Africa
Ethiopia Interior
Libia Interior
Mare Indicum
Mare Atlanticum
Terra Incognita
Terra Australis
Circulus Arcticus
Circulus Equinoctialis
Circulus Antarcticus
Tropicus Cancerum
Tropicus Capricorni

10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200



Traditionally maps were made by cartographers with specialized skills and training.





280 ELM ST GIS IMPERVIOUS INSPECTION REPORT
Routine Investigation
 PERFORMED ON : 7/17/2006



Schedule Number: 73-0607129001000
Investigator: Kathey Swan
Measurement Method: PHOTO2004

Impervious Surface Totals (sq. ft.)	
Building -	2,400
Driveway -	40
Sidewalk -	143
Parking -	0
Other -	349
Grand Total -	2,932
Assessor Parcel Area -	6,250

Legend

- Building
- Driveway
- Other
- Parking
- Pervious
- Sidewalk



Basemap Data

- Streets



The impervious surfaces on this report were mapped from aerial photography. Buildings that appear to lean are common, sometimes appearing offset from the position of their impervious outline. Horizontal accuracy for this photography is +/- 1 foot.



The Job Market

The New Cartographers

By Emily Underwood

March 18, 2013

CREDIT: National Oceanic and Atmospheric Administration/Department of Commerce

Twenty years ago, a driver lost at night would pull his car over, take out a paper map bought at a gas station, and pore over its folds under a dim light. With luck and some critical thinking, he would eventually get where he was going. Today, he'd be more likely to swipe his finger across a smart phone screen and follow directions using Google Maps.

As maps have changed, so have mapmakers. No longer static images, maps have become active interfaces for information exchange, continuously determining where we are

"[F]uture shortages in cartography, photogrammetry, and geodesy seem likely because the number of graduate choices or means of meeting sudden demand." —Future U.S. Workforce for Geospatial Intelligence, a report from

Email Article

Email Editor

Discuss in Forum

Related Articles

Print Article

New York Health Department Restaurant Ratings Map

FACEBOOK TWITTER GOOGLE+ E-MAIL SHARE

The New York City Department of Health and Mental Hygiene performs unannounced sanitary inspections of every restaurant at least once per year. Violation points result in a letter grade, which can be explored in the map below, along with violation descriptions. The information on this map will be updated every two weeks. For menus and reviews by New York Times critics, visit our restaurants guide. [Related Article](#)

FIND A RESTAURANT

FIND A LOCATION

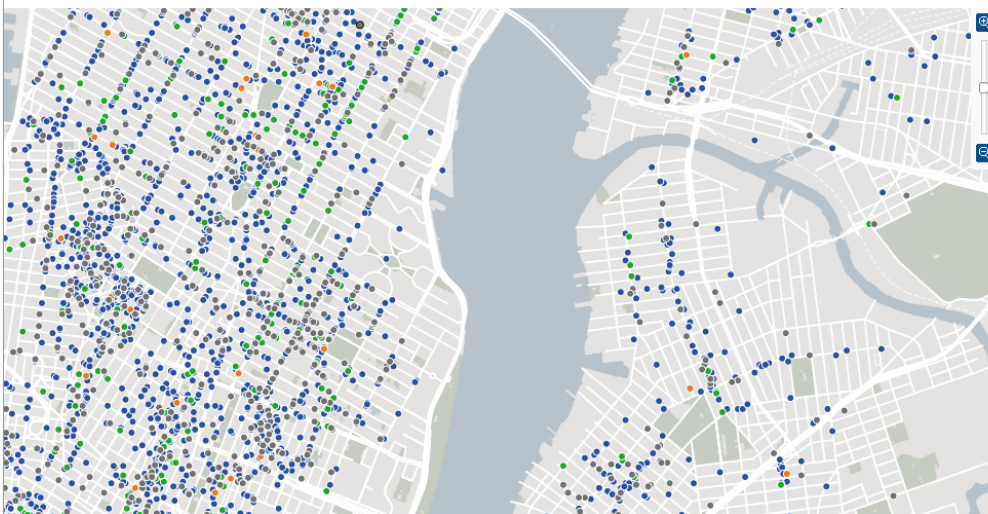
FILTER

Search Name of restaurant

All grades

All violations

All cuisines



“Ghost Rides” and Block Cartograms

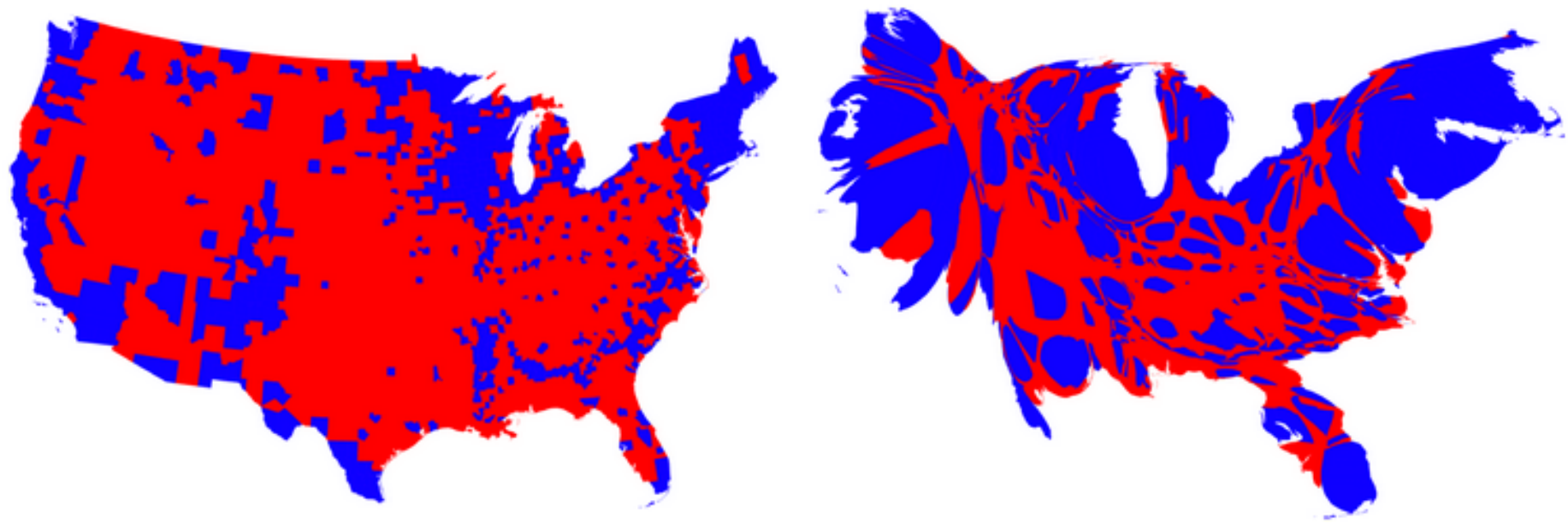
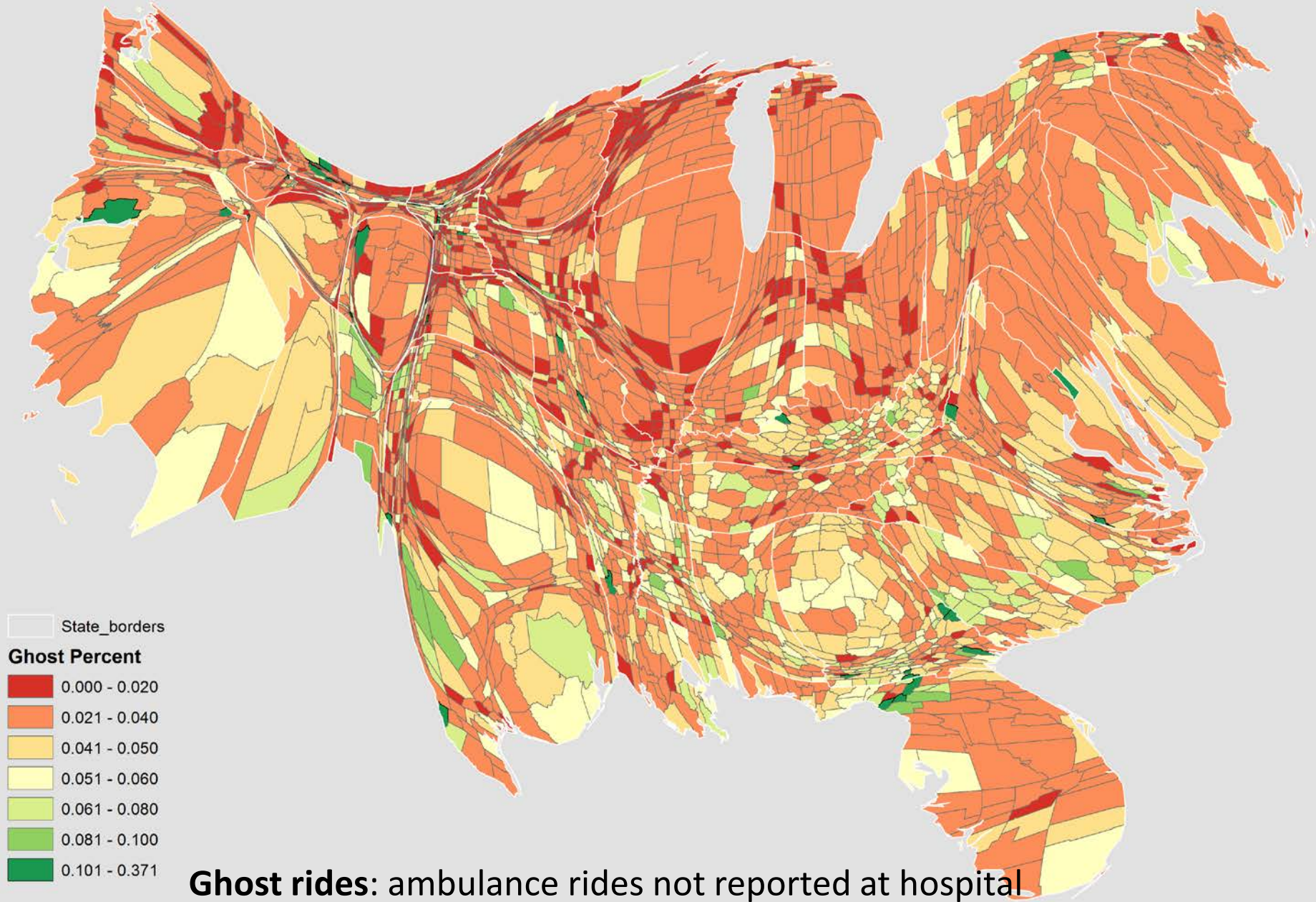
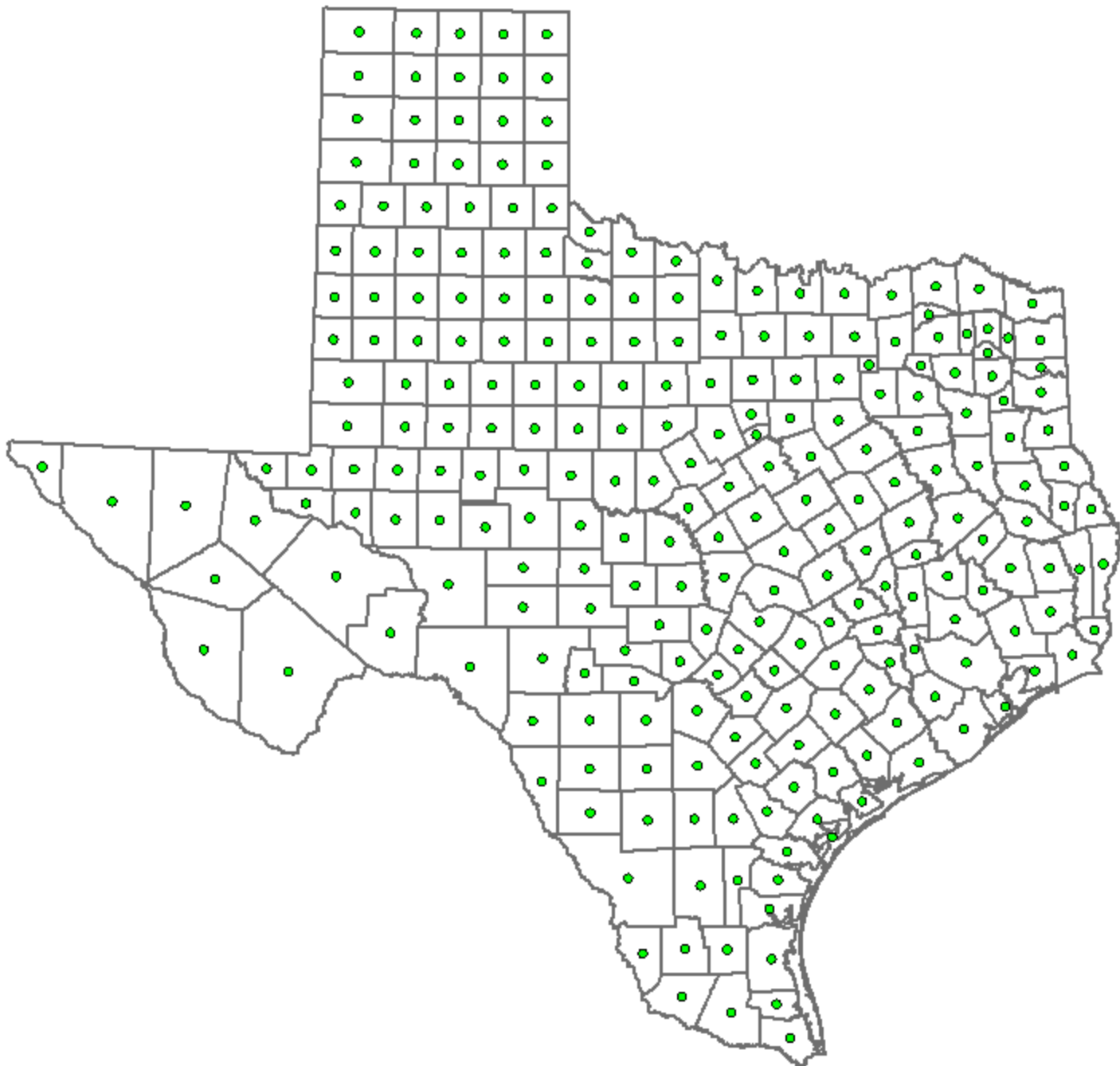


