

Cartography 1

Enter Maps:

Definitions, Types,

Parts

As of 20 May 2015
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OUTLINE

Definitions of Maps

Types of Maps

Parts of Formal Printed Maps

DEFINITIONS OF A WHAT A MAP IS

Traditionally, maps are conceived as directional guides printed on papers. Other people think of maps as any two-dimensional representation of the earth's surface and is reserved only for cartography

In the discussion in this class, though, a thing is considered a map if it is a graphic representation of spatial reality. Ergo, maps are ubiquitous – printed, projected, formal, sketched, official, unofficial, mental, spoken, personal, shared, among others. Maps are not only of and for the cartographers and geographers.

It is to be mentioned that maps do not portray full reality. Rather, they are abstractions - models of the world.

A MAP IS A

GRAPHIC

REPRESENTATION OF

SPATIAL

REALITY.

map

A cartographic representation of specifically chosen spatial information. The information is transmitted through images constructed from symbols. We tend to restrict the term to visual maps, but spatial information may be represented on a computer screen, through braille, or verbally through spoken description, and these categories of spatial representation may also be described as maps (Mayhew).

map

A symbolized image of geographical reality, representing selected features or characteristics, resulting from the creative effort of its author's execution of choices, and is designed for use when spatial relationships are of primary relevance (ICA in Gomez and Jones III).

map

are graphic representations that facilitate a spatial understanding of things, concepts, conditions, processes, or events in the human world (Harley and Woodward in Gomez and Jones III).

cartography

The production and study of maps and charts (Mayhew).

cartography

the body of practical and theoretical knowledge about making distinctive visual representations of Earth's surface in the form of maps (Knox, Marston, and Nash).

TYPES OF MAPS

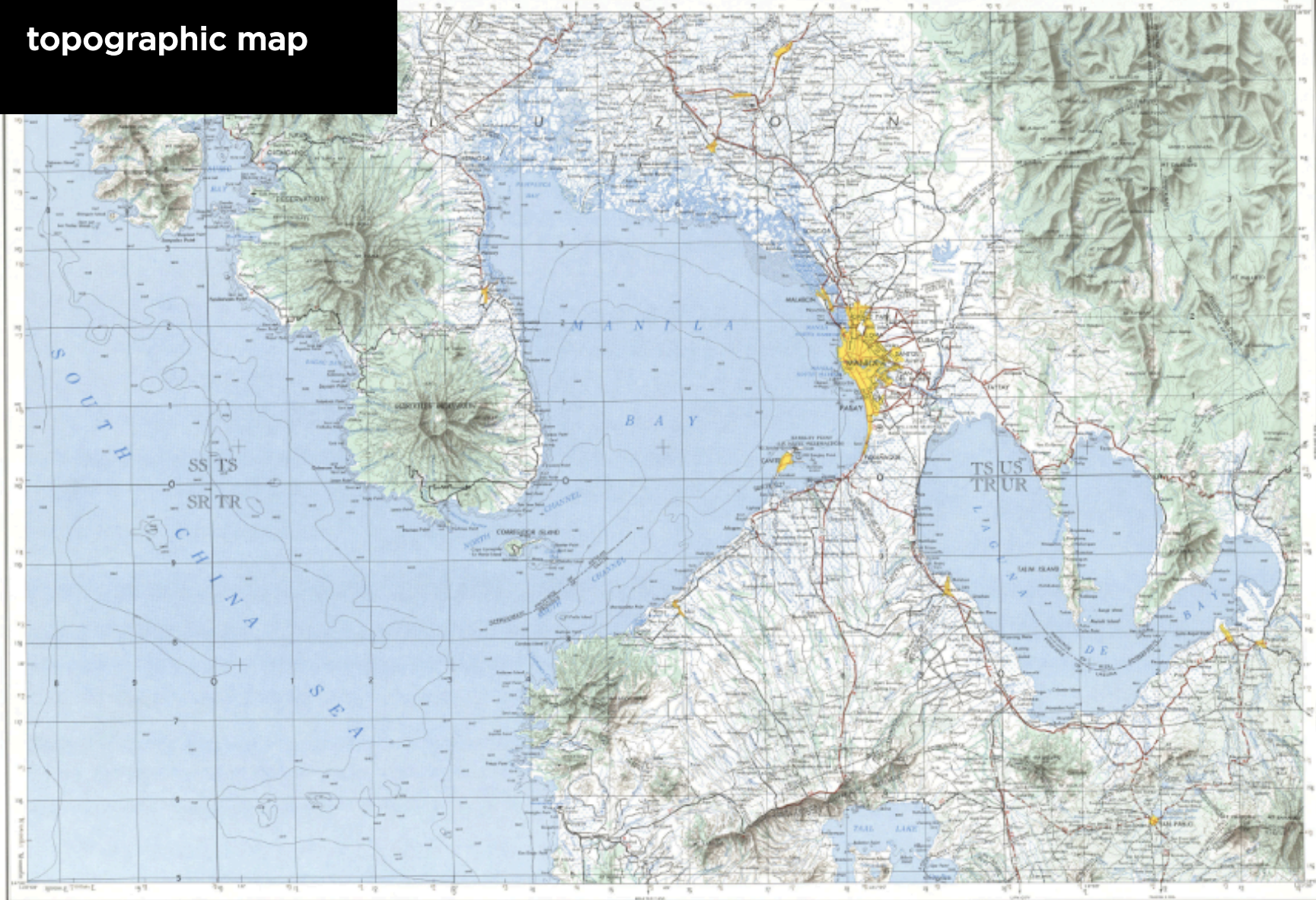
Traditionally maps have been classified as either general (including topographic) and thematic. Maps were classified as general if they displayed multiple geographic features for general usage. Maps are deemed thematic if they focus on particular geographic features. But for having a deeper and wider understanding of map types, maps can be classified using three factors – focus, symbol, and medium. Map types that are according to focus are classified by the dominance of one or more themes or layers. Maps of different symbols concentrate in various representations such as points, lines, and polygons. Various media is used to “store” and show map data.

A map can be classified as a combination of types within each sort of classification and between classification types. A multivariate, printed dot-line map can therefore exist.

TYPES OF MAPS ACCORDING TO FOCUS, SYMBOL, AND MEDIUM

FOCUS	SYMBOL	MEDIA
MULTIVARIATE	DOT	PRINTED
BIVARIATE	ISOLINE	PROJECTED
UNIVARIATE	CHOROPLETH	COGNITIVE
	LOCATED CHARTS	SPOKEN
	TOPOLOGICAL	OTHERS
	CARTOGRAM	

topographic map



SCALE
Scale 1:50,000

CONTOUR INTERVAL 100 METERS, RELIEF PARTIALLY SHOWN BY FORM LINES
TRANSVERSE MERCATOR PROJECTION

MANILA, PHILIPPINE ISLANDS

SYMBOLS

UNINCORPORATED PLACES	MANILA	INCORPORATED PLACES	MANILA
UNINCORPORATED PLACES	MCARD	INCORPORATED PLACES	MCARD
UNINCORPORATED PLACES	MCARD	INCORPORATED PLACES	MCARD

ADDITIONAL SYMBOLS FOR USE OF U.S. NAVY

1. Landmark	2. Light	3. Buoy	4. Beacon
5. Daymark	6. Fog signal	7. Radio beacon	8. Radar station
9. Searchlight	10. Searchlight	11. Searchlight	12. Searchlight

MANILA, PHILIPPINE ISLANDS

0
8063
5255
3211
83
55-5
PCS 833

100040

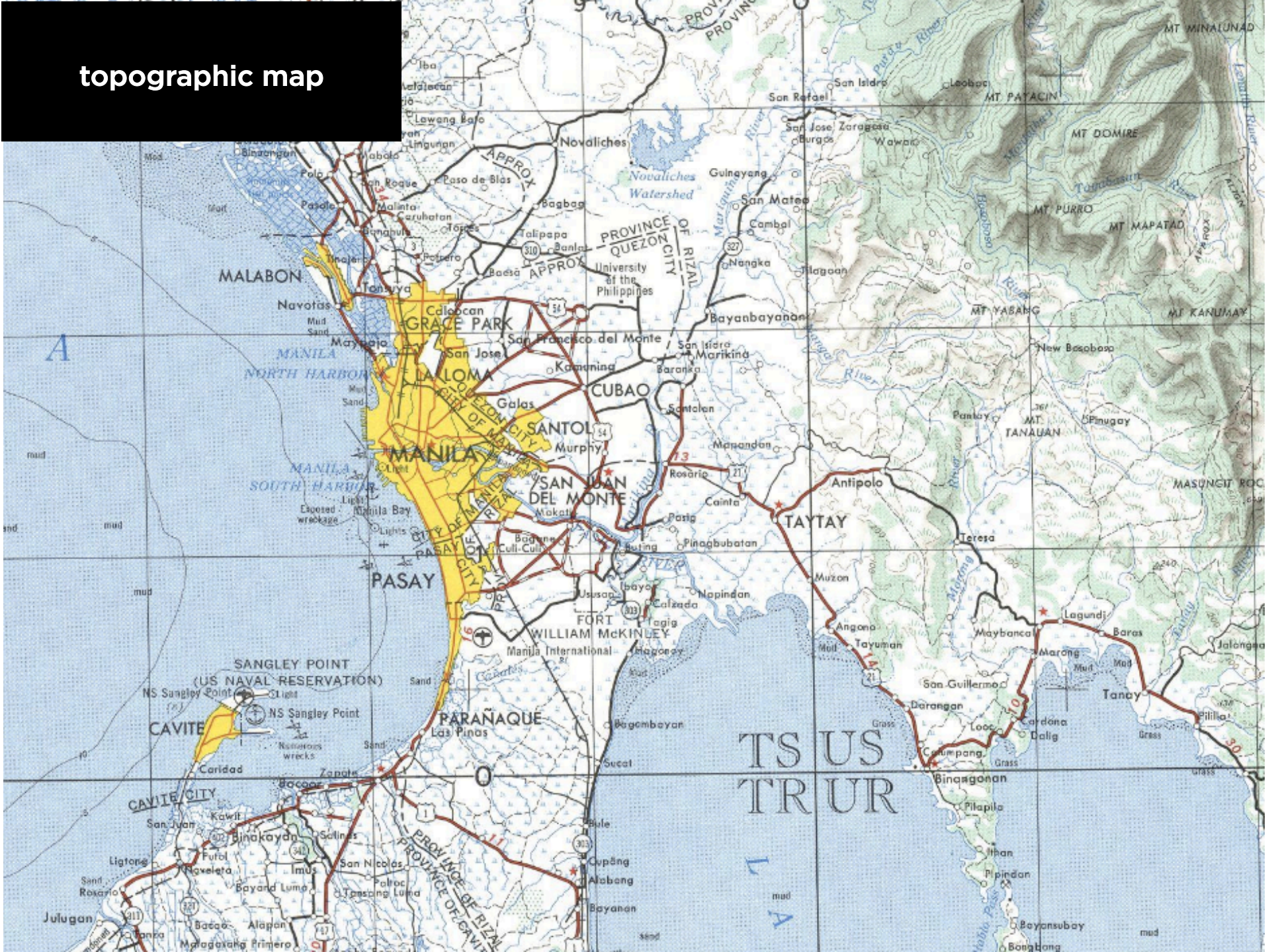
thematic maps

are designed to represent the spatial dimensions of particular conditions, processes, or events.

topographic maps

display the longstanding and more permanent features of the Earth's surface such as buildings, highways, political boundaries, contour lines, mountains and rivers..

