CARTOGRAPHY

III B.SC GEOGRAPHY

DATE : 19/10/2020

TIME : 11.30 TO 12.30

TOPIC : MAP SYMBOLIZATION

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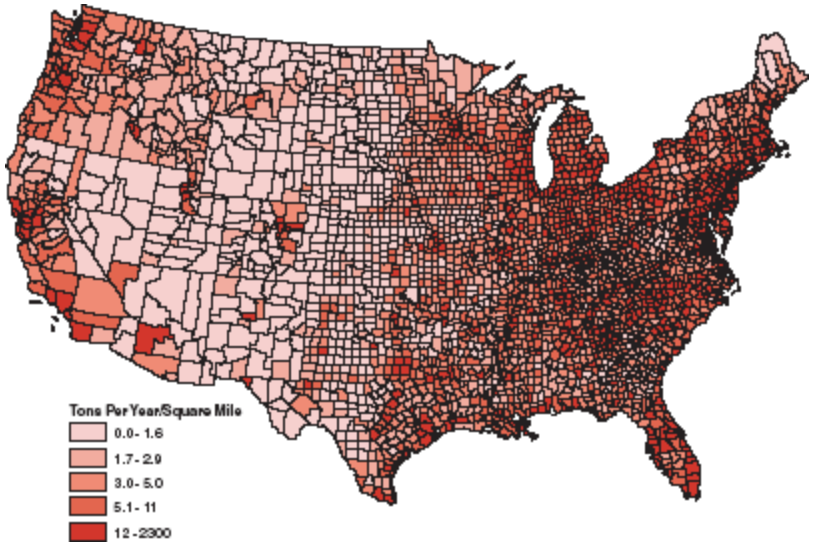
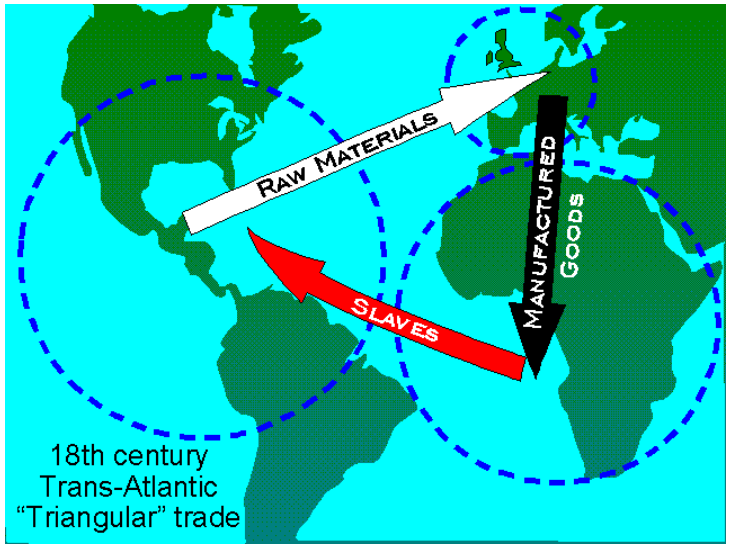
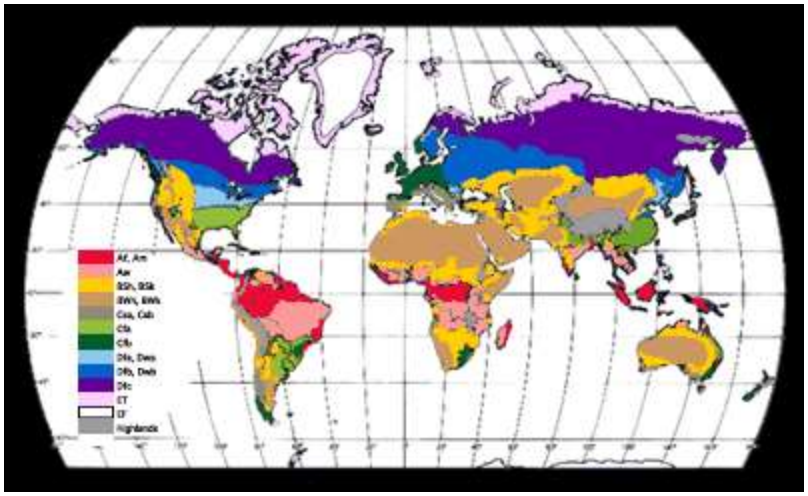
KUMBAKONAM





Introduction to maps



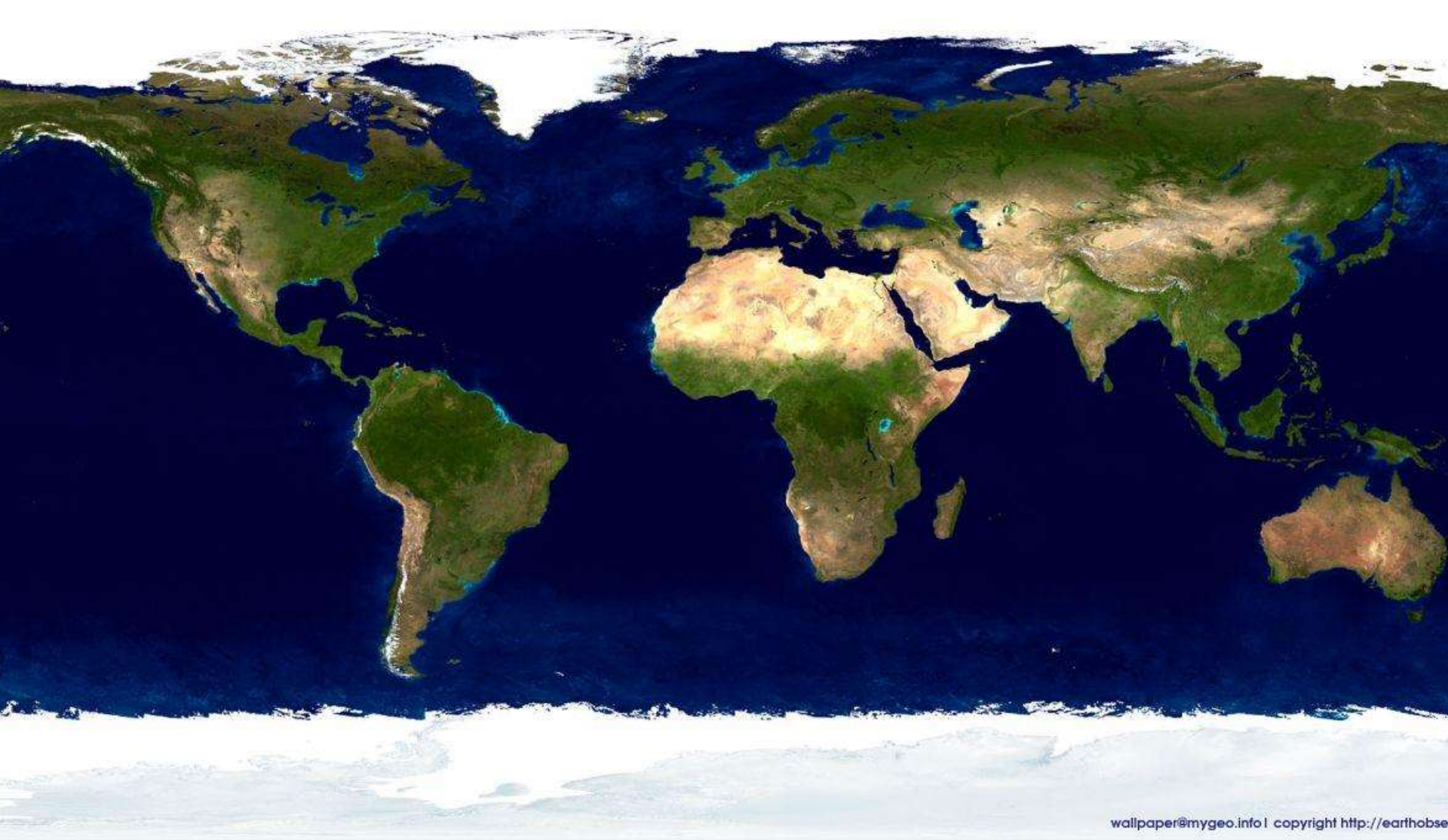
What *is* a map?

- A generalized view of an area, usually some portion of Earth's surface, as seen from above at a greatly reduced size
- Any geographical image of the environment
- A two-dimensional representation of the spatial distribution of selected phenomena

