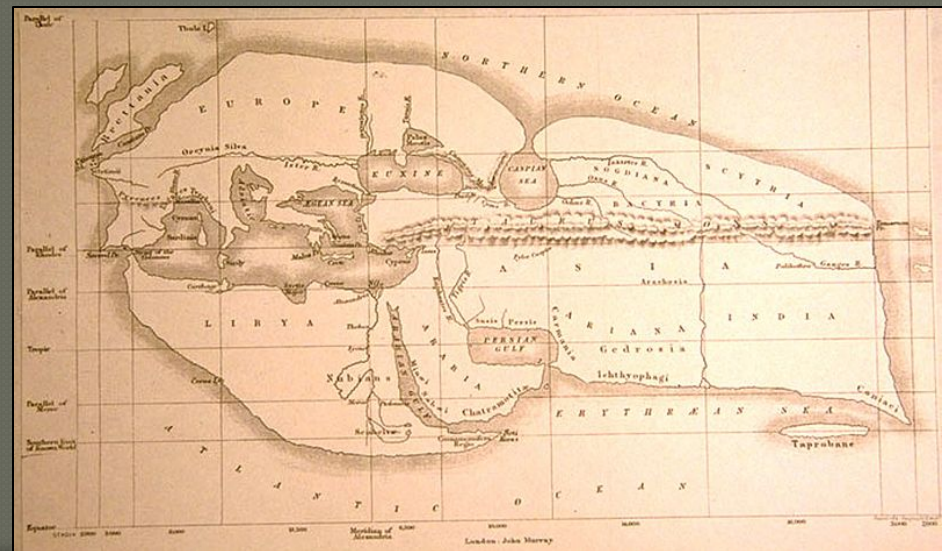
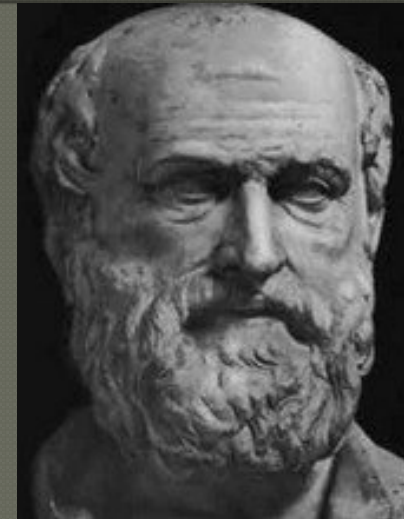


Thinking Geographically

Basic Concepts

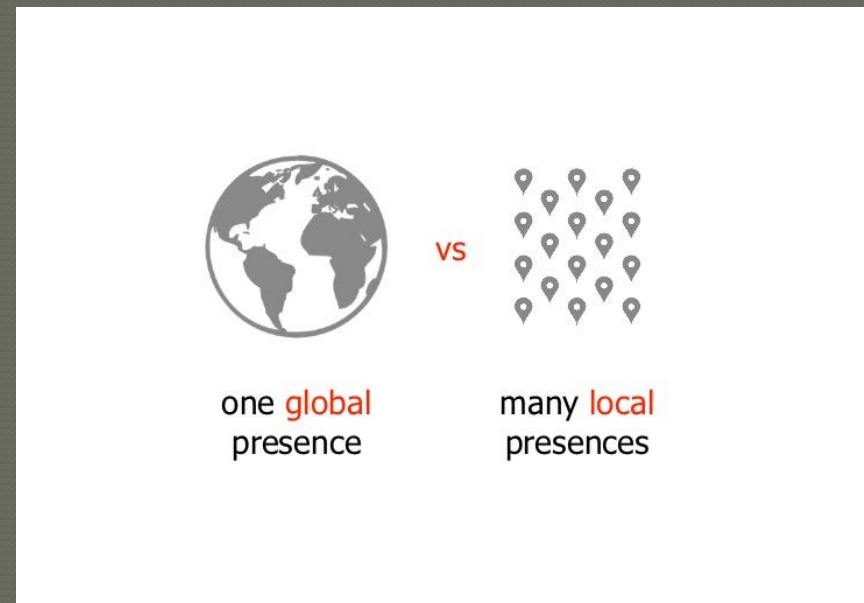
Defining Geography

- Video 1a
- Word coined by...
 - Eratosthenes
- Geo
 - “Earth”
- Graphia
 - “Writing” or “field of study”
- Geography
 - Earth Writing



Contemporary Geography

- Geographers ask...
 - Where & Why
 - Location & Distribution are important
 - Concerned with tension between globalization and local diversity
 - Divided
 - Physical Geography & Human Geography



Key Vocabulary

● Space

- The geometric surface of the Earth. Objects (trees, people, buildings, etc.) occupy this space

● Place

- An area of bounded space of some human importance. People don't have to live there, as long there is a place name, or toponym

● Region

- A type of place that has common features
 - Formal, Functional, Vernacular

● Scale

- The relationship of an object or place to the Earth as a whole.
 - Map scale vs Relative scale

Purpose of Maps

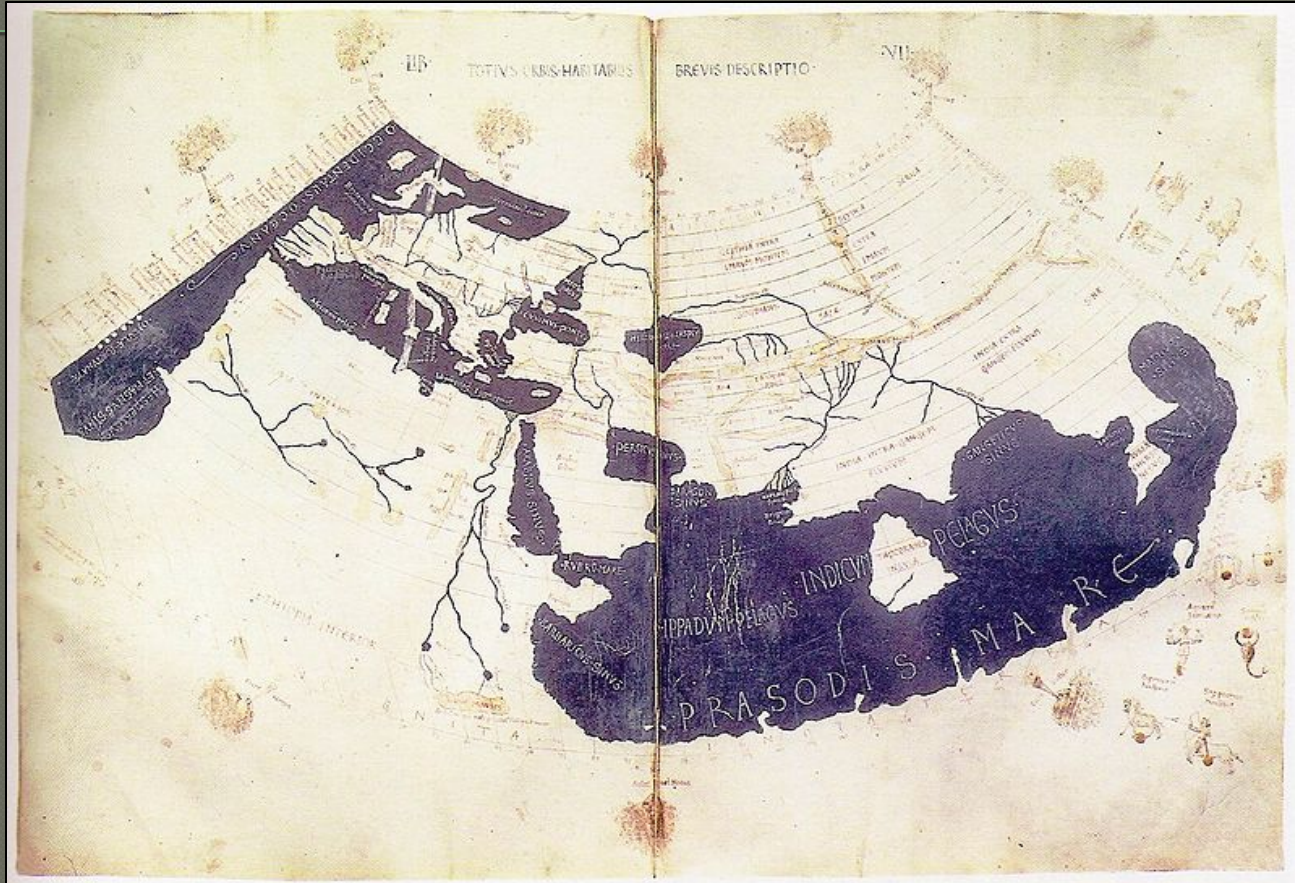
- ◉ As reference tools
 - To find location
 - To find one's way
- ◉ As communication tools
 - To show the distribution of human and physical features
- ◉ Video 1b

Early Map Making

- Oldest known maps:
 - 7th century BCE
 - Map of a plan for the town of Catalhöyük, in present day Turkey.
 - 6th century BCE
 - World map from depicts a circular land area surrounded by a ring of water. Ancient city of Babylon in the center.



Claudius Ptolemy



- Ptolemy's 150 CE World Map (redrawn in the 15th century).

Muhammad al-Idrisi



- The *Tabula Rogerina*, drawn by al-Idrisi for Roger II of Sicily in 1154, one of the most advanced ancient world maps. Modern consolidation, created from the 70 double-page spreads of the original atlas.
(Note that the north is at the bottom, and so the map appears "upside down")

Abraham Ortelius



Abraham Ortelius - "Typus Orbis Terrarum", Antwerp, 1570 - Private collection

Satellite Image of the World

● Video 1c



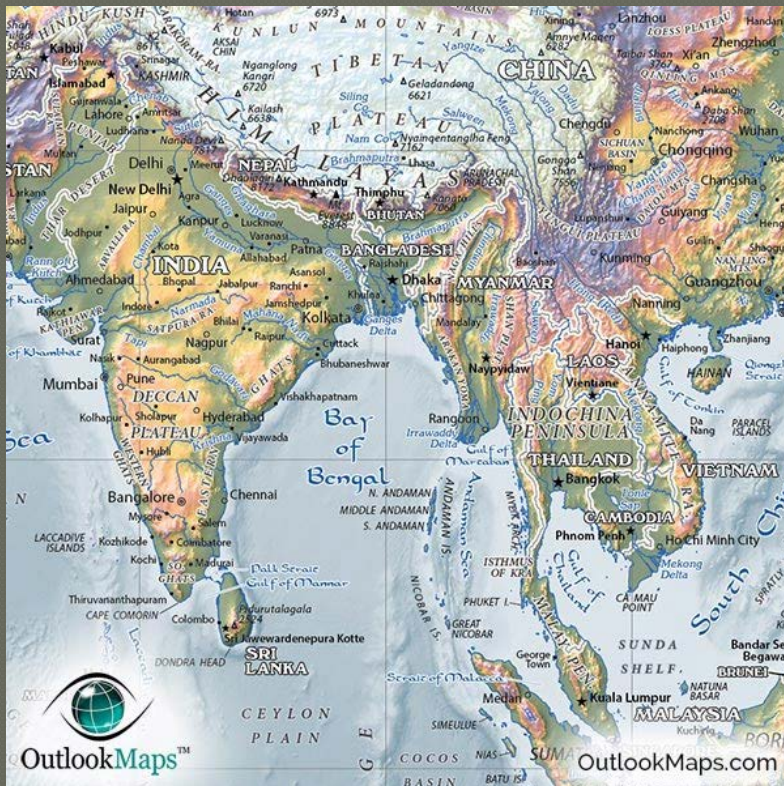
World Political Boundaries (2018)



National political boundaries are among the most significant elements of the cultural landscape