topographic map



topographic map

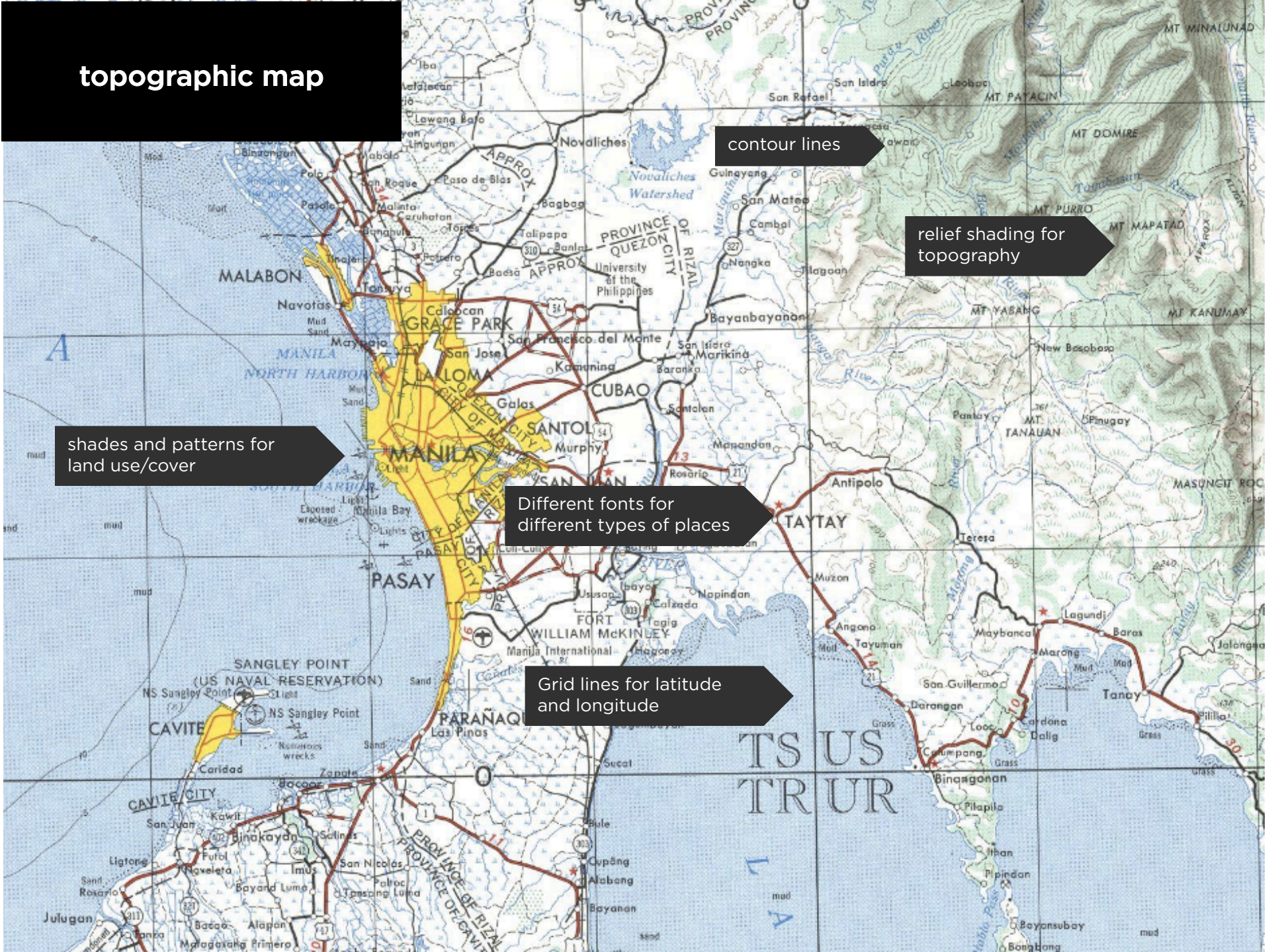
contour lines

relief shading for topography

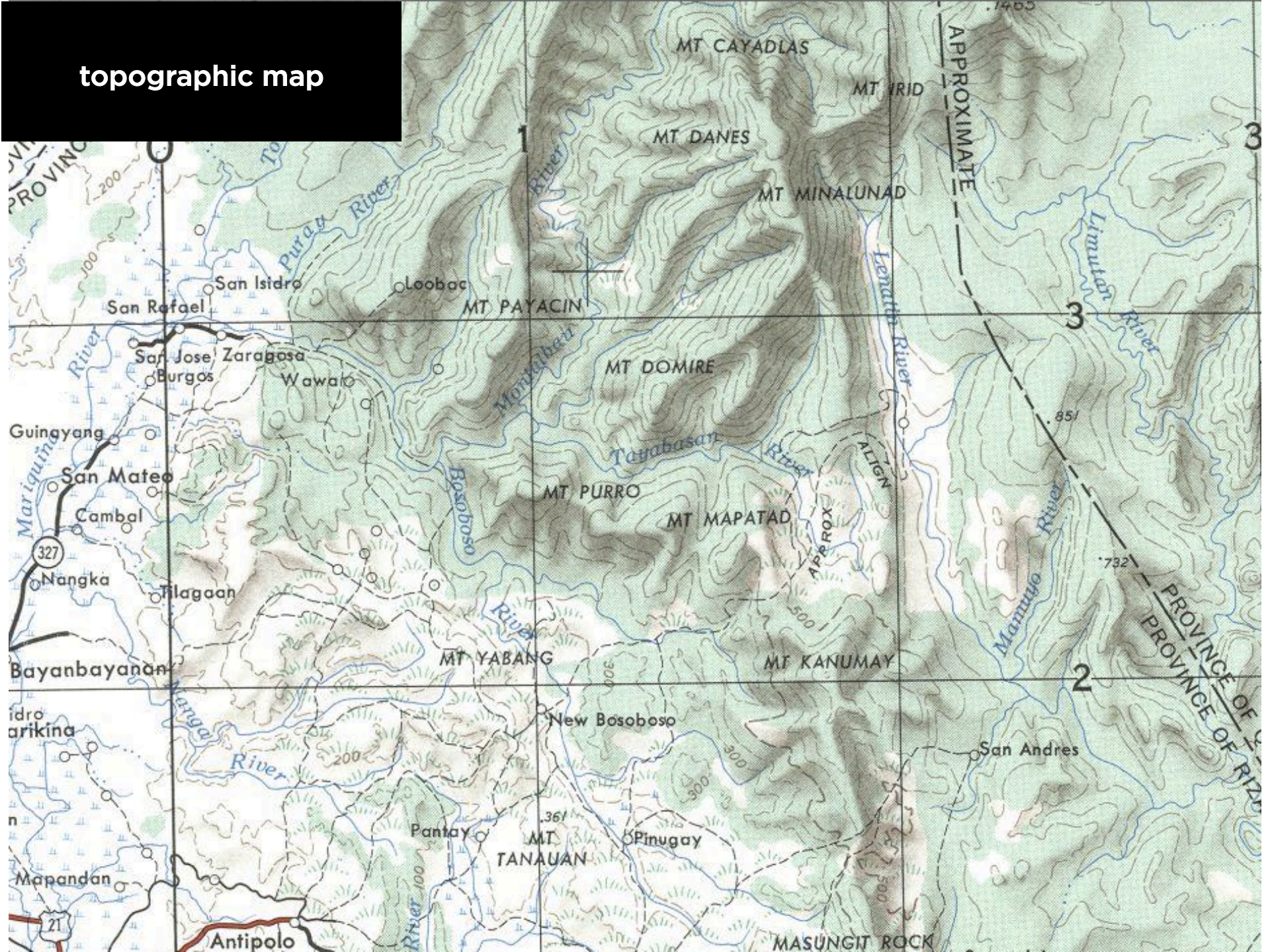
shades and patterns for land use/cover

Different fonts for different types of places

Grid lines for latitude and longitude



topographic map



topographic map

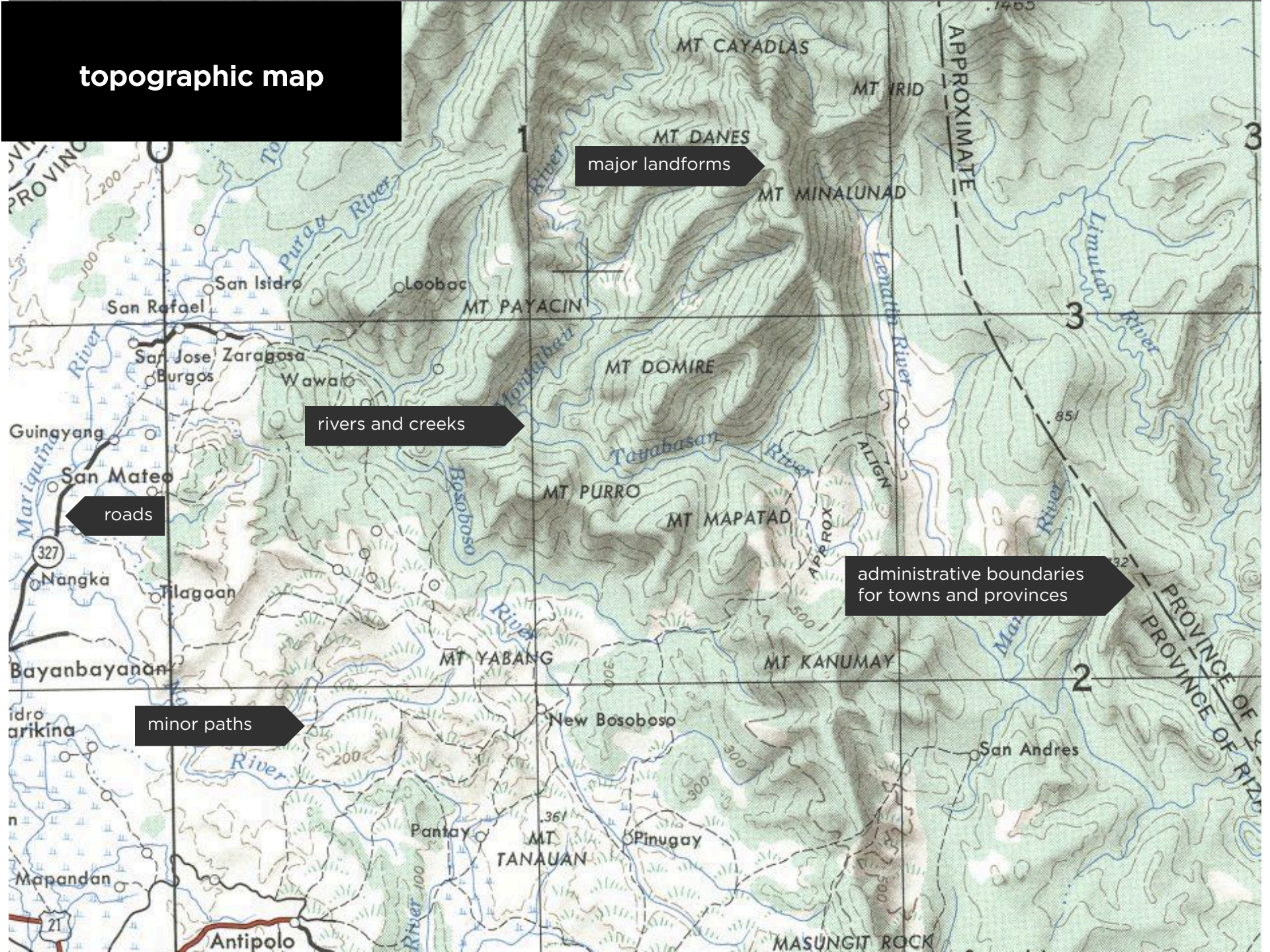
major landforms

rivers and creeks

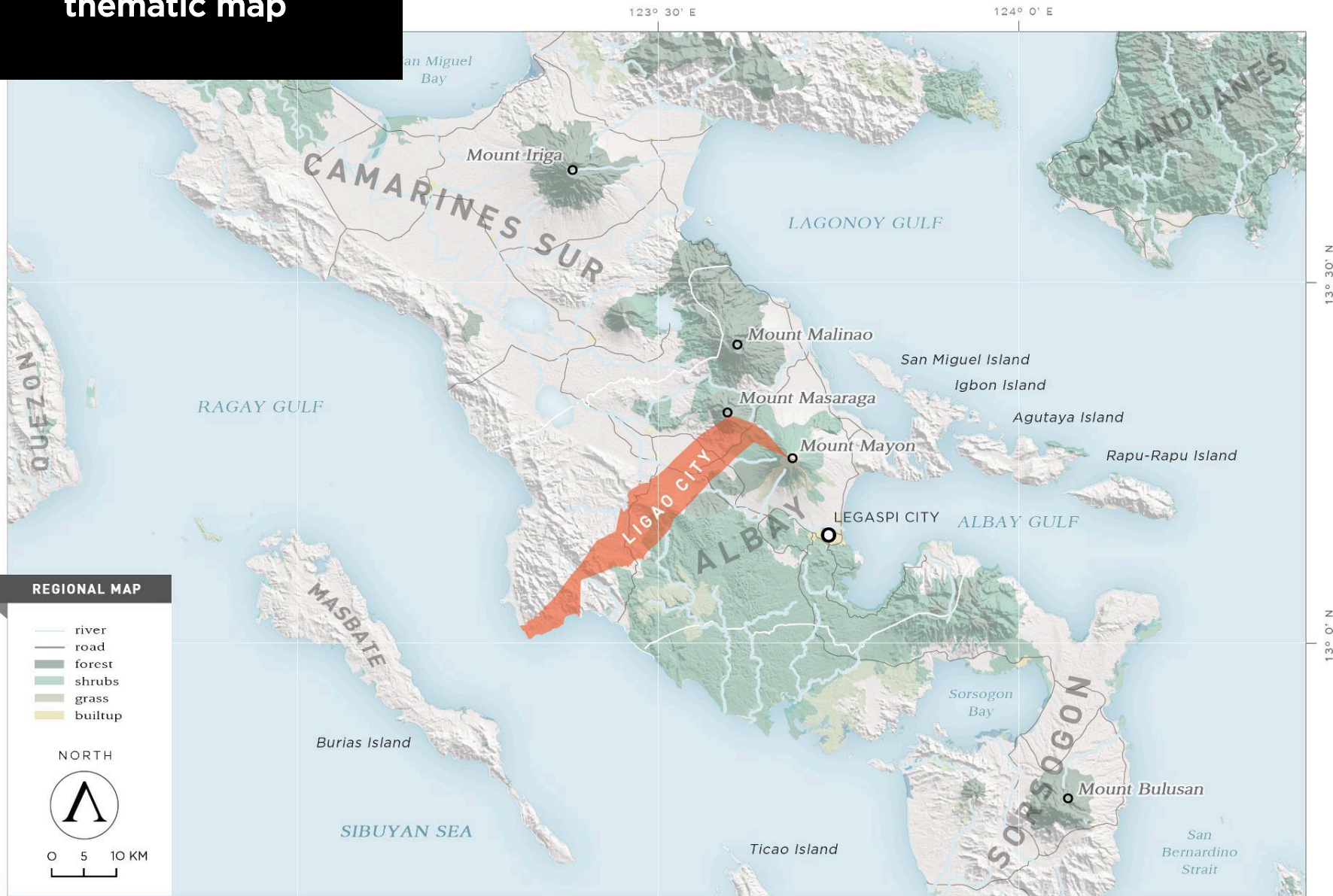
roads

administrative boundaries for towns and provinces

minor paths



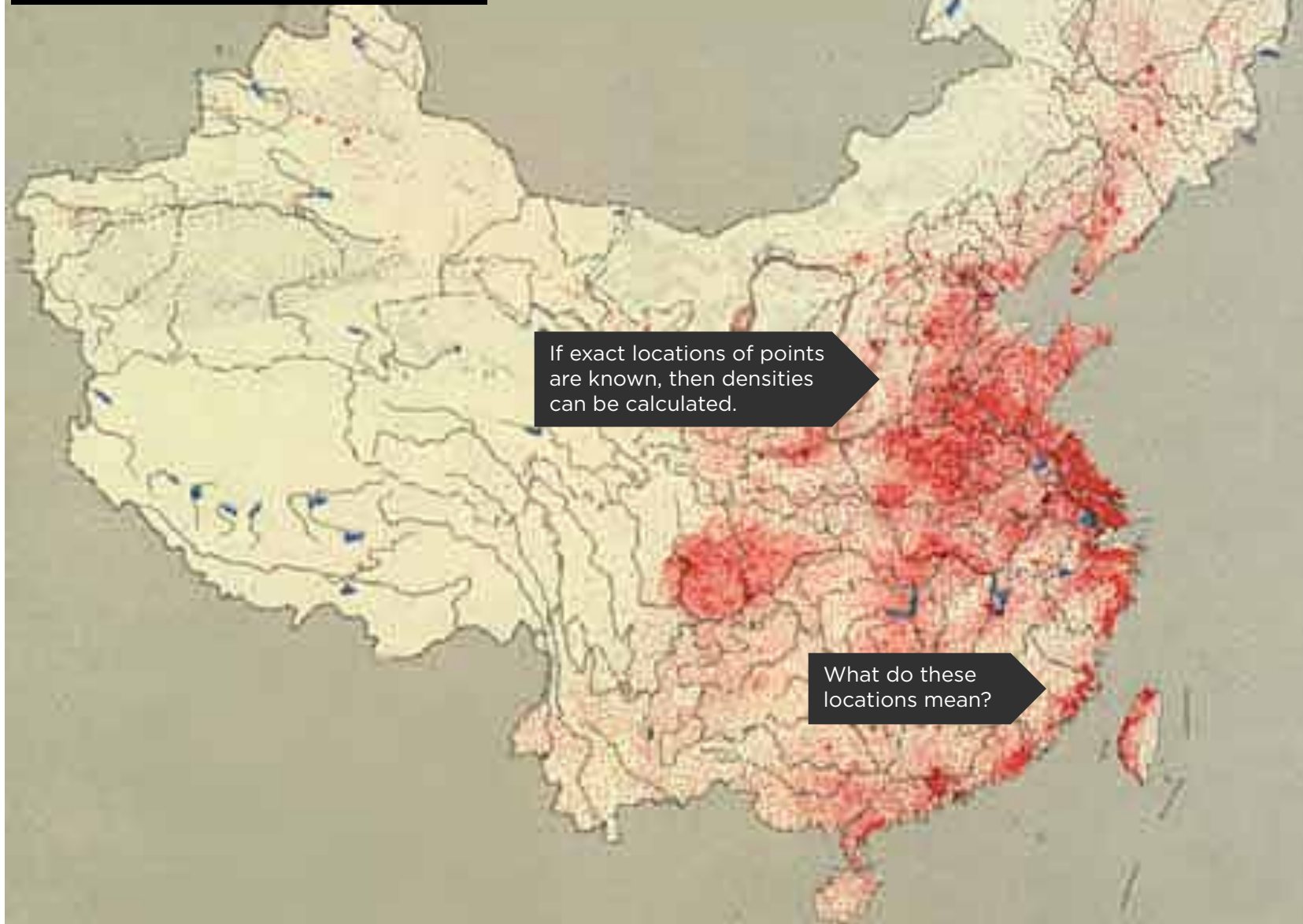
thematic map



dot map



dot map



dot map on steroids

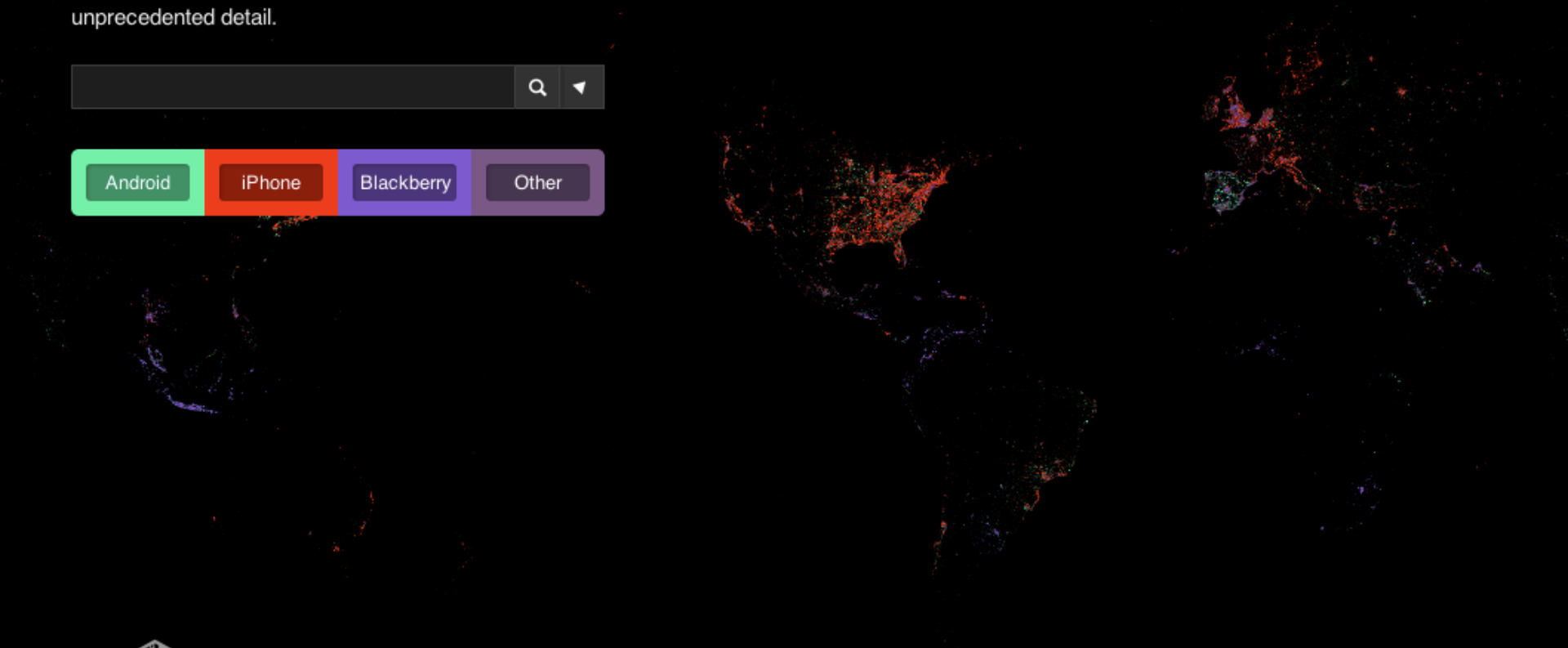
x

Mobile Devices + Twitter Use

More than 280 million Tweets posted from mobile phones reveal geographic usage patterns in unprecedented detail.

Q◀

- Android
- iPhone
- Blackberry
- Other



Sinaloa, Mexico

[Terms & Feedback](#)

dot map on steroids

X



Mobile Devices + Twitter Use

More than 280 million Tweets posted from mobile phones reveal geographic usage patterns in unprecedented detail.

Q◀

- Android
- iPhone
- Blackberry
- Other

Which phones are most used for tweets in which places?