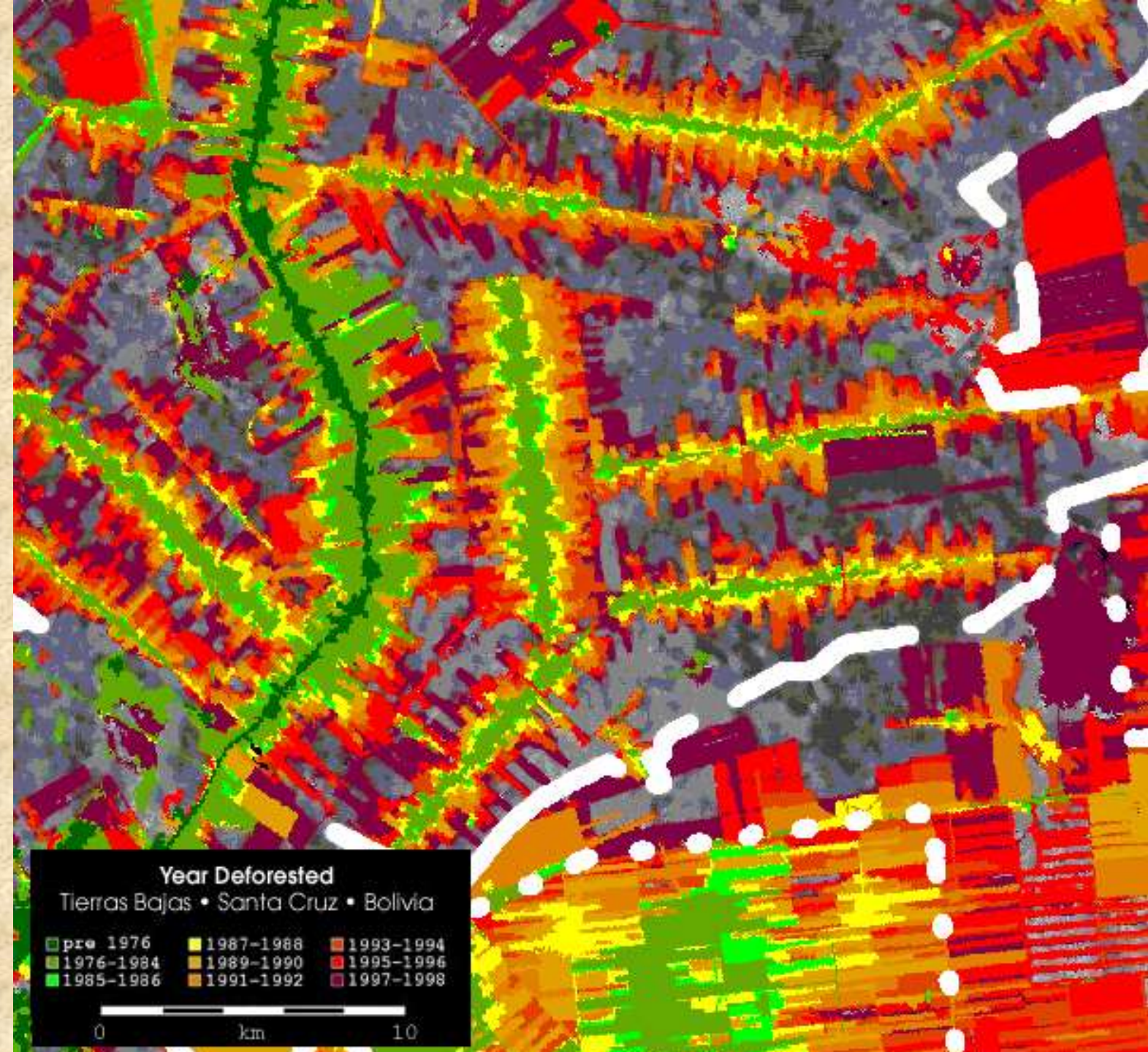
Why make maps?

- To represent a larger area than we can see
- To show a phenomenon or process we can't see with our eyes
- To present information concisely
- To show spatial relationships

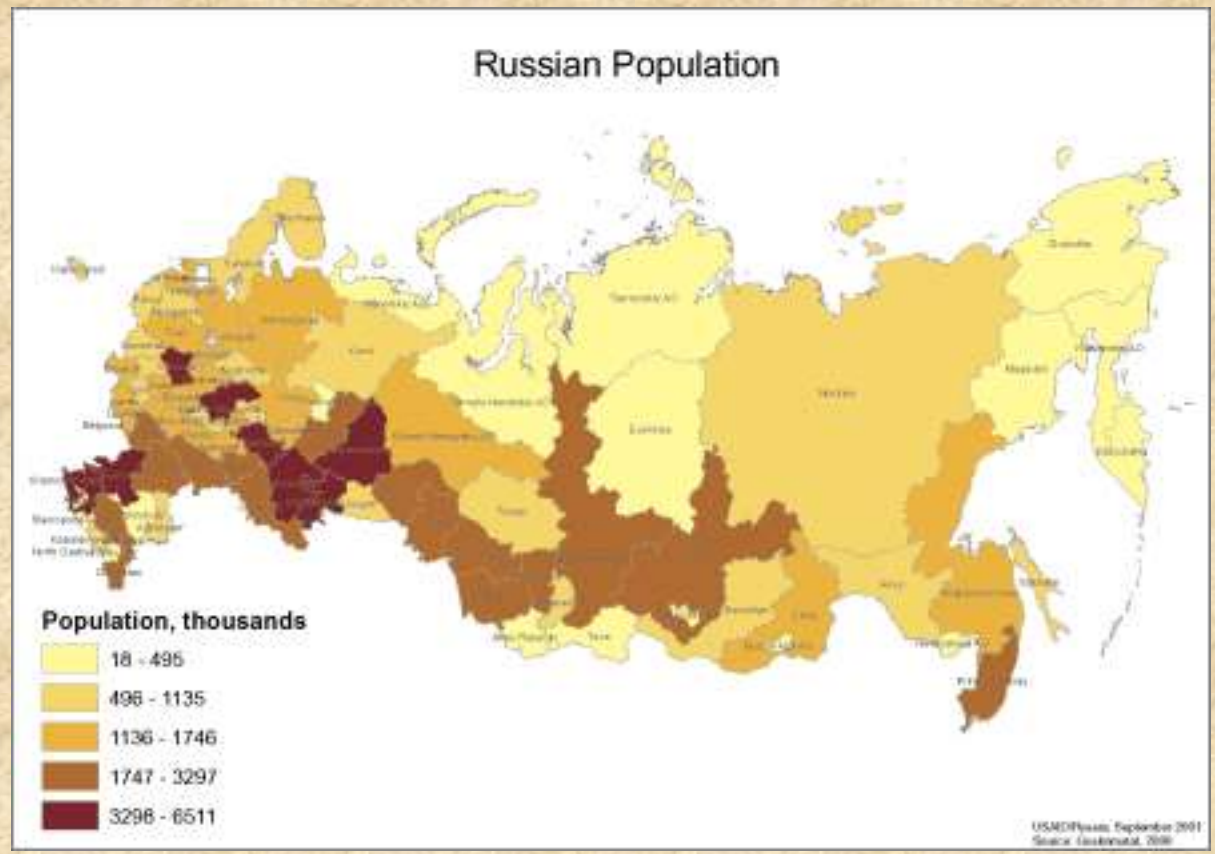
Represent a larger area



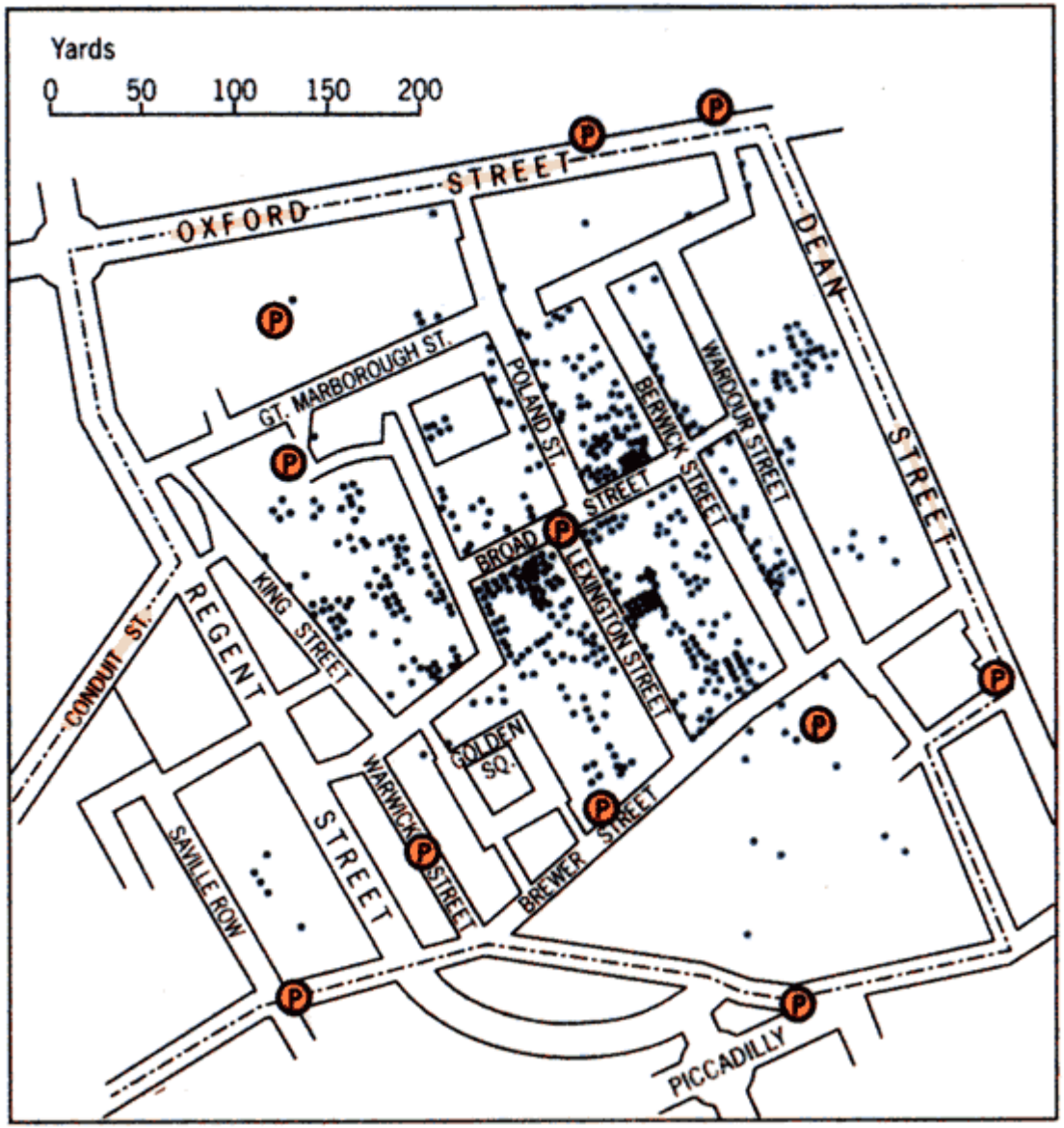
Show what we can't see



Present info concisely



Cholera and the Map



Show spatial relationships

How do we read maps?