Map Types: Topographic

- Displays the features of the land's surface
 - Good for surveys and navigation

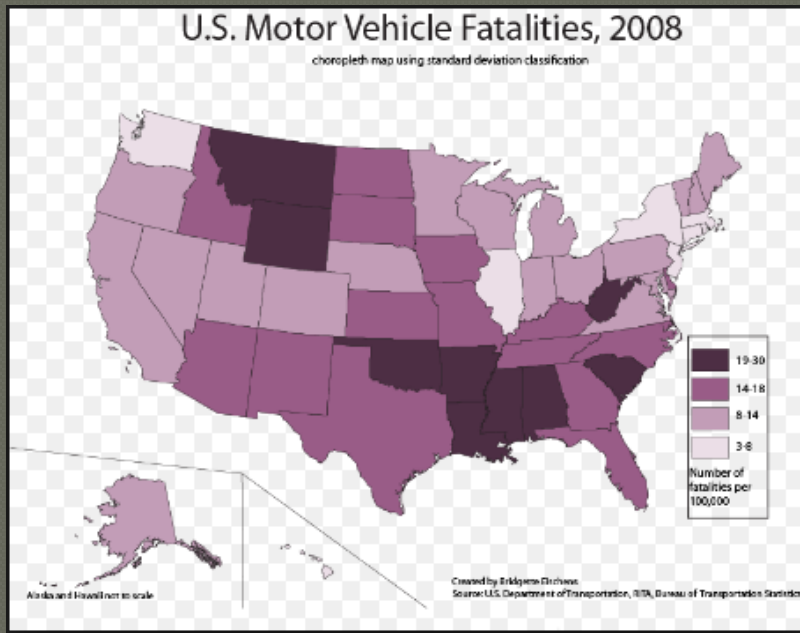


Map Types: Thematic

Expresses a particular subject and does not show landforms

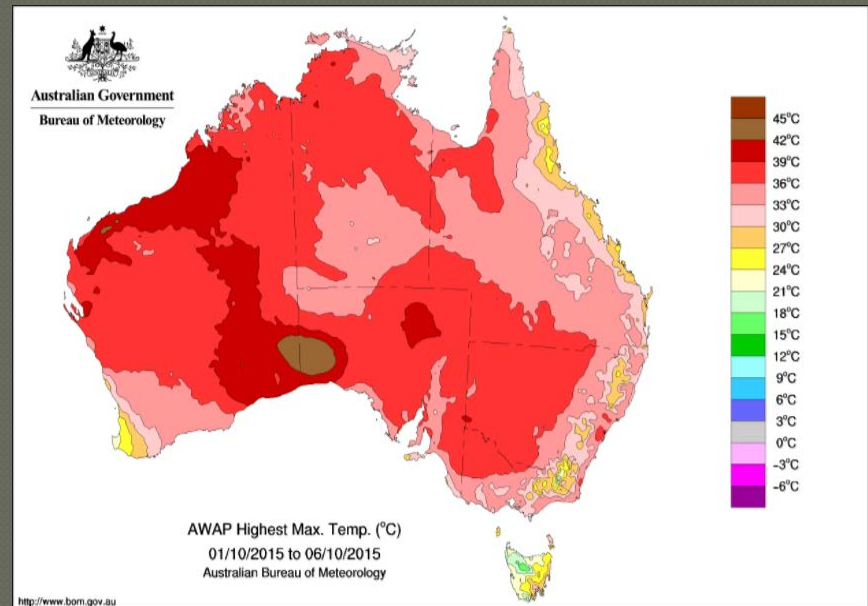
- **Choropleth**

- Uses color variation to express variability in the map data



- **Isoline Map**

- Calculates data values between points across a variable surface

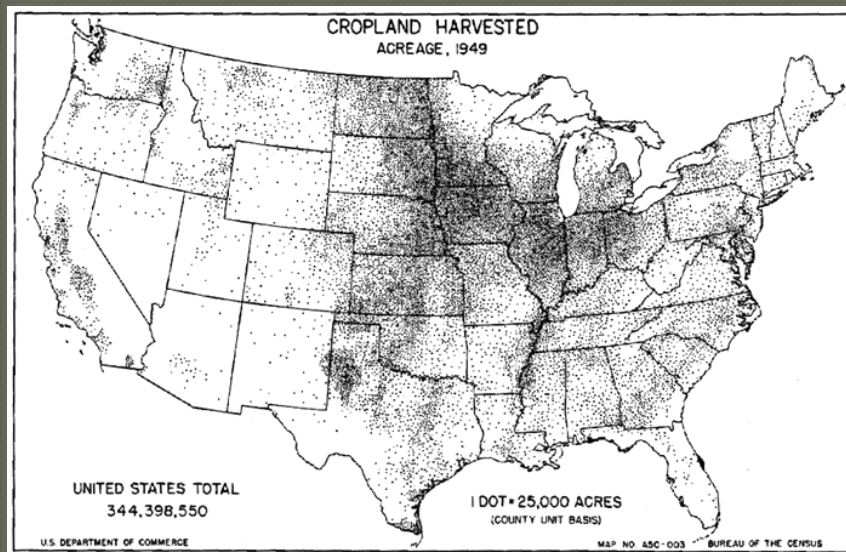


Map Types: Thematic

Expresses a particular subject and does not show landforms

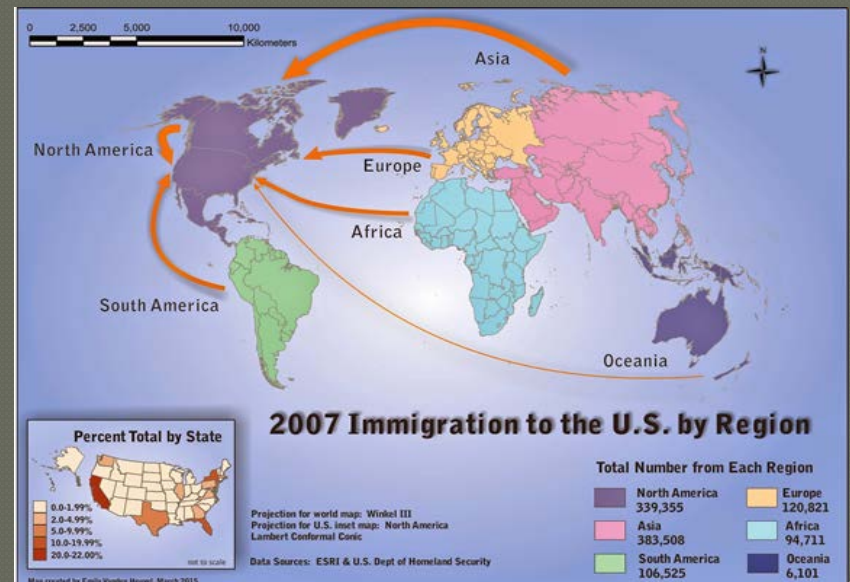
- Dot Density Map

- Uses dots to express the volume and density of a particular geographic feature.



- Flow-Line Map

- Uses lines of varying thickness to show the direction and volume of a particular geographic movement.

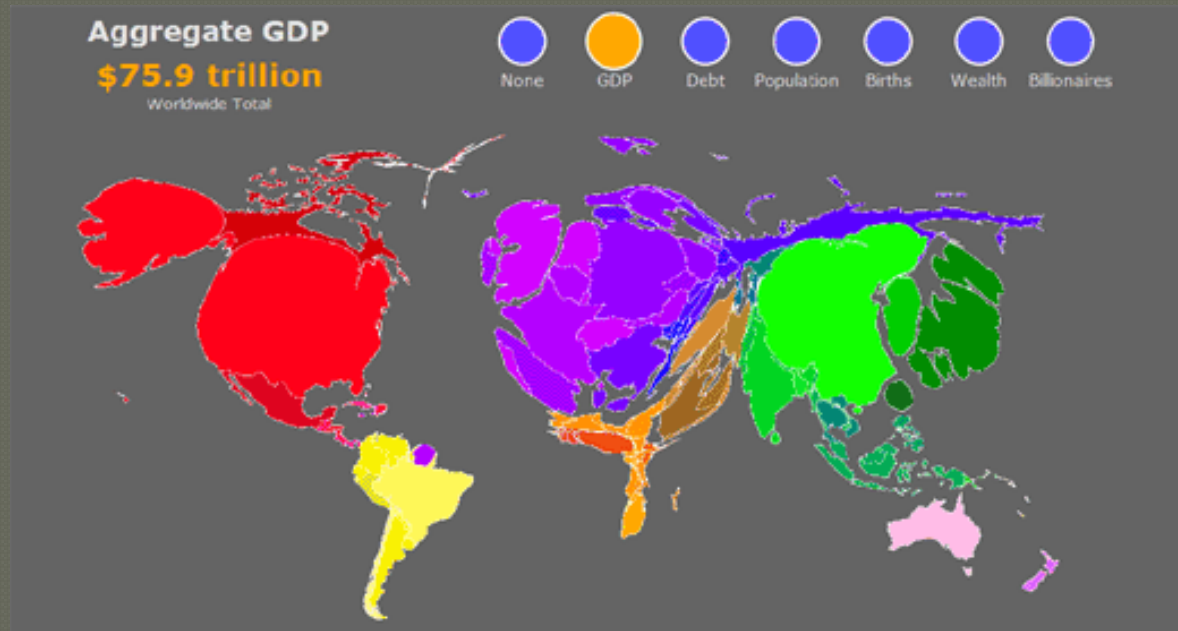


Map Types: Thematic

Expresses a particular subject and does not show landforms

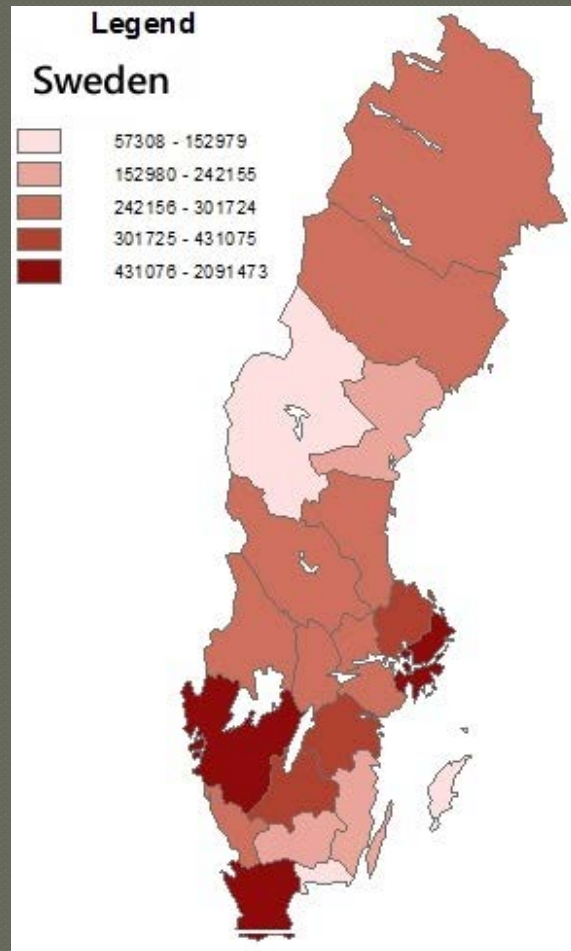
- Cartogram

- Simplified geometries that represent real-world places.