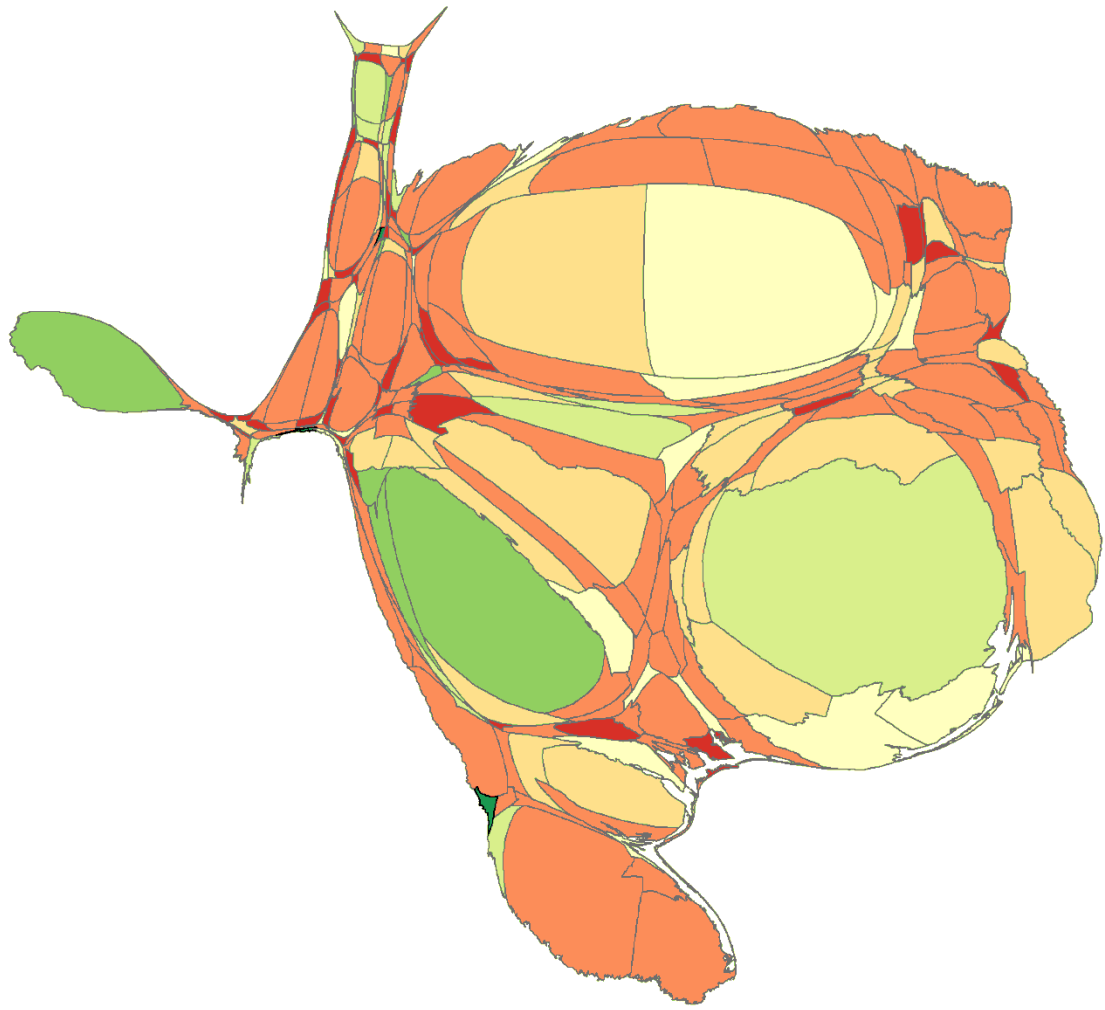
Figure 3.30: Election results by county with red signifying a republican majority and blue a democratic majority (left) and cartogram skewing the counties by their respective populations (right).

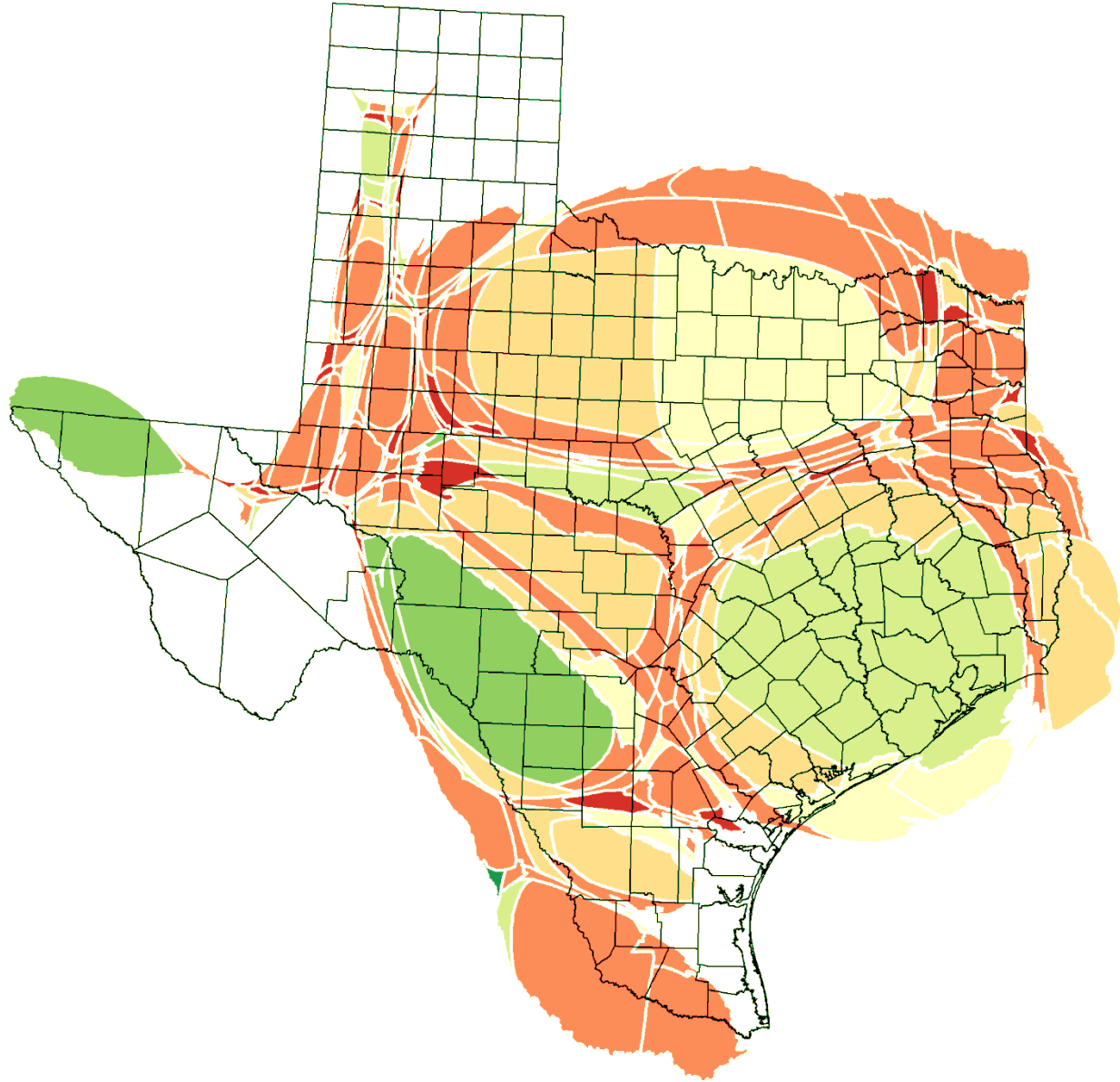


Ghost rides: ambulance rides not reported at hospital
Size of counties adjusted to **total rides**
project for Prachi Sanghavi









Election Results

RESULTS: THE PRESIDENCY

RESULTS: THE SENATE

RESULTS: THE HOUSE

RESULTS: THE GOVERNORS

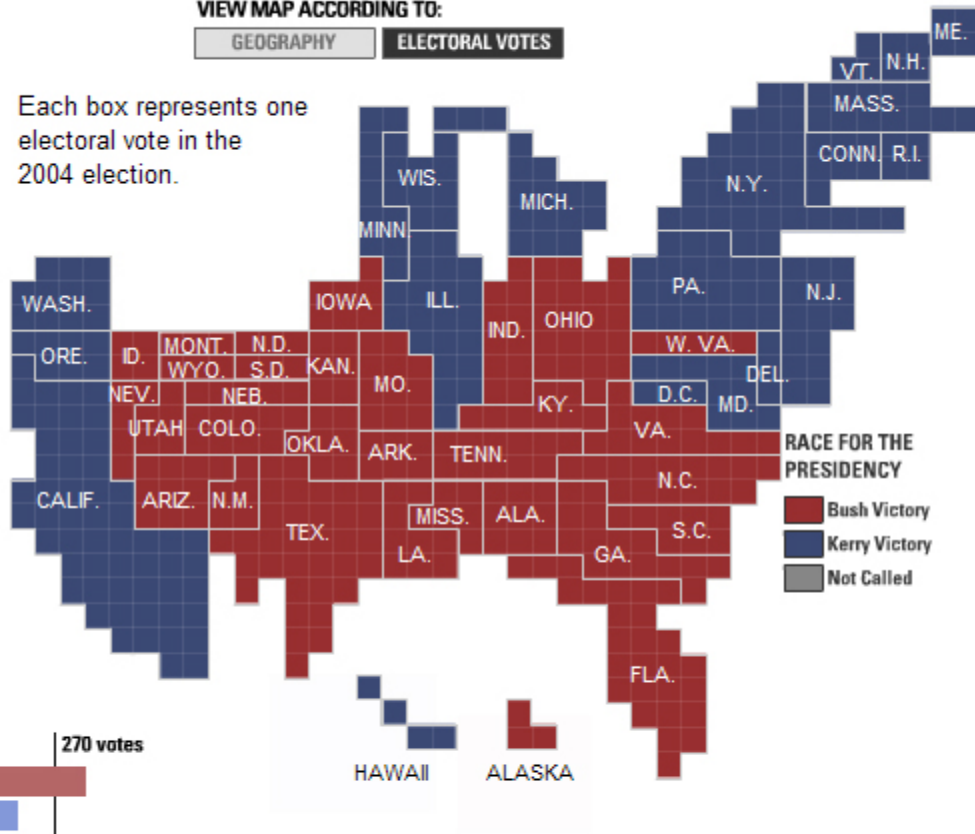
PREVIOUS ELECTIONS

VIEW MAP ACCORDING TO:

GEOGRAPHY

ELECTORAL VOTES

Each box represents one electoral vote in the 2004 election.



ELECTORAL VOTES

0 not assigned

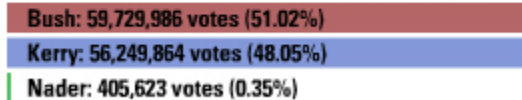
270 votes



THE POPULAR VOTE

100.0% of precincts reporting

50%



Touch to view

1960 Population

2011 Population

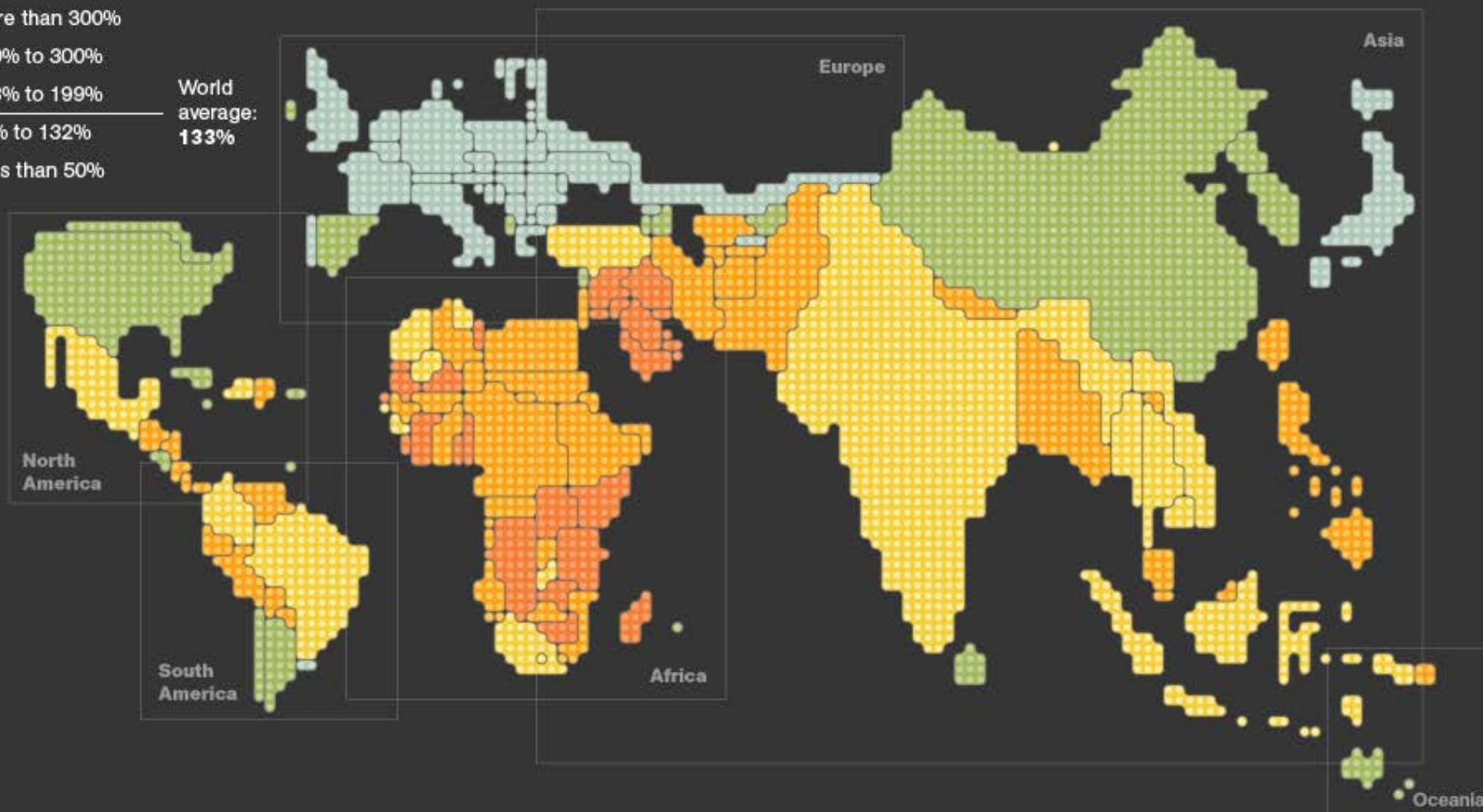
Color shows amount of growth from 1960 to 2011.

- More than 300%
- 200% to 300%
- 133% to 199%
- 50% to 132%
- Less than 50%

World average:
133%

Each country is sized according to its projected population in 2011. Each dot represents two million people. Nations with populations under 1.5 million are not shown.

Tap map regions to view more



Cartography Tools

Annotation

Cartographic Refinement

- Align Marker To Stroke Or Fill
- Calculate Line Caps
- Calculate Polygon Main Angle
- Create Overpass
- Create Underpass
- Disperse Markers
- Set Representation Control Point At Intersect
- Set Representation Control Point By Angle

Data Driven Pages

Generalization

- Aggregate Points
- Aggregate Polygons
- Collapse Dual Lines To Centerline
- Collapse Road Detail
- Create Cartographic Partitions
- Delineate Built-Up Areas
- Merge Divided Roads
- Simplify Building
- Simplify Line
- Simplify Polygon
- Smooth Line
- Smooth Polygon
- Thin Road Network

Graphic Conflicts

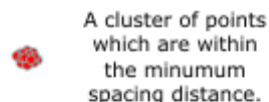
Grids and Graticules

Masking Tools

Representation Management

Disperse Markers

Finds representation markers that are overlapping or too close to one another and spreads them apart based on a minimum spacing and dispersal pattern.