- Maps are *selective* views of reality
- Size of the map relative to reality (scale)
- What's on the map (symbolization)
- Shape of the map (projection)

Map scale

- Ratio of the distance on the map to the distance on the ground
- Scale is a fraction
- Larger area covered means larger denominator
- Larger denominator means smaller fraction
- So a *large-scale* map covers a small area


Waukegan
North Chicago
Mundelein
Lake Michigan
Highland Park
Buffalo Grove
Wheeling
Northbrook
Wilmette
Mount Prospect
Glenview
Skokie
Evanston
Elgin
Des Plaines
Niles
Schaumburg
Bartlett
Itasca
Hanover Park
Glendale Heights
Elmhurst
St. Charles
Oak Park
Maywood
Chicago
Wheaton
Glen Ellyn
Berwyn
Aurora
Downers Grove
La Grange
Naperville
Oak Lawn
Bolingbrook
Orland Park
Tinley Park
Chicago Heights
ILLINOIS
INDIANA
N
©2000 Maps.com


Erie St
River North
Ontario St
Near North
Grand Ave
Illinois St
Dearborn St
State St
Wabash Ave
Rush St
Erie St
St. Clair St
Fairbanks Ct
McClurg Ct
Ohio St
Illinois St
Olive Park
Navy Pier Park
Navy Pier
River Esplanade Park
Hubbard St
Kinzie St
Water St
N. Water St
Centennial Fountain & Arc
Wacker Dr
S. Water St
Wells St
Chicago R.
N. Milwaukee Ave
North Branch Chicago R.
Lake St
Randolph St
Field Blvd
Chicago
Clinton St
Canal St
La Salle St
Washington Blvd
Garland Ct
Franklin St
The Loop
Madison St
Monroe St
Wacker Dr
Clark St
Dearborn St
State St
Wabash Ave
Michigan Ave
Monroe Dr
Adams St
Sears Tower
Grant Park
Chicago Harbor
Jackson Blvd
De Paul Univ.
Jackson Dr
Van Buren St
Lincoln Statue
EISENHOWER EXPY
Congress Pkwy
Buckingham Fountain
Harrison St
Balbo Dr
Polk St
South
8th St
9th St
Columbus Dr
Lake Shore Dr
Taylor St
Roosevelt Rd
South Branch Chicago R.
Clinton St
Canal St
Clark St
Plymouth Ct
13th St
14th St
McFetridge Dr
Solidarity Dr
Northerly Island
Northerly Island Park
Adler Planetarium & Astronomy Mus.
Lake Michigan
N
0
0.5 mi
©2000 Maps.com

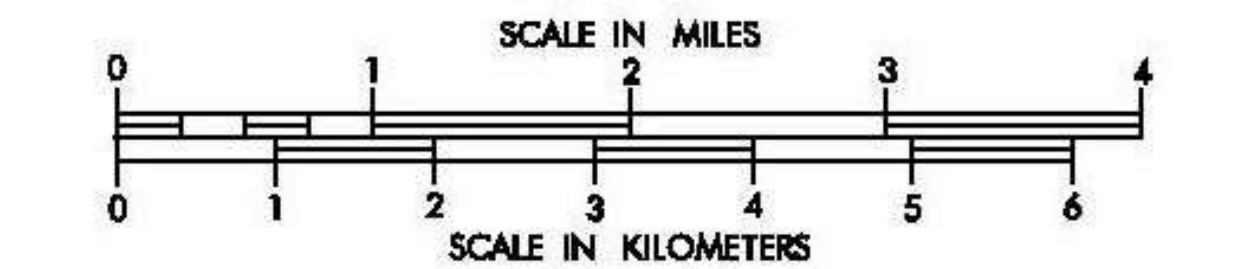
Large-scale

Small-scale

Map scale

- Ratio of the distance on the map to the distance on the ground

1. Graphic:



- Stays the same when photocopied
- Might not be right for the whole map

Map scale

2. Verbal:

1 inch equals 10 miles

- Easy to understand
- Can change if photocopied

Map scale

3. Representative fraction or ratio:

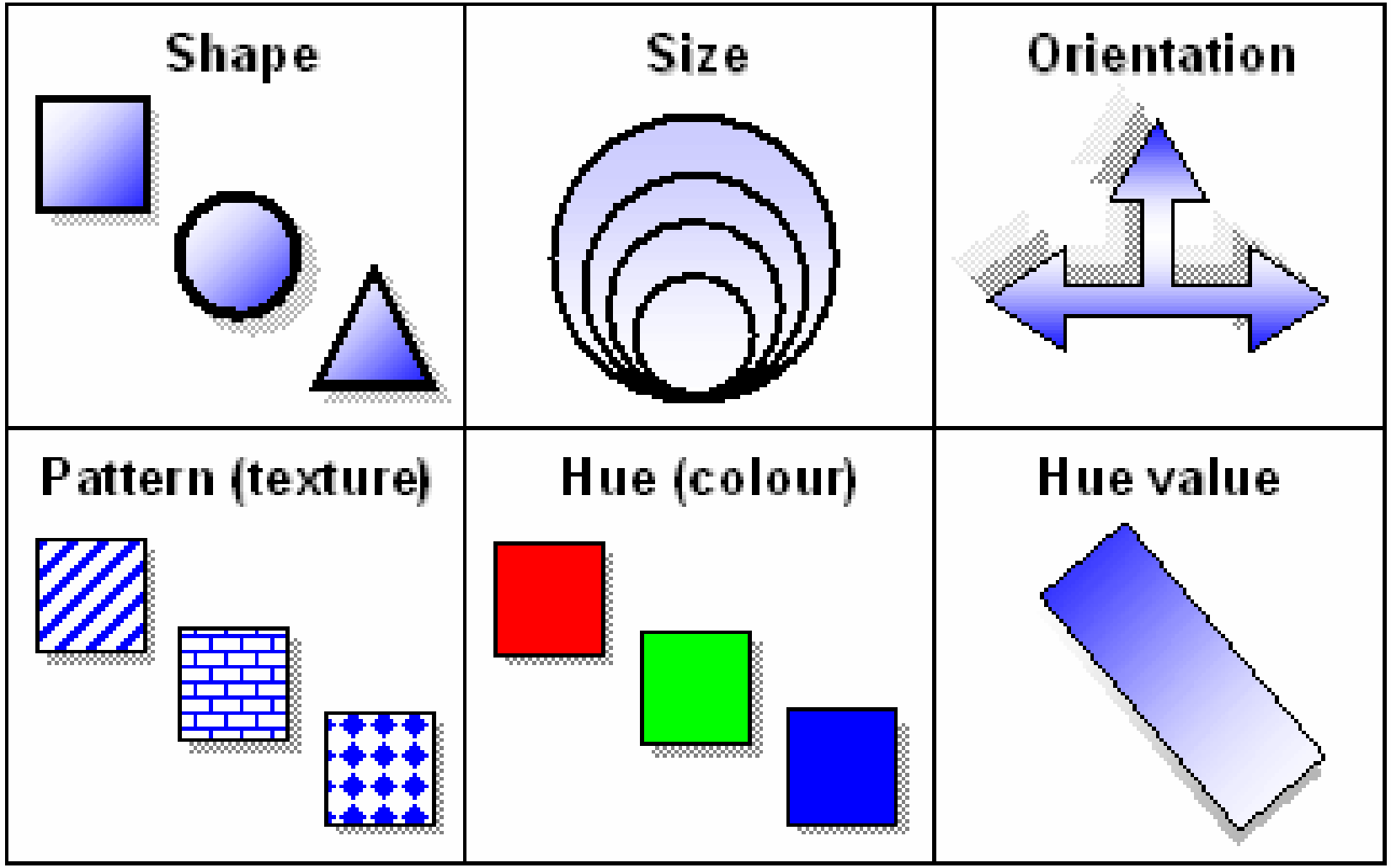
1:24,000

- Units don’t matter
- Can change if photocopied

Map symbolization

- Symbols are a code instead of text
- Three kinds: point, line, area
- Consider shape, size, orientation, pattern, color, value

Visual Variables



Point symbols

- Every symbol counts as one occurrence
- Qualitative points
  - Indicate location
  - Can also describe that location
- Quantitative points
  - Show a distribution
  - Indicate a value (graduated symbols)

Indicate location
Describe location

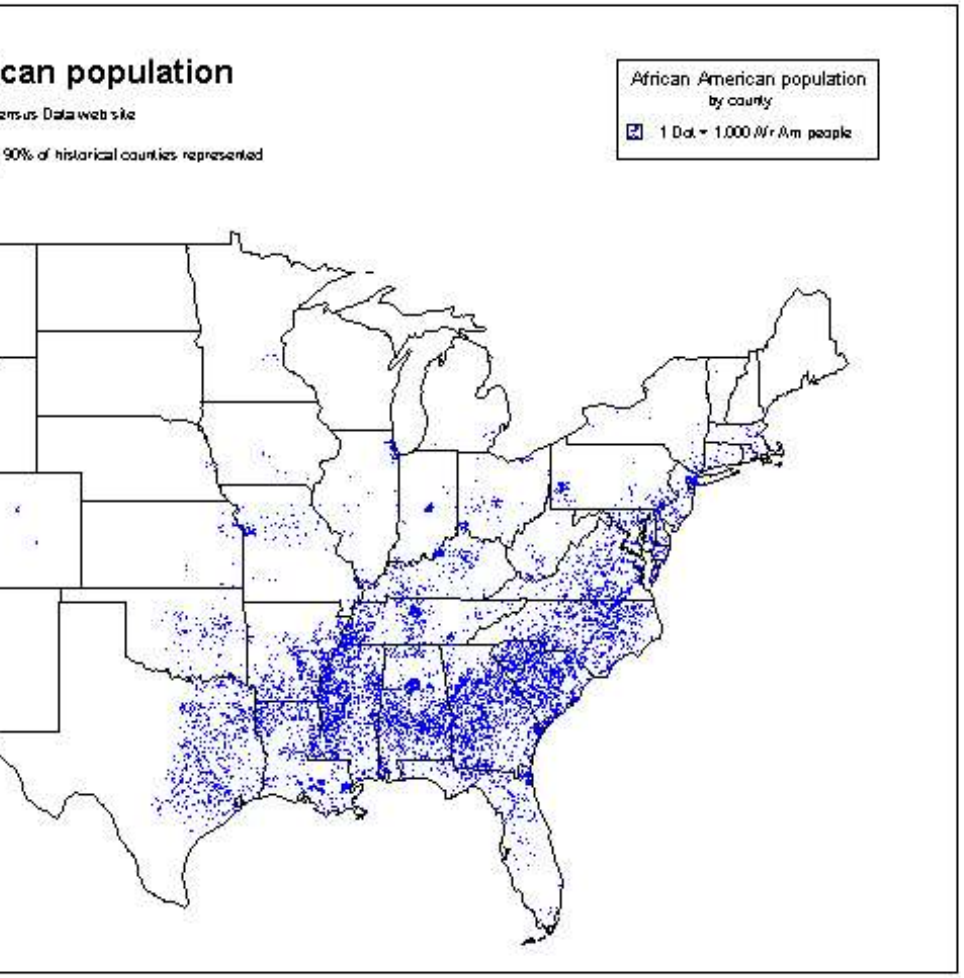
Picnic area	Toilets
Camping	Lookout point/views
Wheelchair access	Interpretation walk
Swimming	Parking/carpark
Accommodation	Water taxi
Cafe/Food	Launch service
Hut	Bus tour
Shelter	Visitor Centre
Information	Walkway
Seals	Wildlife