Sinaloa, Mexico

[Terms & Feedback](#)

dot map on steroids

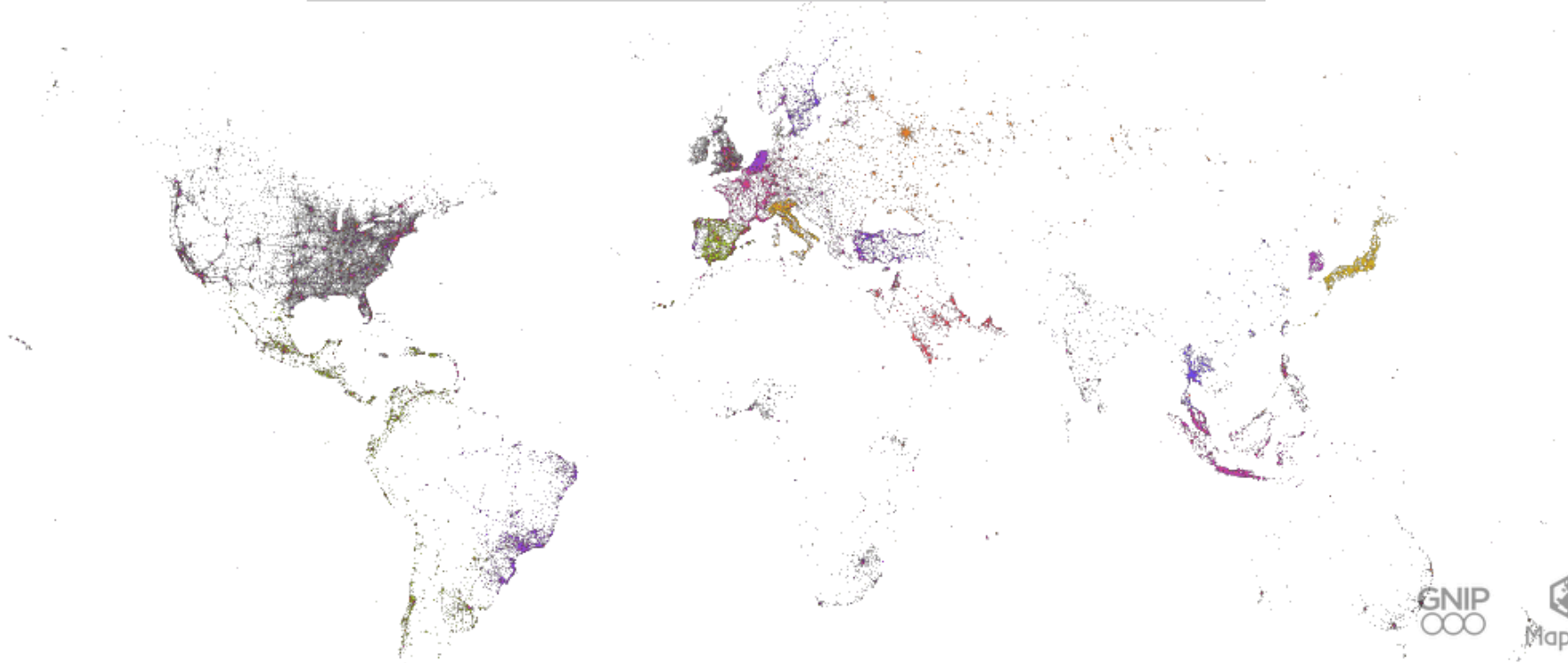


Languages on Twitter



Historical data from Twitter reveals the scope of language distribution around the world.

English Spanish Other



dot map on steroids

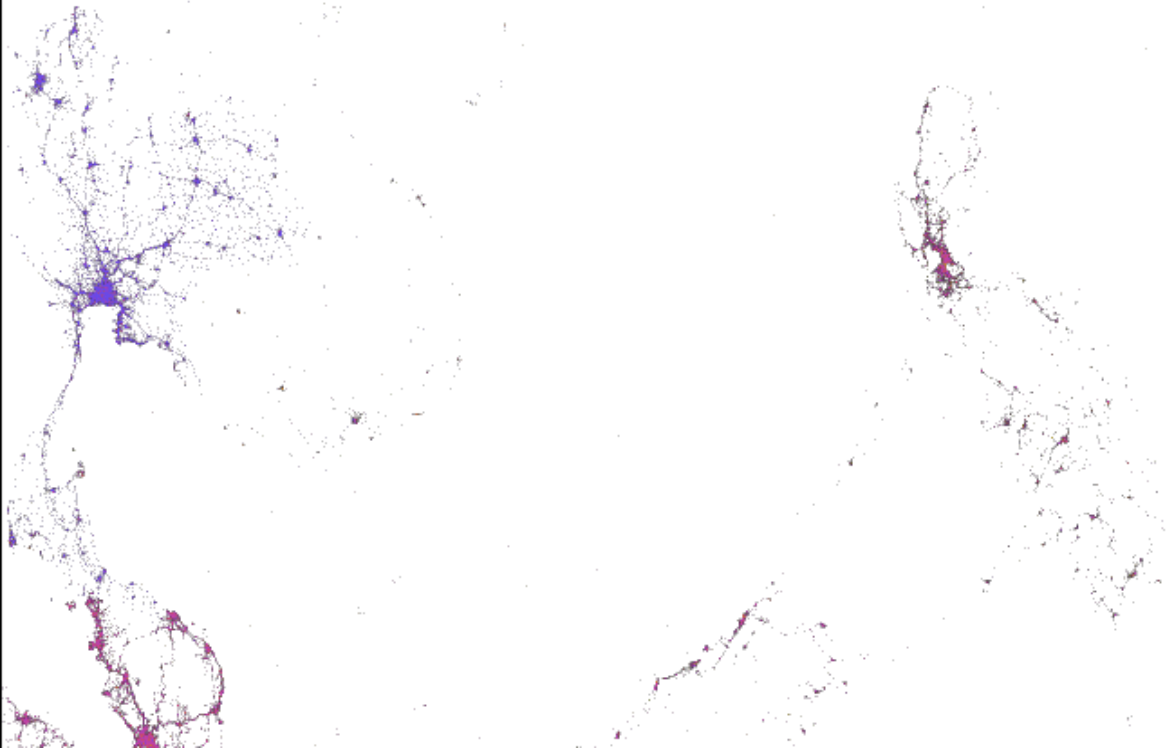


Languages on Twitter

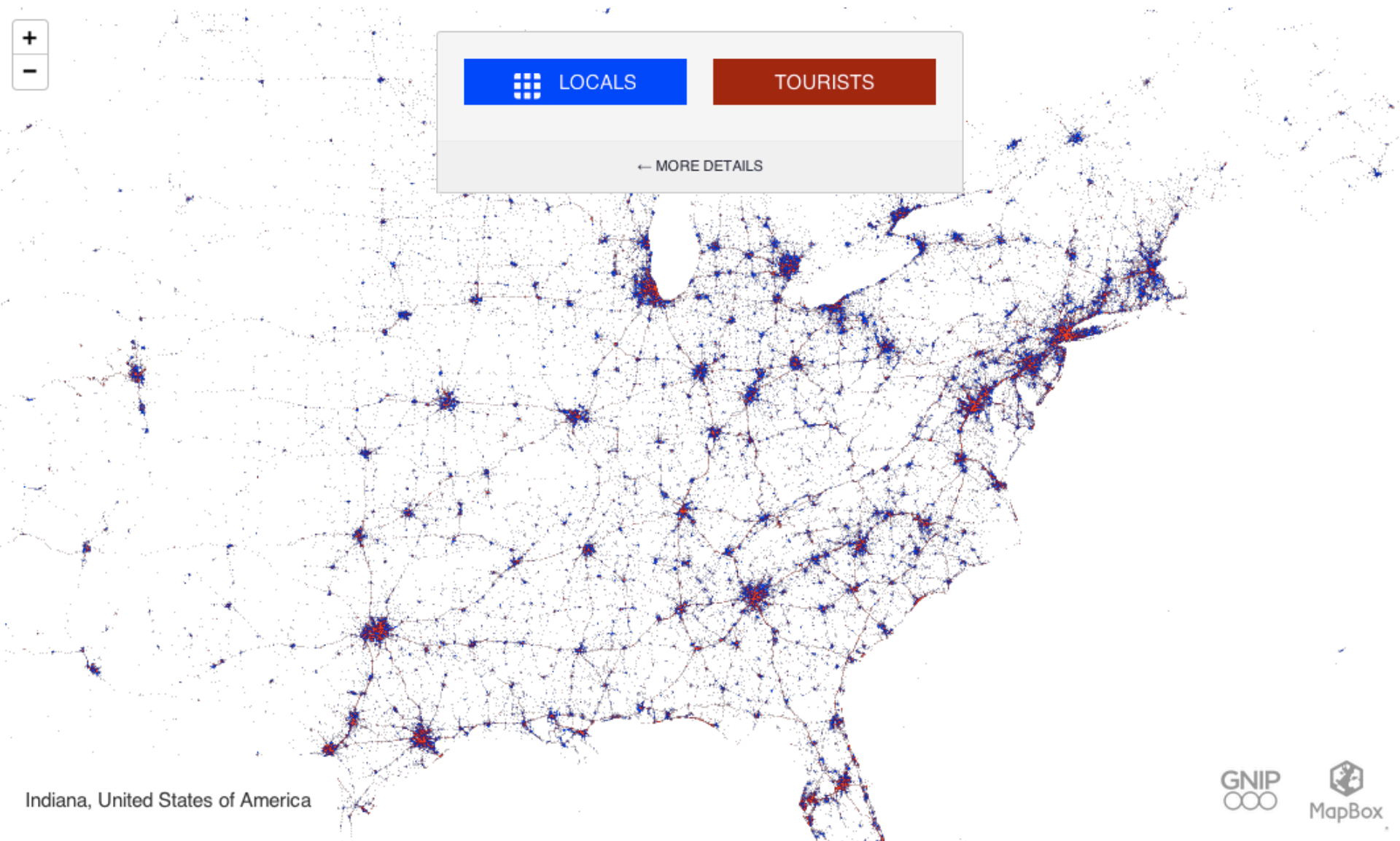


Historical data from Twitter reveals the scope of language distribution around the world.