Expanded



Random



Squares



Rings



Square



Ring



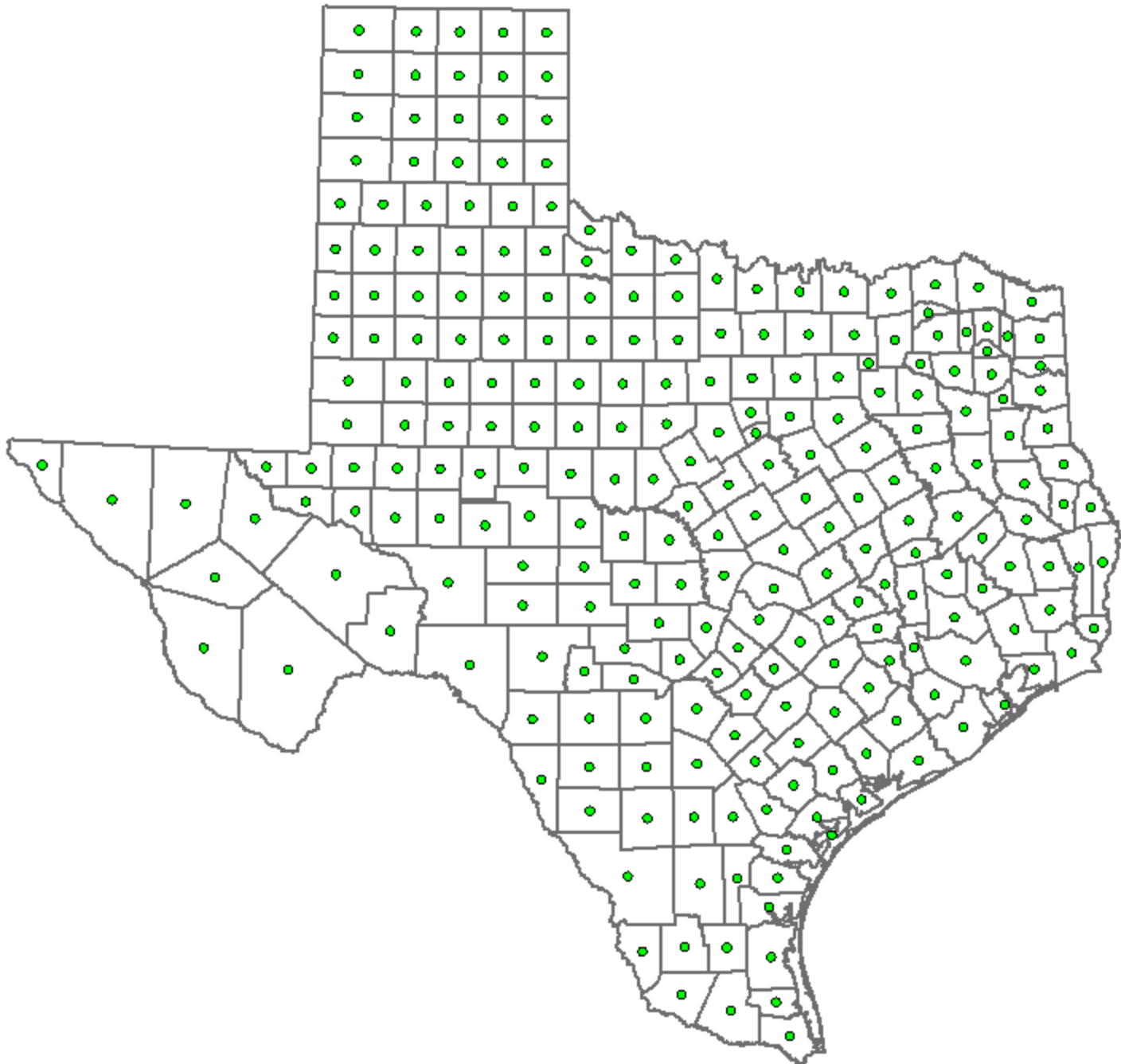
Cross

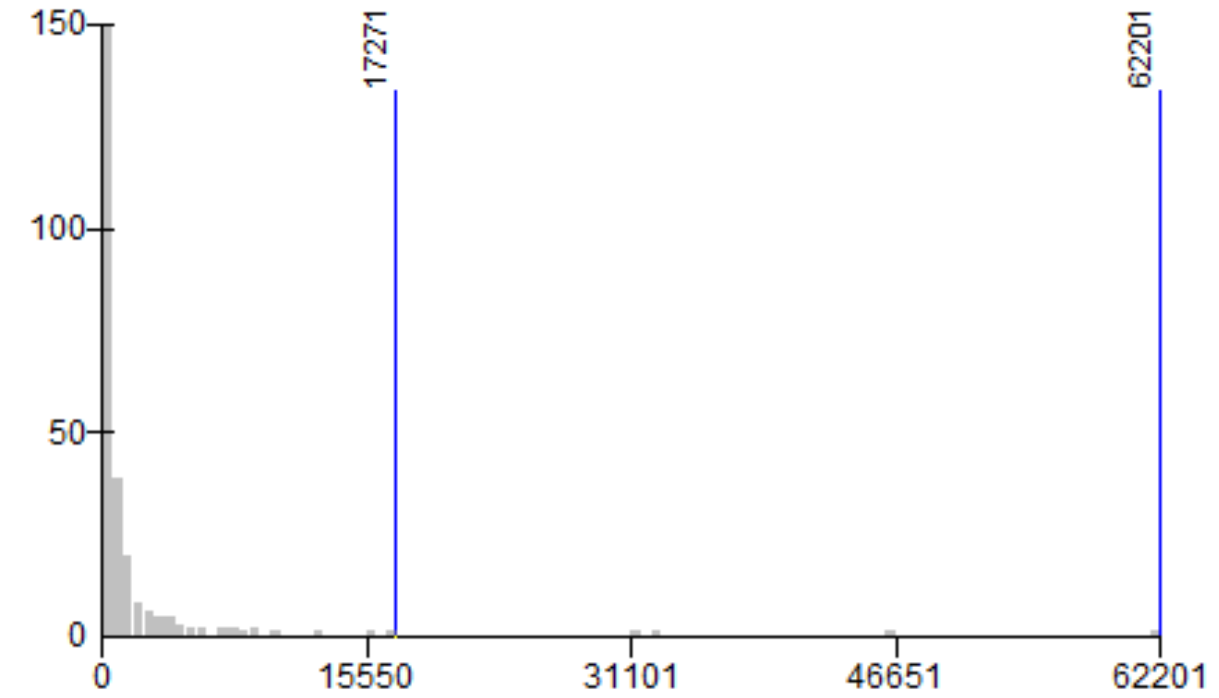


X-Cross



Tool Help



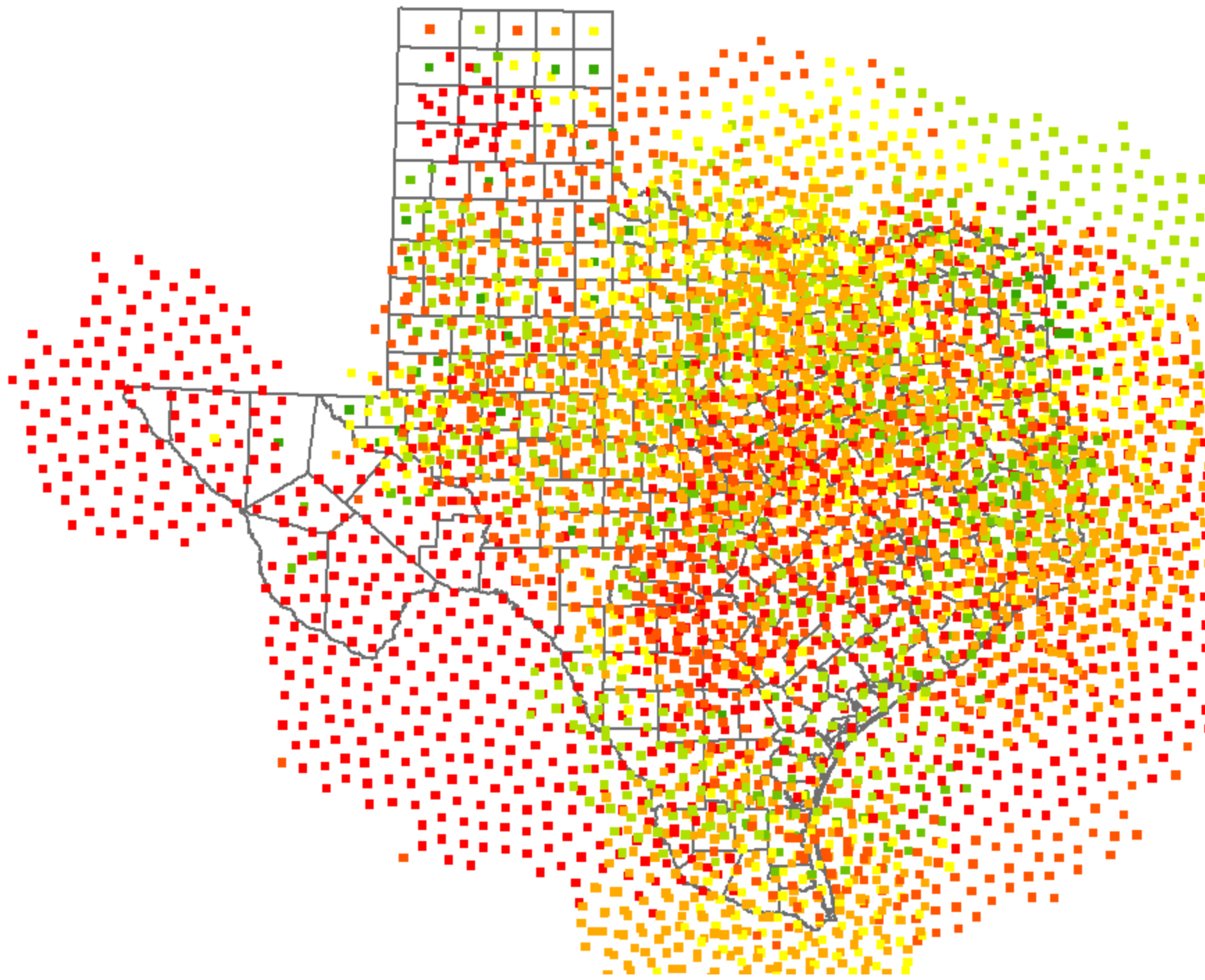


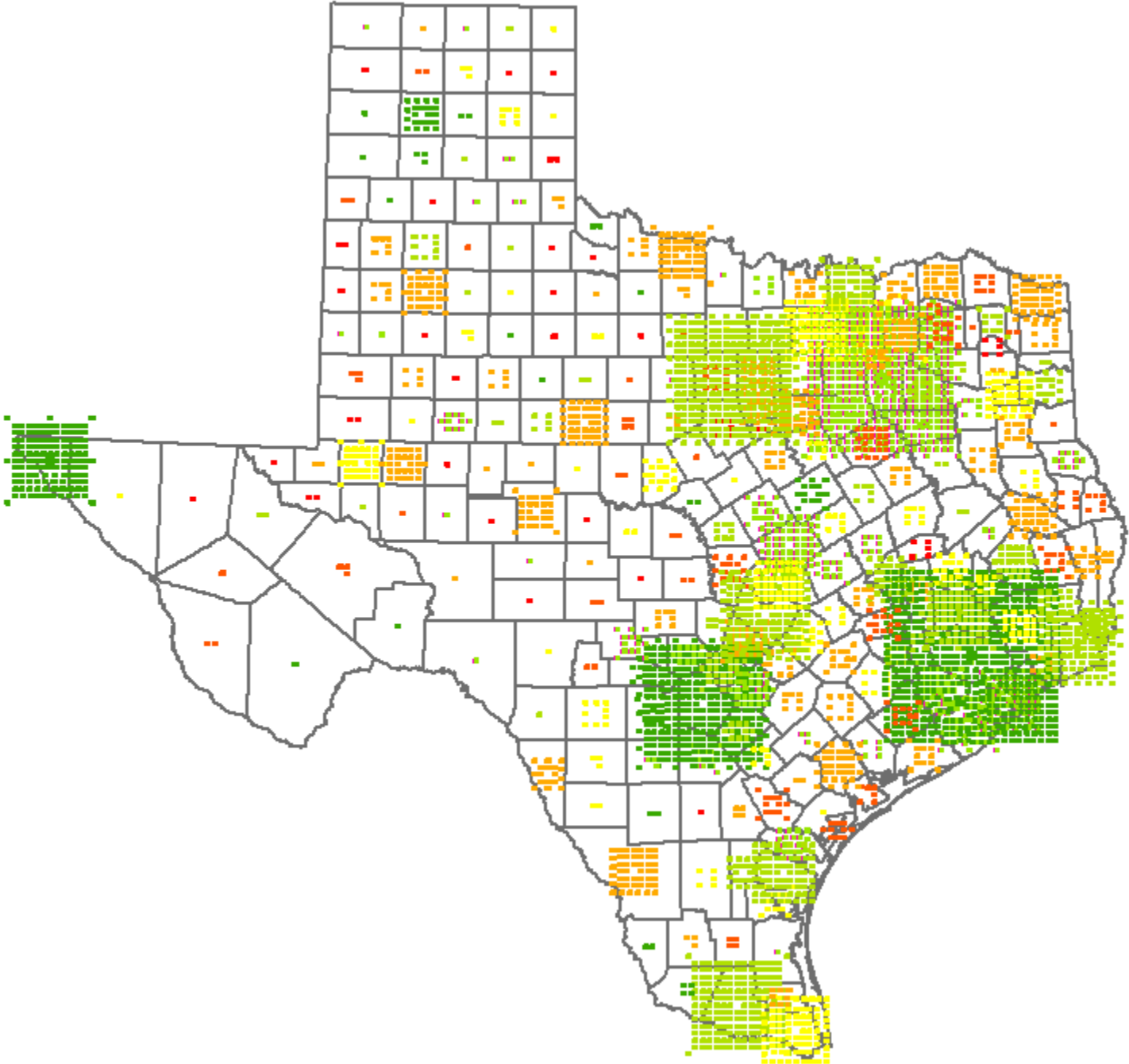
Max total rides: 62,201

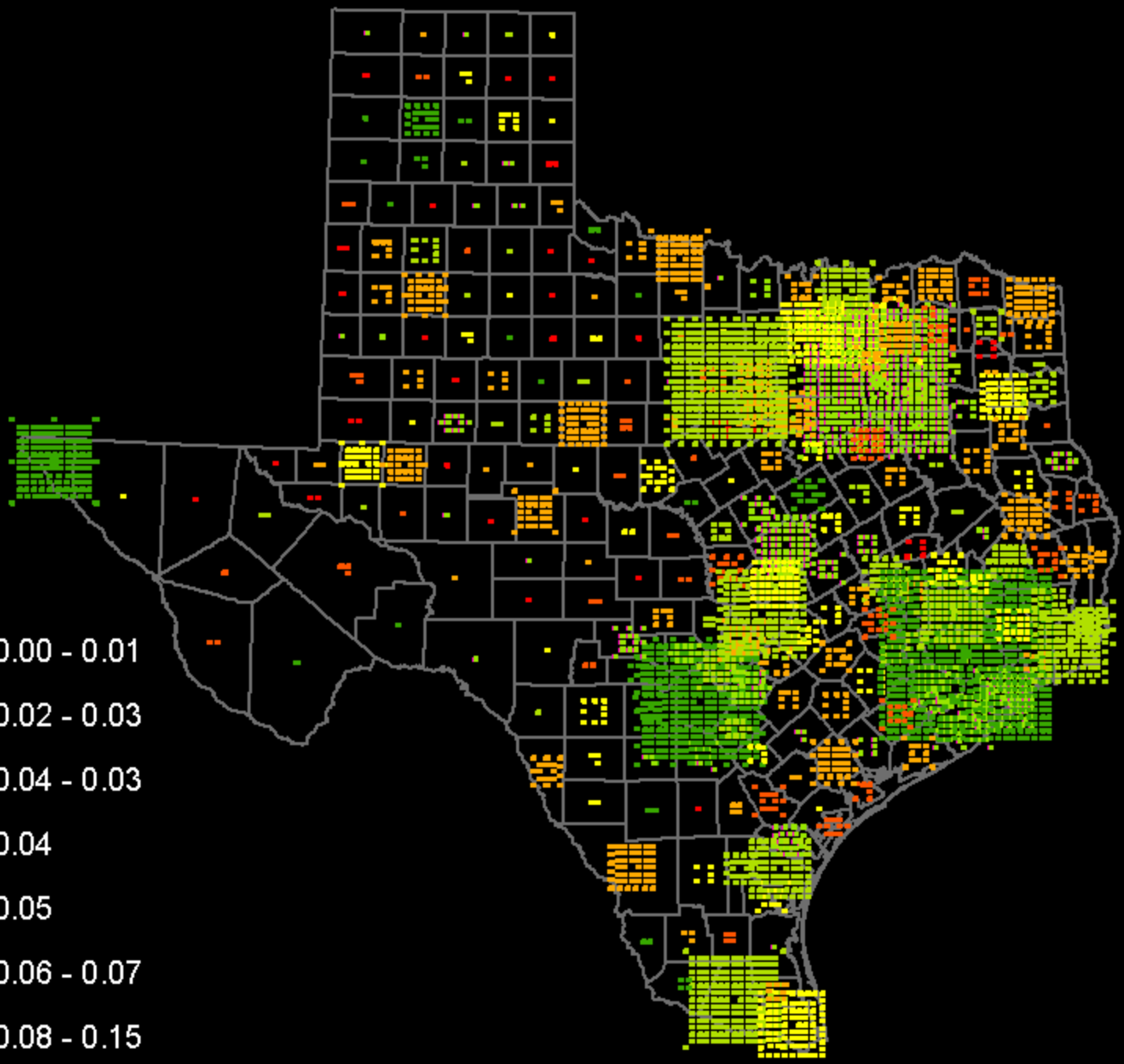
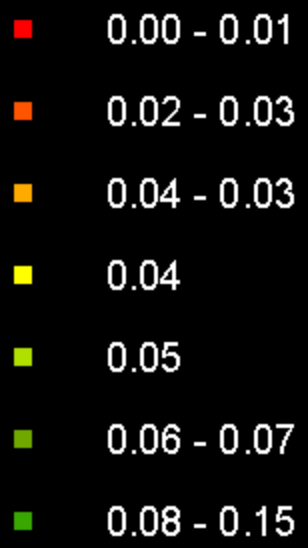
Many with less than 50