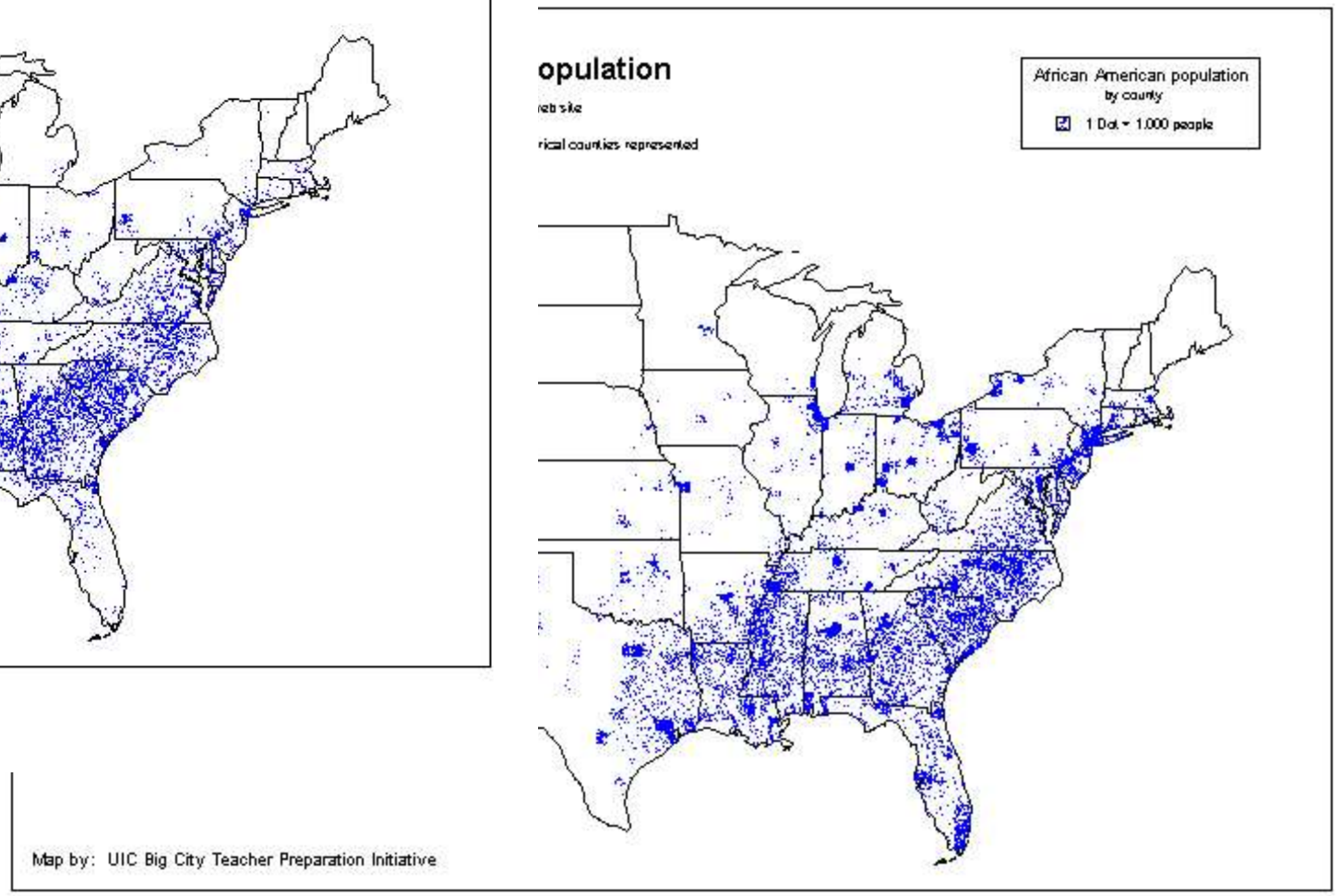
Path - Well marked and always benched * waterways bridged * few steep sections * boots not necessary * for all ages fitness levels * some suitable for disable visitors

Walking Track - Well marked and usually benched * boots not generally needed * most waterways bridged * for most fitness levels

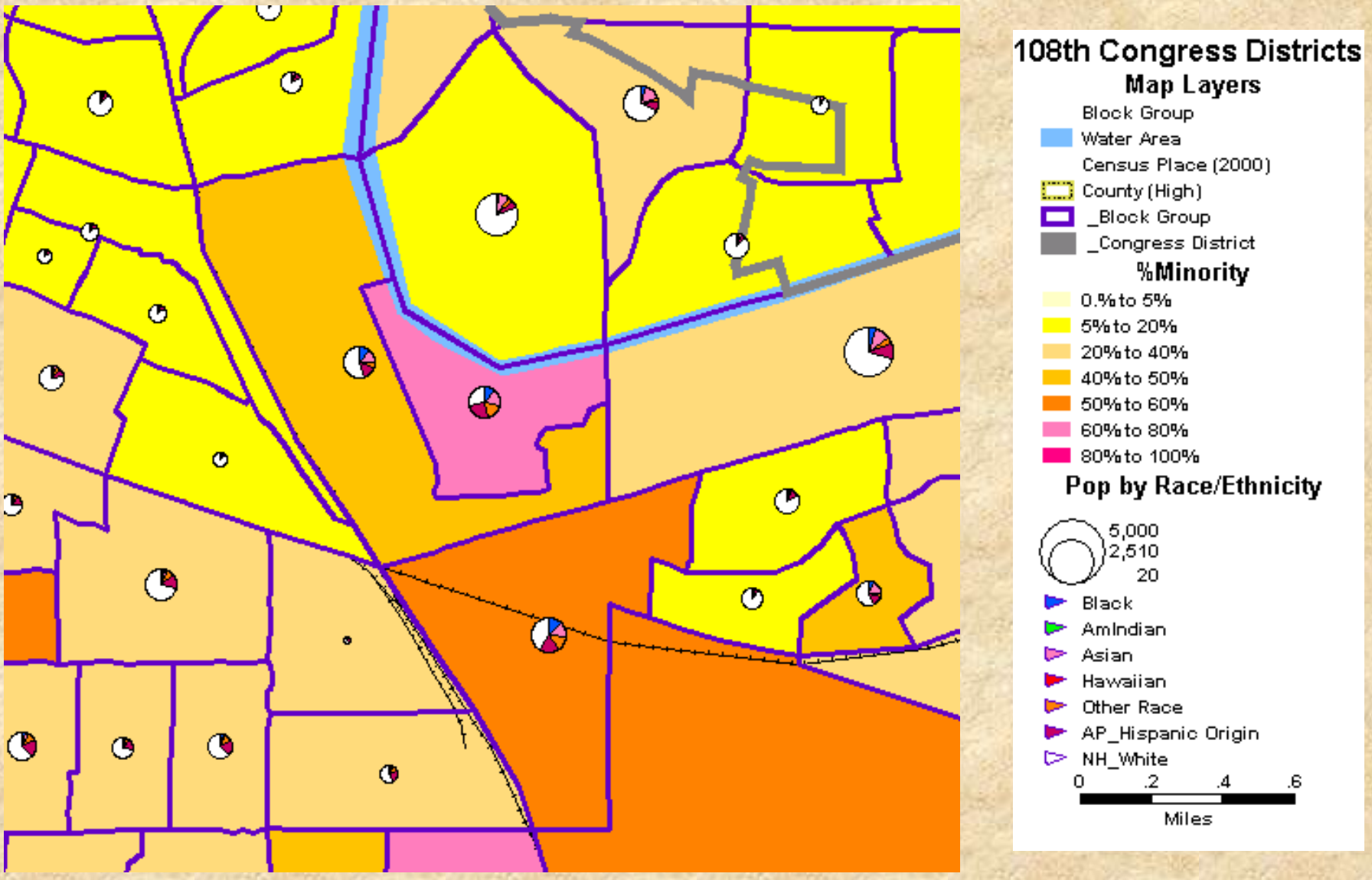
Tramping Track - Marked but not usually benched * may be steep and rough in places * some unbridged waterways * boots advisable * moderate fitness usually required