- English
- Spanish
- Other



dot map on steroids



Indiana, United States of America



dot map on steroids

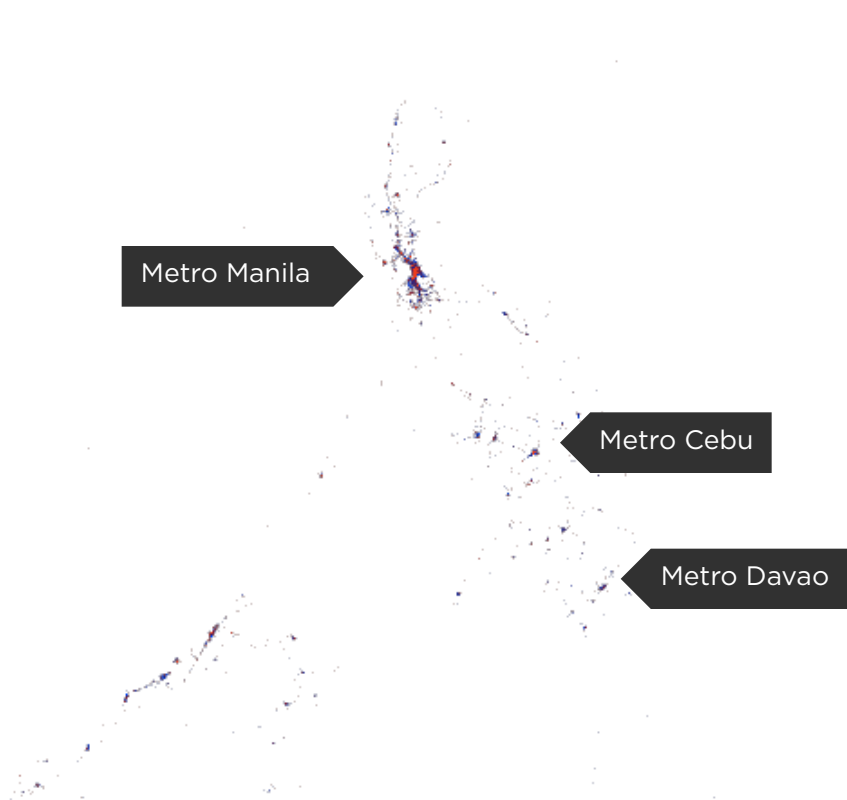


LOCALS TOURISTS

← MORE DETAILS



Indiana, United States of America



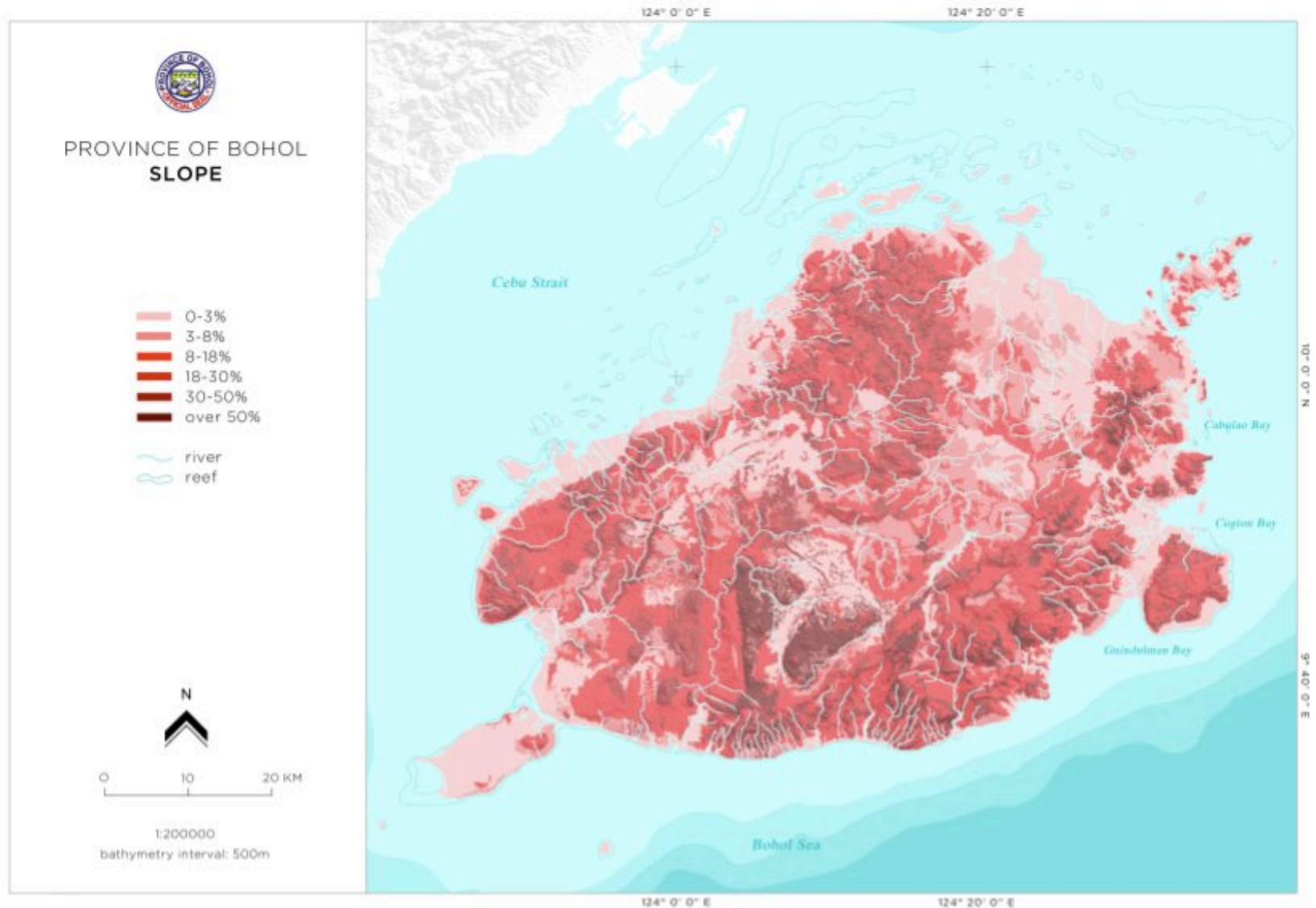
Metro Manila

Metro Cebu

Metro Davao



choropleth map

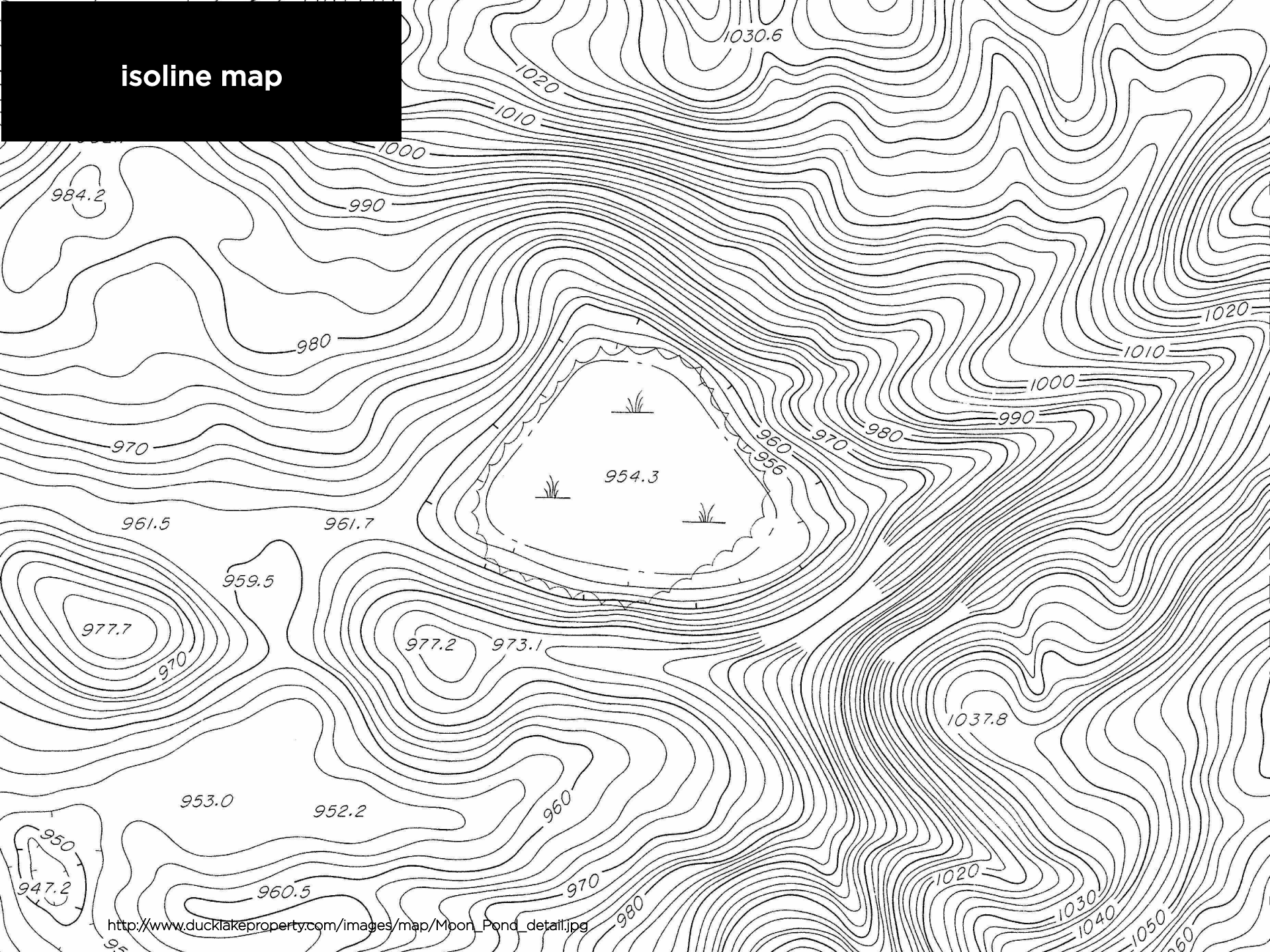


choropleth map

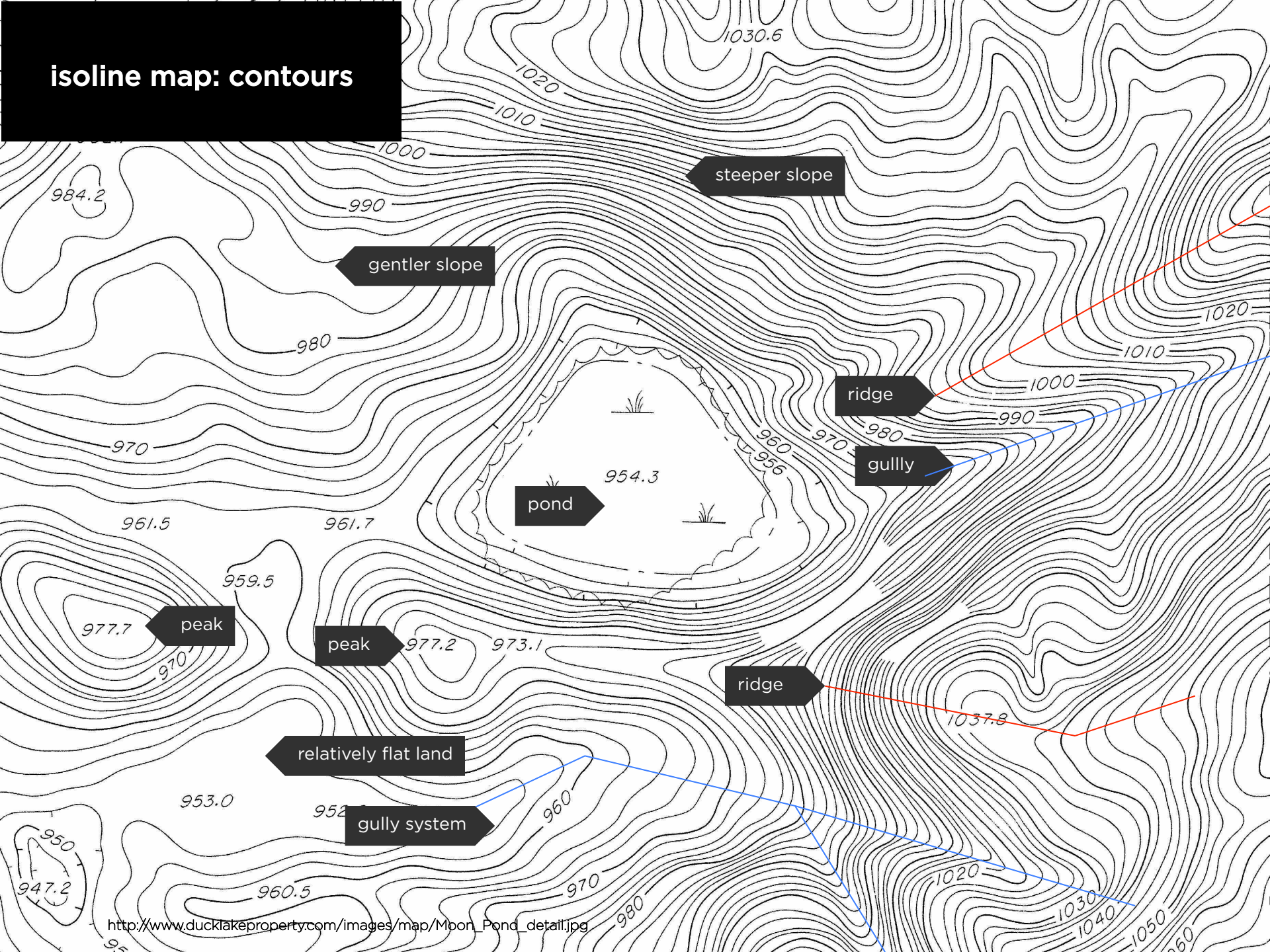
Total Population of 2000 Census Block Groups Population Density of 2000 Census Block Groups



isoline map

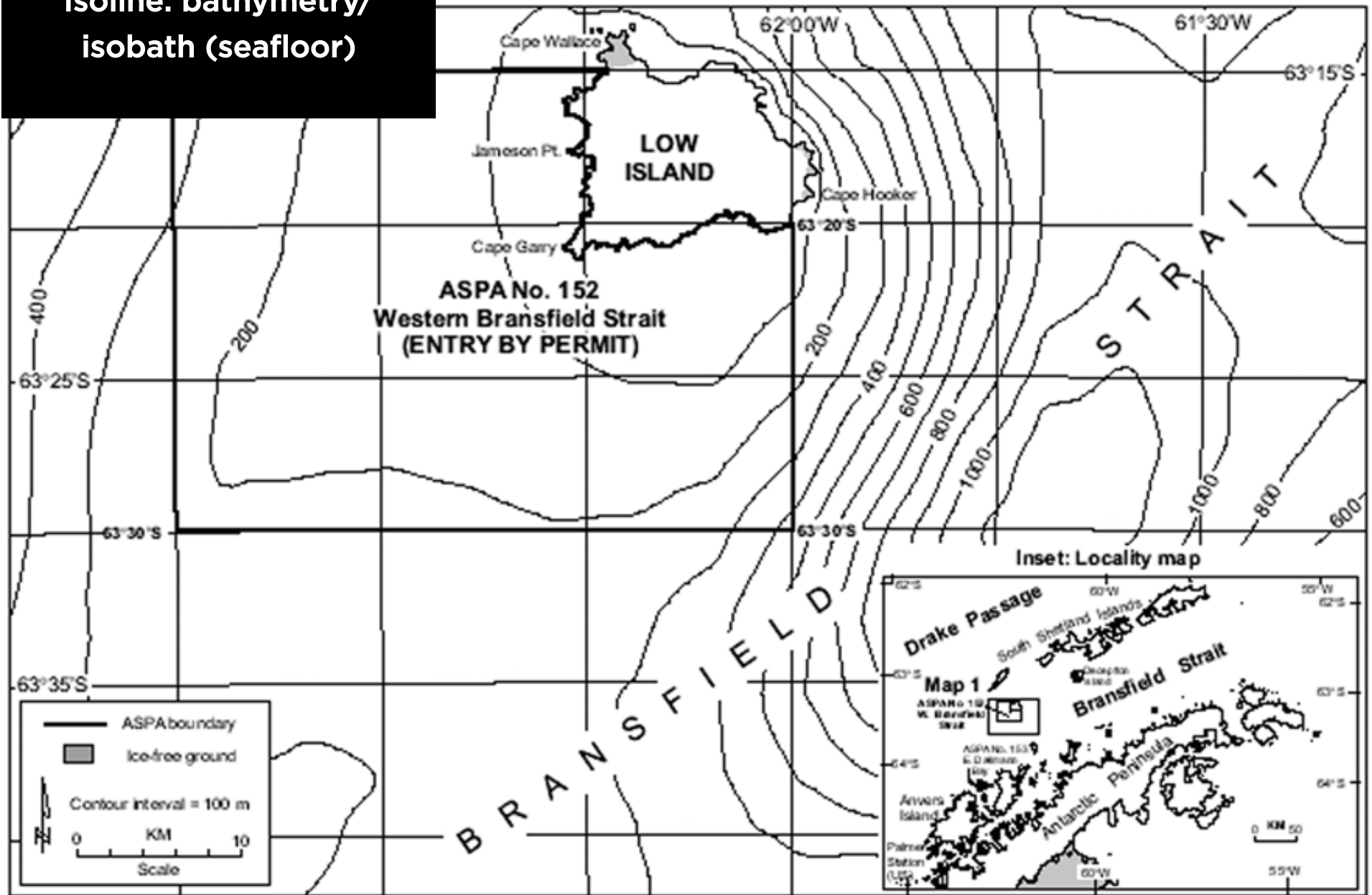


isoline map: contours

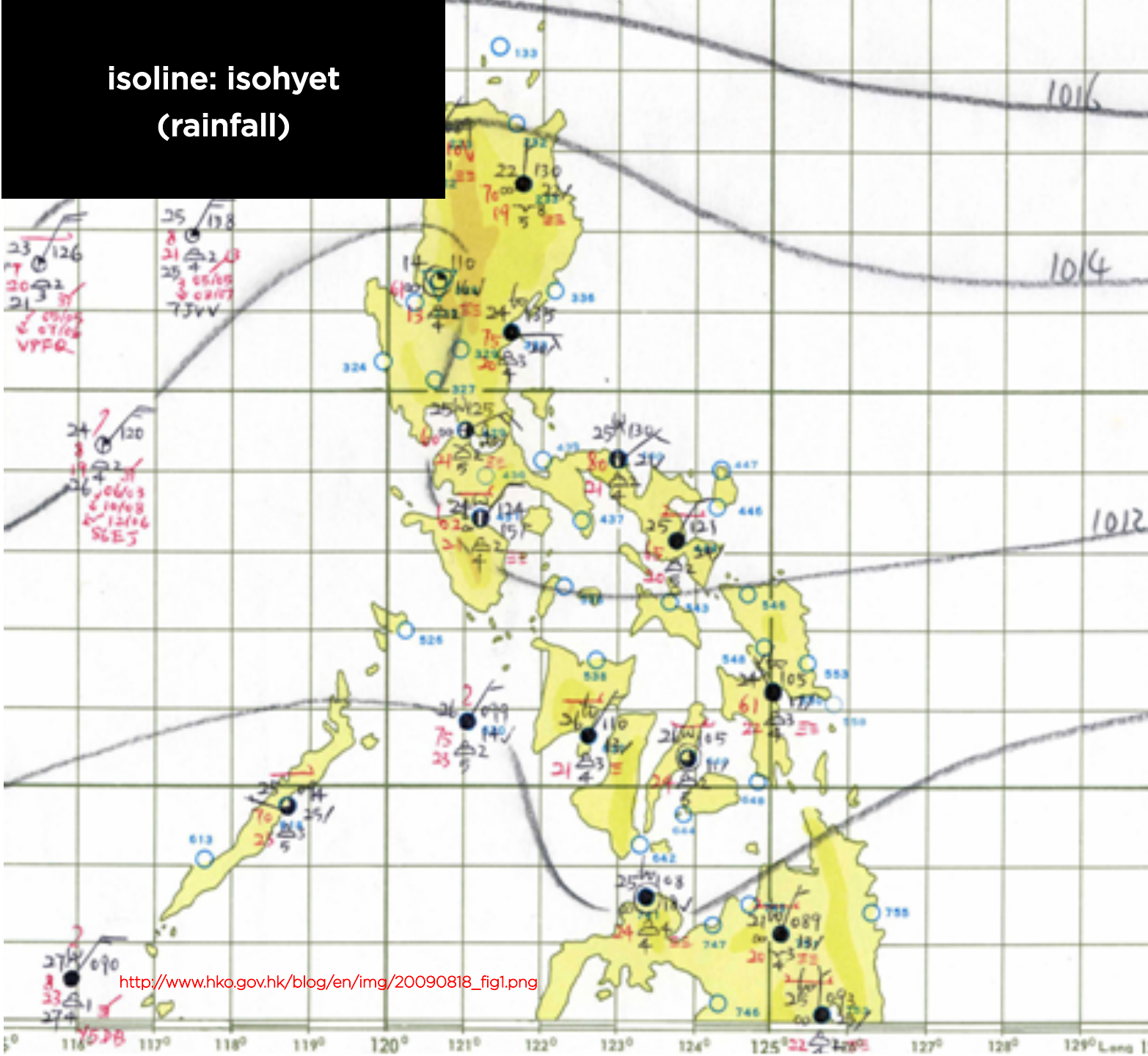


**Isoline: bathymetry/
isobath (seafloor)**

Field Strait: bathymetric map

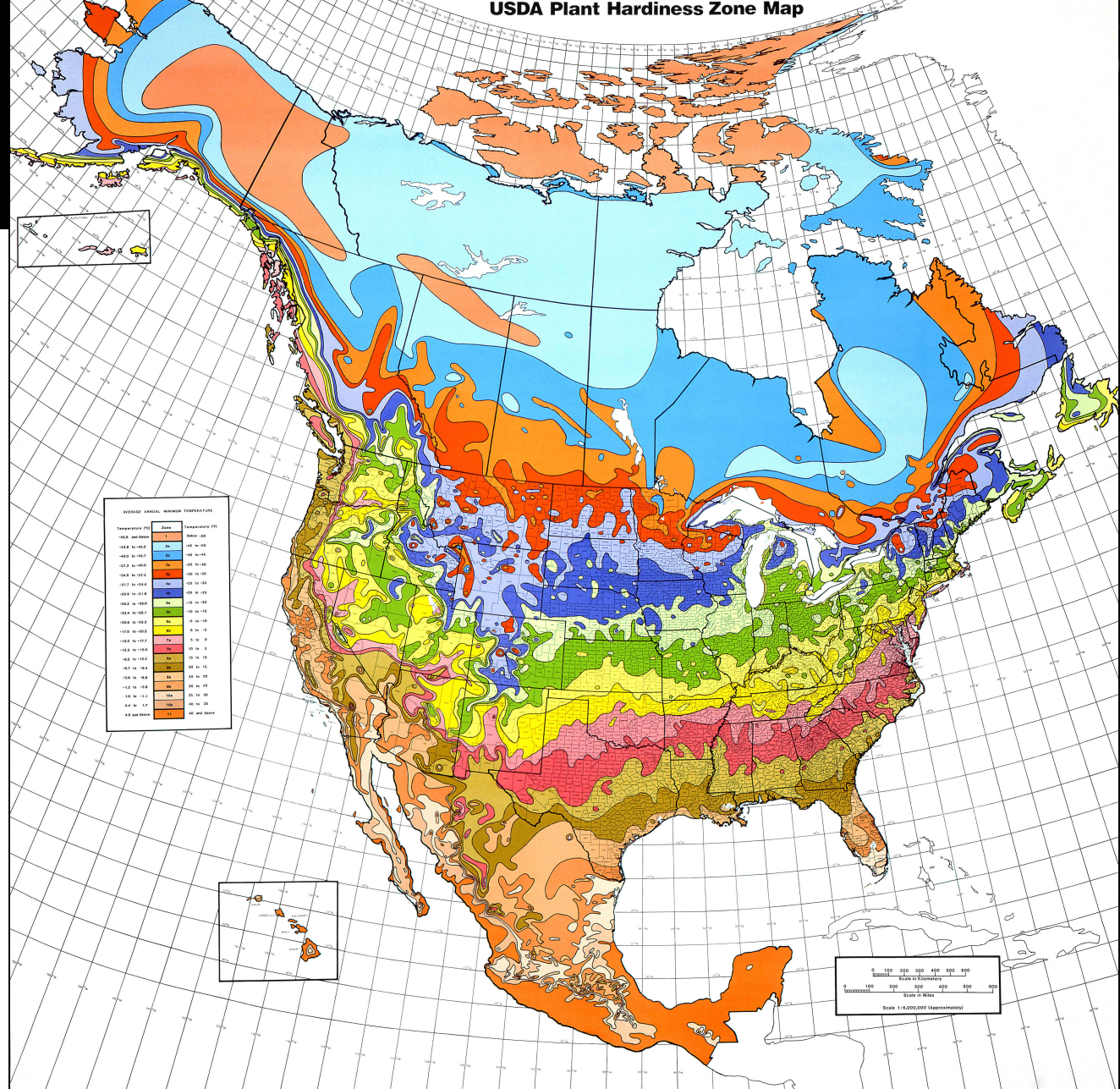


isoline: isohyet
(rainfall)