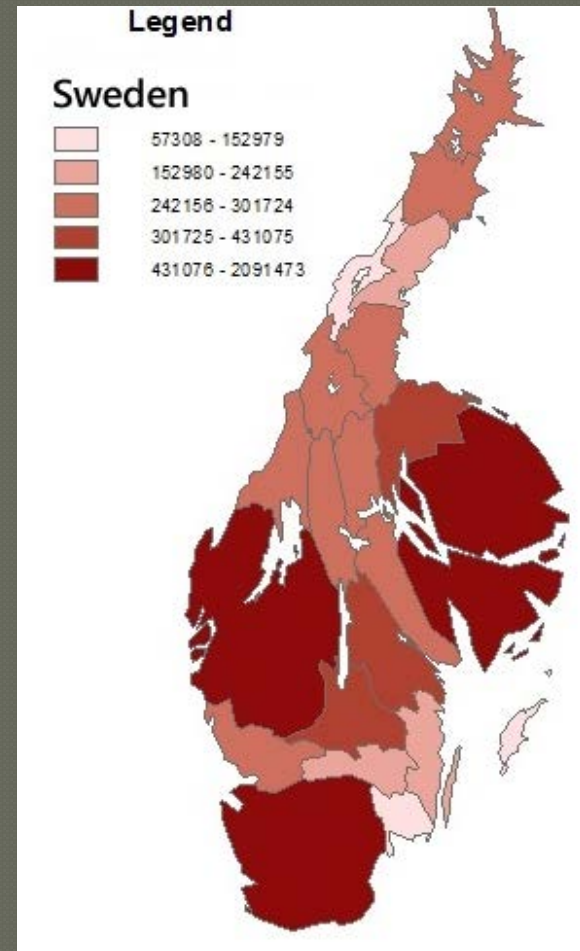


Map Types

Map A



Map B



Map Scale

Word Statement

"One inch equals ten miles"

Graphic Scale



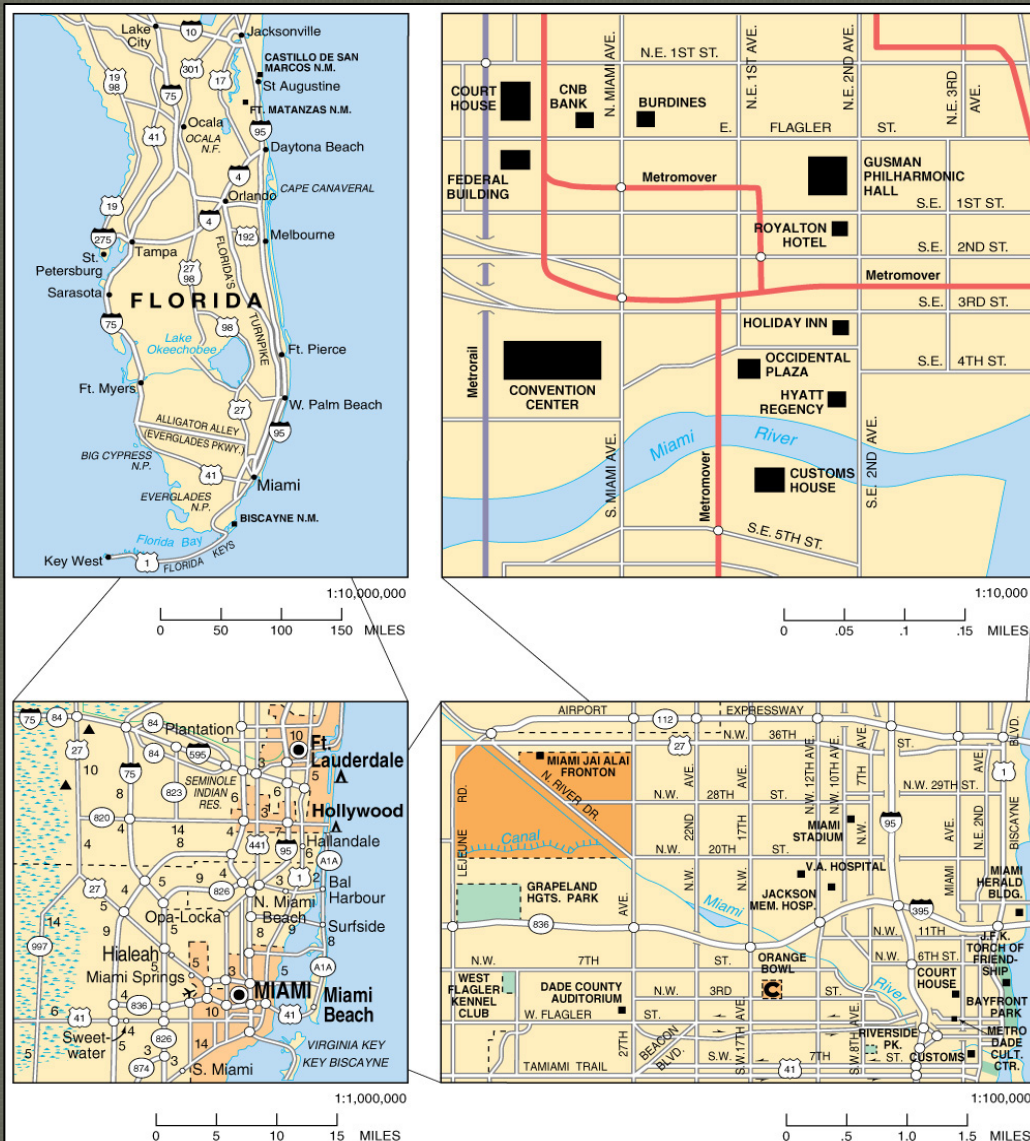
Representative Fraction

$$\frac{1}{633,600}$$

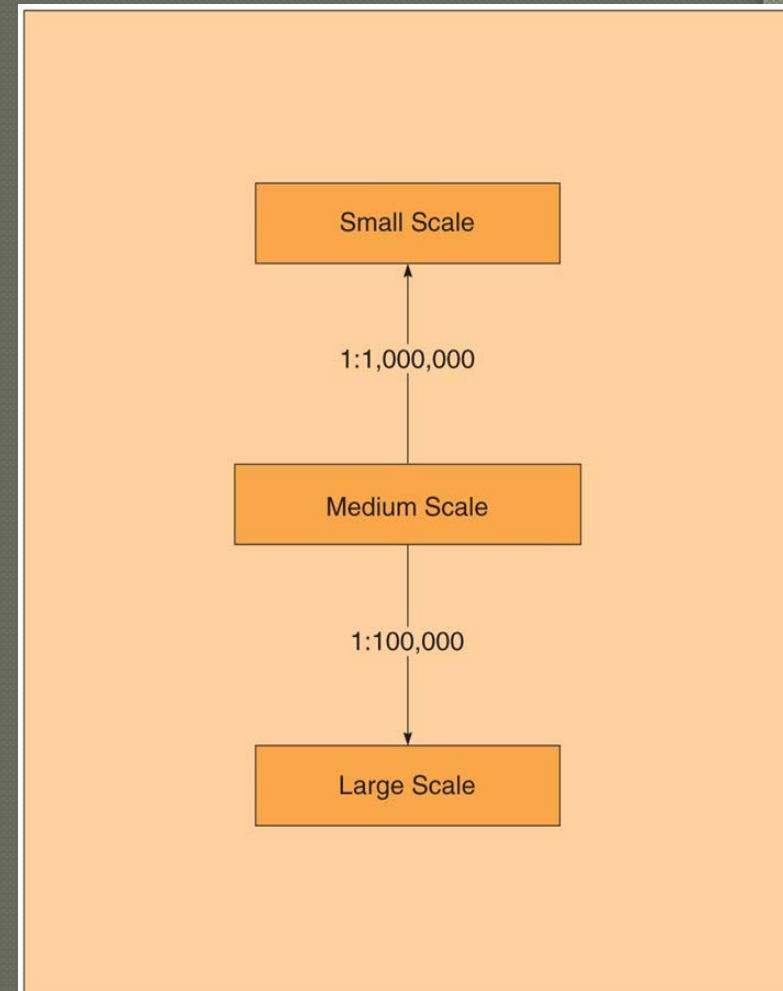
- Types of Map Scales
 - Written
 - Graphic
 - Ratio or Fraction

- The effects of scale on a map of Florida
 - Scale from 1:10 Million to 1:10,000

Map Scale



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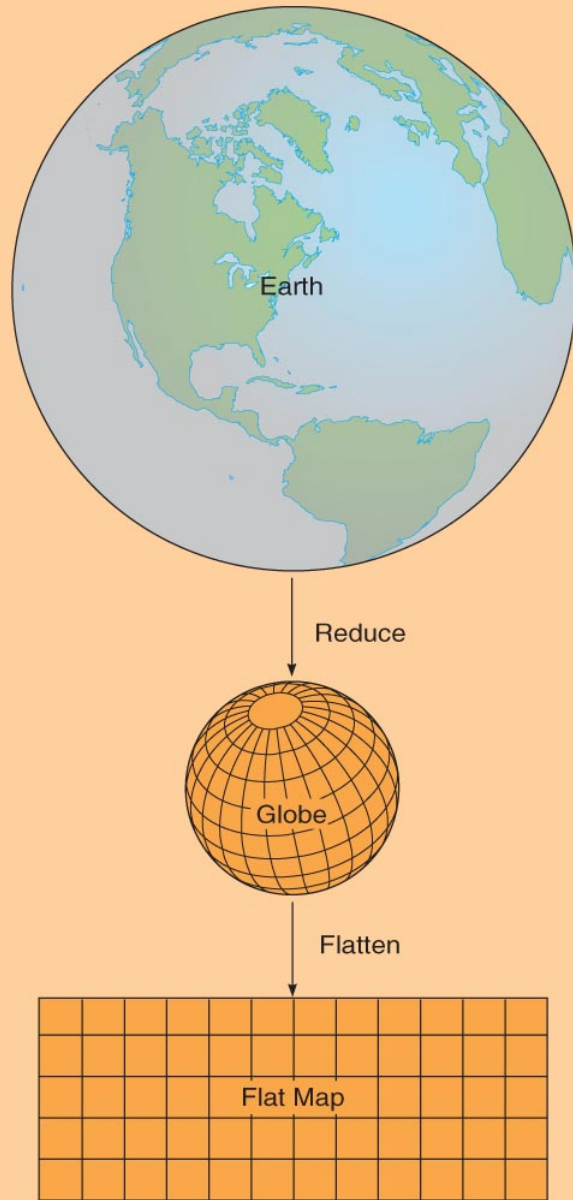
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Map Scale

Map Scale	1:50,000	1:1,000,000
Ratio	1/50,000	1/1,000,000
Scale Type	Large Scale	Small Scale
Area Covered	Small Area	Large Area
Level of Detail	High Detail	Low Detail
Purpose	City	State or Province

- Dividing point between Small & Large Scale
 - 1:250,000

Map Projections



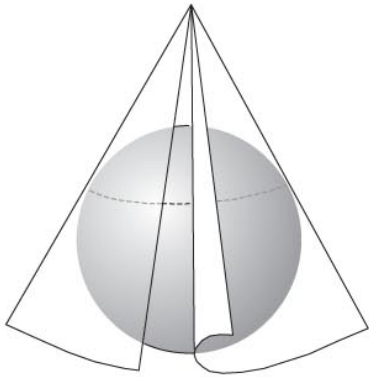
- Distortion
 - Shape
 - Distance
 - Relative size
 - Direction

● Video 1d

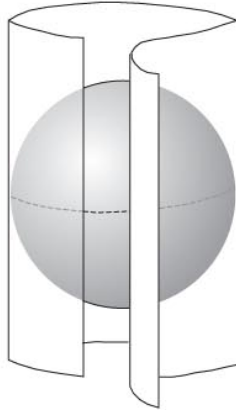
Map Projections

• Cylindrical

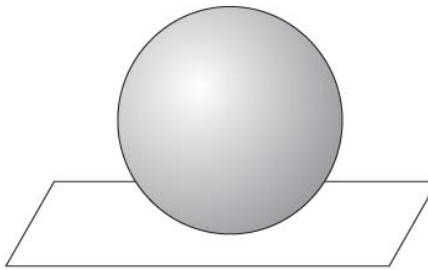
- Easy to use
- Longitude & Latitude are at right angles
- Shows true direction
- Distorts high latitudes