Show a distribution





Indicate a value

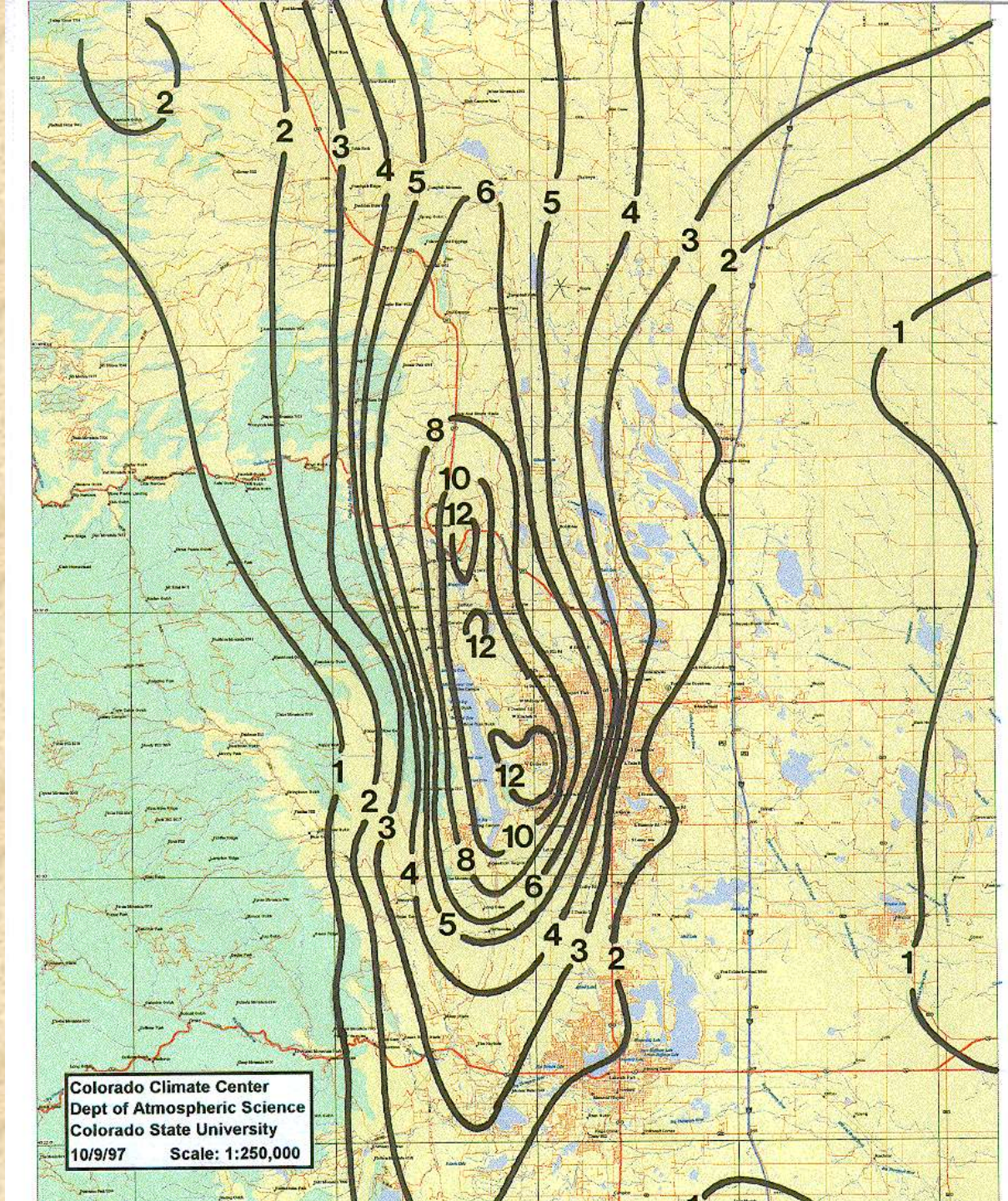


Line symbols

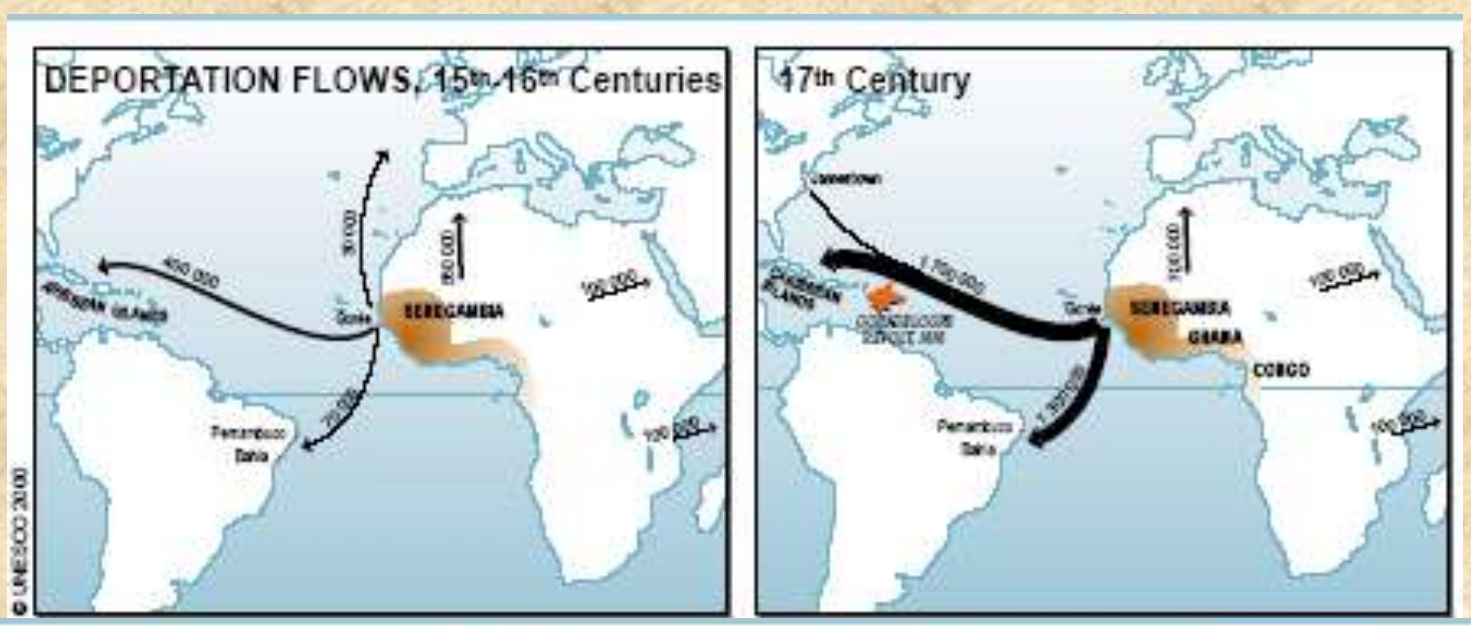
- One-dimensional
- Mostly taken for granted (borders, roads)
- *Isolines* connect same values
- Flow-line maps indicate value by width of line

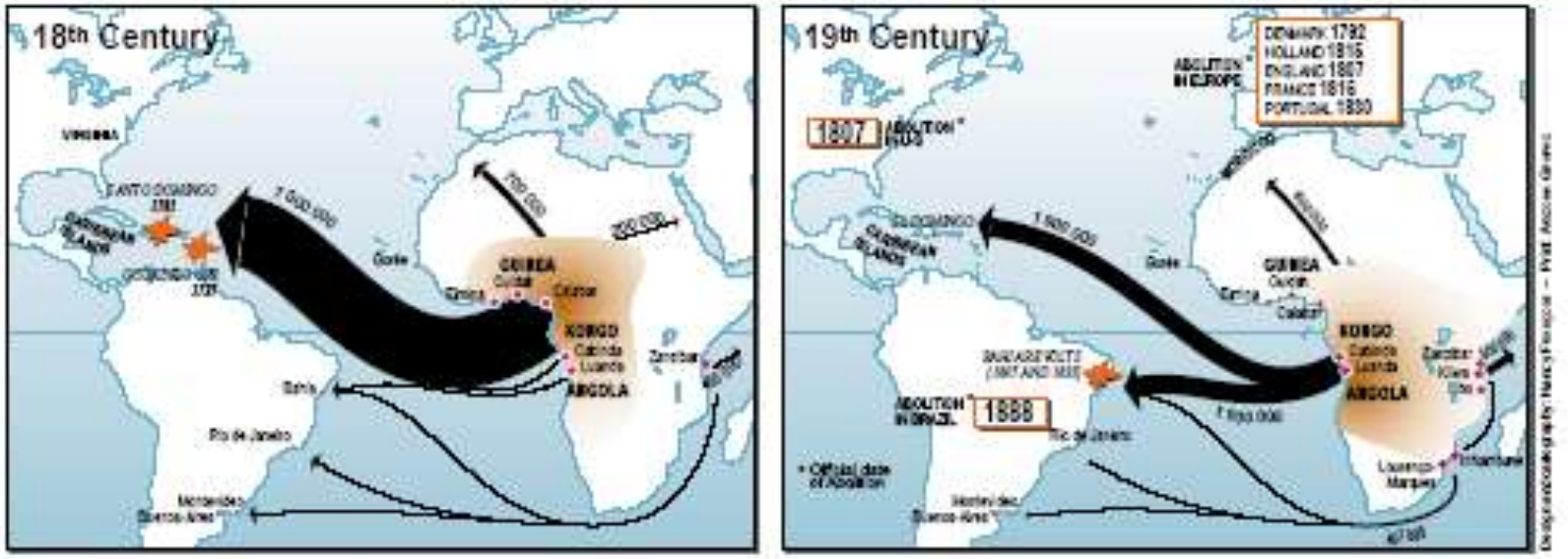

MOTUEKA TO TAKAKA
Map key on pages 6-7
Golden Bay
Whanwharangi Bay
Separation Point
Taupo Point
Wainui Bay
Rangihaeata Head
Abel Tasman memorial
Totaranui
(Totaranui Trail Map - page 110)
Pohara
Clifton
Takaka
Waikoropupu Springs
The Grove
Waikoropupu River
Waingaro River
Takaka River
Takaka Hill Road
Paynes Ford
Wainui River
Inland Track
Awaroa
Abel Head
Coast Track
Marine Reserve
Tonga Island
ABEL TASMAN NATIONAL PARK
Bark Bay
Falls R
Tasman
Abel
Torrent Bay
Pitt Head
Harwoods Hole
Takaka Gorge
Takaka East
Creek
Mt Evans
CANAAN BASIN
Canaan Road
Astrolabe Roadstead
Adele Island
Fisherman Island
Ngarua lookout
Hawkes lookout
Harwoods lookout
Marahau
Split Apple Rock
Upper Takaka
Takaka Hill Summit
Riwaka Vly Rd
Kaiteriteri
Cobb Trail
Takaka River
Riwaka Resurgence
Riwaka River
Marahau
Settlers cairn
Riwaka
Motueka River
Motueka
Tasman Bay
N
0
5
Kilometres
Lower Moutere
Richmond, Nelson