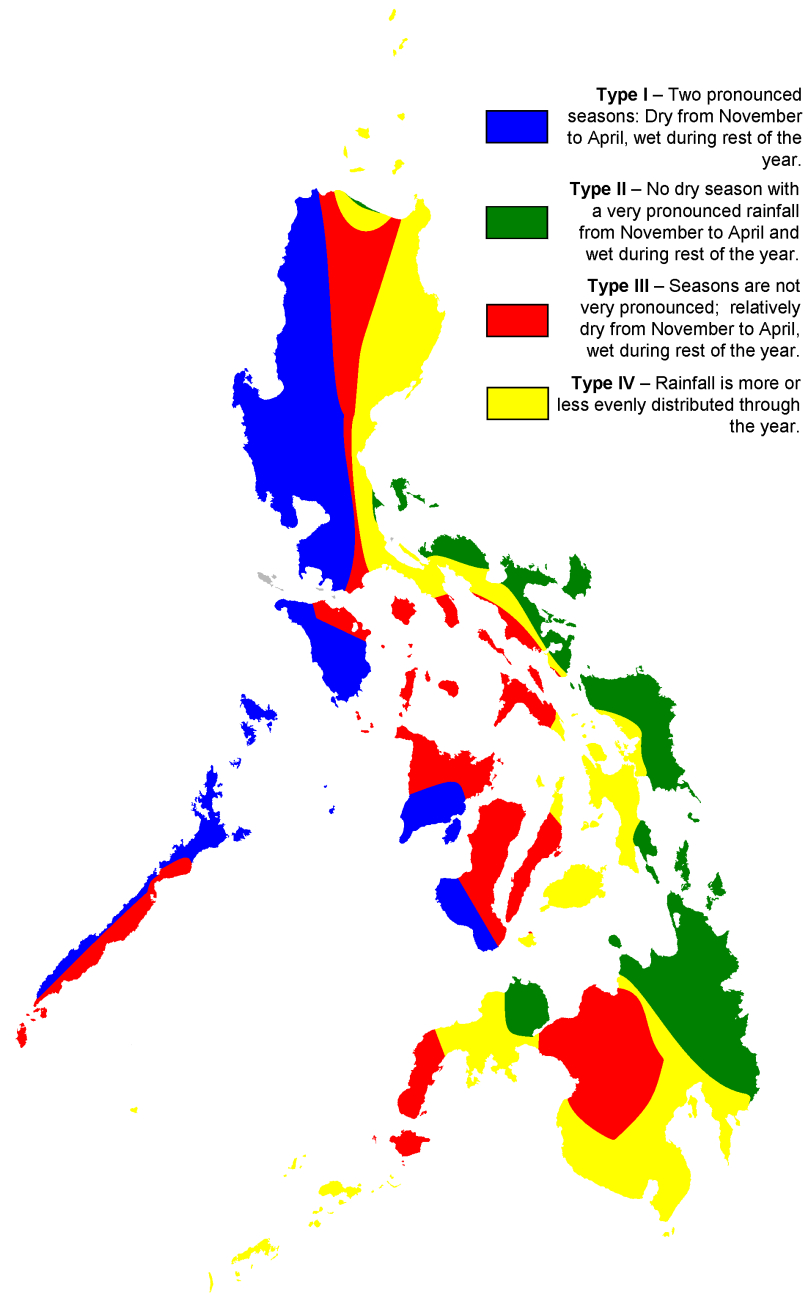


http://www.hko.gov.hk/blog/en/img/20090818_fig1.png

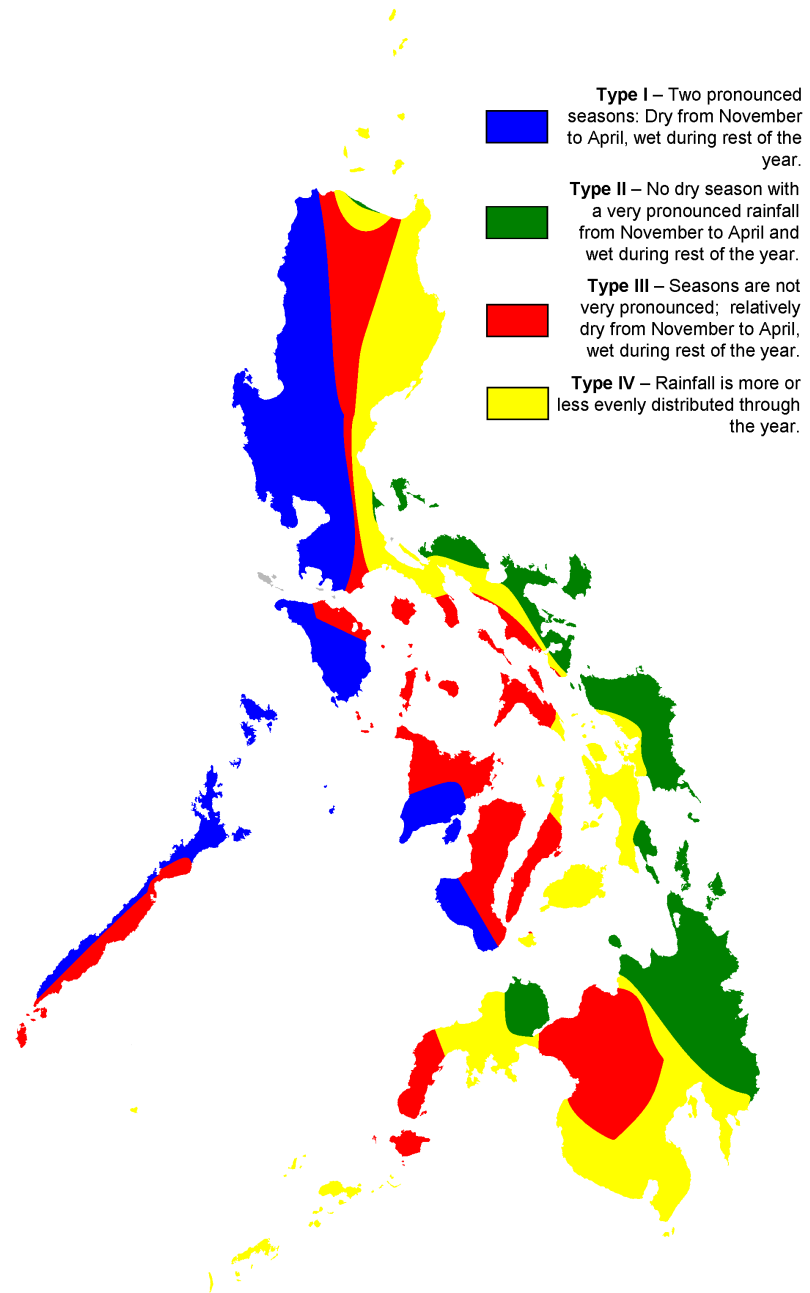
dasymetric:
isoline+choropleth



**dasymetric:
isoline+choropleth**

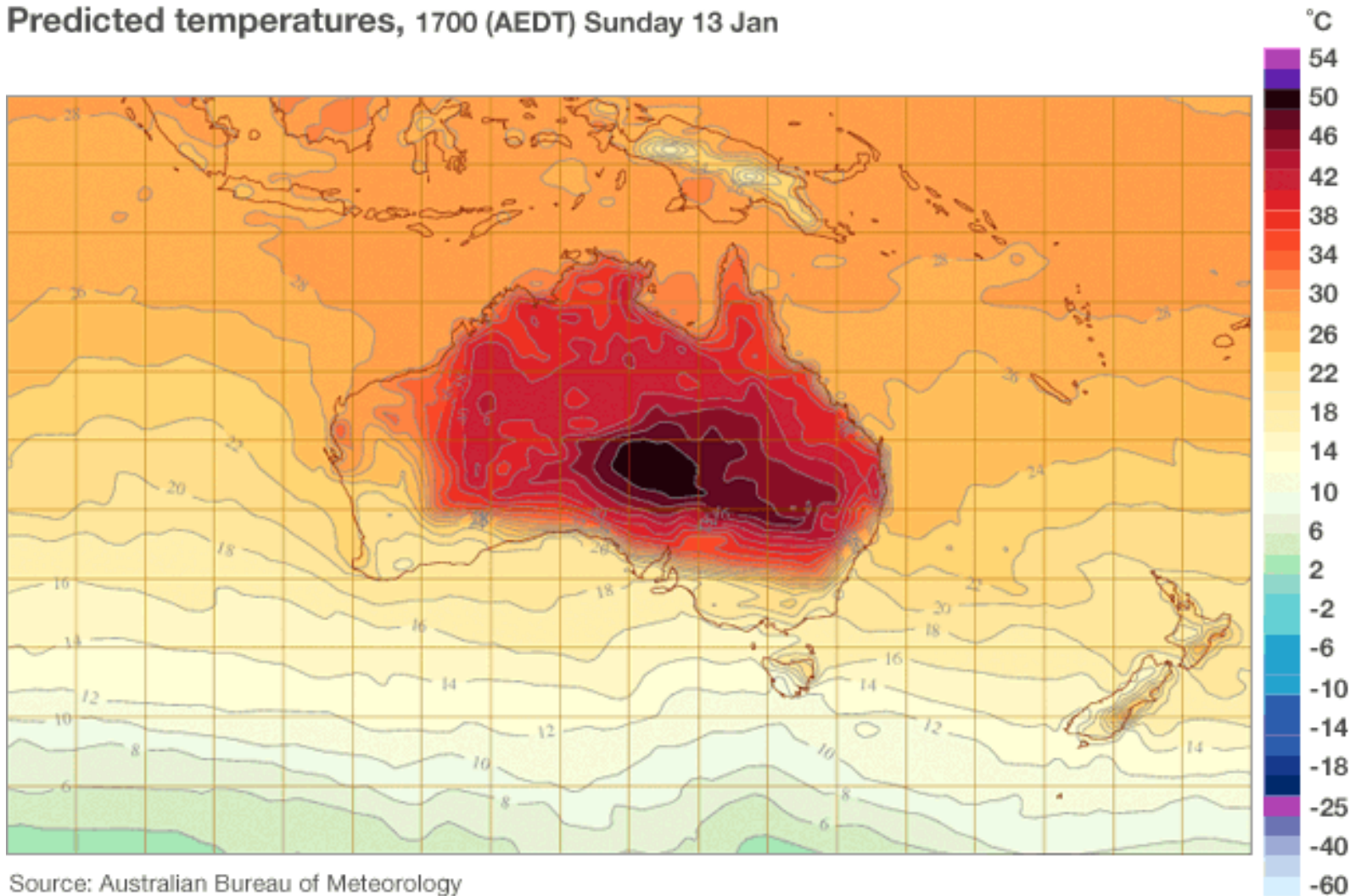


**dasymetric:
isoline+choropleth**



**dasymetric:
isoline+choropleth**

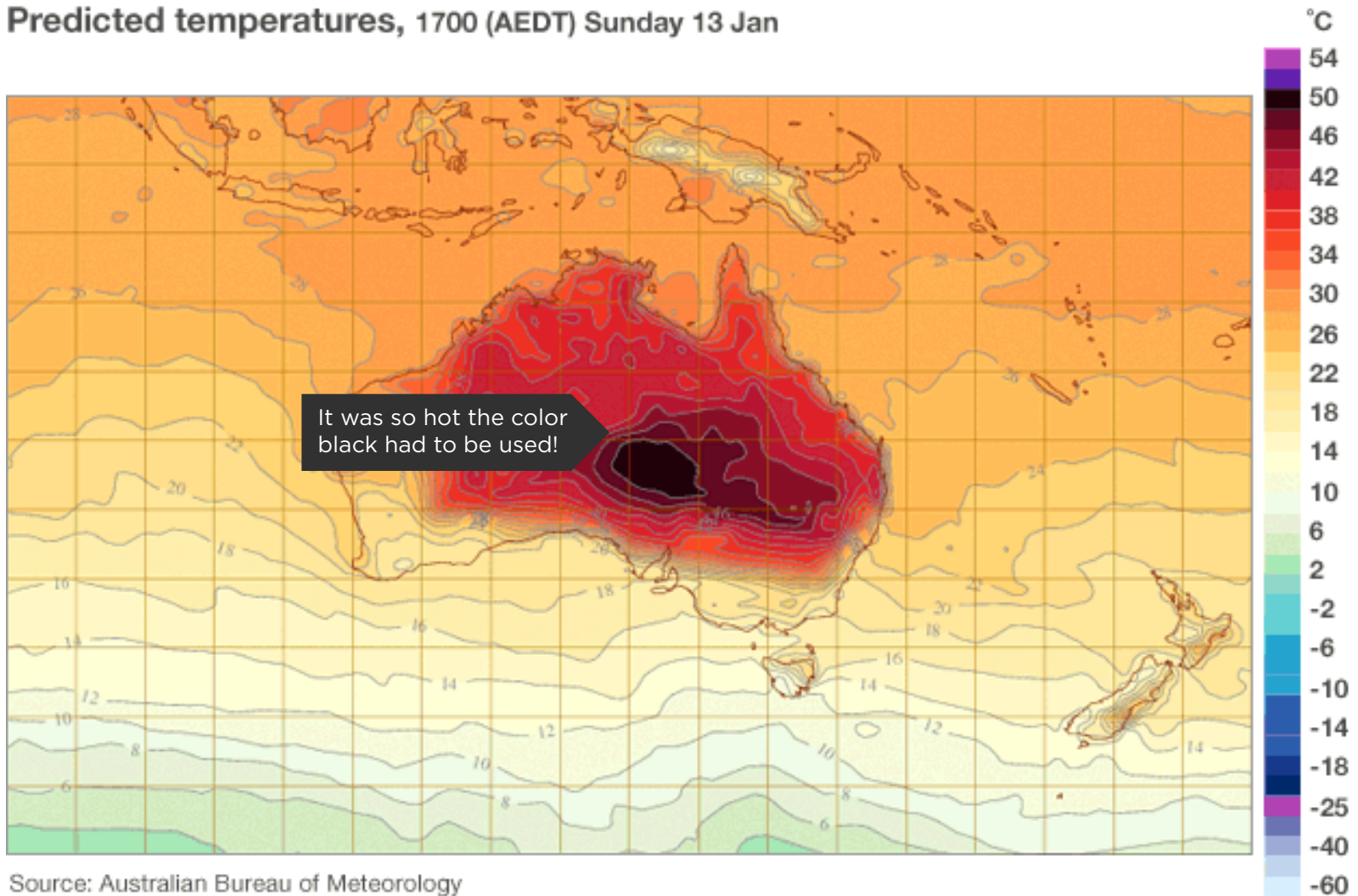
Predicted temperatures, 1700 (AEDT) Sunday 13 Jan



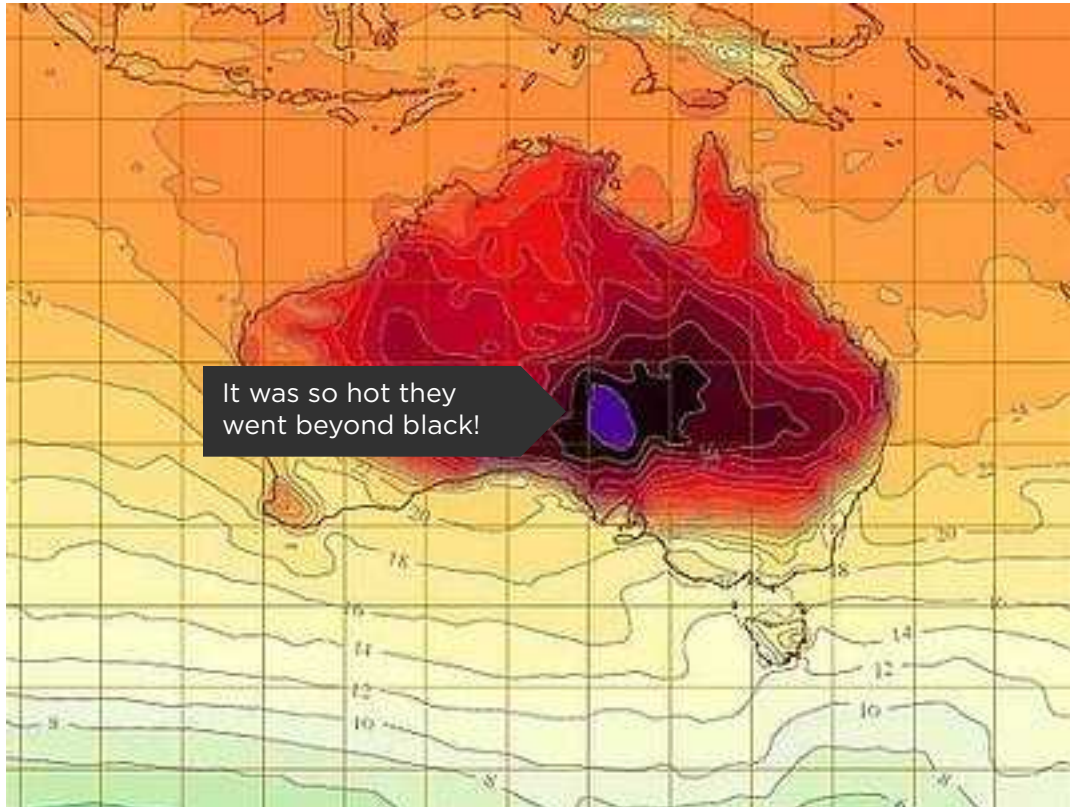
Source: Australian Bureau of Meteorology

dasymetric: isoline+choropleth

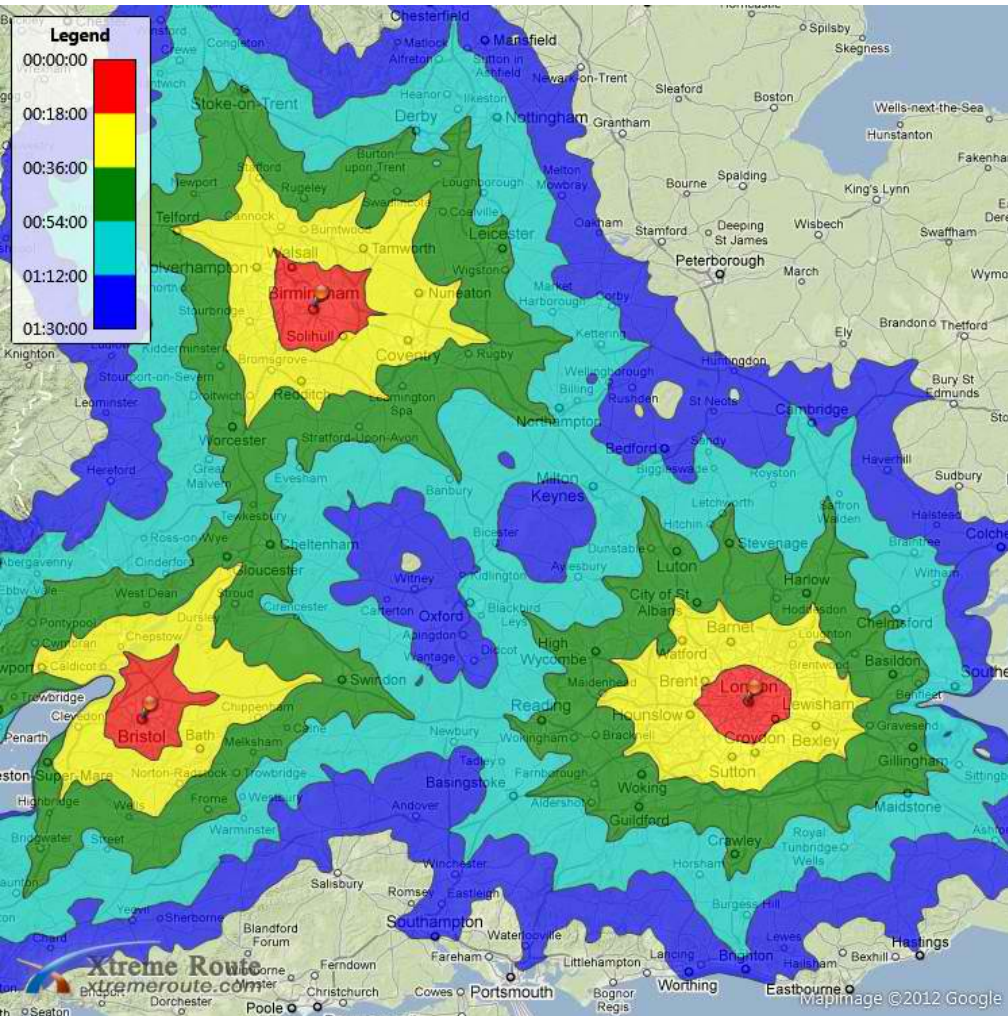
Predicted temperatures, 1700 (AEDT) Sunday 13 Jan