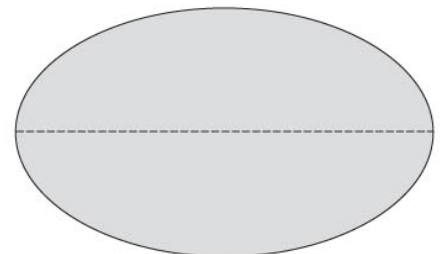
Conic



Cylindrical



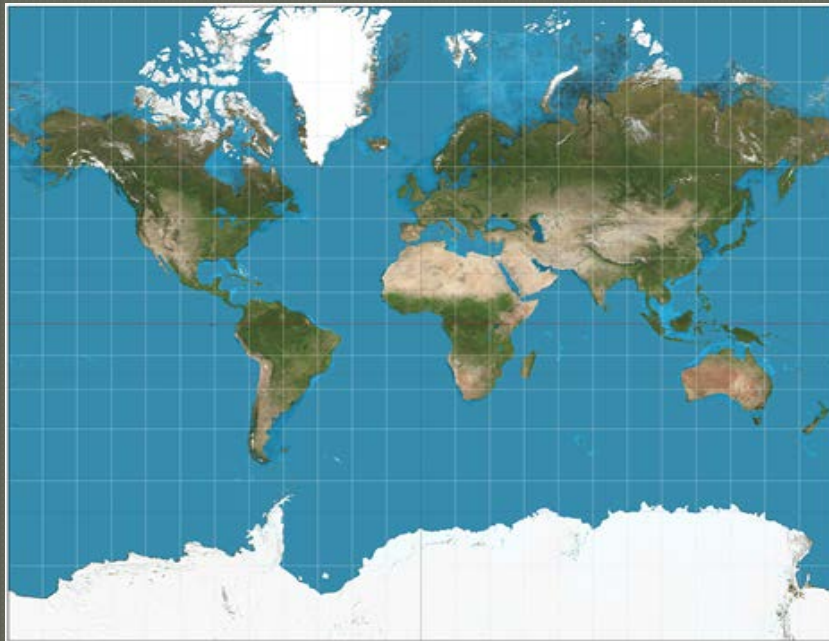
Planar



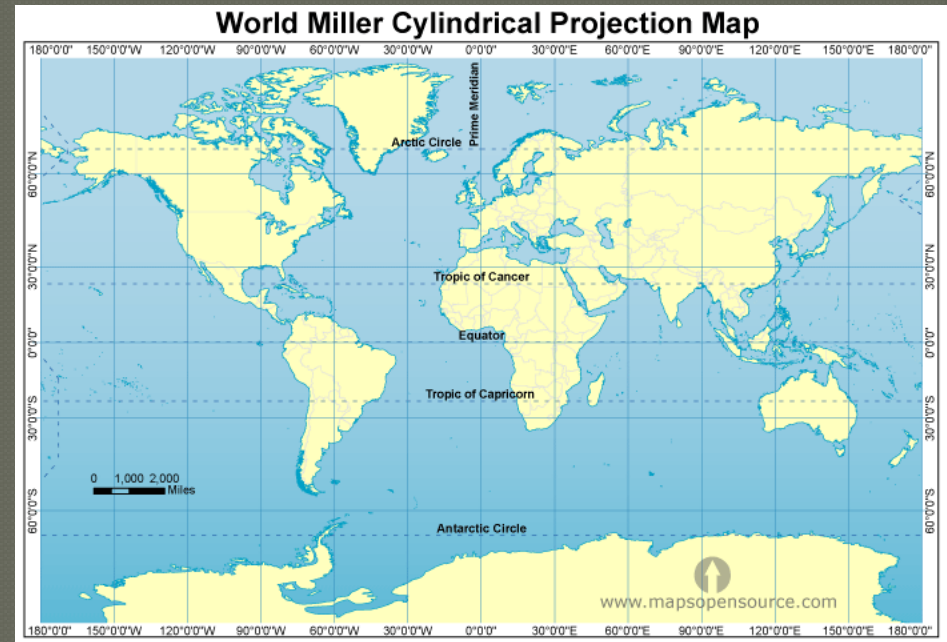
Oval

Cylindrical Projections

- Mercator Projection
 - Better for navigation



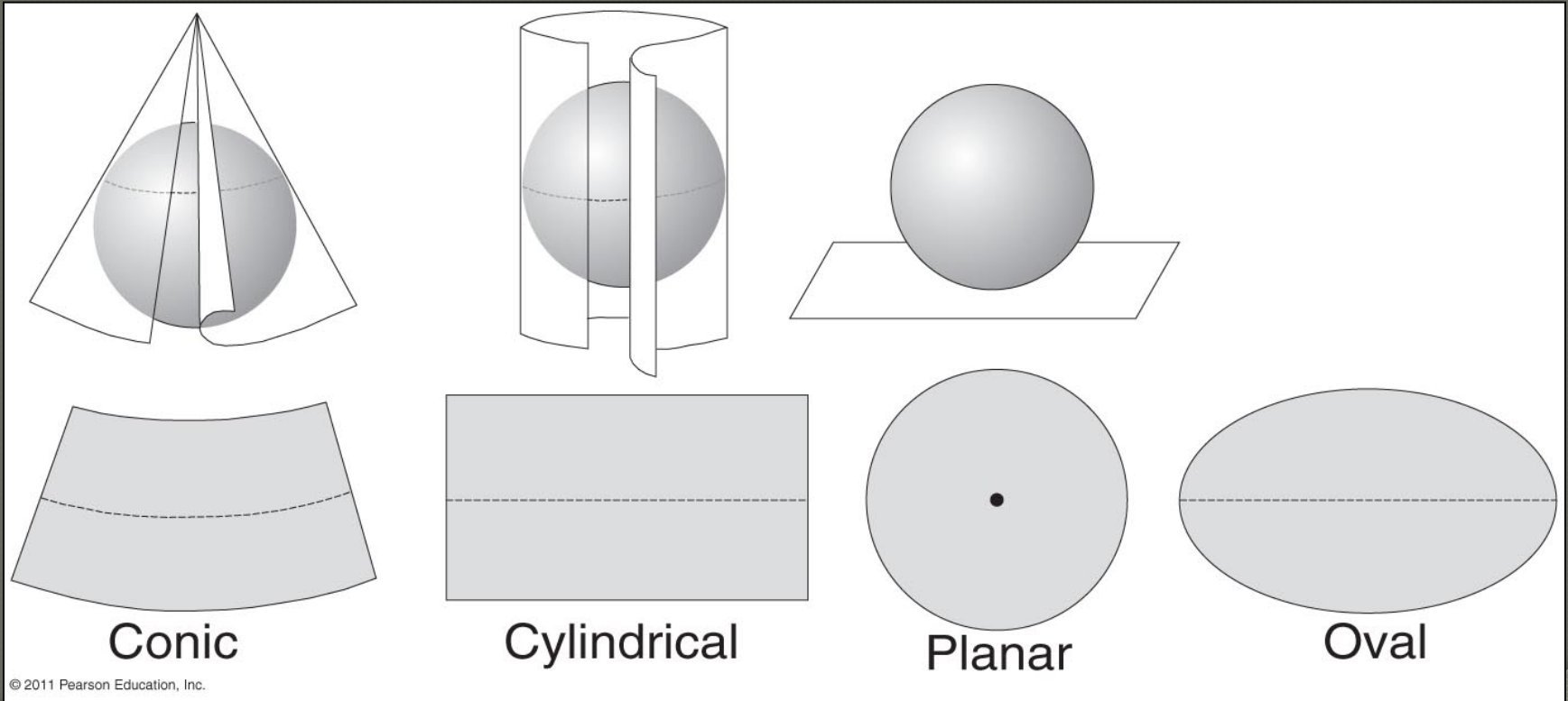
- Miller Projection
 - Better as a wall map



Map Projections

● Planar

- Useful for showing polar regions
- Distorts direction and distance



Planar Projection

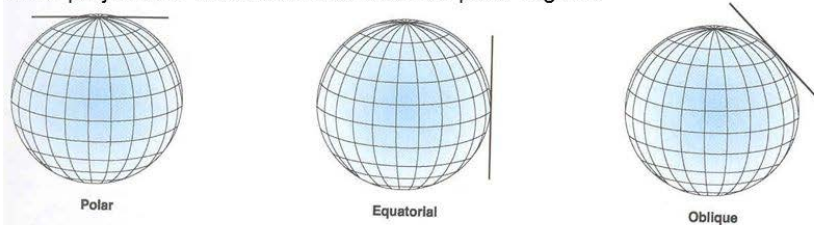
- Azimuthal Projection
 - (Plane Projection)



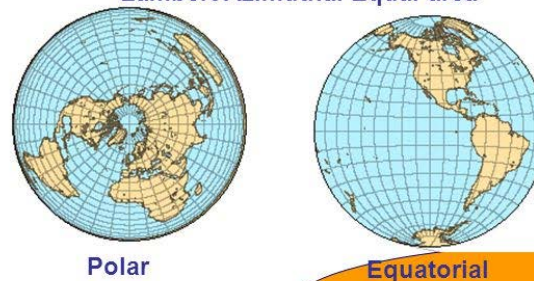
Azimuthal or Plane Projection

With **Azimuthal** projections, the spherical (globe) grid is projected onto a flat plane, thus it is also called a plane projection.

Planar projections are used most often for polar regions



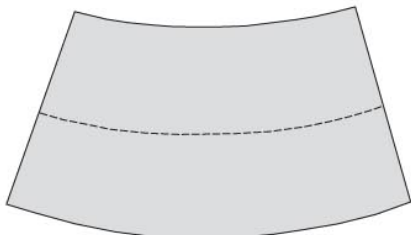
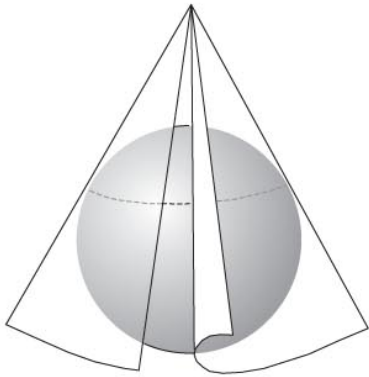
Lambert Azimuthal Equal-area



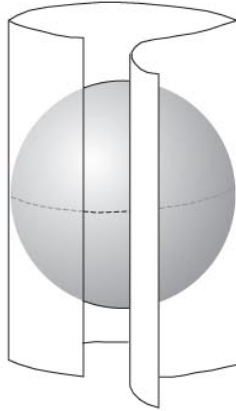
Map Projections

● Conic

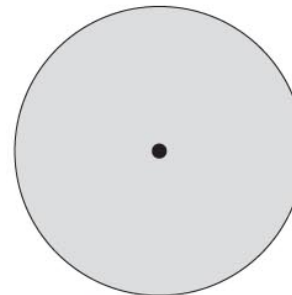
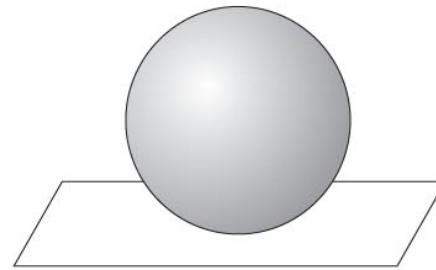
- Good for showing small areas accurately