Isolines (Contour lines)



Flow-line maps

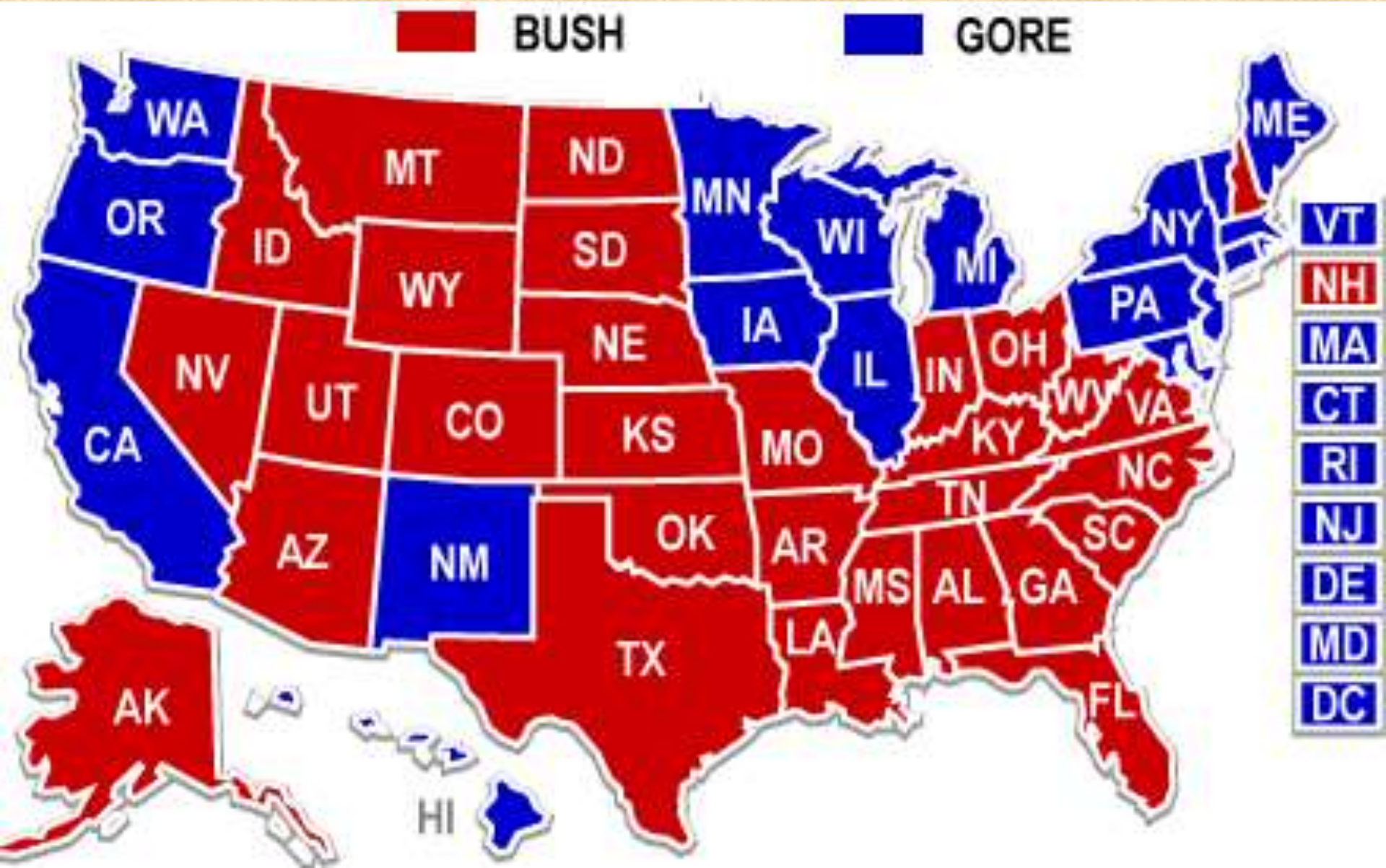




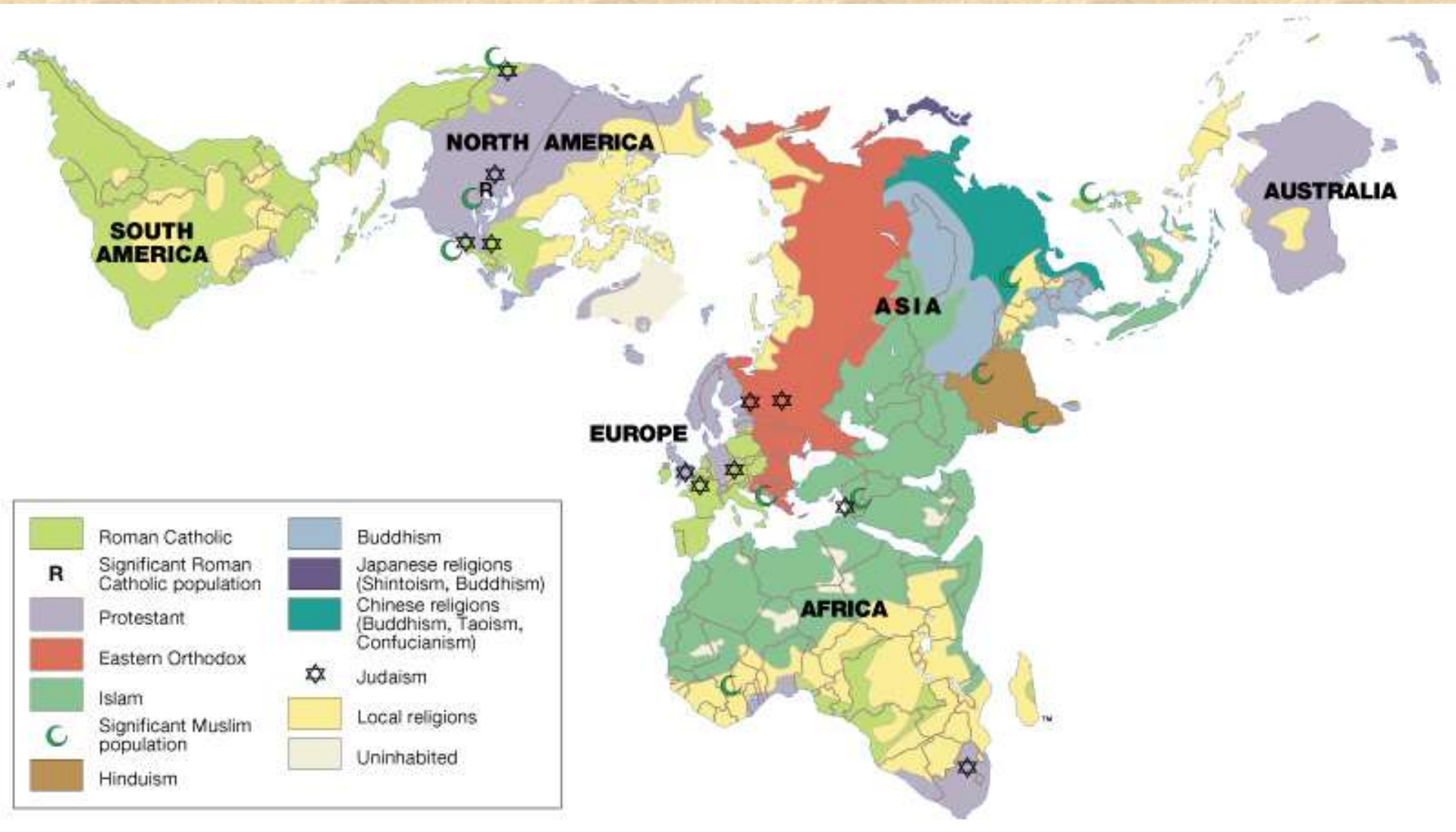
Area symbols

- Each territory or region has one value
- Differences in kind
- Differences in value
  - *Choropleth* maps
  - Usually, darker indicates more
- Cartograms distort area to show value