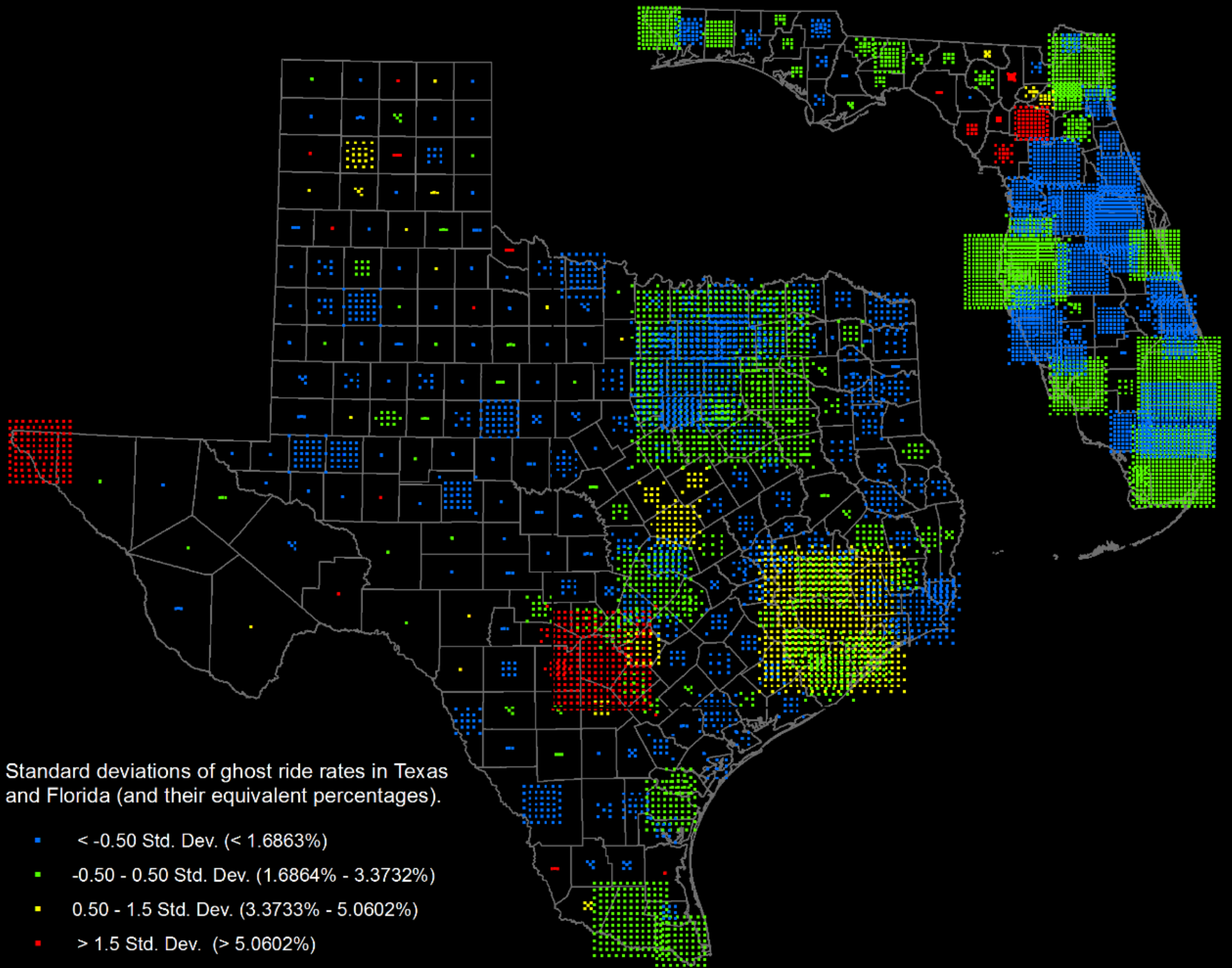
OBJECTID	NAME	county_Cou	Ghost_Perc	POINT_X	POINT_Y	RuleID	squares
71	Hemphill County	12	0	975534.575	1517555.983	1	1
72	Hidalgo County	17271	0.038909154	1181728.789	473315.2481	1	173
73	Hockley County	628	0.02866242	782821.4142	1272484.33	1	6
74	Howard County	1013	0.050345508	865073.7253	1126955.873	1	10
75	Hutchinson County	341	0.038123167	877465.8581	1518549.443	1	3
76	Irion County	21	0	906673.9769	1015593.808	1	1
77	Jack County	58	0.034482759	1170077.678	1230141.573	1	1
78	Jim Hogg County	286	0.031468531	1129305.976	544303.38	1	3
79	Jones County	191	0.041884817	1011345.593	1174097.67	1	2
80	Kendall County	953	0.047219307	1124147.77	865522.688	1	10
81	Kent County	57	0.122807018	927595.163	1223230.519	1	1
82	Kerr County	1422	0.047819972	1062564.712	877927.592	1	14
83	Kimble County	186	0.021505376	1024085.042	924816.0762	1	2
84	King County	0	0	976287.8026	1271189.996	1	1
85	Kinney County	78	0.038461538	959478.1653	799089.0372	1	1
86	Knox County	132	0.03030303	1023971.88	1270045.408	1	1
87	Lamb County	566	0.026501767	783117.3923	1323563.03	1	6

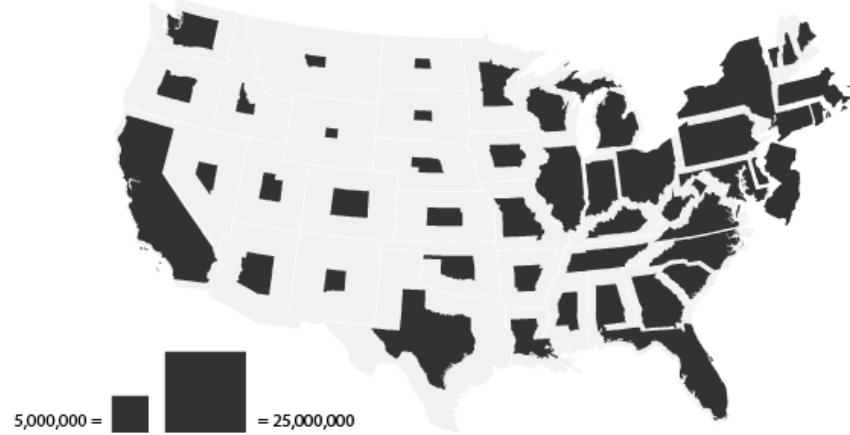
Excel macro created one line for each Square needed







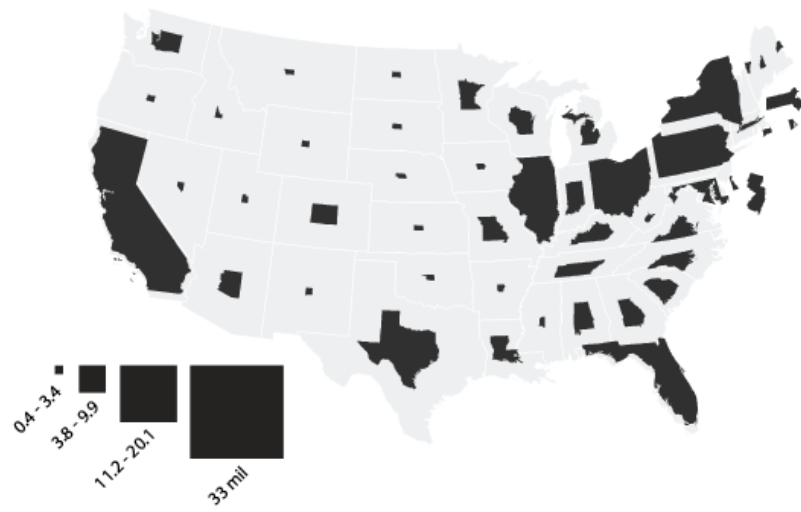




The above is a normal, unclassed cartogram showing U.S. population. Notice the continuous range of state areas, shown below in order of population (but smaller).



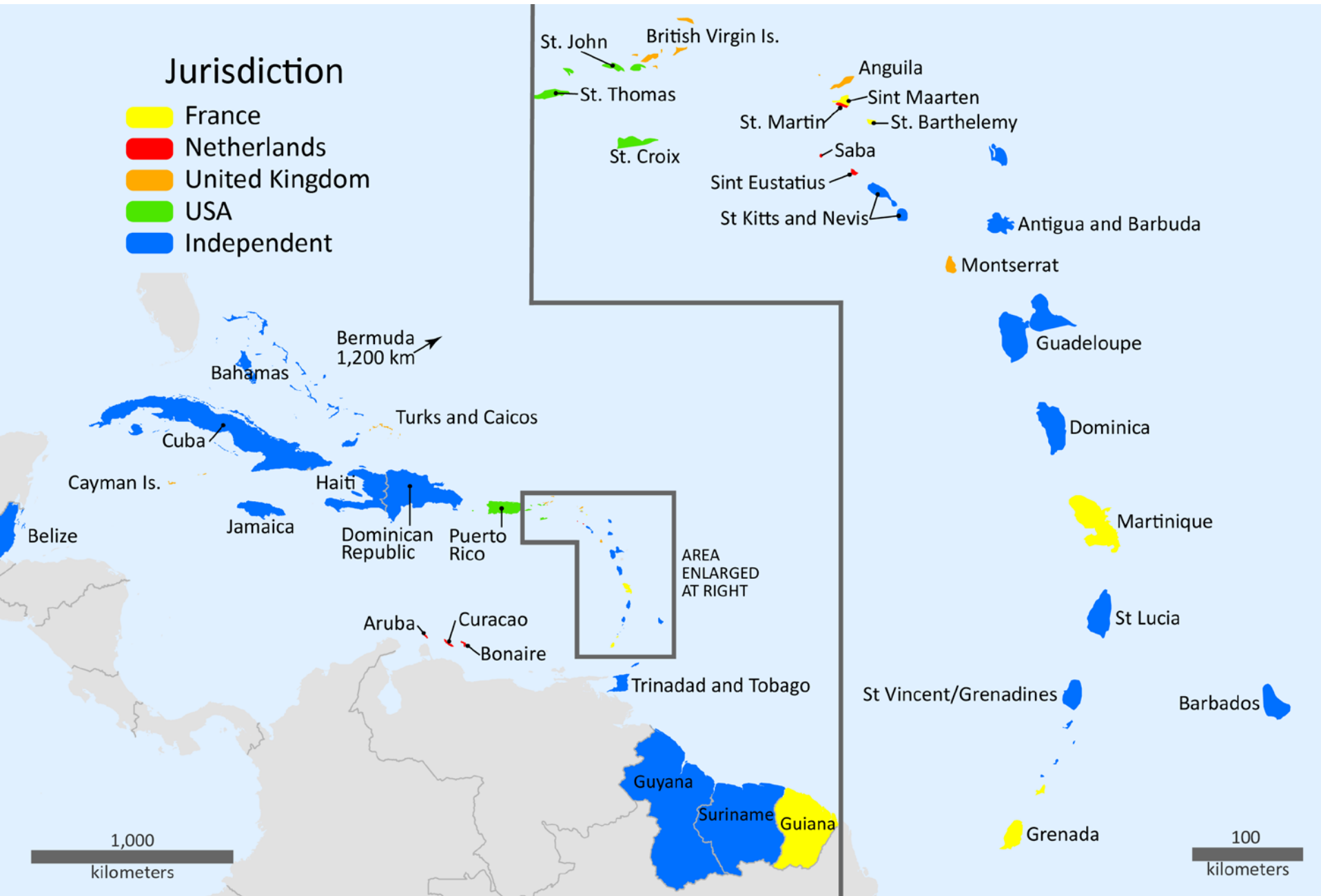
Despite the two legend chips, I think it's quite difficult to estimate the population of states with any degree of precision. The following classed cartogram abandons precision in favor of a more easily and quickly interpreted map.