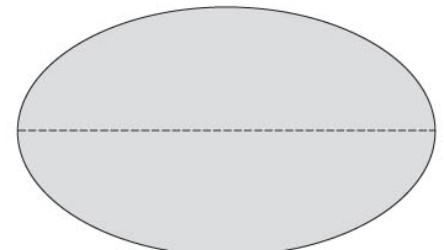
Conic



Cylindrical



Planar

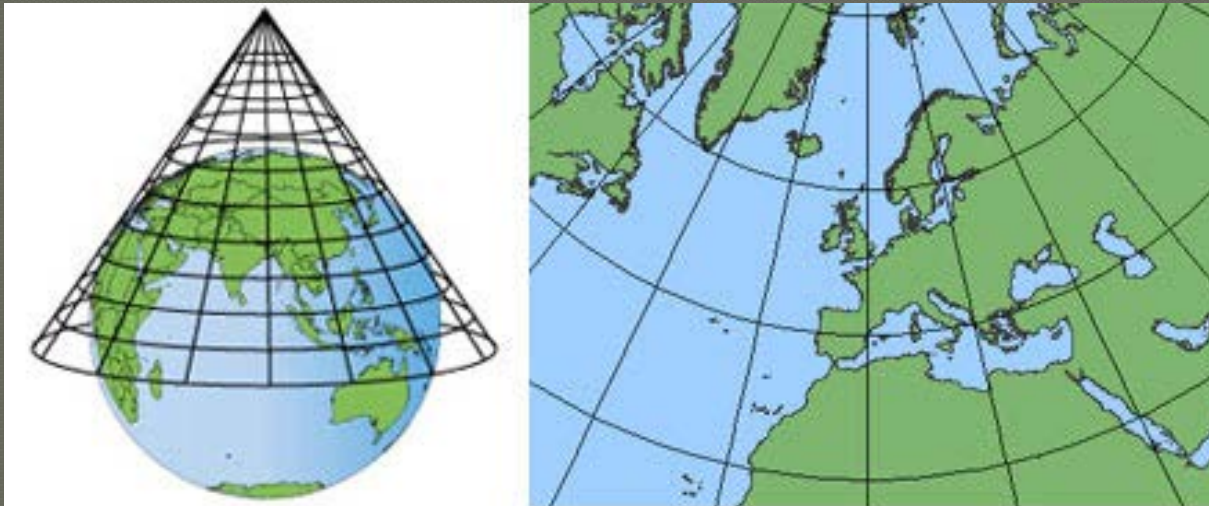


Oval

Conic Projection



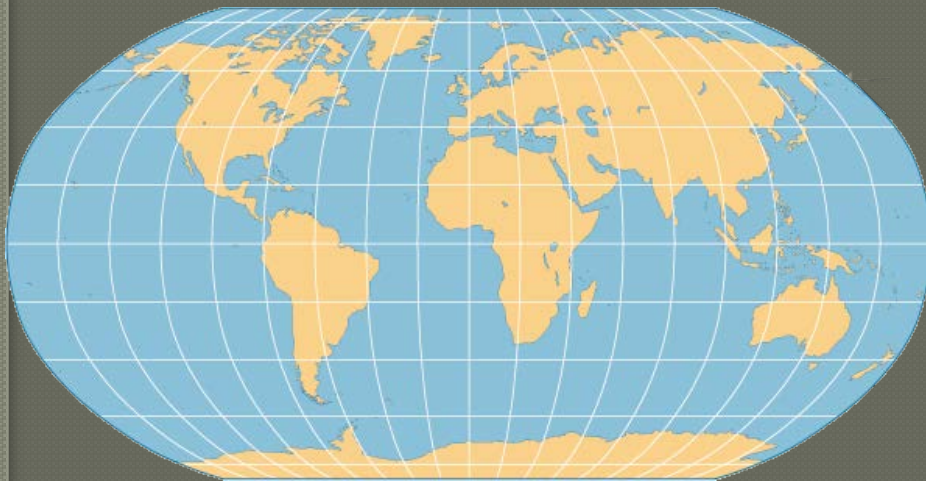
- Lambert Projection
 - Aeronautical usage



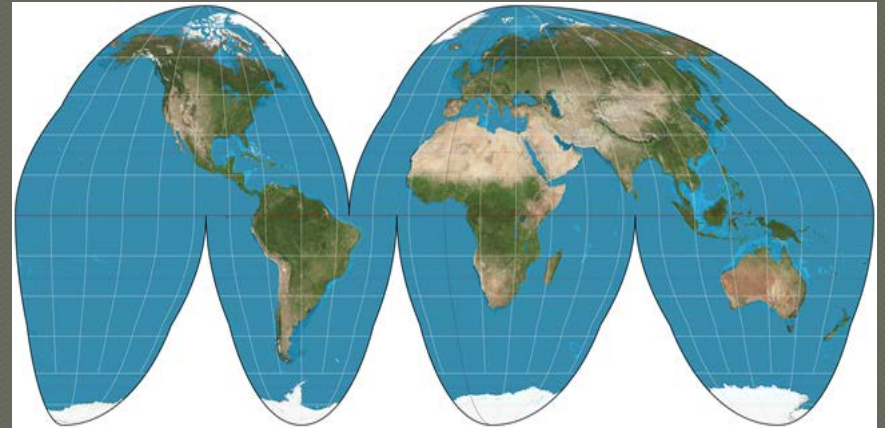
Conical Projection

Balance Map Projections

- Robinson Projection



- Goode Homolosine Projection



Many more projections...



☐ Kharchenko-Shabanova



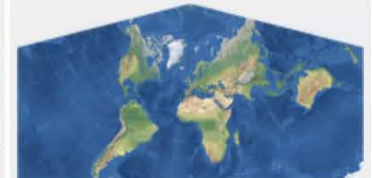
☐ Lagrange



☐ Lagrange (120°)



☐ Lambert Cylindrical



☒ Lambert CC



☐ Lambert Equal-Area Conic



☐ Larrivé



☐ Laskowski Tri-Optimal



☐ McBryde P3



☐ McBryde Q3



☐ McBryde S2



☐ McBryde S3



☒ McBryde S3 (i.)



☐ McBryde-Thomas #1



☐ McBryde-Thomas #2



☐ McBryde-Thomas FPP



☐ McBryde-Thomas FPQ



☐ McBryde-Thomas FPS

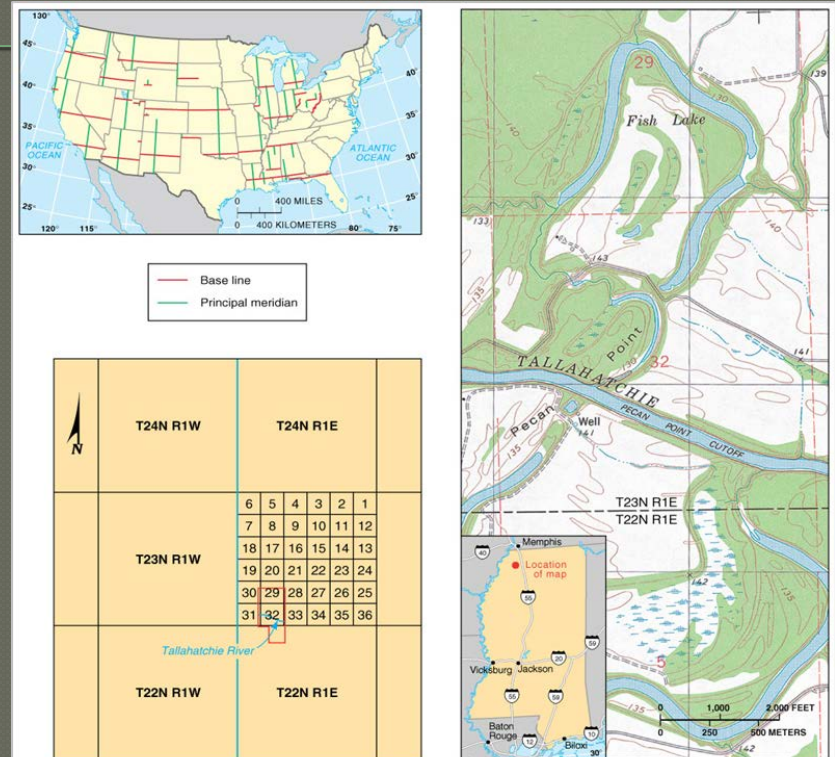


☐ McBryde-Th. FPQ (i.)



☐ Mercator

Ordinance of 1785

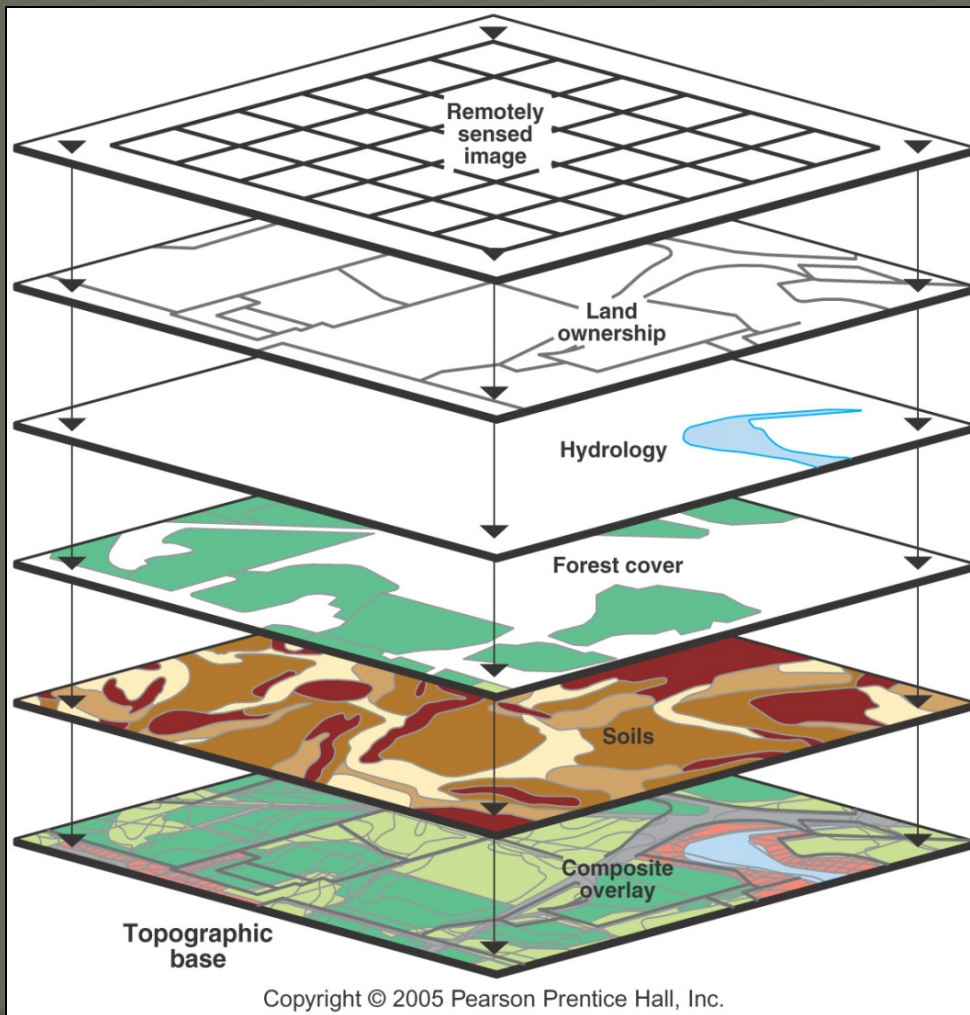


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Principal meridians and east-west baselines of the township system. Townships in northwest Mississippi and topographic map of the area.