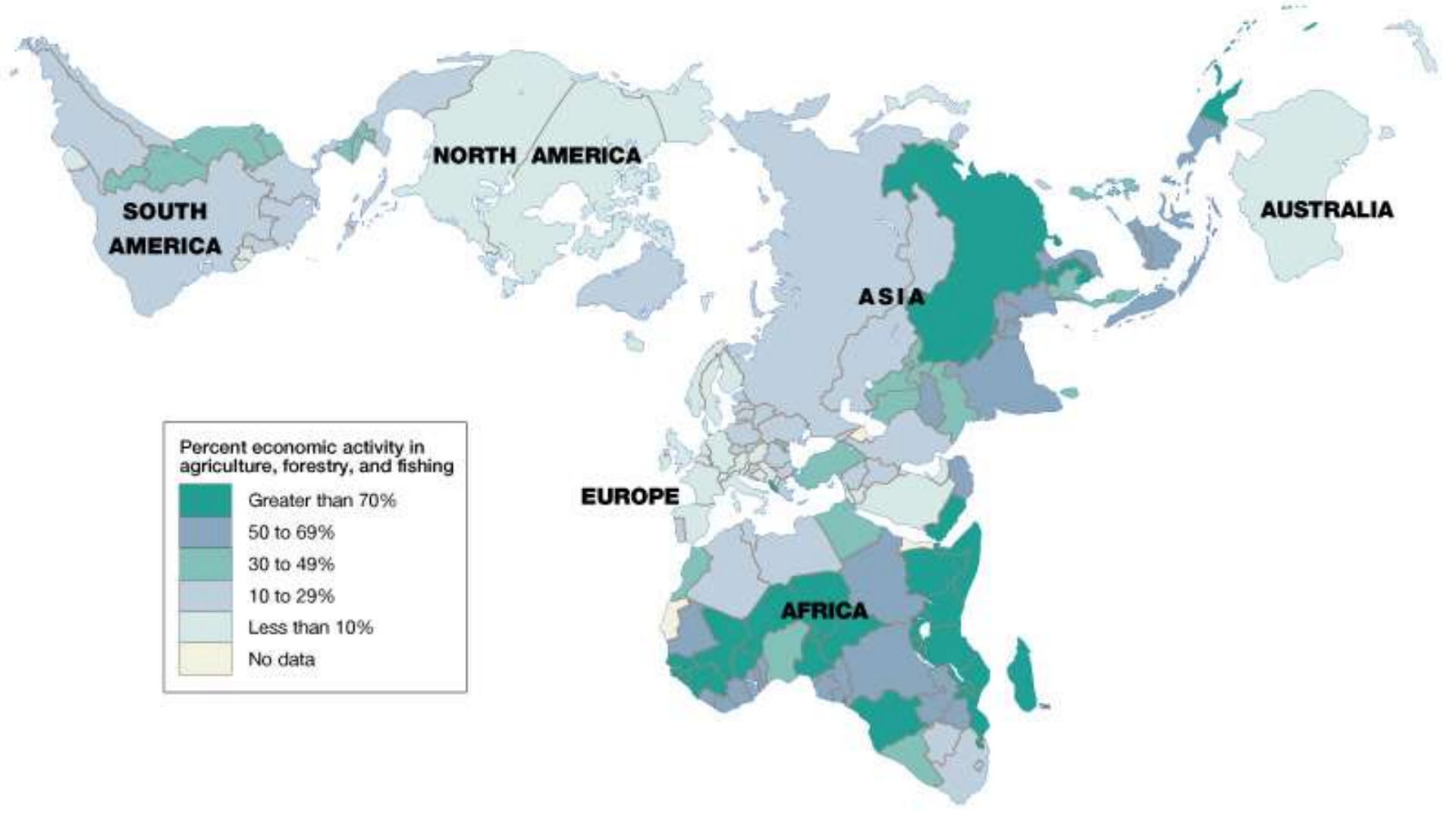
Differences in kind

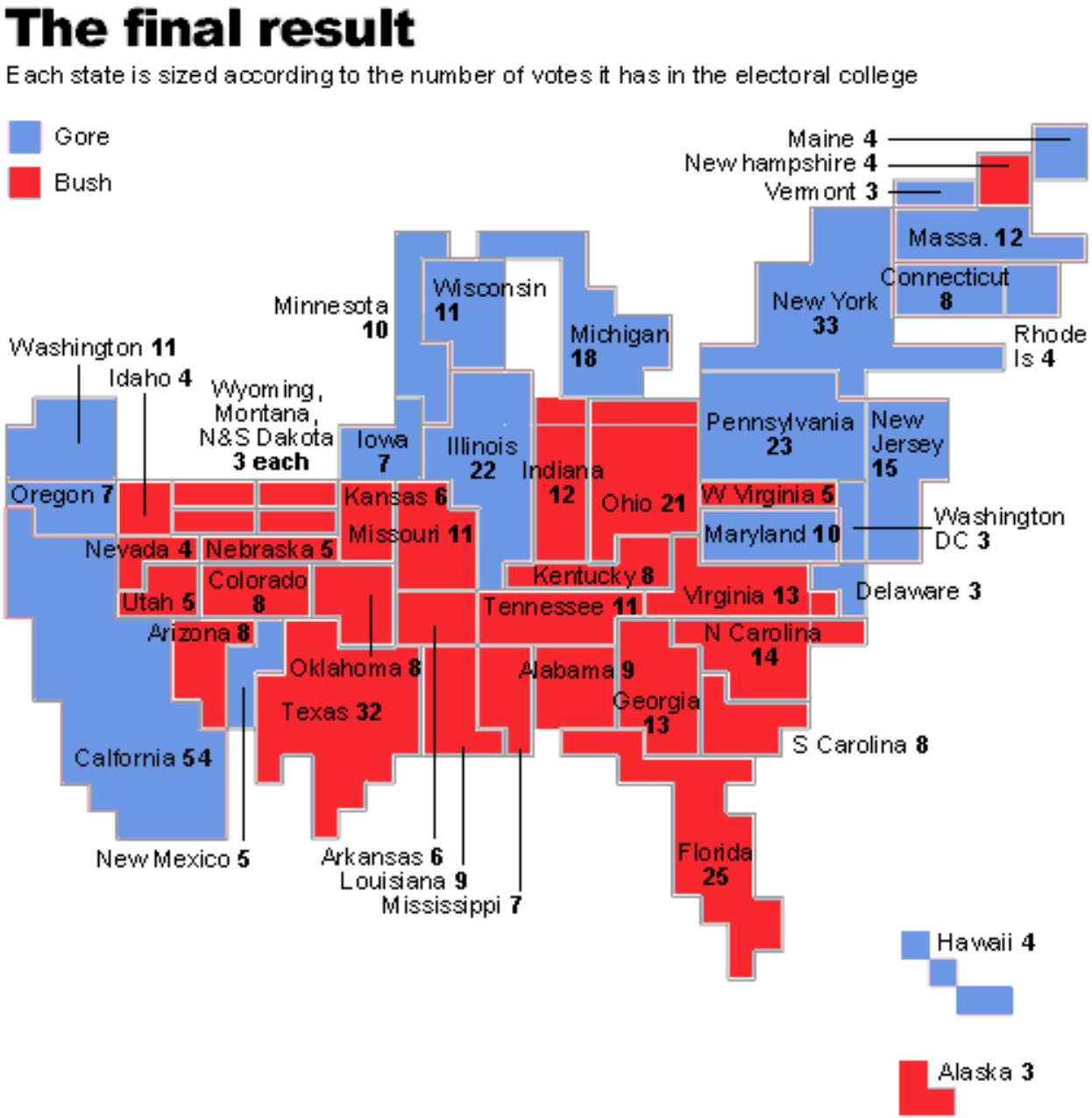


Differences in kind



Differences in value (Choropleth)

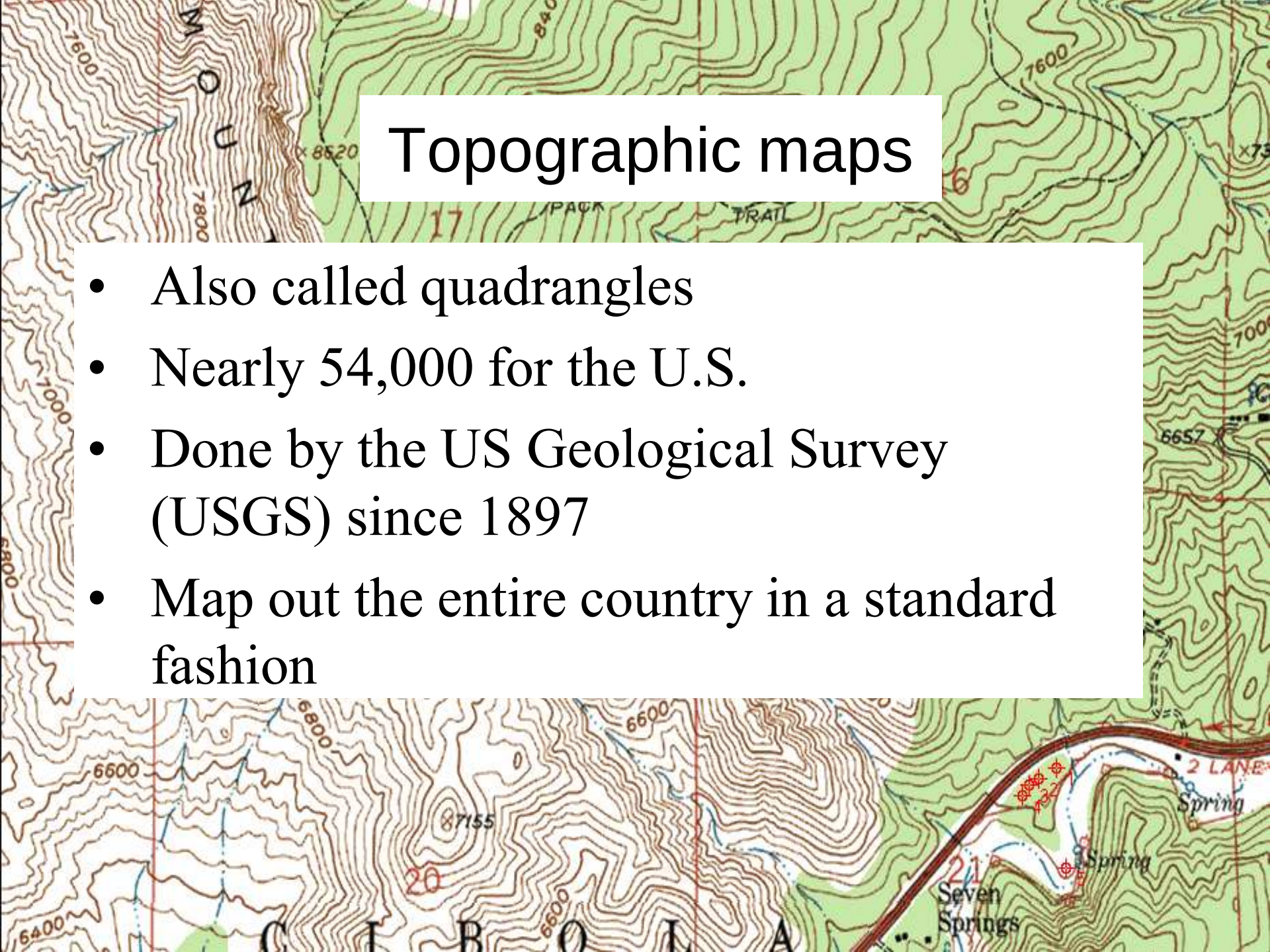



The final result
Each state is sized according to the number of votes it has in the electoral college
Gore
Bush
Maine 4
New hampshire 4
Vermont 3
Massa. 12
Connecticut 8
New York 33
Rhode Is 4
Wisconsin 11
Minnesota 10
Michigan 18
Washington 11
Idaho 4
Wyoming, Montana, N&S Dakota 3 each
Iowa 7
Illinois 22
Indiana 12
Pennsylvania 23
New Jersey 15
Oregon 7
Kansas 6
Ohio 21
W Virginia 5
Missouri 11
Maryland 10
Washington DC 3
Nevada 4
Nebraska 5
Colorado 8
Kentucky 8
Utah 5
Virginia 13
Delaware 3
Tennessee 11
Arizona 8
N Carolina 14
Oklahoma 8
Alabama 9
Texas 32
Georgia 13
S Carolina 8
Calfornia 54
Florida 25
New Mexico 5
Arkansas 6
Louisiana 9
Mississippi 7
Hawaii 4
Alaska 3