Caribbean Sovereignty

Jurisdiction

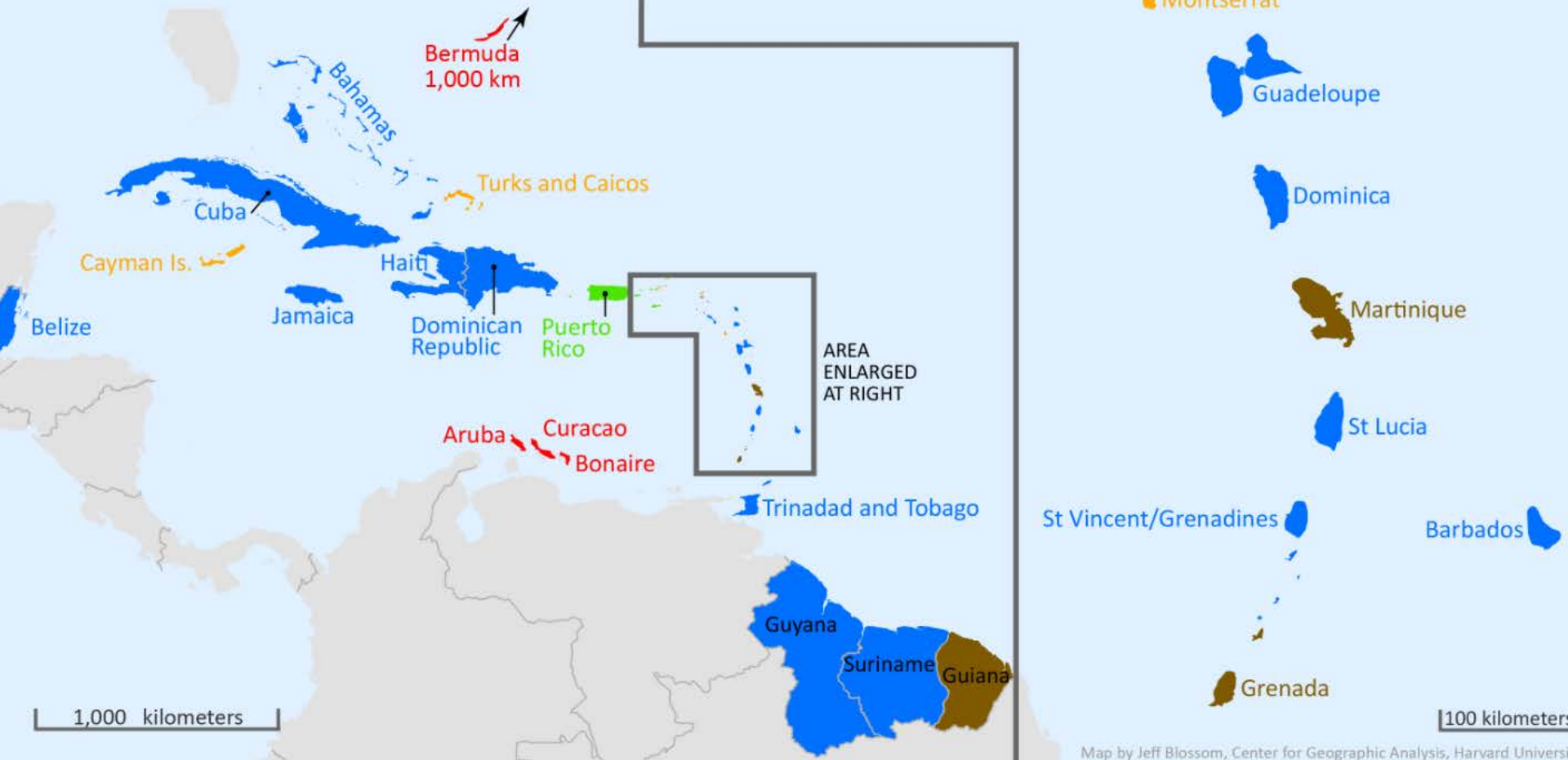
- France
- Netherlands
- United Kingdom
- USA
- Independent



Caribbean Jurisdictions

- France
- United Kingdom
- Netherlands
- USA
- Independent

Some small islands are rendered larger than their actual size.



CARIBBEAN JURISDICTIONS

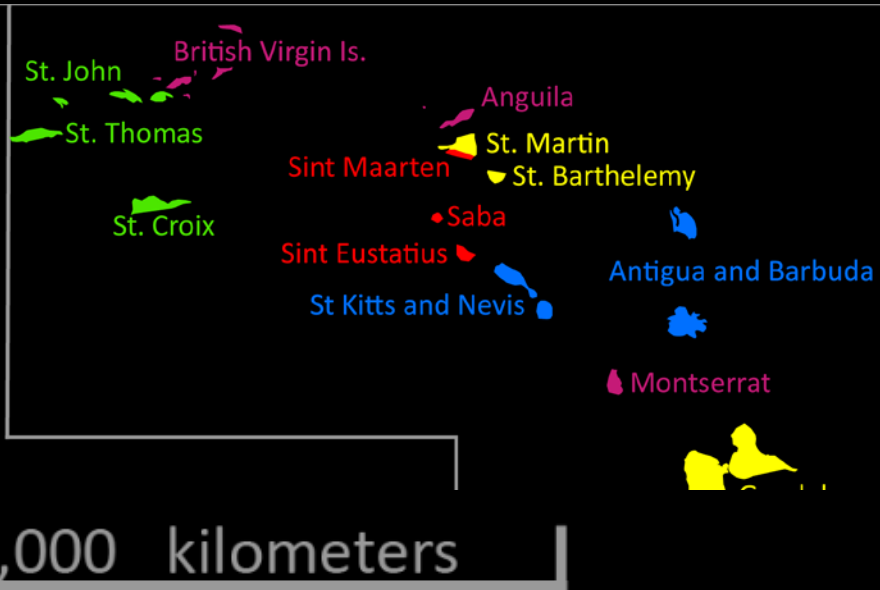
INDEPENDENT

FRANCE

NETHERLANDS

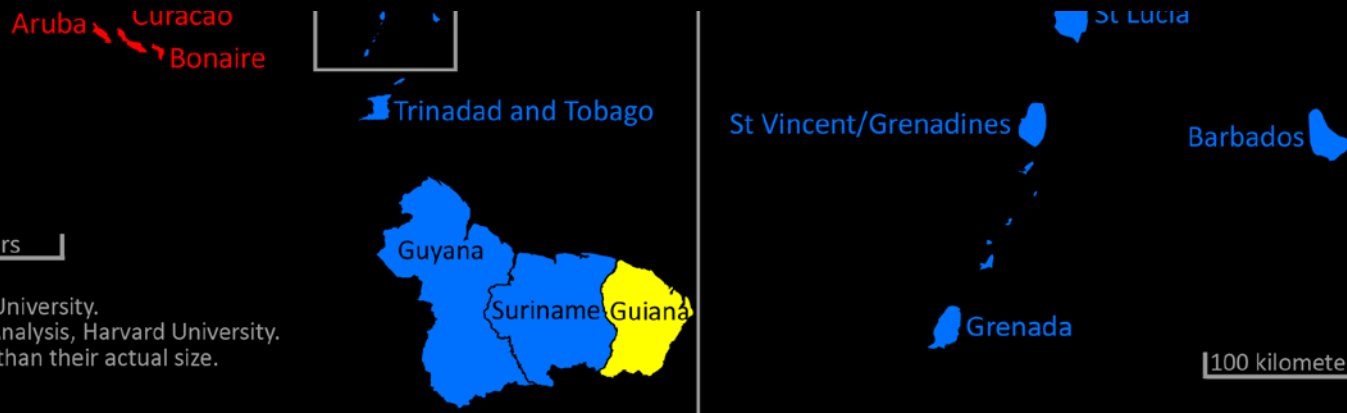
UNITED STATES

UNITED KINGDOM



By Yarimar Bonilla, Rutgers University.

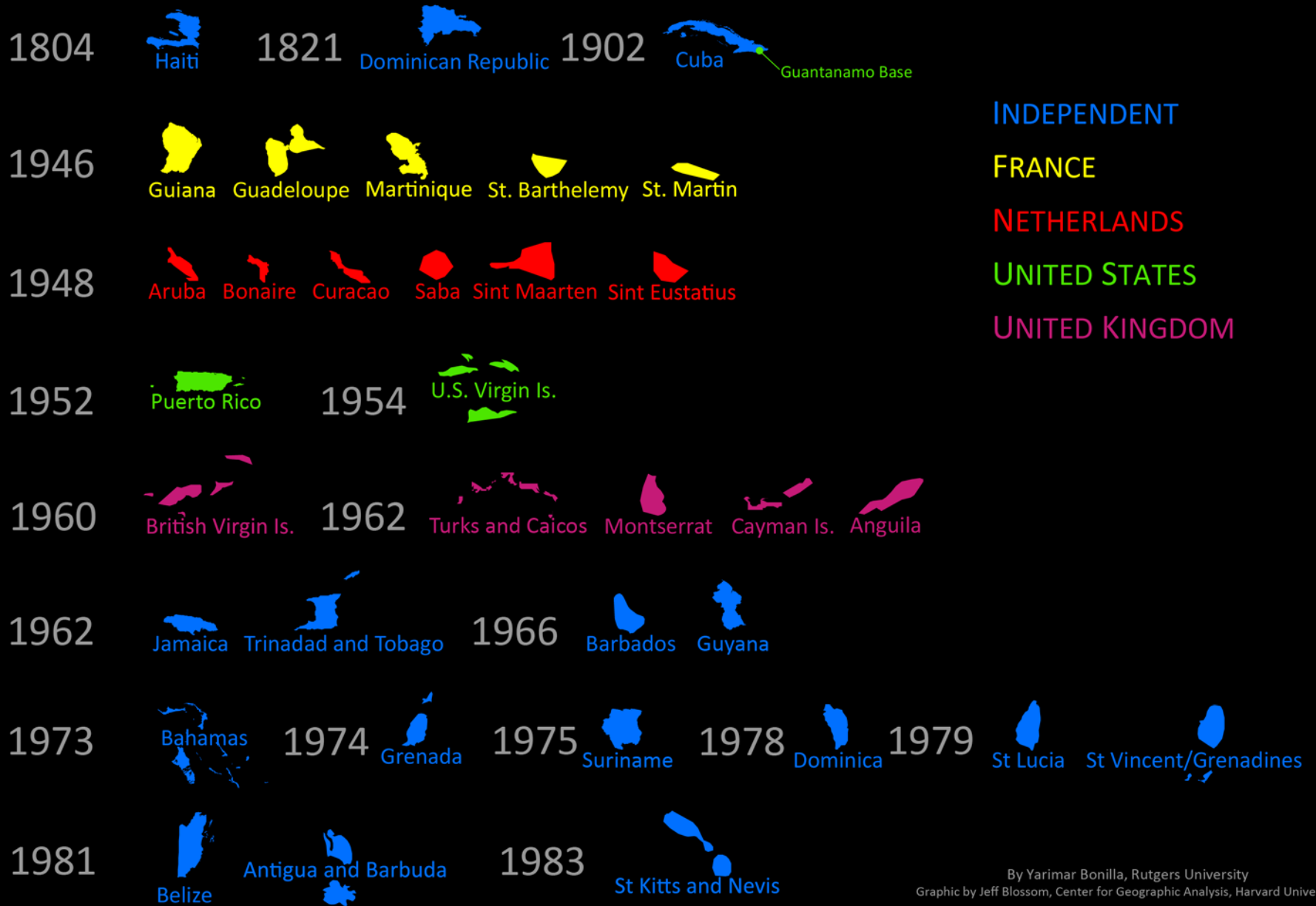
Map by Jeff Blossom, Center for Geographic Analysis, Harvard University.
Some small islands are rendered at a larger geographic scale.



By Yarimar Bonilla, Rutgers University.

Map by Jeff Blossom, Center for Geographic Analysis, Harvard University.
Some small islands are rendered larger than their actual size.

100 kilometers



INDEPENDENT

FRANCE

NETHERLANDS

UNITED STATES

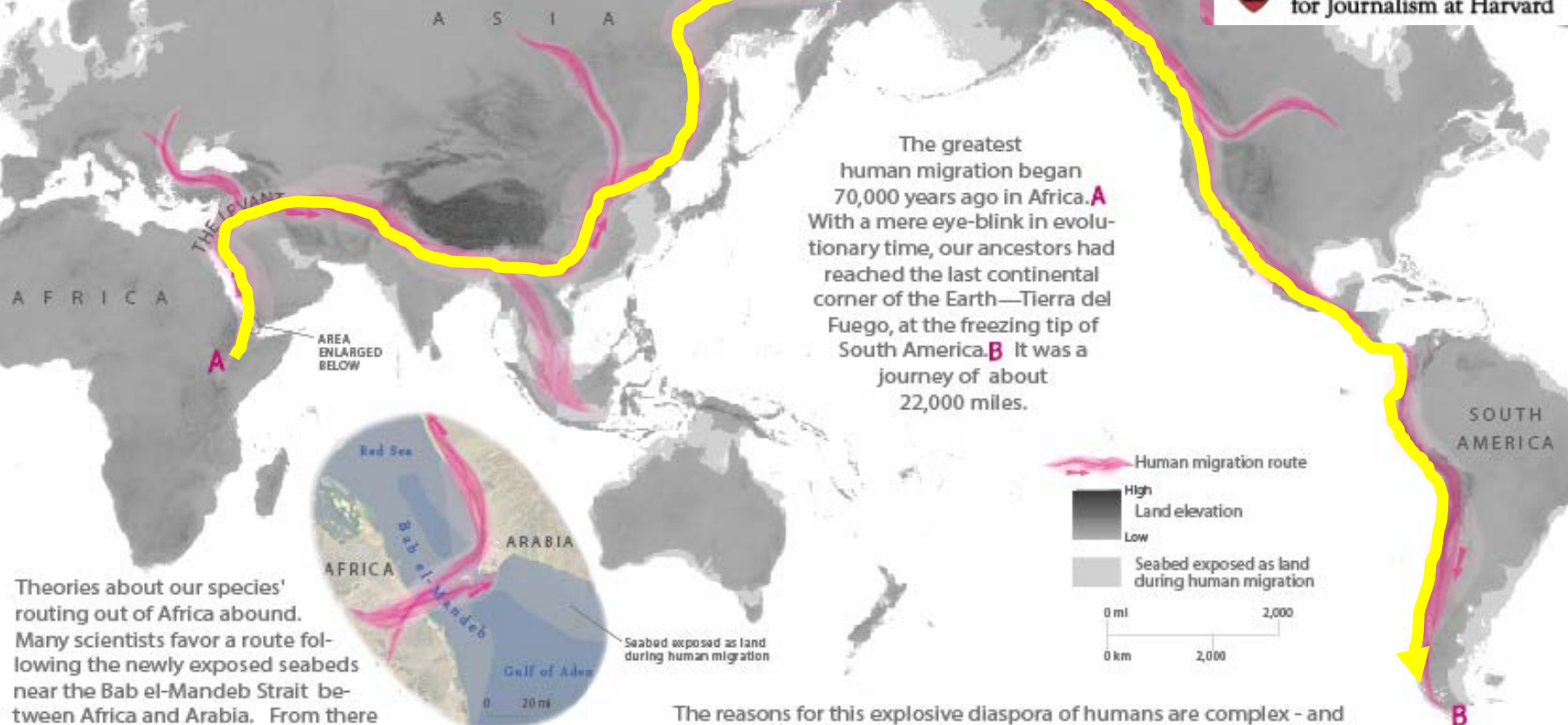
UNITED KINGDOM

THE GREATEST WALK

OUT of EDEN WALK *a journey through time*



 **Nieman Foundation**
for Journalism at Harvard



The greatest human migration began 70,000 years ago in Africa. **A** With a mere eye-blink in evolutionary time, our ancestors had reached the last continental corner of the Earth—Tierra del Fuego, at the freezing tip of South America. **B** It was a journey of about 22,000 miles.

Theories about our species' routing out of Africa abound. Many scientists favor a route following the newly exposed seabeds near the Bab el-Mandeb Strait between Africa and Arabia. From there our ancestors spread into the Levant, Europe and Asia before finally reaching land's end in the Americas.

The reasons for this explosive diaspora of humans are complex - and the topic of much debate. Many scientists point to a drop in sea levels, creating land bridges for early wanderers to trudge across. This map uses sea floor elevation data to depict this drop in sea level.

A WALK THROUGH TIME





Mapping The Walk

Kyrenia

LEFKOSIA

Larnaca

Limassol



October, 2014

December, 2013

January, 2013

Miles travelled to date: 3,182
— 2,103 walking
— 1,079 boating



Donor Map: *A cartographic award*

Donors' Map

This ever-expanding Out of Eden Walk map recognizes all our friends who have sponsored a Milestone (Navigator) or a mile of the journey (Walking Partner) during our grassroots fundraising campaigns. Paul Salopek's trek along the ancient pathways of the ancestors would not be possible without the kind support of our global community of fellow wanderers.