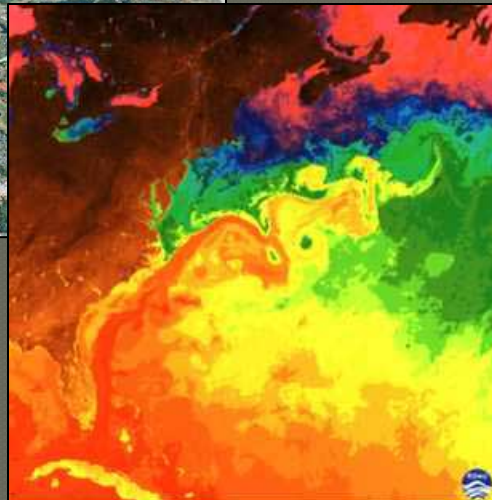
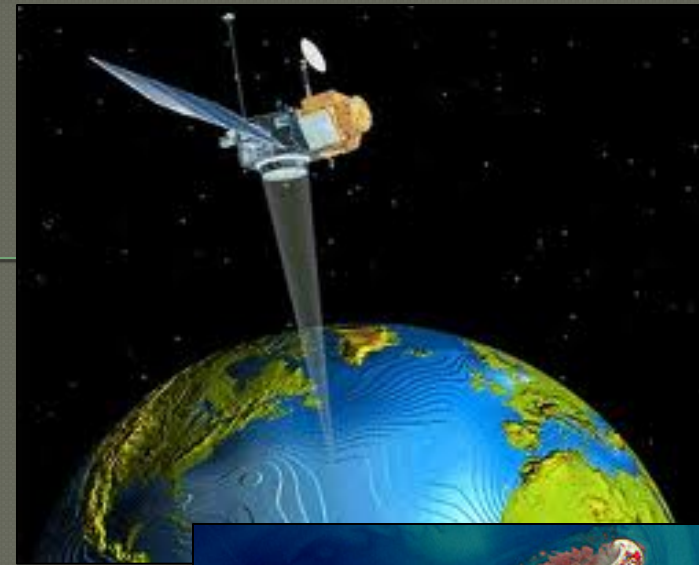
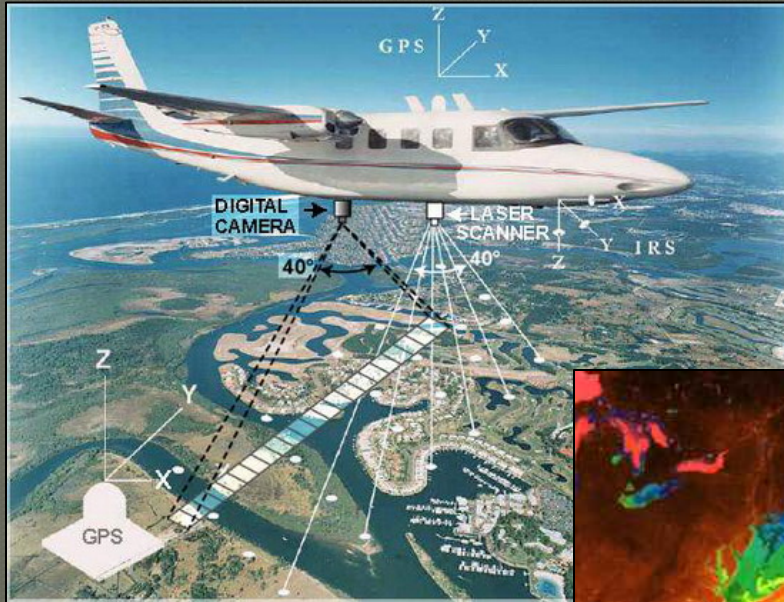
Contemporary Tools

Layers of GIS



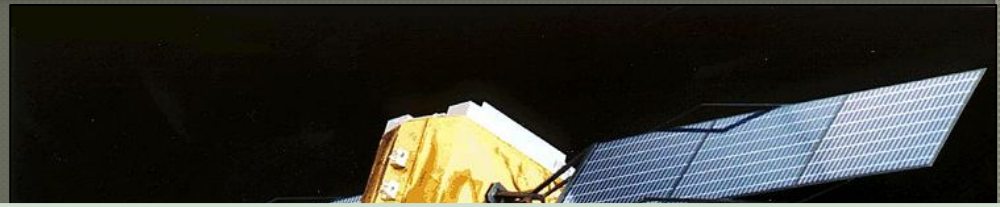
- A geographic information system (GIS) stores information about a location in several layers. Each layer represents a different category of information.
- Video 1e

Remote Sensing

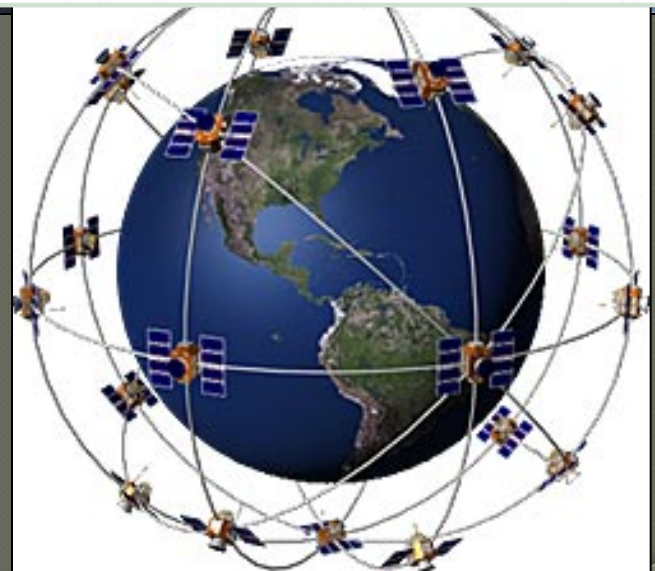


Remote Sensing involves gathering data and information about the physical "world" by detecting and measuring signals composed of radiation, particles, and fields emanating from objects located beyond the immediate vicinity of the sensor device(s).

GPS



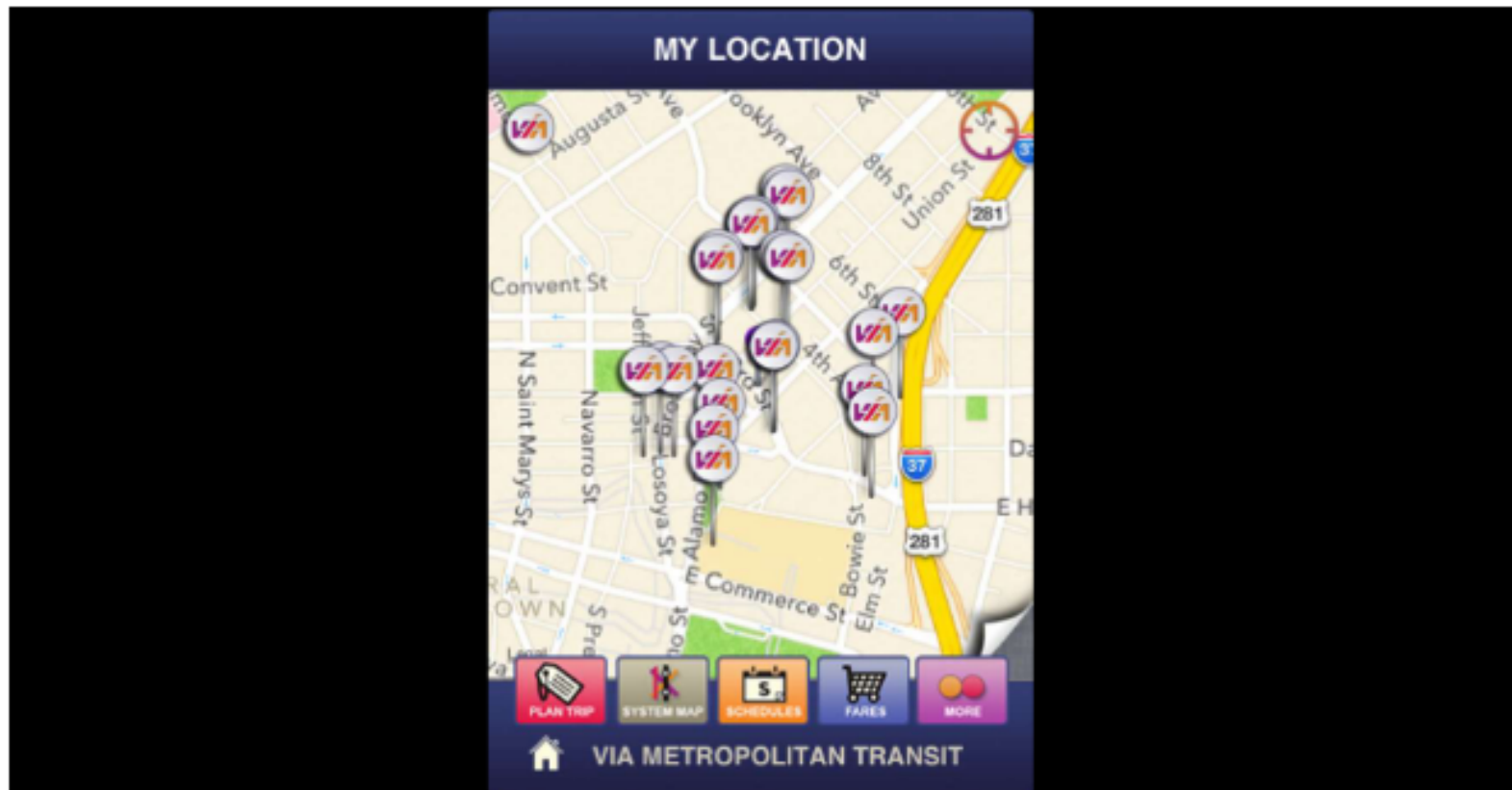
The **Global Positioning System (GPS)** is a space-based satellite navigation system that provides location and time information in all weather, anywhere on or near the Earth, where there is an unobstructed line of sight to four or more GPS satellites. It is maintained by the United States government and is freely accessible by anyone with a GPS receiver.