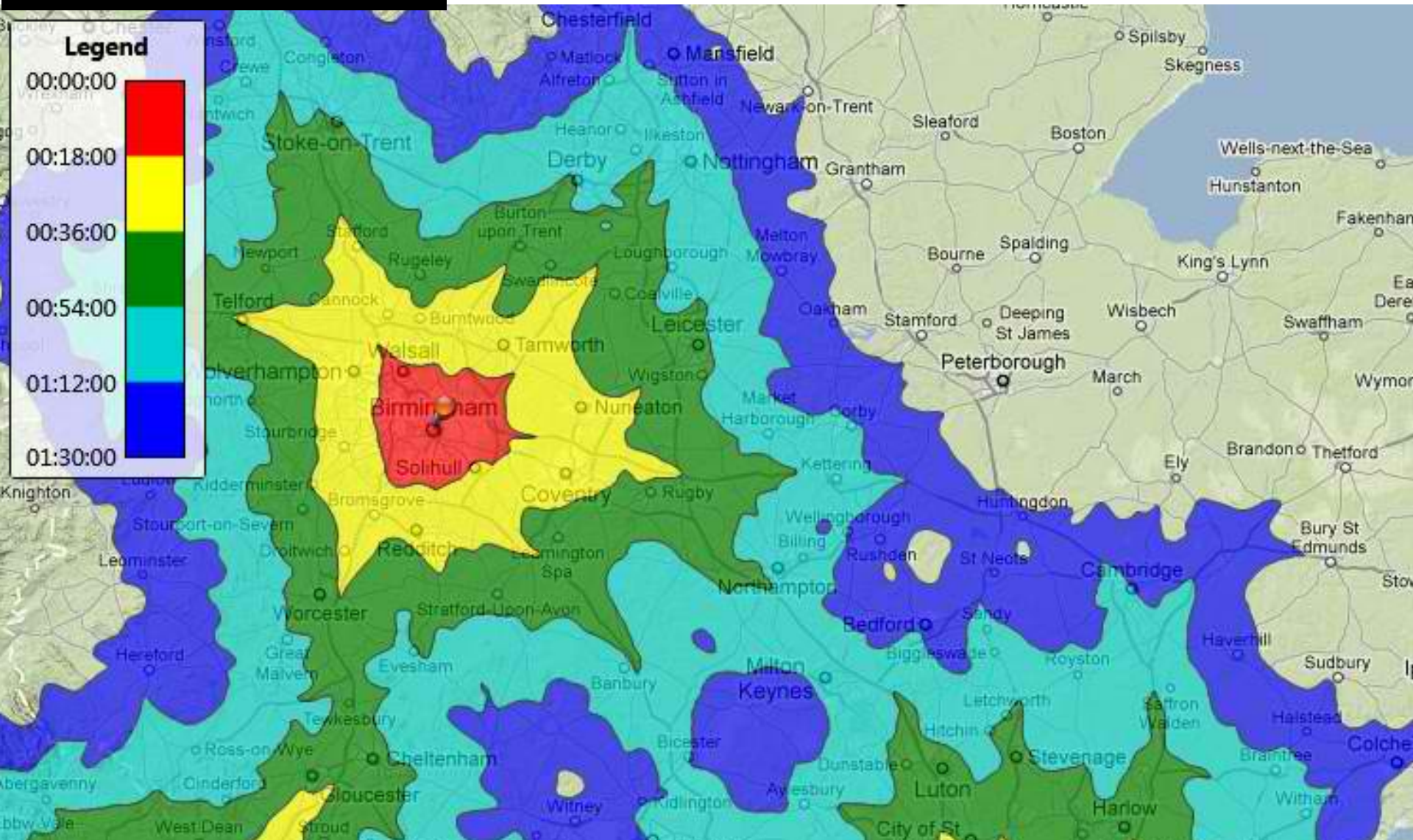
**dasymetric:
isoline+choropleth**



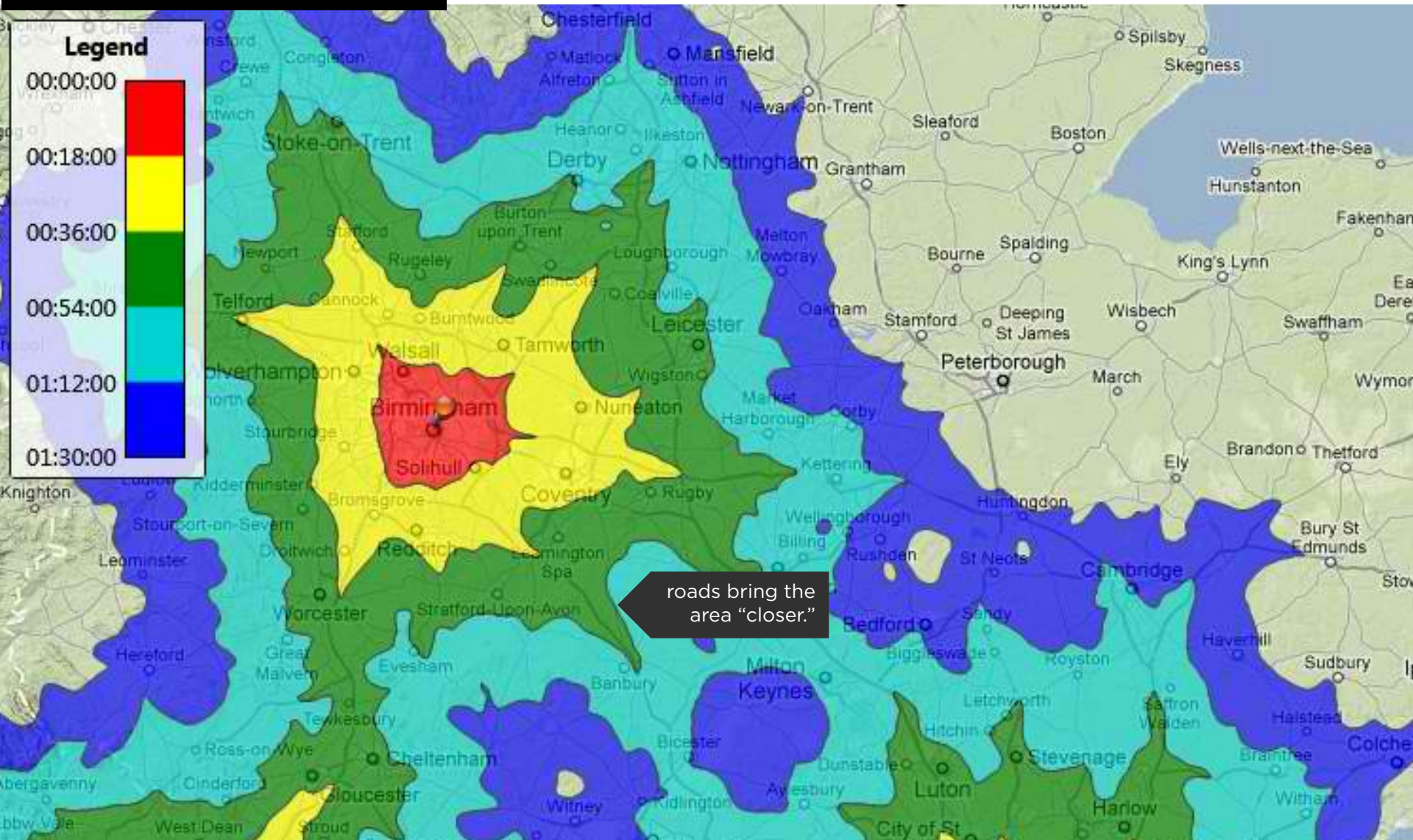
isochrone: time



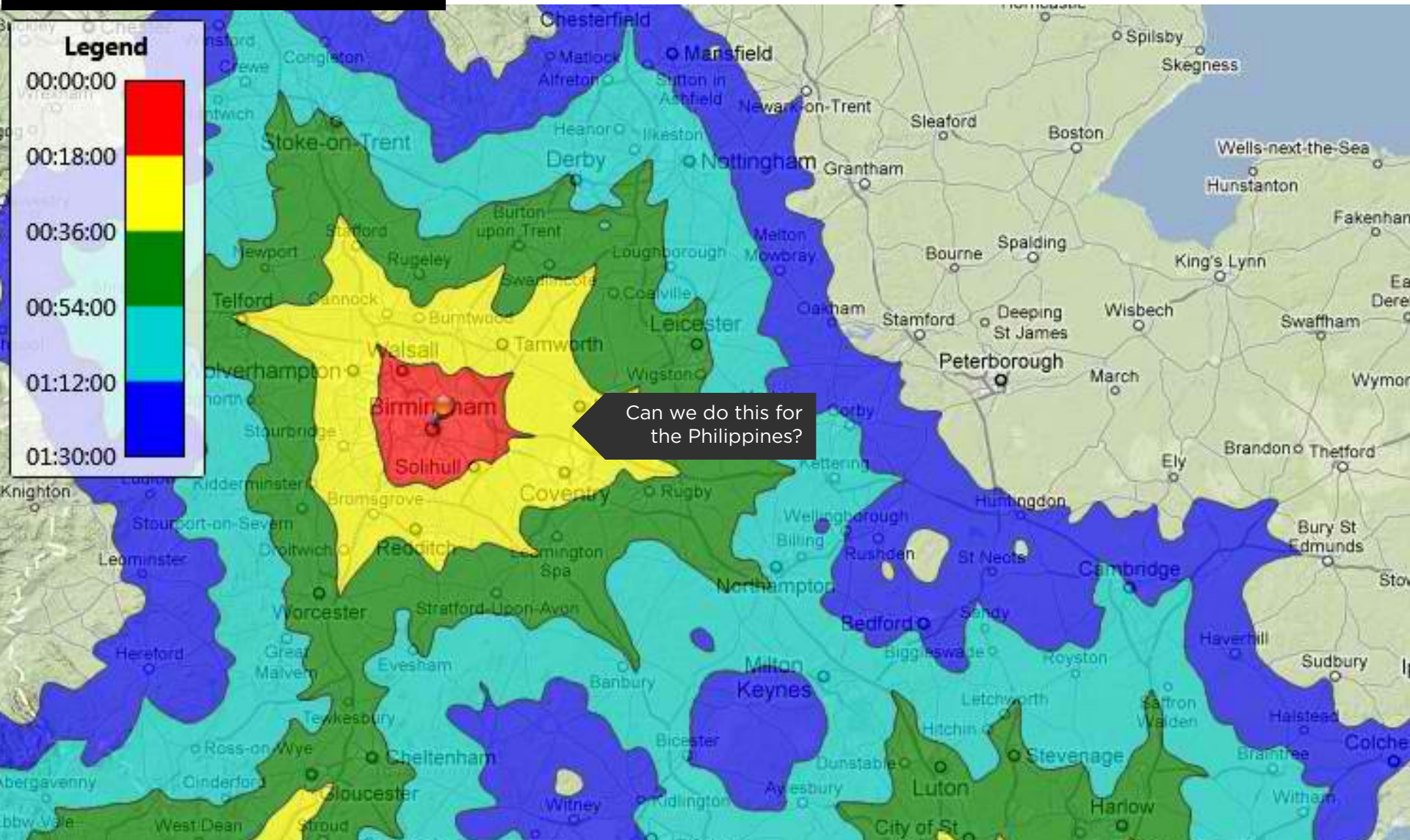
isochrone: time



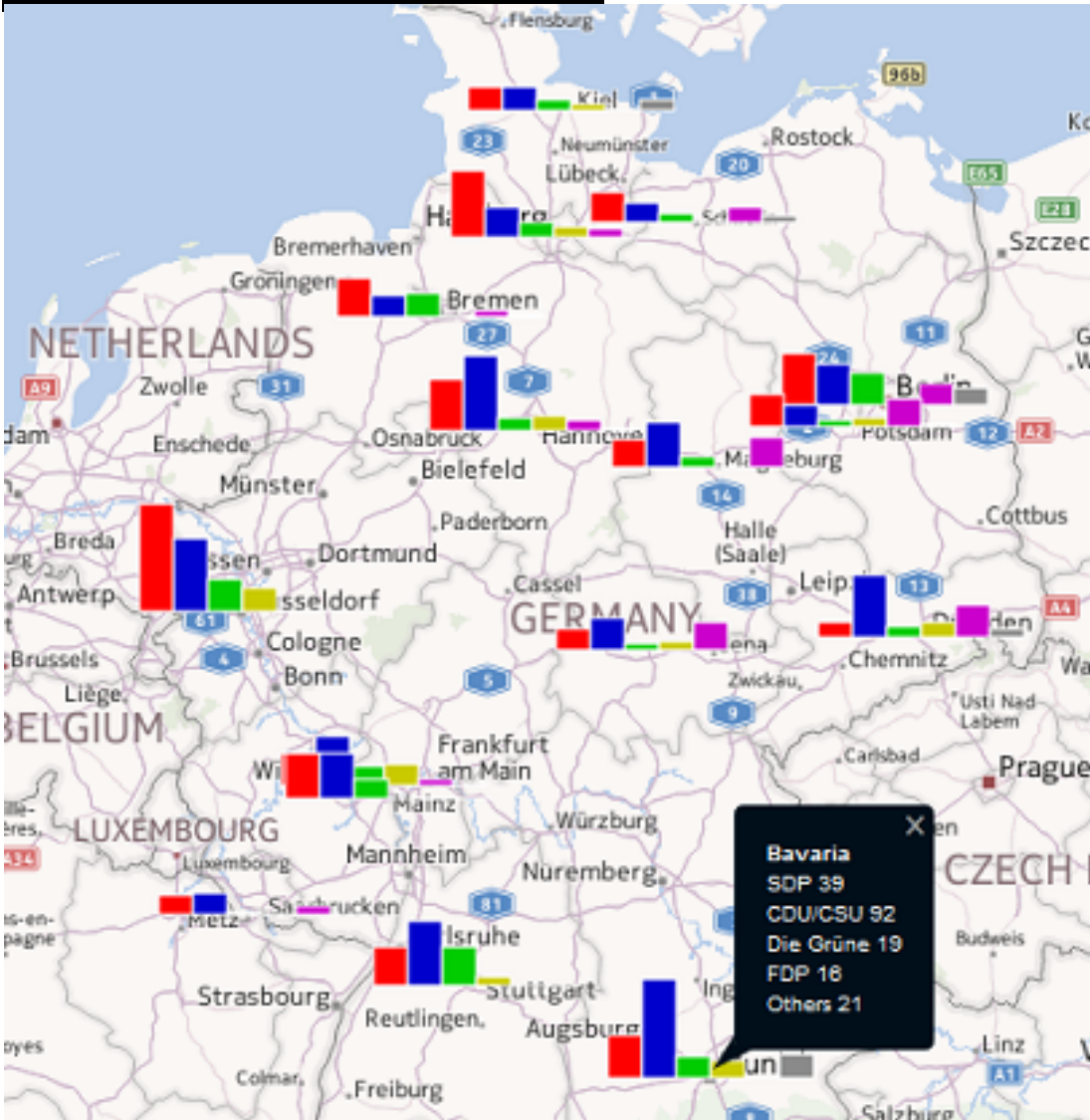
isochrone: time



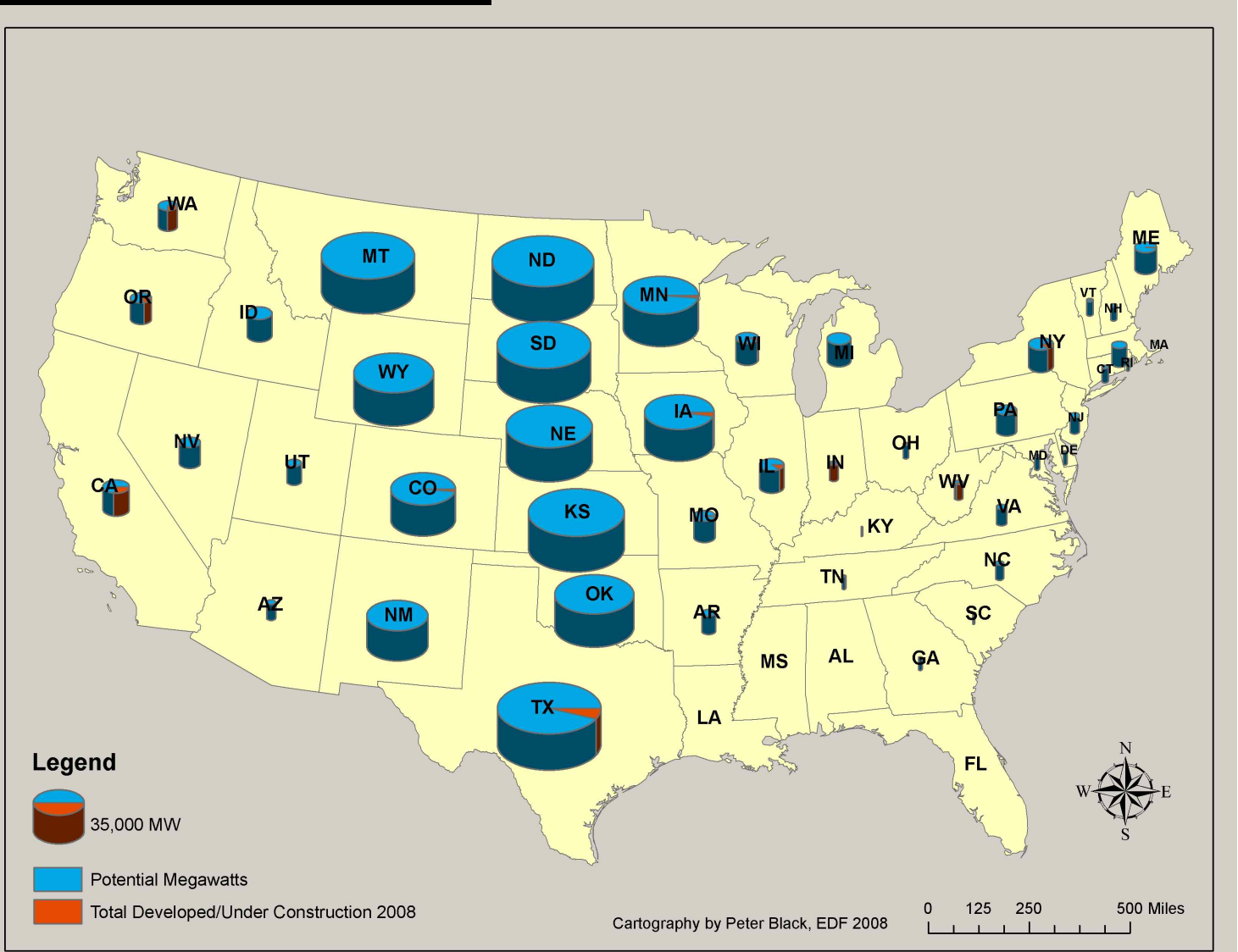
isochrone: time



located charts



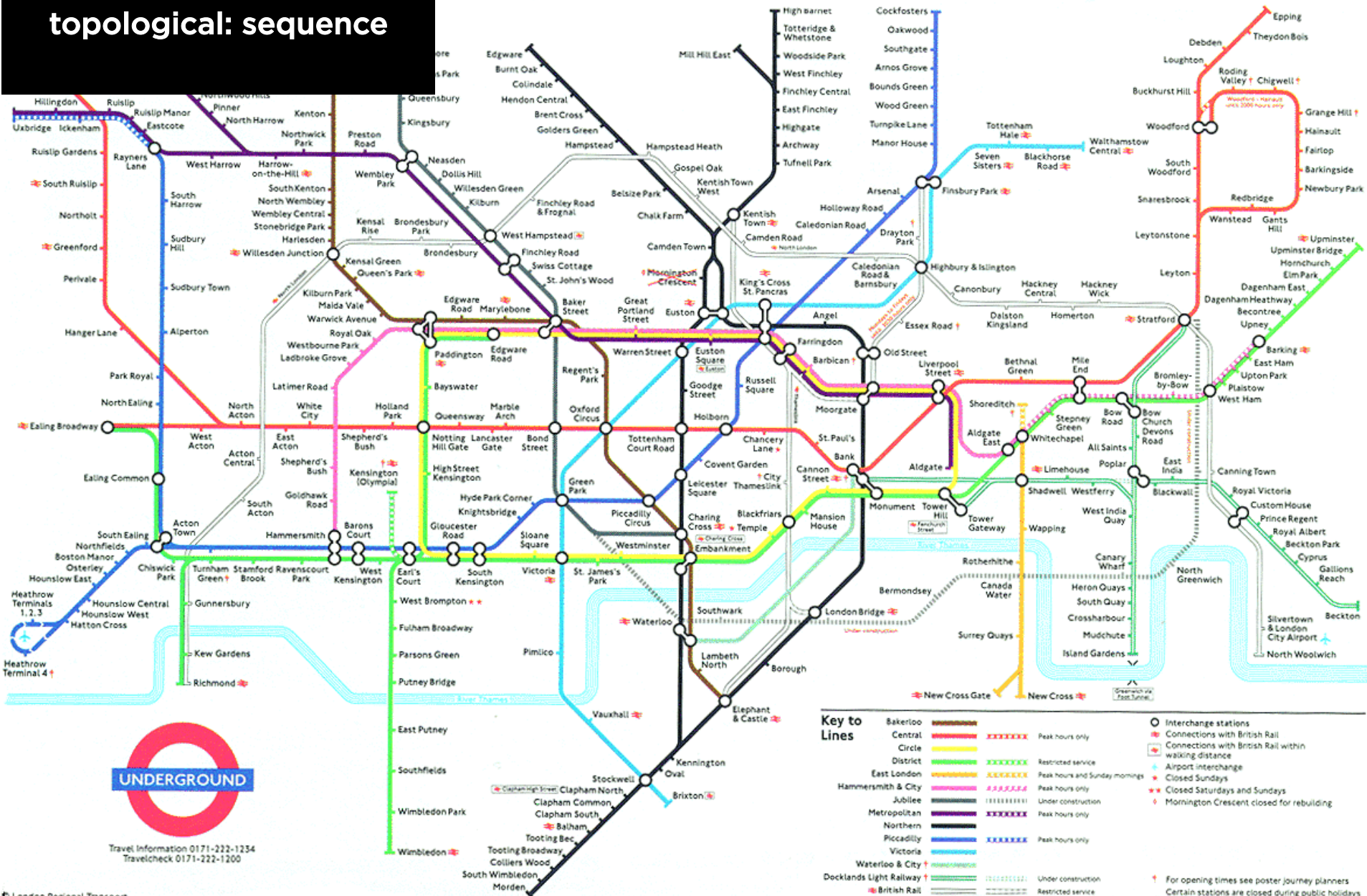
located charts