Click on your name (list below) or directly on the route map to locate which Milestone or stretch of the walking trail through Eurasia you sponsored. Zoom in: Every coastline, town, river valley and mountain pass along the way was touched by one of you.

Thank you for walking along. We will organize crowd funding drives every summer to keep this collective journey going. We encourage you to get involved along any step of the way to to humankind's finish line at Tierra del Fuego.

Share this: [Twitter](#) · [Facebook](#) · [Google+](#)

▾ Navigator (Milestone) Donors

- [Darren Woody](#)
- [Kay A. Schmid](#)
- [Lisa Lewis](#)
- [Paul Schneider](#)
- [Sam Kirley](#)
- [William Lynch](#)
- [Wynn Kramarsky](#)

▾ Walking Partner Donors

- [Ahmed Kabil](#)
- [Alan Crowther](#)
- [Amir Karger](#)
- [Ana D Lopez](#)
- [Angelica Curtis](#)
- [Ann Green](#)



Manualize it



NACIS2014Pittsburgh

OCTOBER 8-11 CARTOGRAPHY AND TIME



PITTSBURGH,
PENNSYLVANIA.
1902.

BRINGING HISTORIC MAPS TO LIFE



1852



1894




1902

MATTHEW HAMPTON

NACIS 2014

Map creation for David Bindman's book "Image of the Black in African and Asian Art"



**IMAGE OF THE BLACK
IN AFRICAN AND ASIAN ART
WORKSHOP**

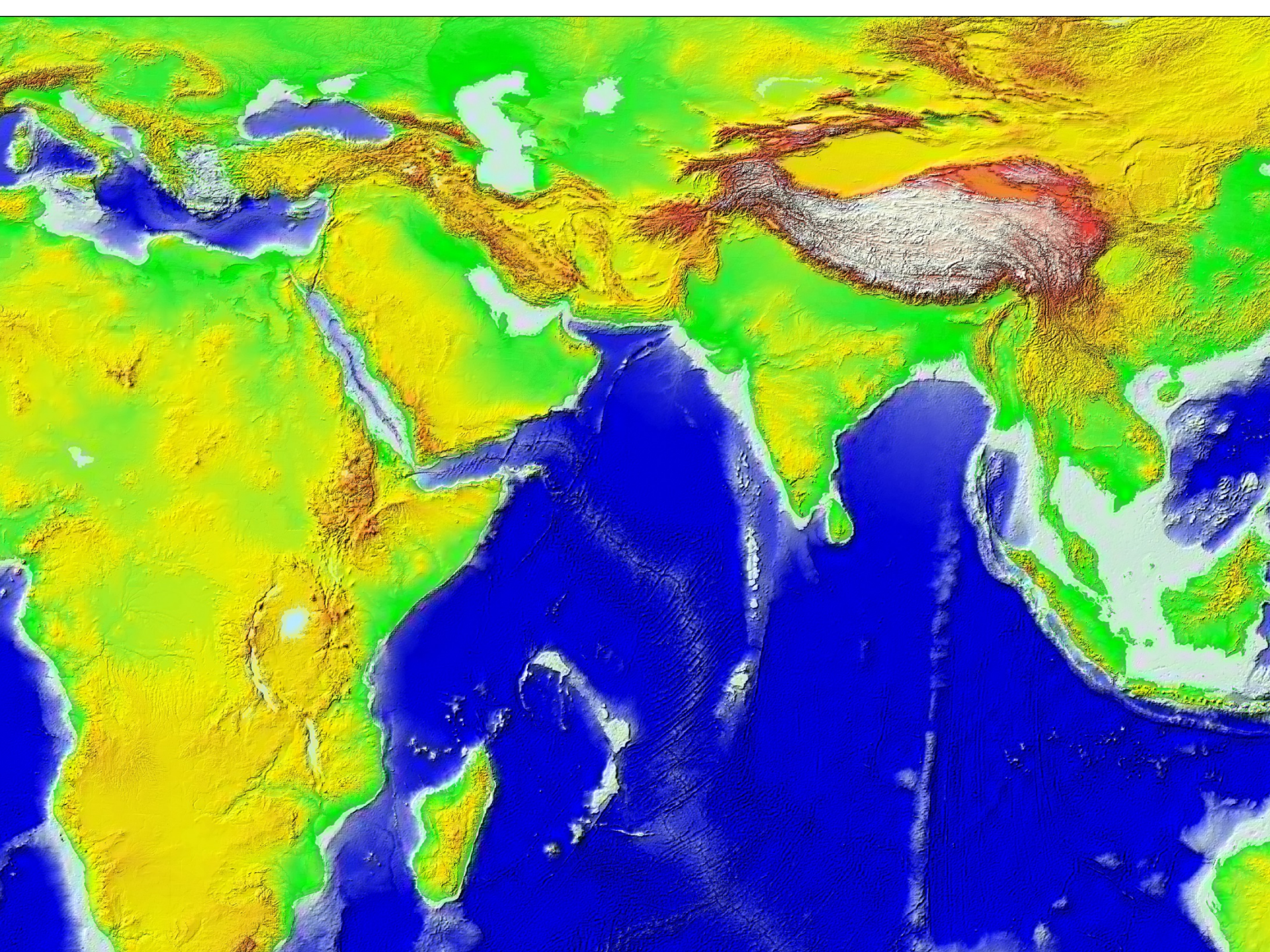
MONDAY, MARCH 25 | 10:00 am - 5:00 pm
THOMPSON ROOM, BARKER CENTER
12 QUINCY STREET, CAMBRIDGE

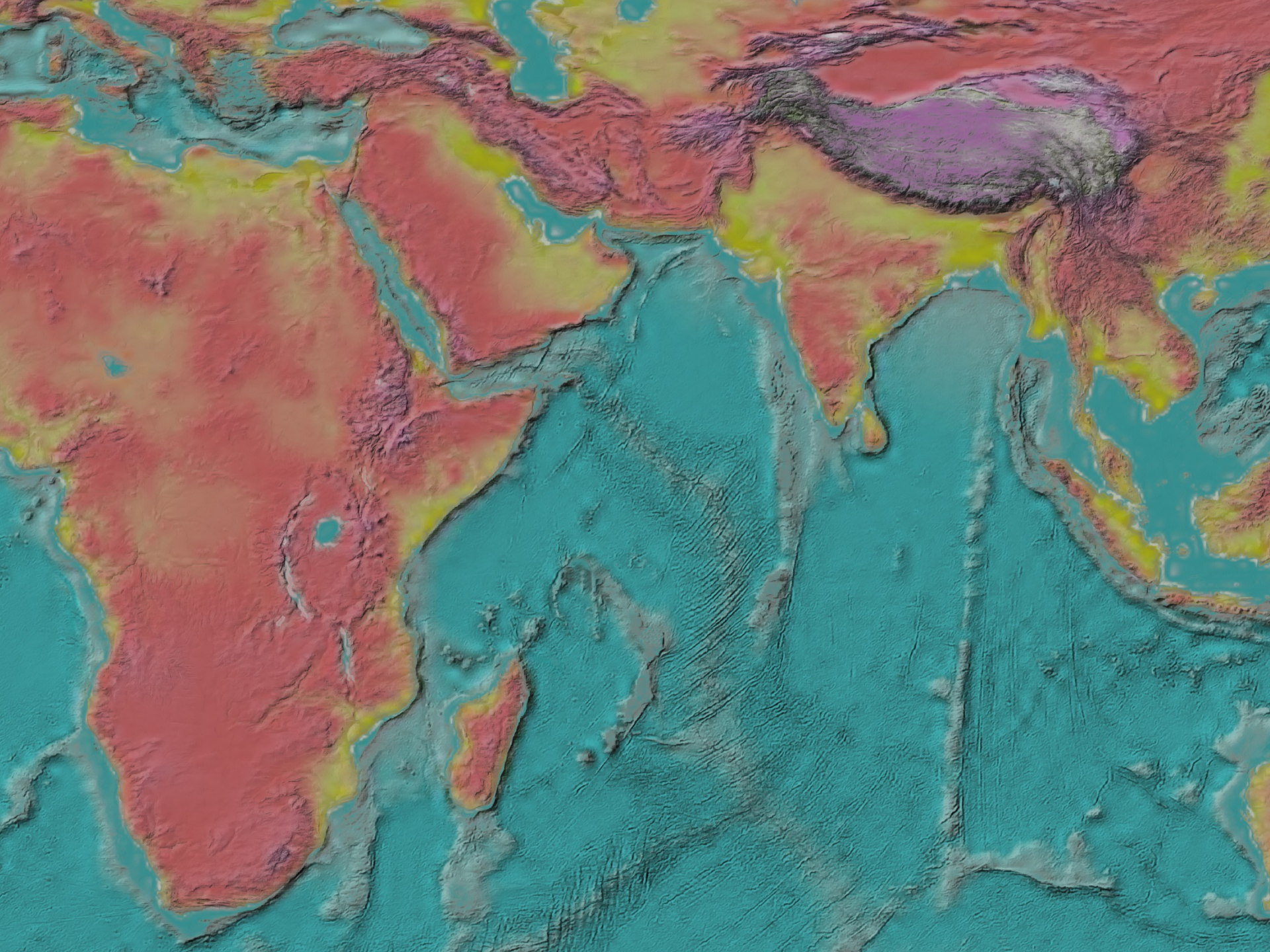
FEATURING PRESENTATIONS BY
DAVID BINDMAN | SUZANNE ELIER | CHRISTRAUD
ROBERT ELLENBRAND | JOHN McLEOD
STEVEN NELSON | KENNETH X. ROBBINS
TIMON SCREECH | KRISTINA VAN DYKE | ALICIA
DON WYATT

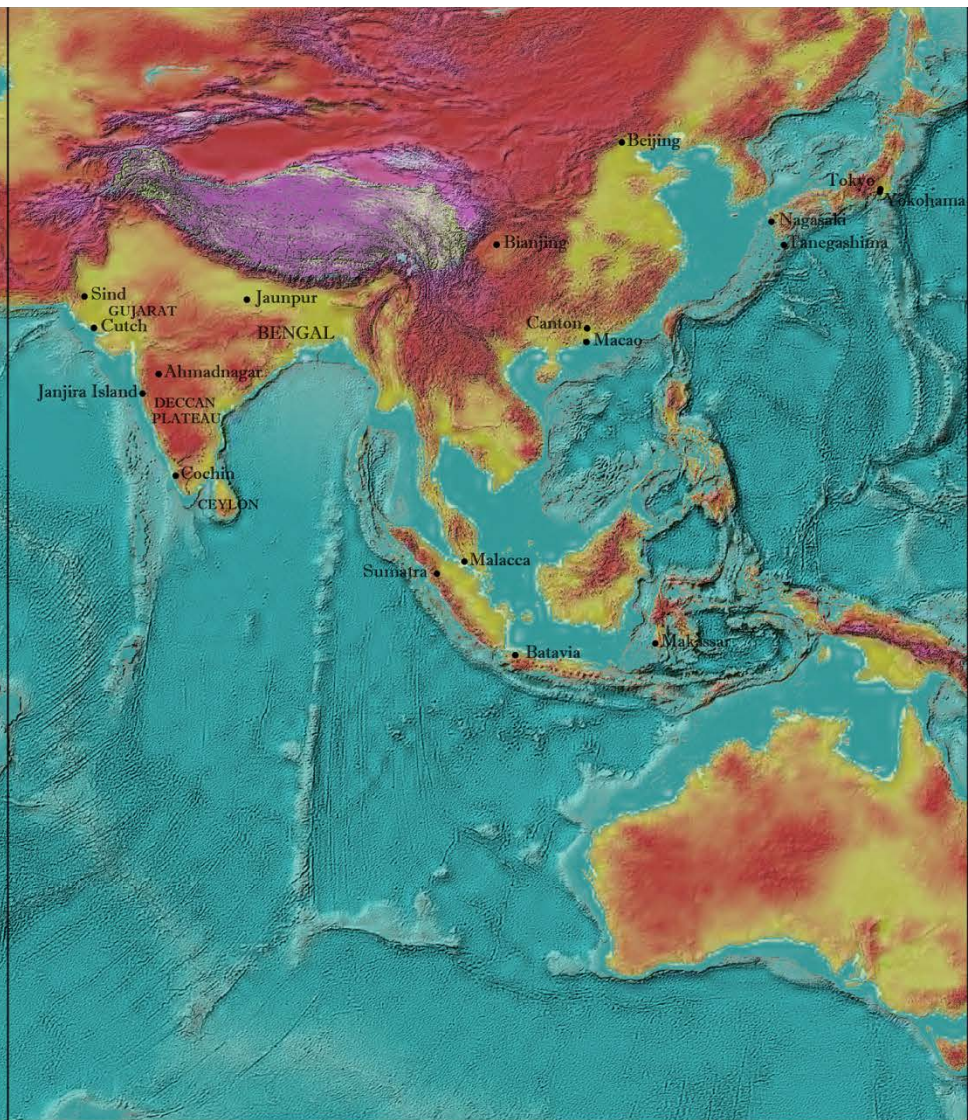
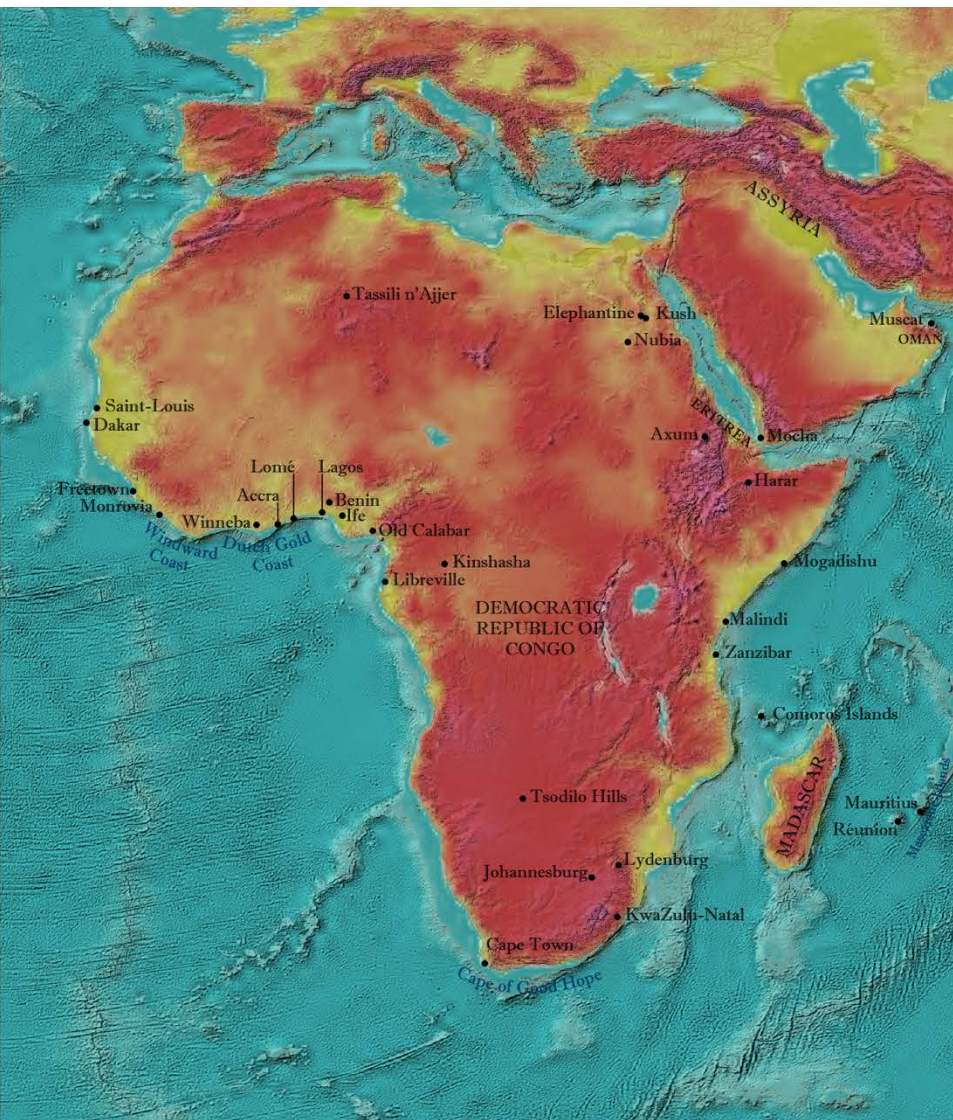
W. E. B. DU BOIS INSTITUTE FOR AFRICAN &
AFRICAN AMERICAN RESEARCH
ASIA CENTER
COMMITTEE ON AFRICAN STUDIES
DEPARTMENT OF AFRICAN AND AFRICAN AMERICAN ST
FARIBANK CENTER FOR CHINESE STUDIES
PRINCE ALWALEED BIN TALAL ISLAMIC STUDIES PROG
REISSHAUER INSTITUTE OF JAPANESE STUDIES
SOUTH ASIA INSTITUTE