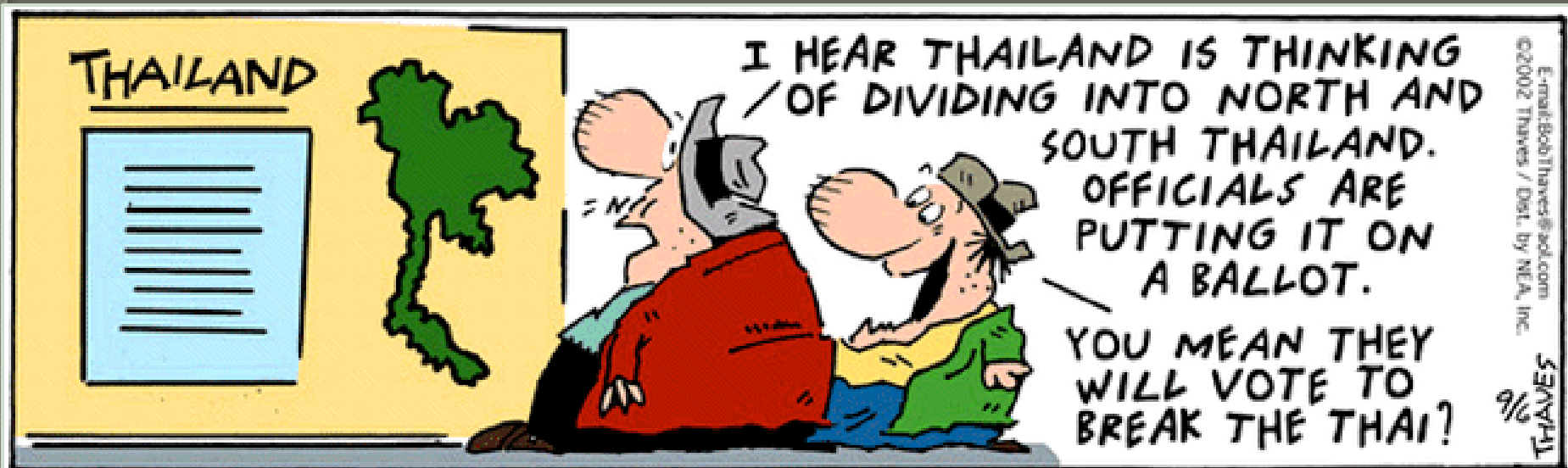
VIA Bus Tracker

Where's that bus? Check the VIA app

By **Vianna Davila** Updated 9:51 pm CDT, Monday, June 3, 2013



Uniqueness of Place & Region



Place Names - Toponym

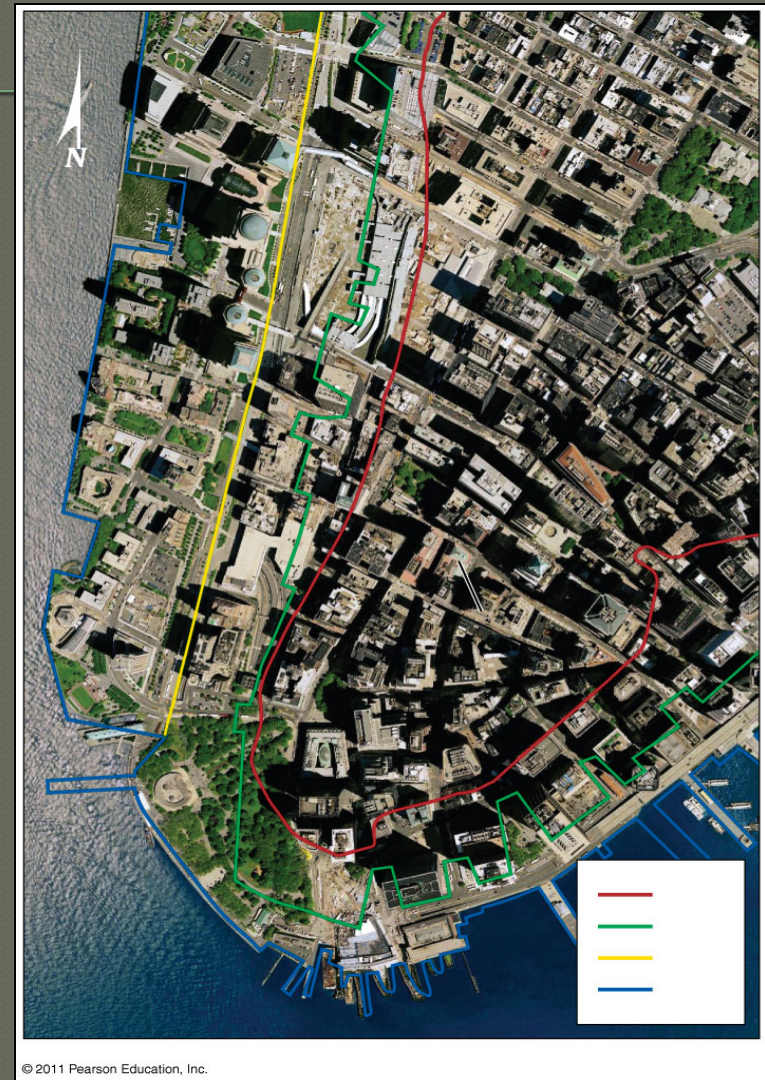
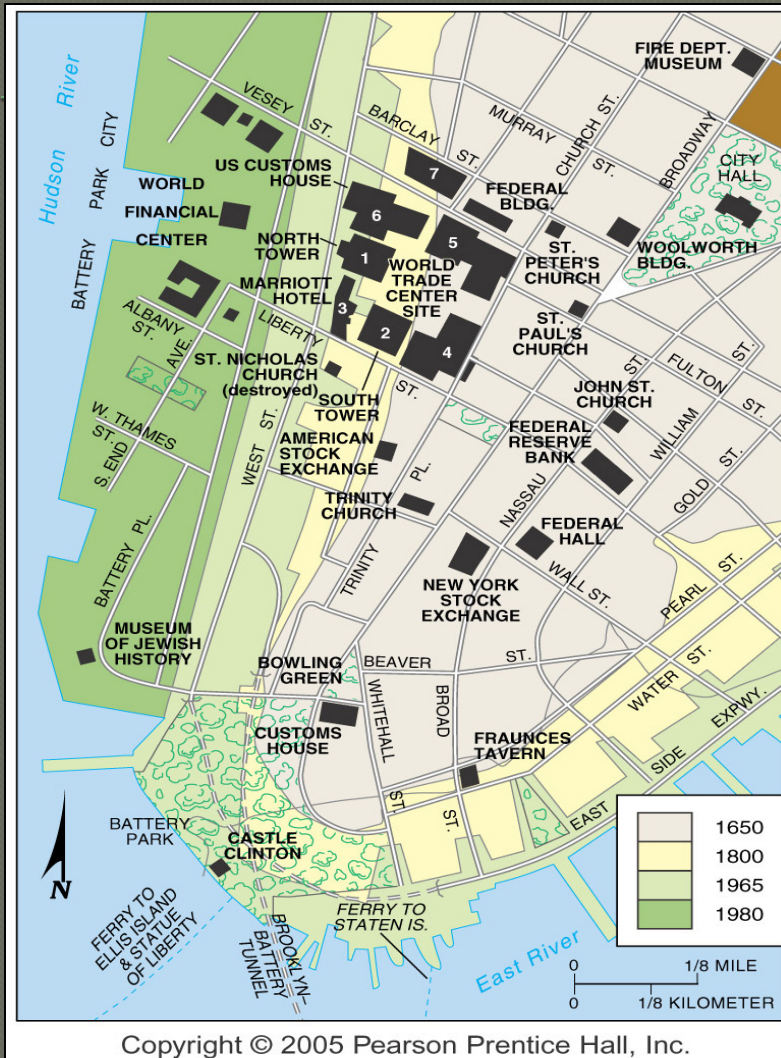
LLANFAIRPWLLGWYNGYLLGOGERYCHWYRNDROBWLLLLANTYSILIOGOGOGOCH

ST MARYS CHURCH IN THE HOLLOW OF THE WHITE HAZEL NEAR TO THE RAPID WHIRLPOOL OF LLANTYSILIO OF THE RED CAVE

● Video 1f



Site: Lower Manhattan Island

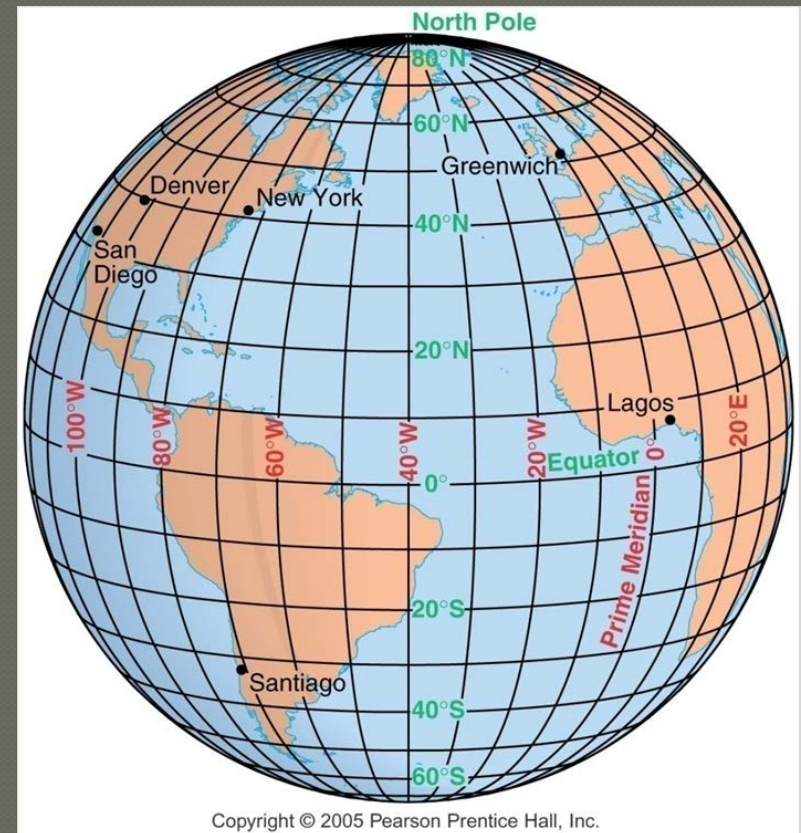


Site of lower Manhattan Island, New York City. There have been many changes to the area over the last 200 years. VIDEO 1G

Place: Absolute Location

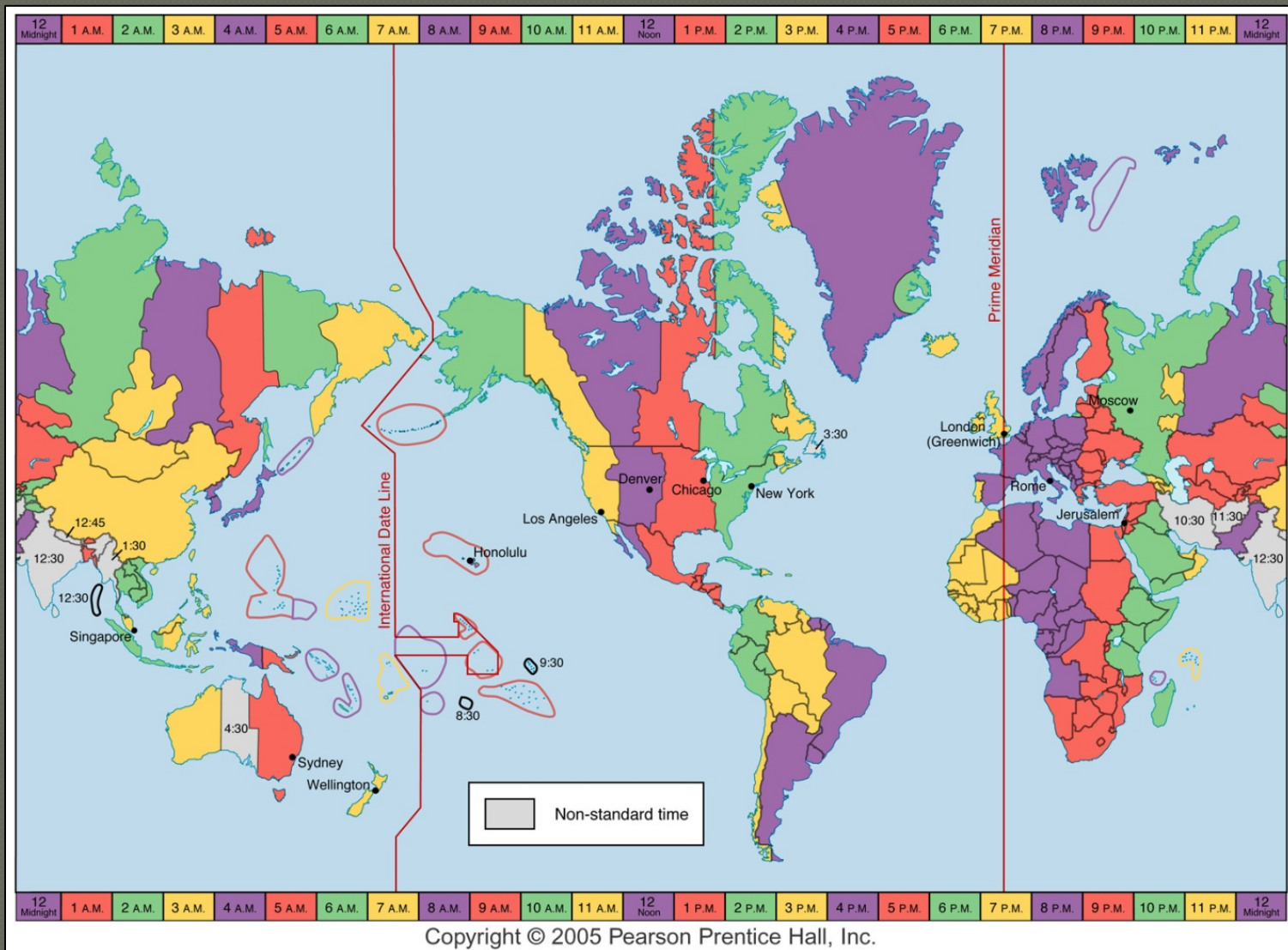
- Location of a place can be described precisely by meridians and parallels

- Meridians (Lines of Longitude)
 - Prime Meridian
- Parallels (Lines of Latitude)
 - Equator



- Greenwich, England
0° (Prime Meridian)

World Time Zones



VIDEO
1H

The world's 24 time zones are often depicted using the Mercator projection.