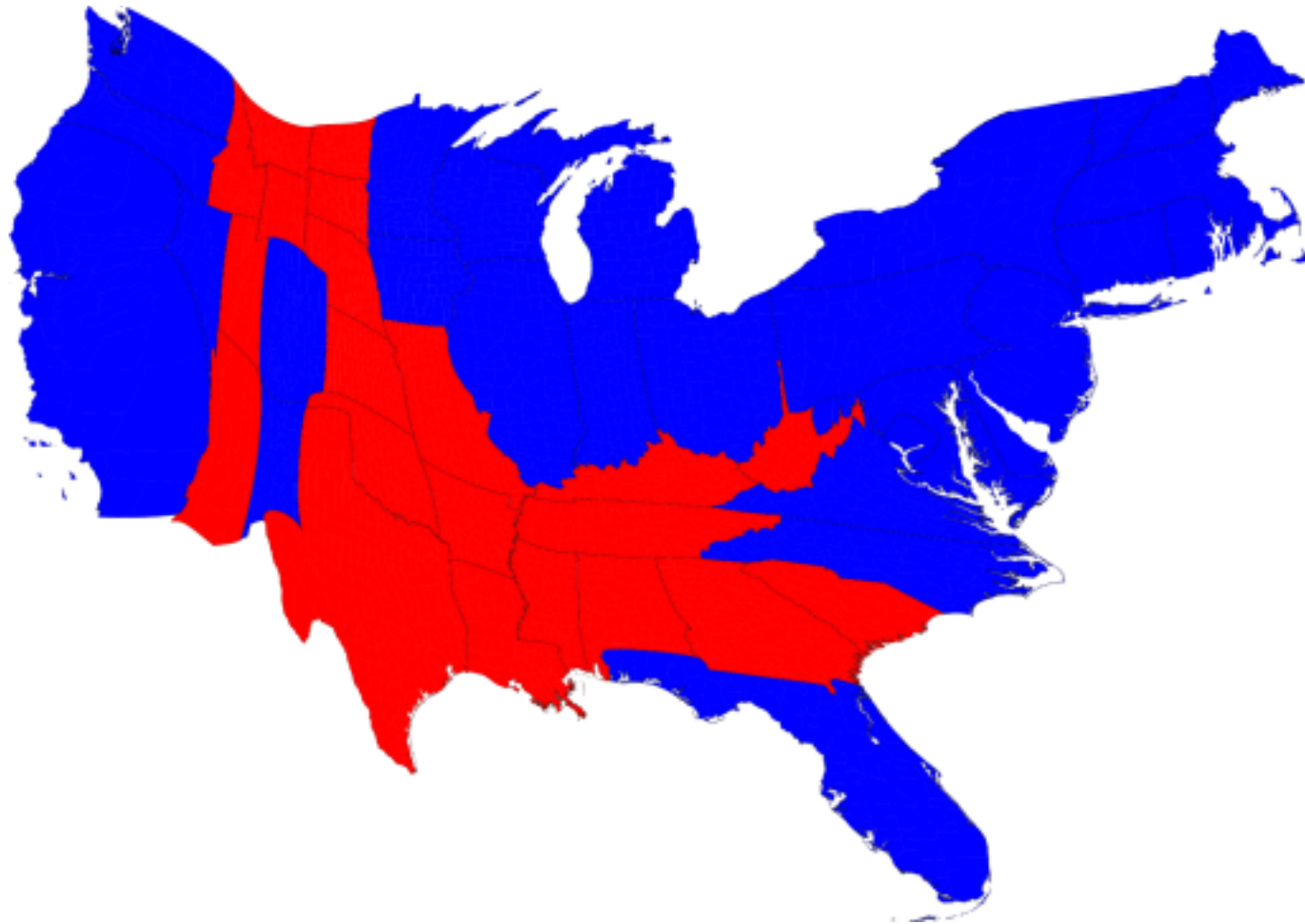
topological: sequence



topological: sequence



cartogram

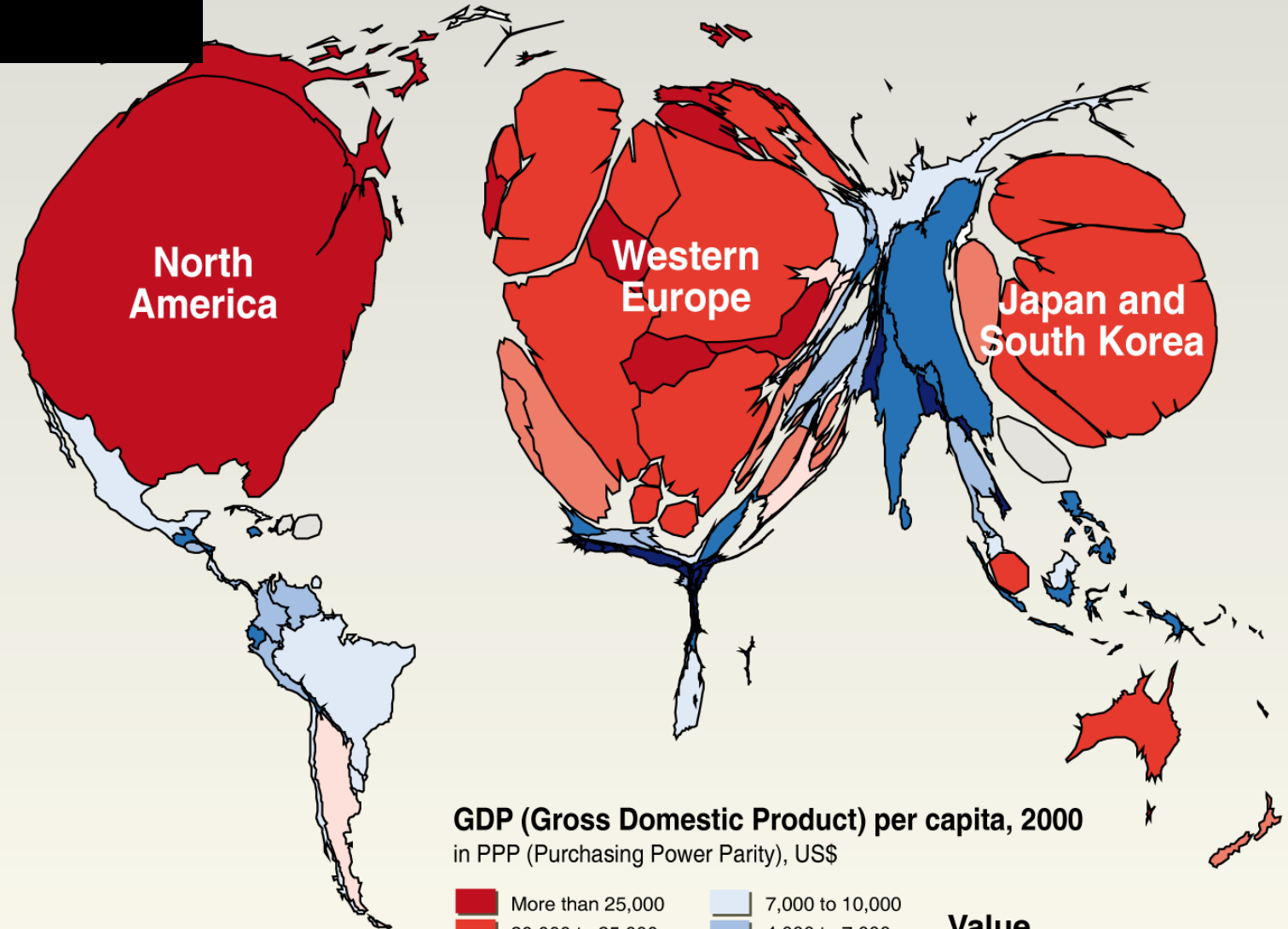


cartogram

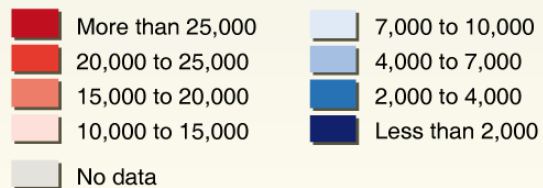
A map transformation based on a scale other than a true scale, e.g. population or income.

cartogram

AN ALTERNATIVE VIEW OF THE WORLD



GDP (Gross Domestic Product) per capita, 2000
in PPP (Purchasing Power Parity), US\$