Cartogram

Topographic maps

- Also called quadrangles
- Nearly 54,000 for the U.S.
- Done by the US Geological Survey (USGS) since 1897
- Map out the entire country in a standard fashion

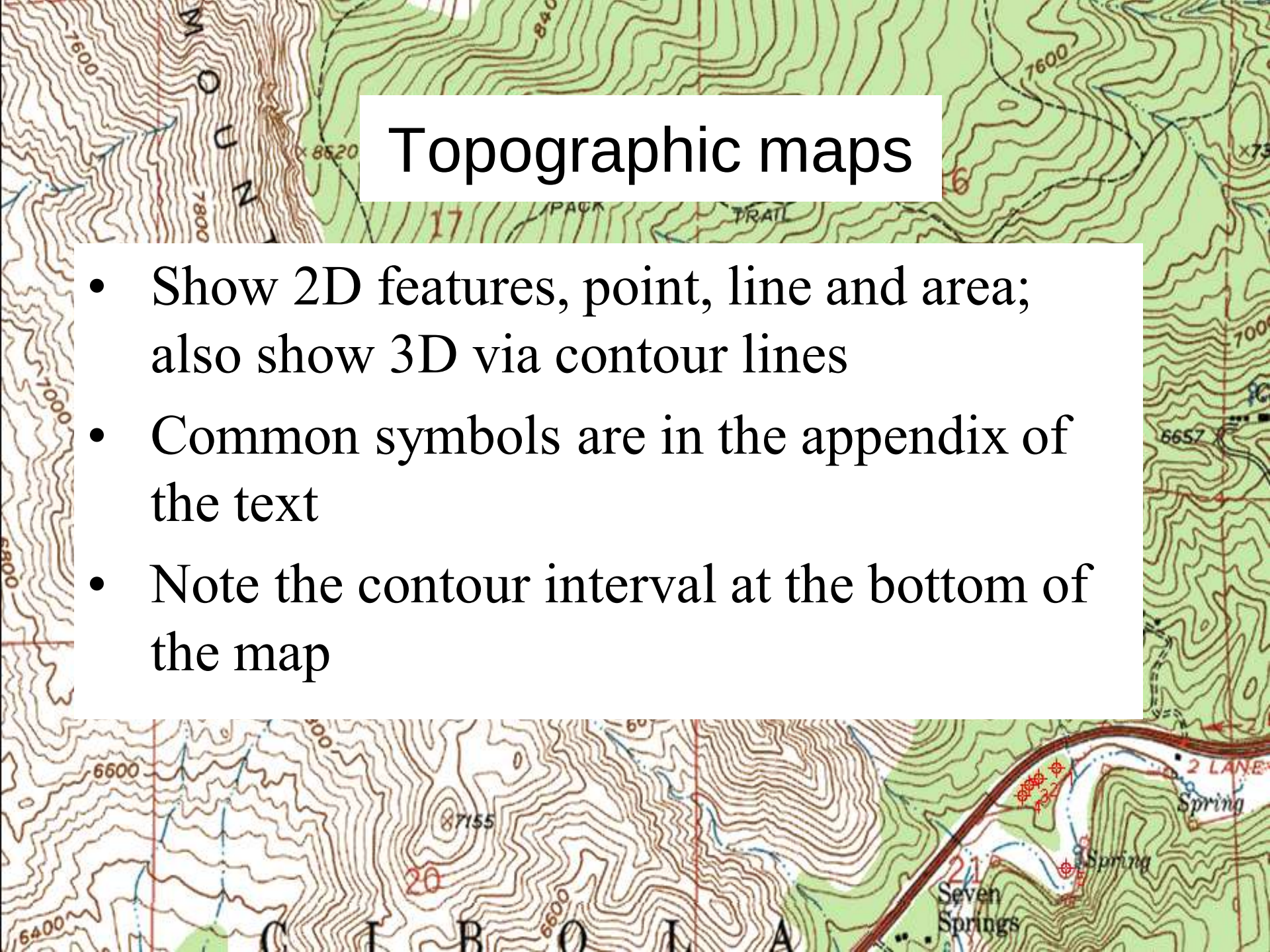


Topographic maps

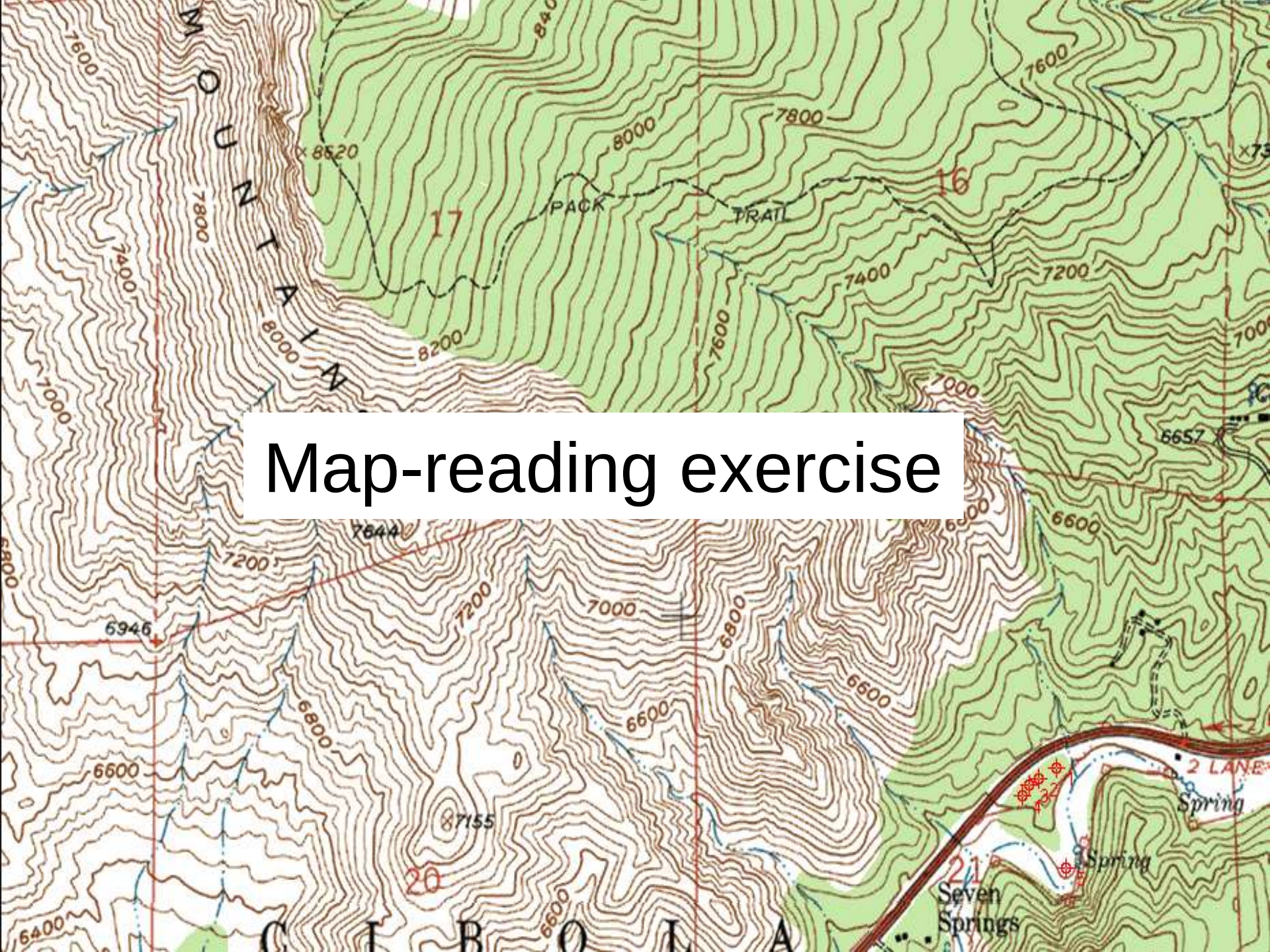
- Till the 1940s, you climbed to the highest point and plotted what you could see from there
- Aerial photography after WWII
- Two overlapping photos are put in a stereoscope
- 10 photos for each 7.5 minute map

Topographic maps

- Show 2D features, point, line and area; also show 3D via contour lines
- Common symbols are in the appendix of the text
- Note the contour interval at the bottom of the map




MOUNTAINS
PACK TRAIL
17
16
20
21
×8620
7644
6946
×7155
6657
Spring
Spring
Seven Springs
2 LANE
CIBOLA
8200
8000
7800
7600
7400
7200
7000
6800
6600
6400


Map-reading exercise
MOUNTAIN
PACK
TRAIL
Seven
Springs
Spring
2 LANE