A Q+A AND GENERAL DISCUSSION WILL FOLLOW THE WQ
FOR A FULL SCHEDULE PLEASE VISIT DUBOIS.FAS.HARV







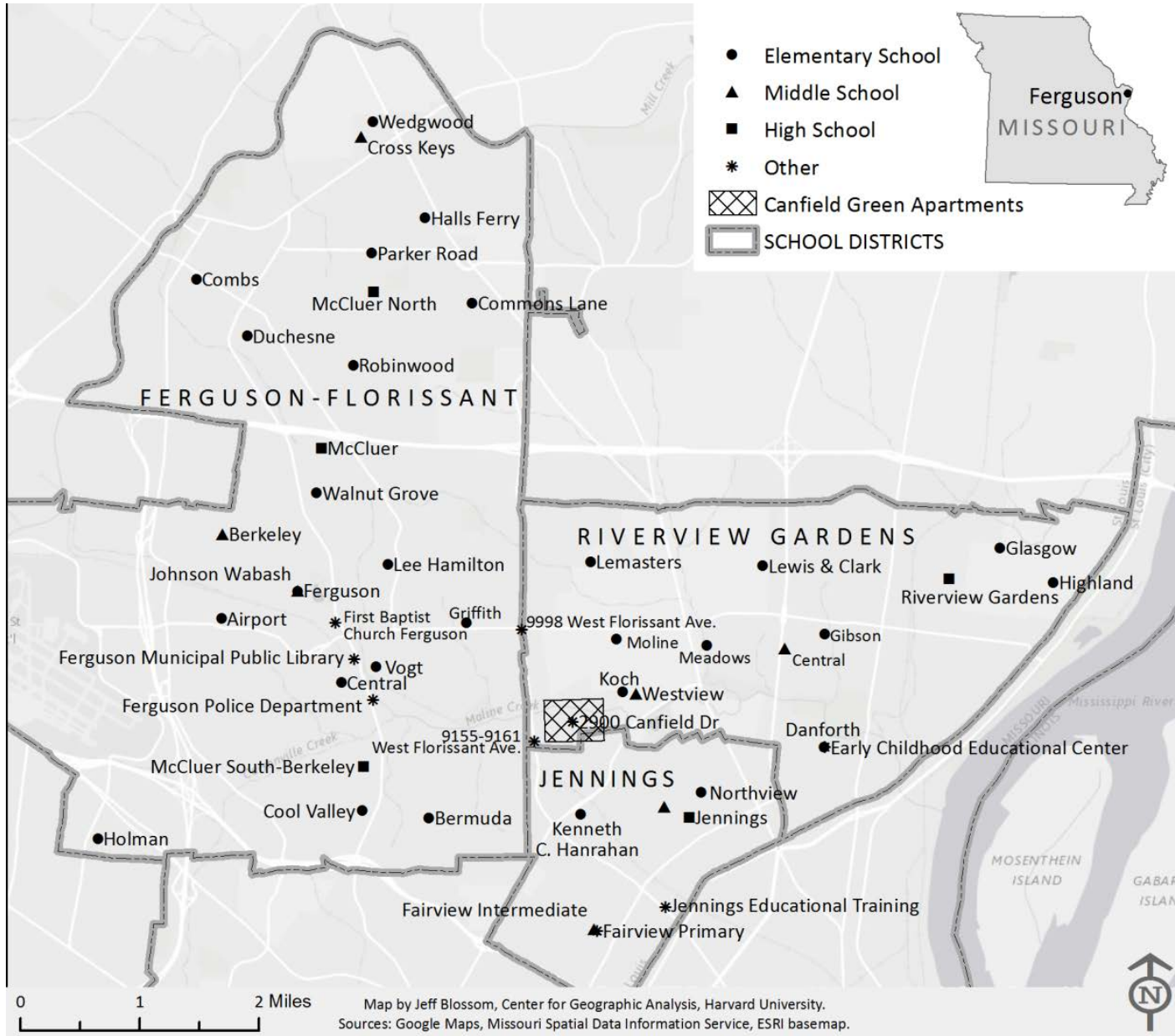


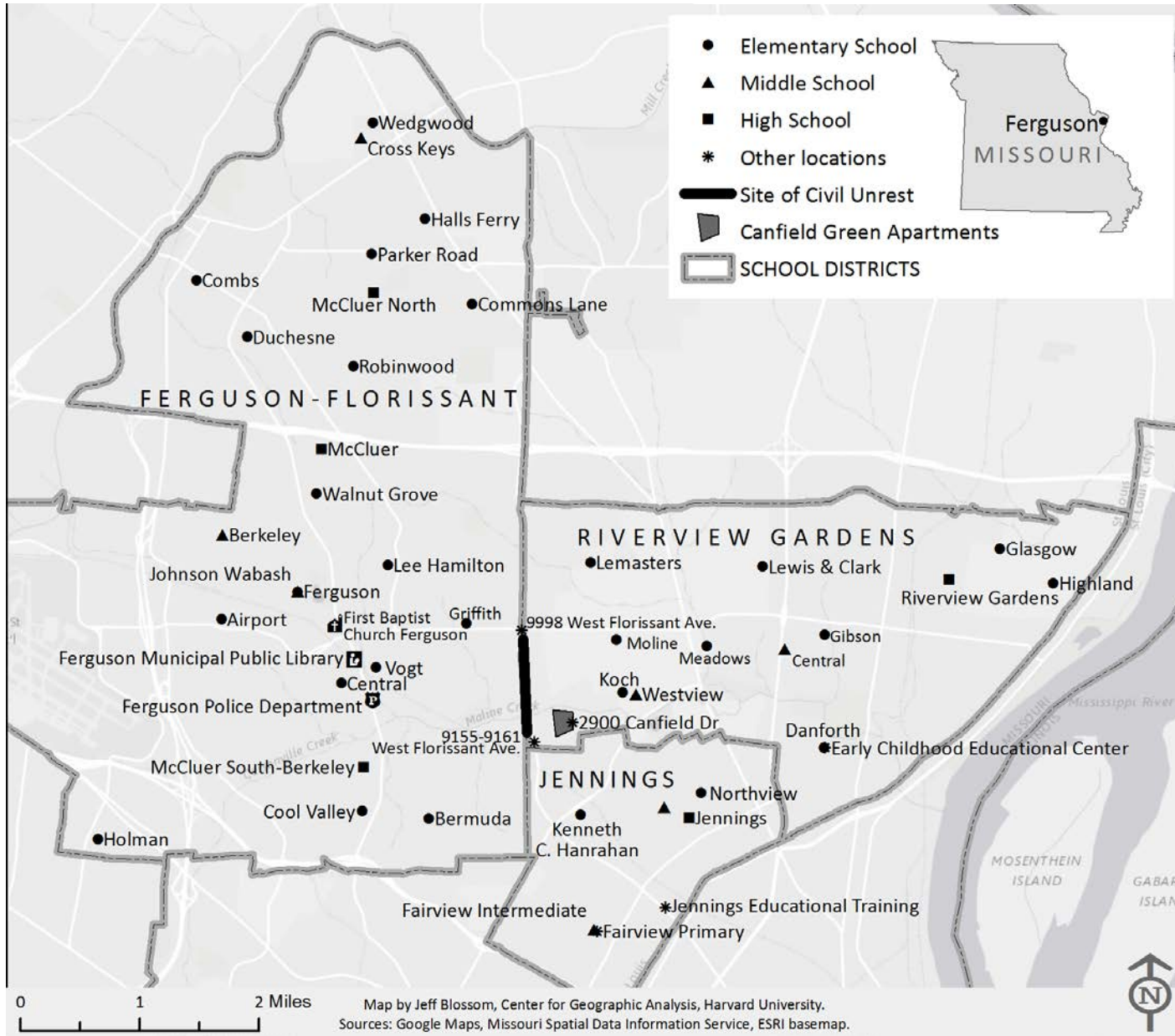




AFRICA and ASIA

References: Zheng He's voyage as depicted by National Geographic, National Geographic, Esri Data and Maps Elevation.





Course Syllabus for ISMT E-155 (23443)
Geographic Communication Today
Harvard Extension School
Spring 2015

(Last updated: *April 6, 2015*)

Course time and place: Mondays, 5:30-7:30 pm

Location: Online

Instructor: Jeff Blossom, M.A., jblossom@cga.harvard.edu

Teaching Assistant: Stacy Bogan, M.S., sbogan@cga.harvard.edu

Section (optional): Mondays, 7:30- 8:30 pm.

Prerequisite: Familiarity with MS Office or OpenOffice software, internet browsing, downloading, and emailing. Microphone capability on computer.

Credits: 4, graduate credit

Website: <https://canvas.harvard.edu/courses/1120>

Course Description

This course teaches the fundamental geographic, cartographic, and technological concepts required to produce informative, meaningful maps that illustrate geographic phenomena. By using a combination of internet and desktop geographic information software, students perform geocoding, thematic mapping, web map creation, and spatial analysis. Maps are generated from publicly available published and crowd-sourced data sets, and individual geographic data sets created from scratch. Students use Google Earth, MyMaps, Social Explorer, ArcGIS, Bing Maps, Quantum GIS, Batchgeo.com, and WorldMap to create and publish maps in various media formats including web maps, 3-D, and video. Understanding the nature of geographic data and how to best represent the data in mapped form is emphasized.

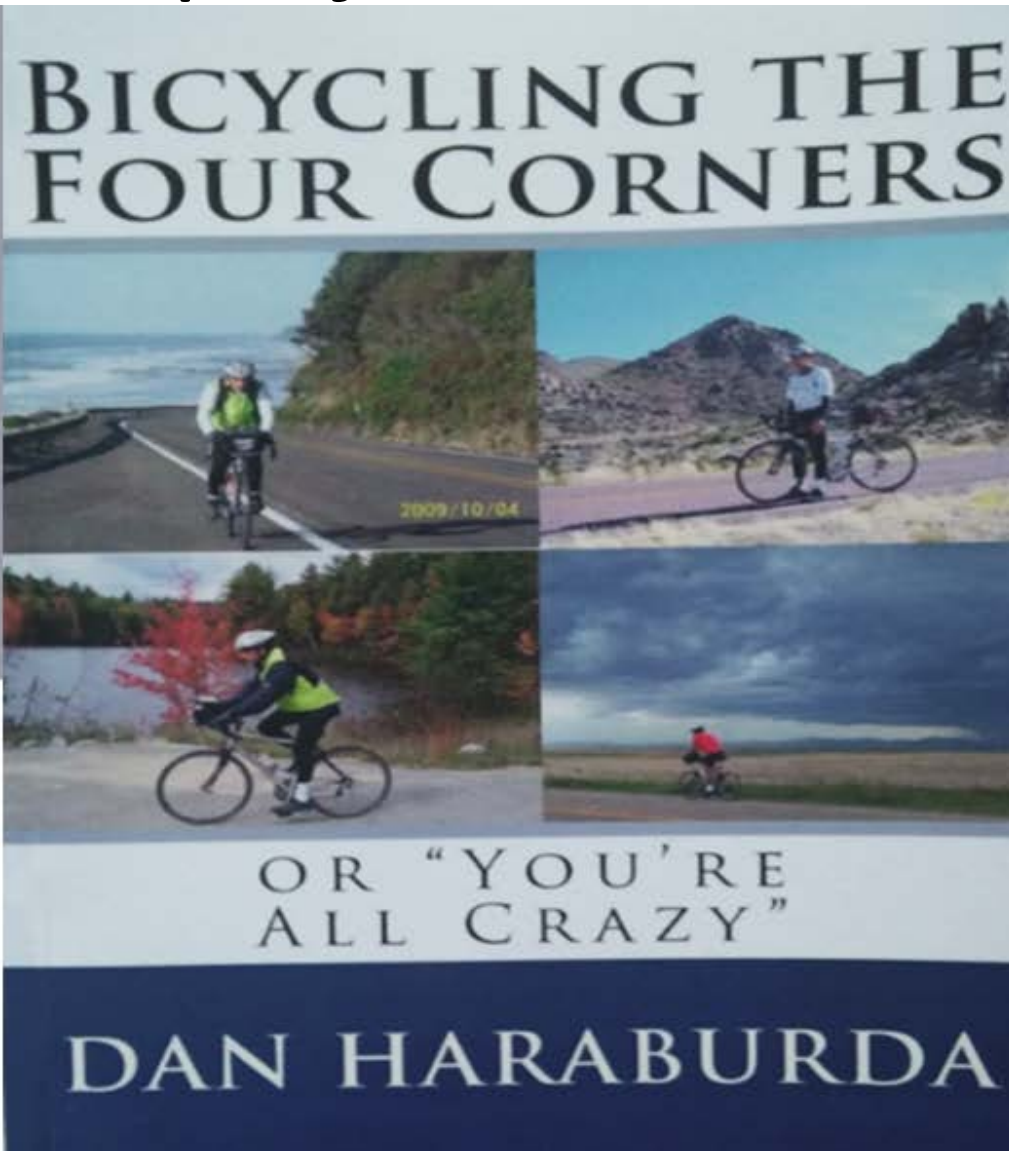
Scott Lepper, final project, 2015

An Interactive Story Map of the Book



Comparing Story Map Tools

Presented by Scott Lepper



First Attempt - Google Tour Builder

The Google Map from imported CSV - manually symbolized and info window configured

The image shows a screenshot of the Google Tour Builder interface. A map of the United States is displayed with a tour route marked by a line and various colored pins. An info window is open for a point named 'Van Horn' in Texas. The info window contains the following details:

- State:** Texas
- Ride:** Southern Tier
- Event:** Dogs
- Description:** I had a couple more incidents with dogs. I am now stopping when they come out. I yell at them and that seems to call their bluff. It is good to get out of the El Paso area. I never really felt safe between the dogs and the ghetto like surroundings. I would not recommend anyone riding a bike through this area alone. The strength in numbers idea would apply to this area. It is hard to imagine living in some of the areas that we went through
- Stats:** Distance to St Augustine 3087
- Total Ridden:** 1029Miles to Go 2056States 4Dogs 5Flats 3

A red box highlights the text 'Clicking a point shows Details' with two red arrows pointing to specific points on the map. The map interface includes a search bar at the top left, a 'Directions' button, and a 'Show: Terrain' option. The bottom of the screen shows the Google logo, 'Map data ©2015 Google, INEGI', and 'The Bahamas' logo.