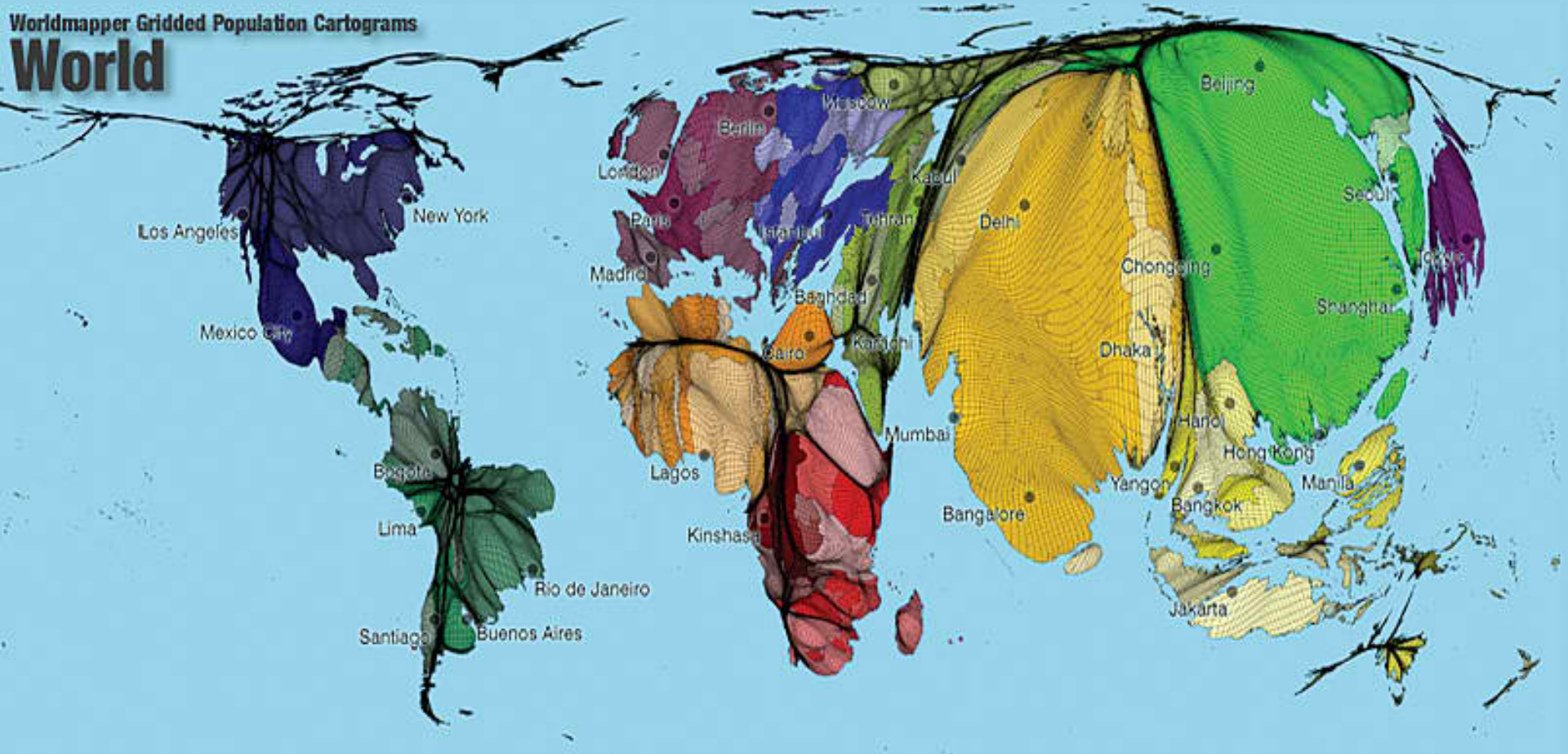


Value

This square represents 100 billion US dollars

cartogram

Worldmapper Gridded Population Cartograms World

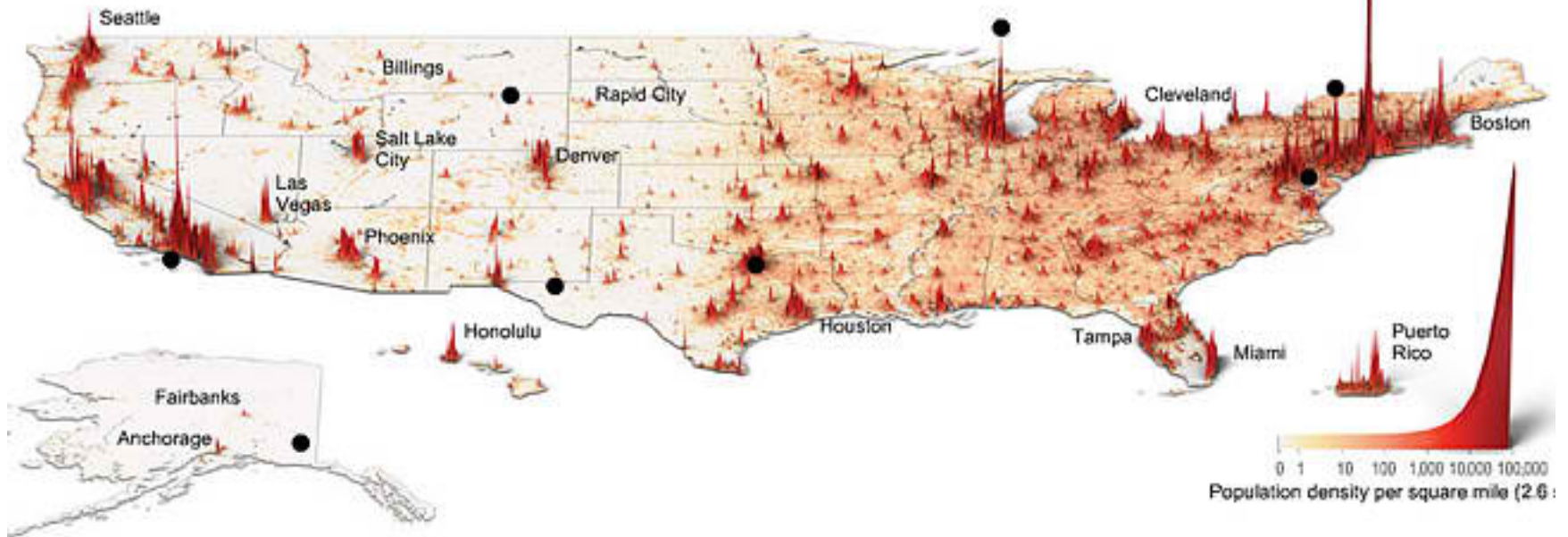


3D maps

This Is Where We Live

Take a look at America by the numbers.
Roll over the map to learn more»

80% of the U.S. population lives in a metropolitan area. Top five population centers are numbered



3D maps

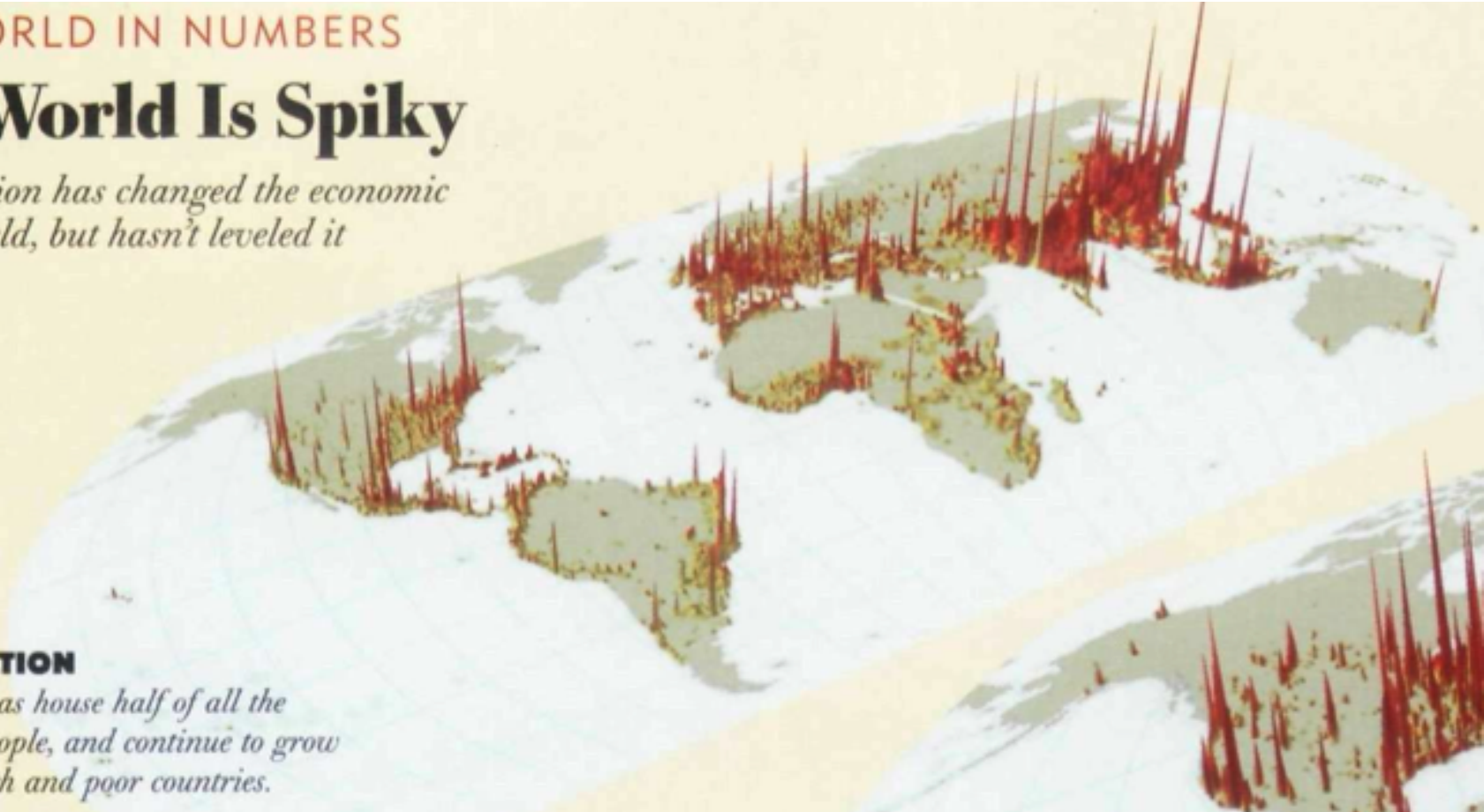
THE WORLD IN NUMBERS

The World Is Spiky

Globalization has changed the economic playing field, but hasn't leveled it

A POPULATION

Urban areas house half of all the world's people, and continue to grow in both rich and poor countries.

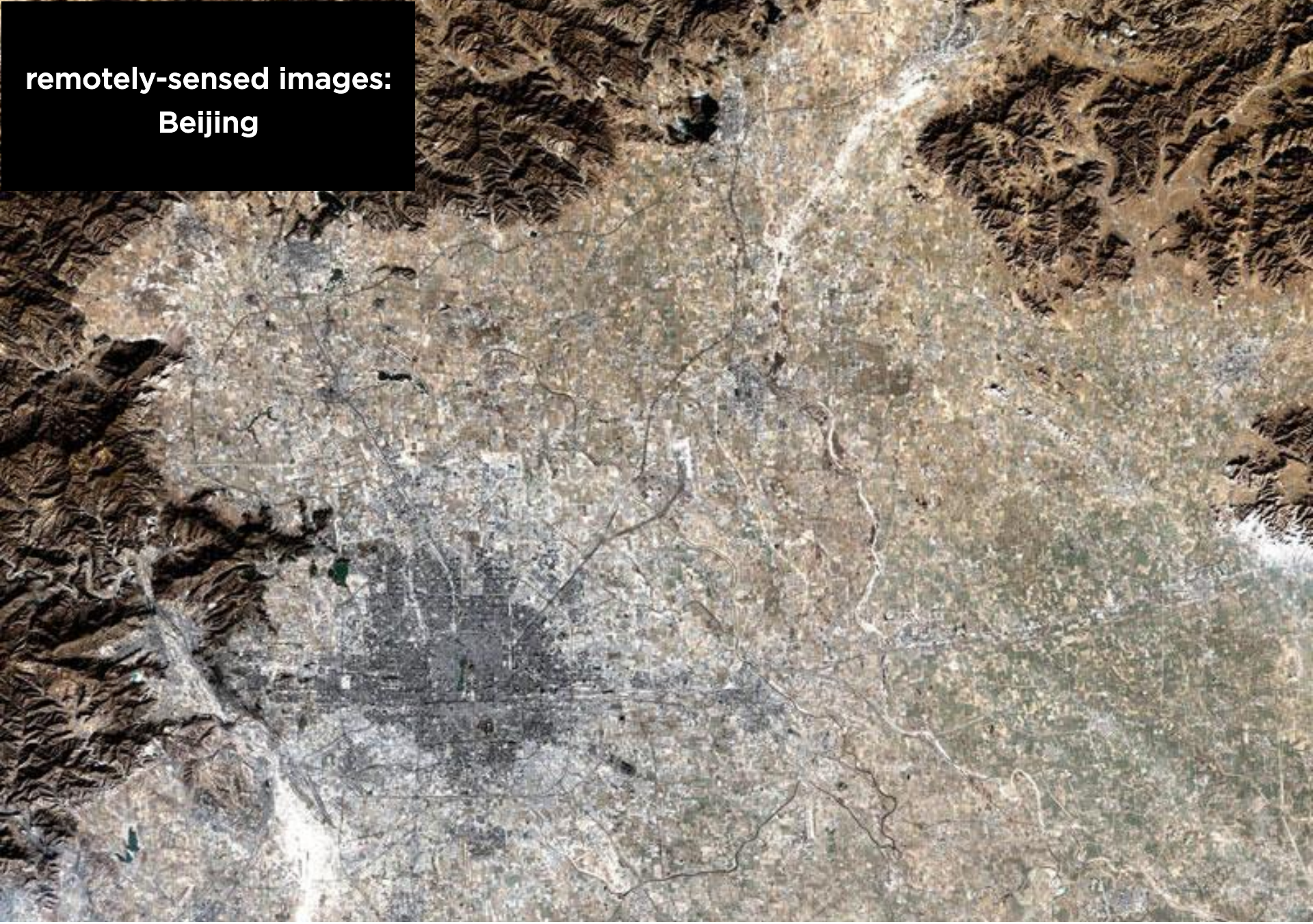


**remotely-sensed images:
Paris**



ISS026E028792

**remotely-sensed images:
Beijing**



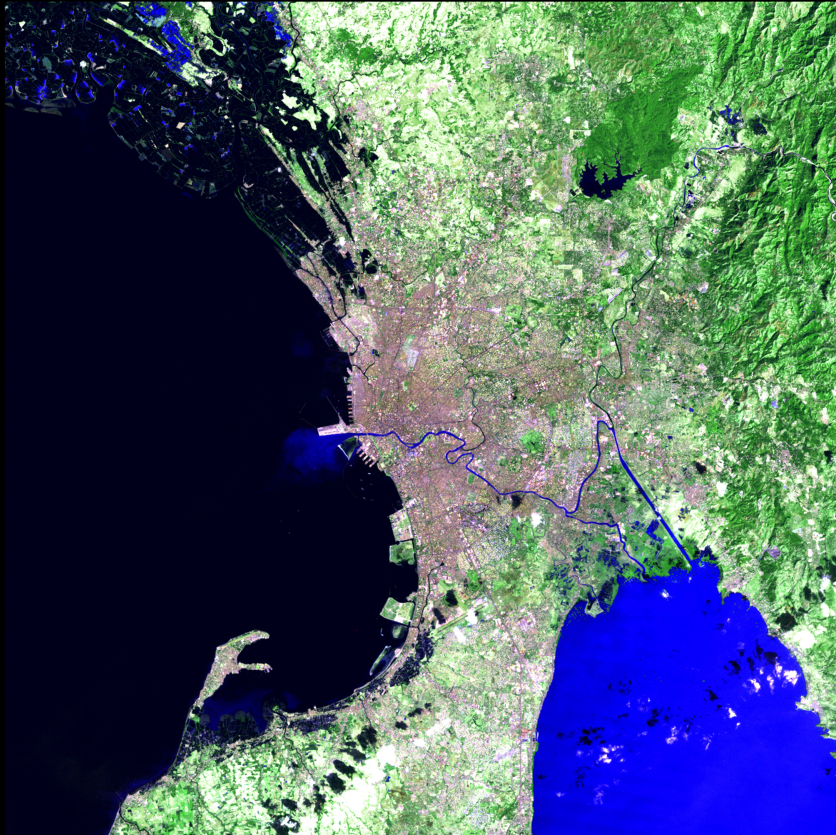
**remotely-sensed images:
Baghdad**



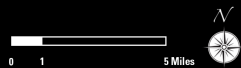
**remotely-sensed images:
Detroit**



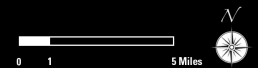
remotely-sensed images: Metro Manila



Landsat 4
January 25, 1989



Landsat 7
April 14, 2012



TYPES OF MAPS ACCORDING TO FOCUS, SYMBOL, AND MEDIUM

FOCUS	SYMBOL	MEDIA
MULTIVARIATE	DOT	PRINTED
BIVARIATE	ISOLINE	PROJECTED
UNIVARIATE	CHOROPLETH	COGNITIVE
	LOCATED CHARTS	SPOKEN
	TOPOLOGICAL	OTHERS
	CARTOGRAM	

MAPS SHOW US THAT

SPATIAL

IS

CRITICAL.

MAPS SHOW US THAT

SPATIAL

IS

SPECIAL.

zombie survival



zombie survival

MAP OF THE DEAD
ZOMBIE APOCALYPSE SURVIVAL

ENTER A CITY, ADDRESS OR POSTAL CODE

SURVIVE

We are very prepared.

MapBox
POWERED BY FOURSQUARE ABOUT STREET DATA MADE BY DOEJO
MENU

WITH MAPS, THERE ARE

**INFINITE POSSIBLE
THINGS TO ANALYZE
AND VISUALIZE!
REPRESENTATION**

WITH MAPS, THERE ARE

MANY POSSIBLE

THINGS TO ANALYZE

AND VISUALIZE!

PARTS OF A FORMAL PRINTED MAP

These parts are common to formal printed maps though one or more may be absent in a particular map.

title

map body

inset map

legend

numerical scale

orientation (e.g. north arrow)

projection (e.g. Mercator, Robinson)

other information

neat line – borders the map body

frame line

projection

is a systematic rendering on a flat surface of the geographical coordinates of the features found on Earth's surface (Knox, Marston, and Nash).

equidistant projections	allow distance to be represented as accurately as possible.
conformal projections	map projections on which compass bearings are rendered accurately.
azimuthal projections	map projections on which compass directions are correct from only one central point
equal-area (Knox, Marston, and Nash)	map projections that portray areas on Earth's surface in their true proportions

A projection preserves and ignores the accuracy of one or more of these: size, shape, area, direction, and distance.

REFERENCES

- Crampton, Jeremy. Mapping: A Critical Introduction to Cartography and GIS. Wiley-Blackwell. 2010.
- Knox, Paul, Sallie Marston, and Alan Nash. Human Geography. Prentice-Hall. 2004.
- Matthews, John and David Herbert. Geography: A Very Short Introduction. Oxford. 2008.
- Mayhew, Susan. A Dictionary of Geography. Oxford. 2004.