The Cultural Landscape

- A unique combination of social relationships



important agents of
change to Earth's
surface



Types of Regions

- Formal (Uniform) Region

- Area define by certain characteristics
- Example: Montana

- Functional (Nodal)

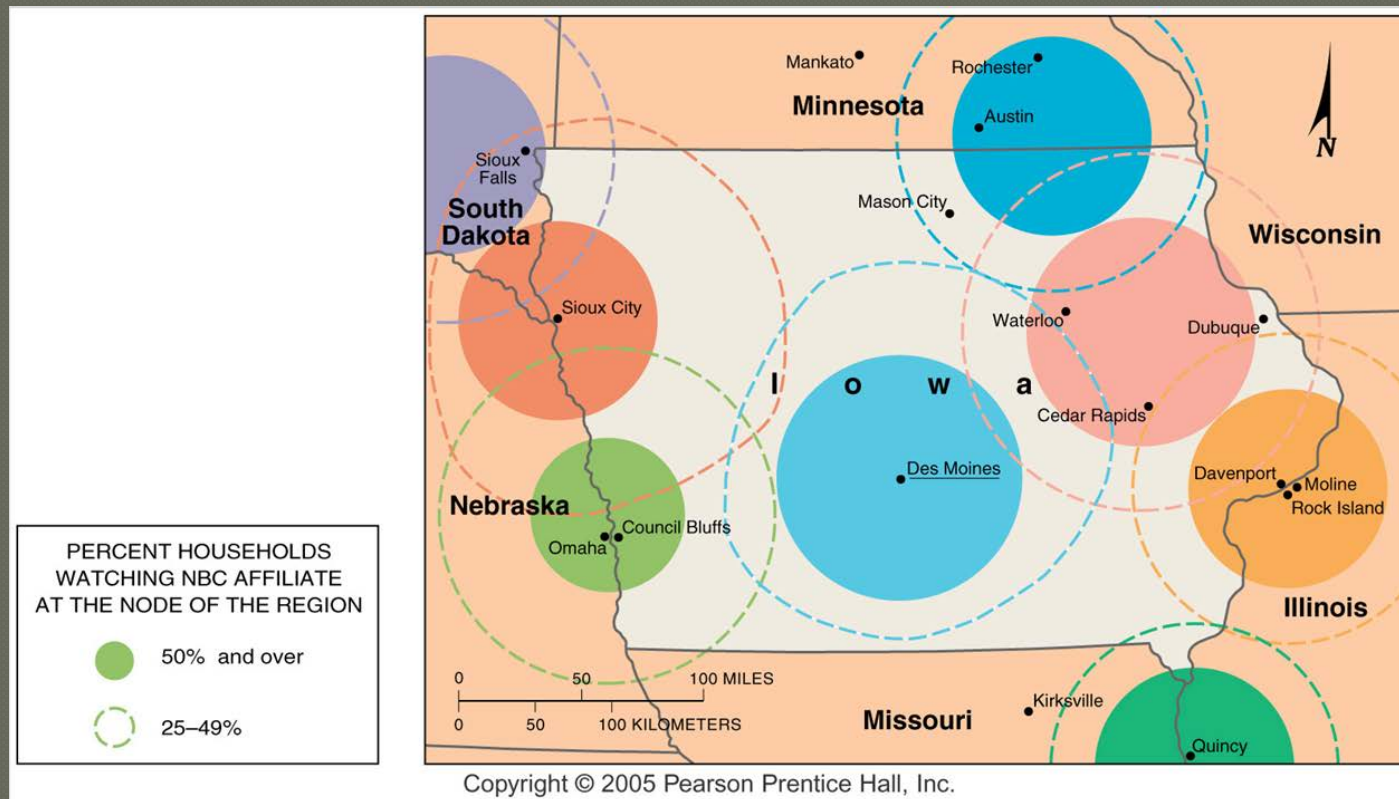
- A central place and the surrounding places affected by it (transportation/movement)
- Example: the circulation area of a newspaper

- Vernacular (perceptual) Region

- Area defined by people's feelings/attitudes
- Example: American South

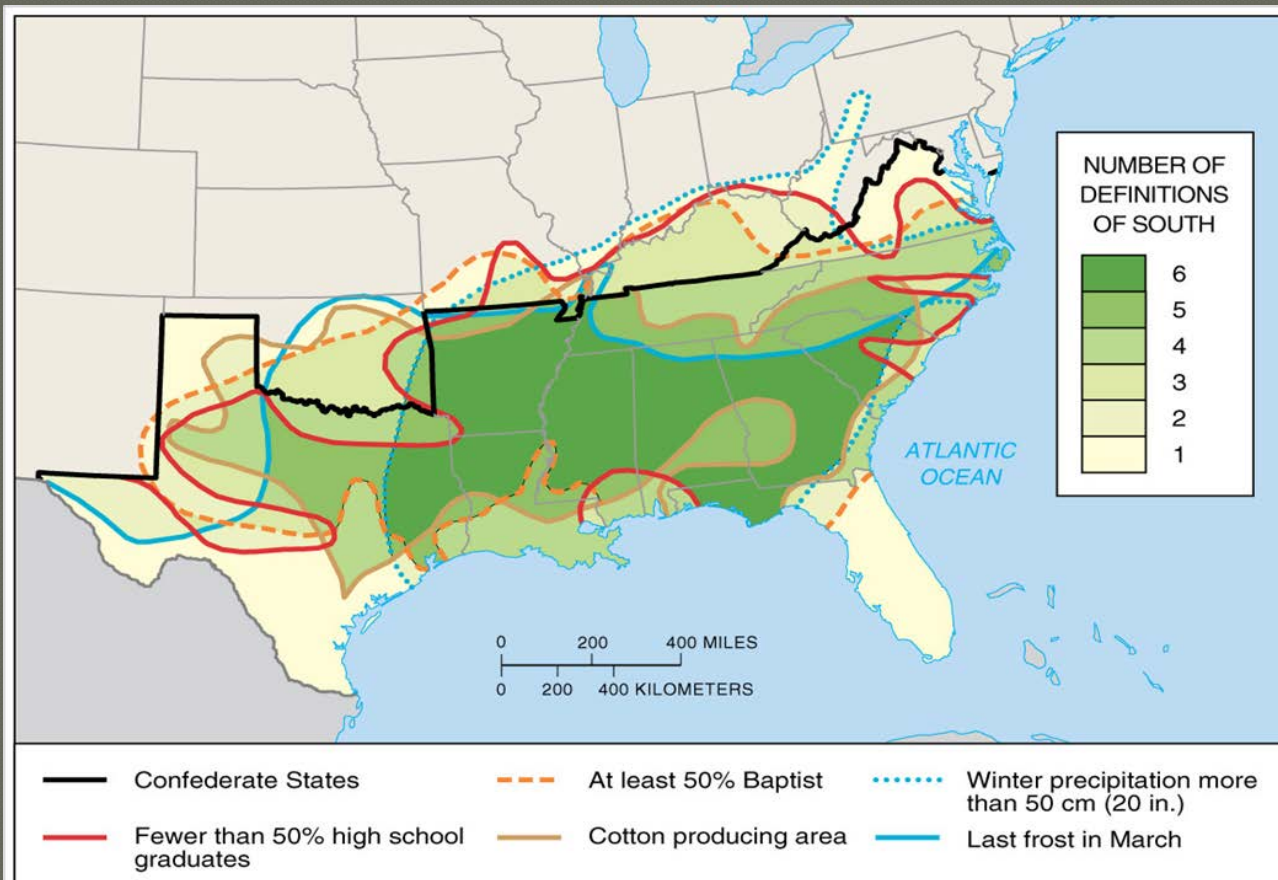
Types of Regions

- Formal (Uniform) Region
 - Example: Iowa
- Functional (nodal)
 - Example: The area of influence of various T.V. stations

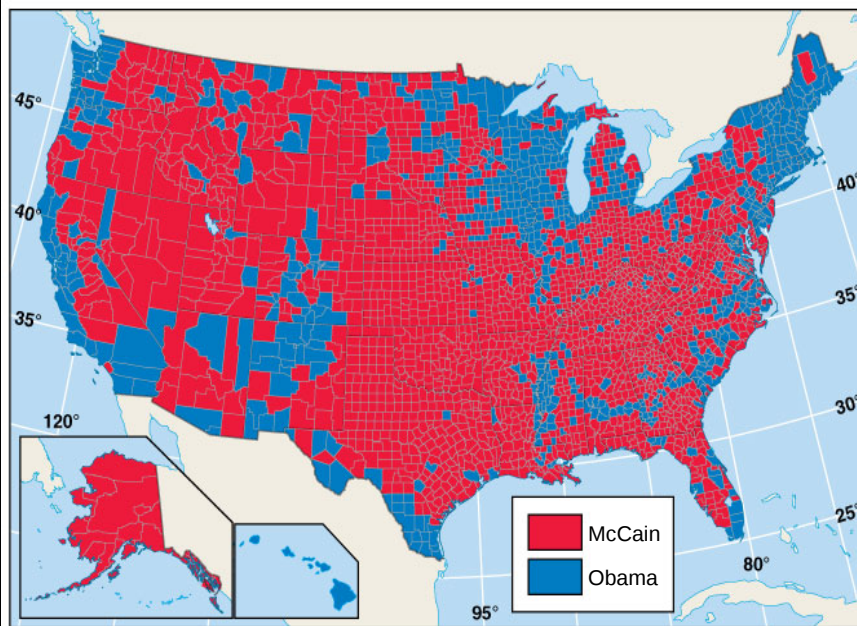


Types of Regions

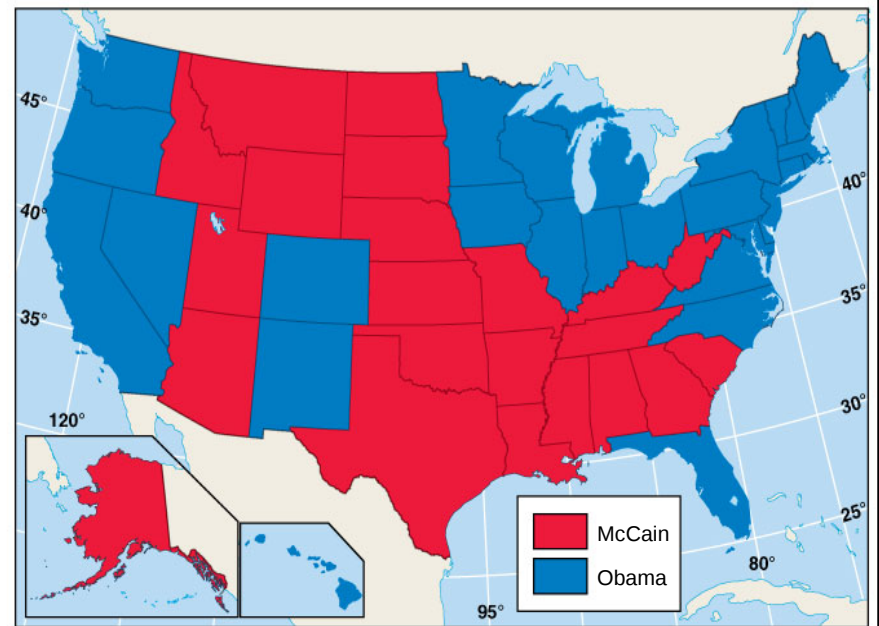
- A number of factors are often used to define the South as a vernacular region, each of which identifies somewhat different boundaries.



“Regional” Differences



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- 2008 Presidential election results by county and state illustrate differences in regional voting patterns.