Second Attempt - ArcGIS Online Tour Builder

Map of Imported CSV data - Symbolized points, configured popup



(1 of 2)

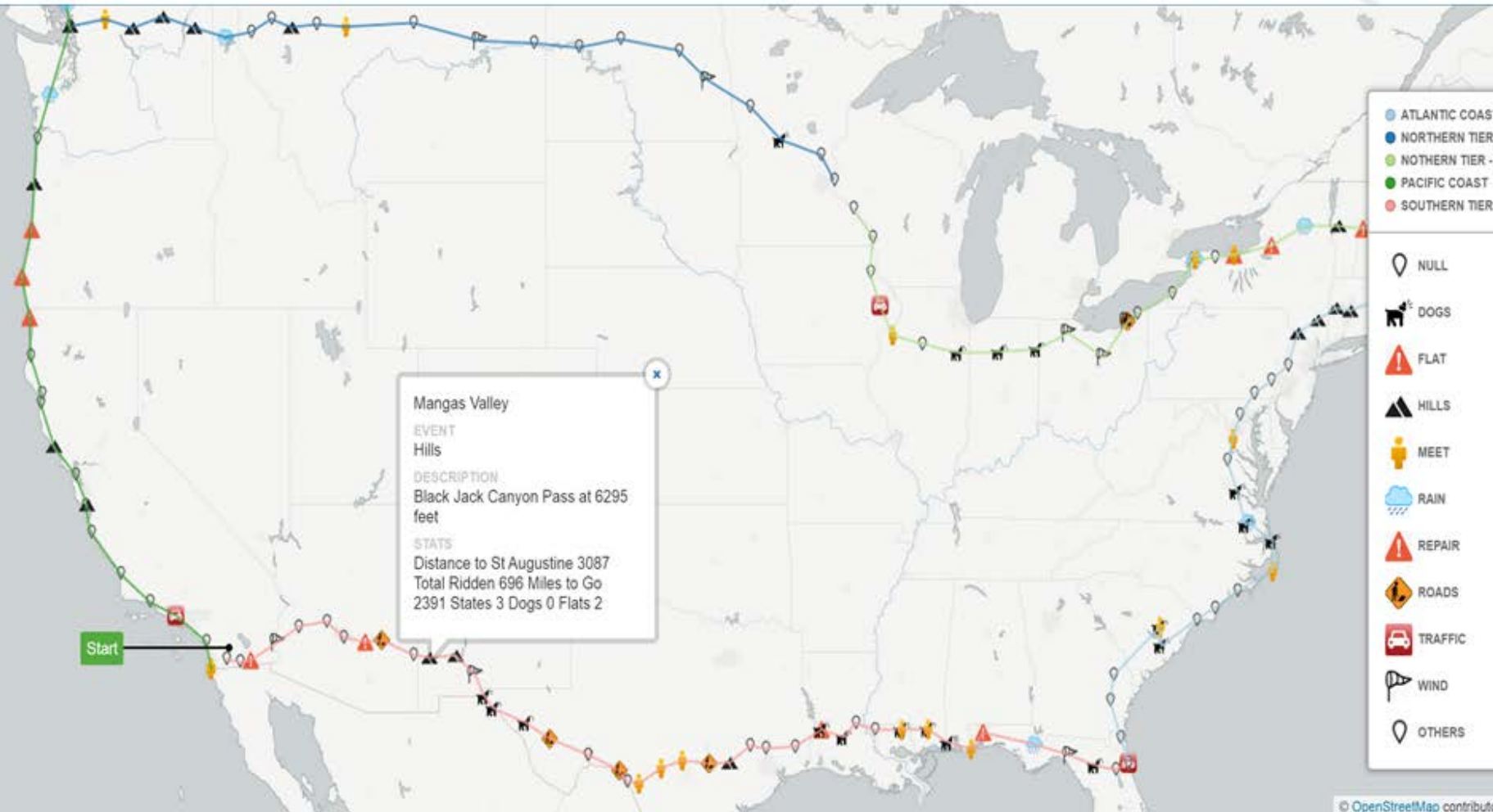
Bar Harbor

Day	43
City	Bar Harbor
State	Maine
Ride	Atlantic Coast
Weather	We rode under cloudless skies with riding temperatures in the mid 70's. Since we were inland, the temperatures are a bit warmer than they would be while riding along the shore
Description	Today we road the roller coaster all day. One hill after another all day so there was a lot of

Zoom to

Third Attempt - CartoDB and Odyssey

CartoDB Map imported from CSV - Symbolized, Info Window and Legend Configured



Mitra Yegani, final project, 2015

- Introduction
- Washington D.C.
- Bali, Indonesia
- Ubud, Indonesia
- Anguilla
- Saint-Barthélemy
- Fes, Morocco
- Rabat, Morocco
- Marrakesh, Morocco



My Travels

Mitra Yegani

This project is a detailed travel log of some of the places of interest to which I've traveled. The project benefactors are friends, family and those interested in adventurous travels around the world.



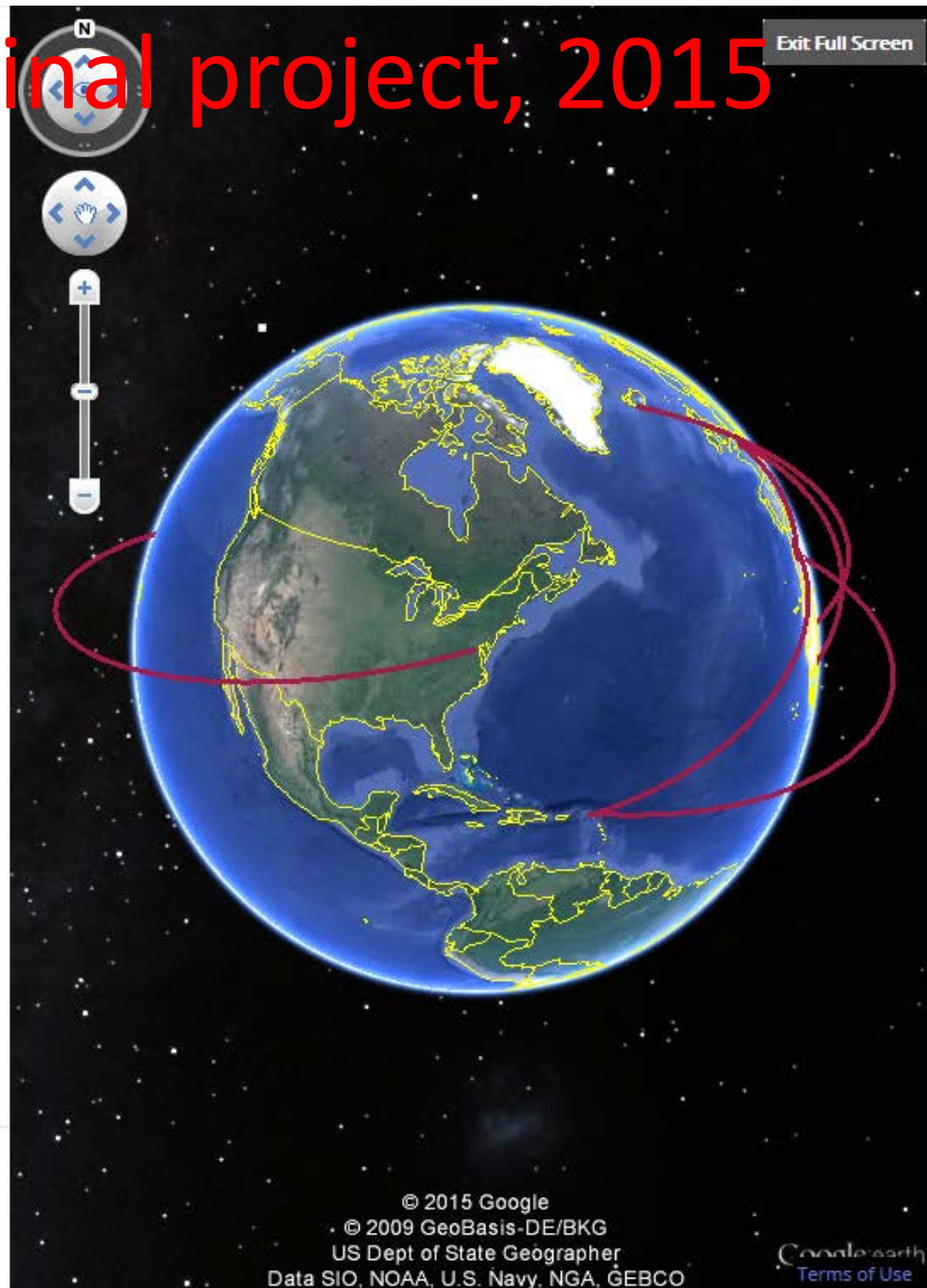
1 of 15

Back

Next

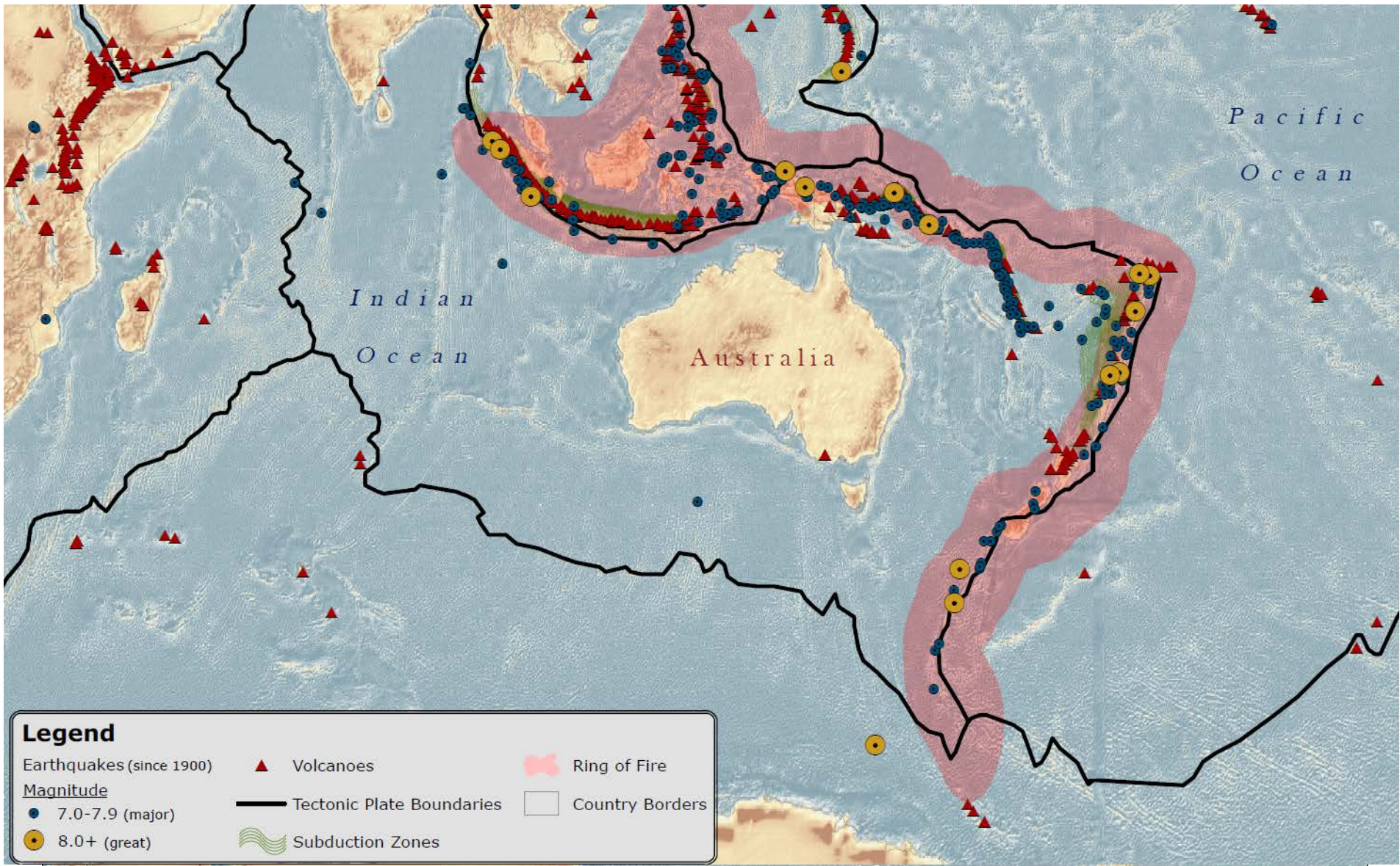
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[Learn about 3D support in Tour Builder.](#)



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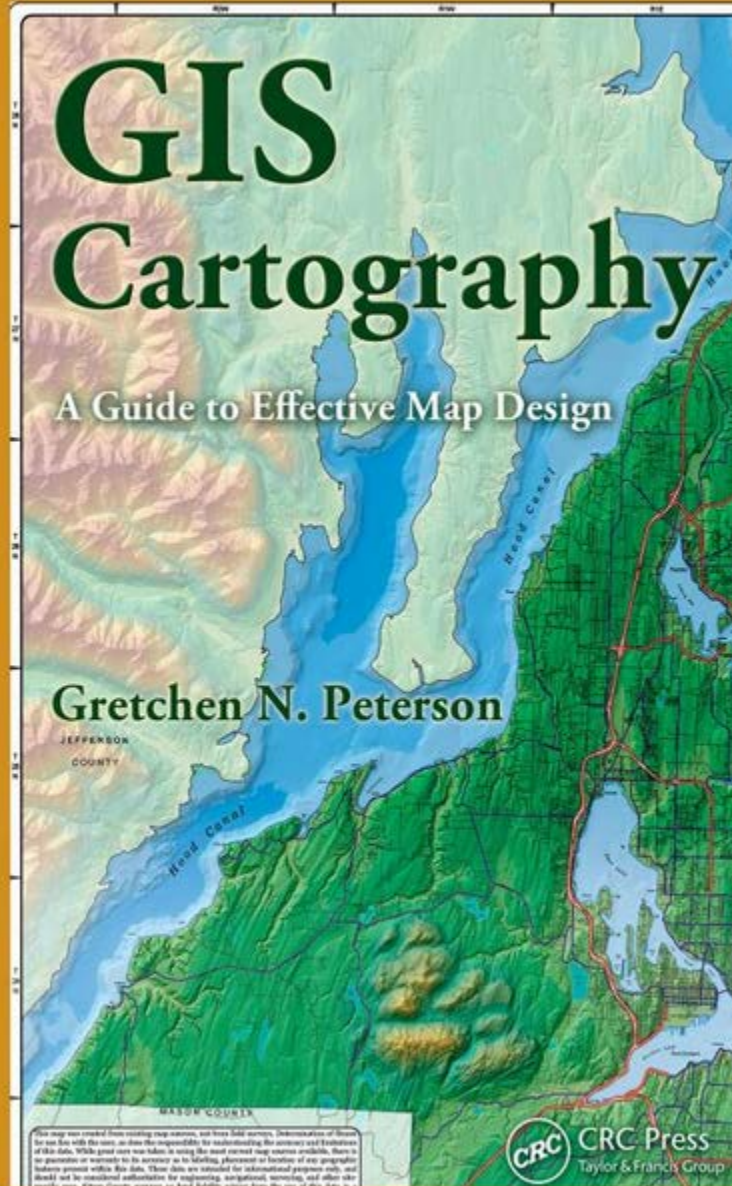
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