



Welcome to the World of Geography!

Unit 1: An Introduction

I. Definition

➡ A. Historical

➡ B. Our definition

◆ *Geography* is the study of Earth and the living things on Earth, especially human beings.



II. Purpose or Aim



1. You are thinking about what you would like to do “When I grow up....” **What subjects in school will help you prepare for this?**



- ☞ English and Speech—communication
- ☞ Science and Math—technology
- ☞ Athletics—teamwork
- ☞ Social Studies—Sense of History, Responsible Voters, etc.
- ☞ Foreign Language—communication/understanding of other cultures
- ☞ Career Technology—skills
- ☞ **Geography**—an awareness of our differences and similarities to help us communicate and understand the people we work for (bosses) and with (colleagues) and the people we work for (customers). It gives us an understanding of our world and the problems we are facing. **No one lives in isolation anymore. We are all connected.**






2. **Why is it important to recycle aluminum?**



 **Finite resource. We will run out.
What then?**

 **Think of all the things made of
aluminum. Could we live without this?**

 **Yes, but how would our lives be
different?**

 **What does this have to do with Geography?**

- What is aluminum made from?**
- Where do we import bauxite from?**

- **Where does the trash go?**
- **Because of environmental laws can we still throw trash anywhere?**
- **What happens when the landfills fill up?**
- **What happens if we have to truck our trash to West Texas? Who will pay to transport it?**



3. How does what is happening in the Middle East influence our lives?

➡ What about Europe?

➡ What about Africa?



- ➡ **Oil prices—gas prices,**
- ➡ **economy,**
- ➡ **our troops' lives,**
- ➡ **present and potential trading partners/allies/ enemies.**
- ➡ **terrorism**
- ➡ **We are not isolated from the rest of the world.**



4. After you have graduated from college and are looking for a location to settle down in, what factors do you take into consideration?



- ☞ Air conditioner sales person in Alaska? Snow ski shop in Florida? Pediatrician in Sun City Arizona (a retirement community)?**
- ☞ What businesses would be successful in College Station?—most people are between the ages of 18-25 for 9 to 10 months out of the year.**
- ☞ Willing to live with hazards?**
- ☞ Rural vs. Urban?**
- ☞ If you want to live in a particular environment or area you need to think about what career would allow you to be successful there—or be willing to go where you can be successful.**



5. What are some issues facing American voters either directly or indirectly, local, nationally or internationally in scope?



- ➡ **War on terrorism,**
- ➡ **War in Iraq, War in Afghanistan, War in Liberia,**
- ➡ **Troops in Korea,**
- ➡ **the economy,**
- ➡ **taxes (all levels—city, state, nation),**
- ➡ **school board issues? School funding?**
- ➡ **Abortion, rape laws, etc.**



6. If the United States was cut off from the rest of the world for a period of time, what would the effects be? Think about food, clothes, transportation, money (investment capital), shelter, etc.



- ☞ Yes, we could survive but at what cost? Think about foods—bananas, coffee, etc. Can they be grown in Florida? Texas? California?**
- ☞ Have the students look at their watches, check out each others tags of their shirts, check their shoes. Where were they assembled? (Mexico, Asia, Made in Taiwan, China, India) -- Why? Couldn't we make them in the USA? Yes, but think about the cost—more expensive. Labor is cheaper in many other countries.**
- ☞ What would happen to the cost of gas without the Middle East petroleum? Think about the gas lines in the 70's and the cost of gas today.**



☞ **B. Possible Values**

- ◆ **1. Understanding of the world**
- ◆ **2. Voting responsibility**
- ◆ **3. To make better “life” decisions**
- ◆ **4. To help solve problems**
- ◆ **5. For personal enjoyment
and appreciation**

[Get a credit toward graduation?]



III. National Standards

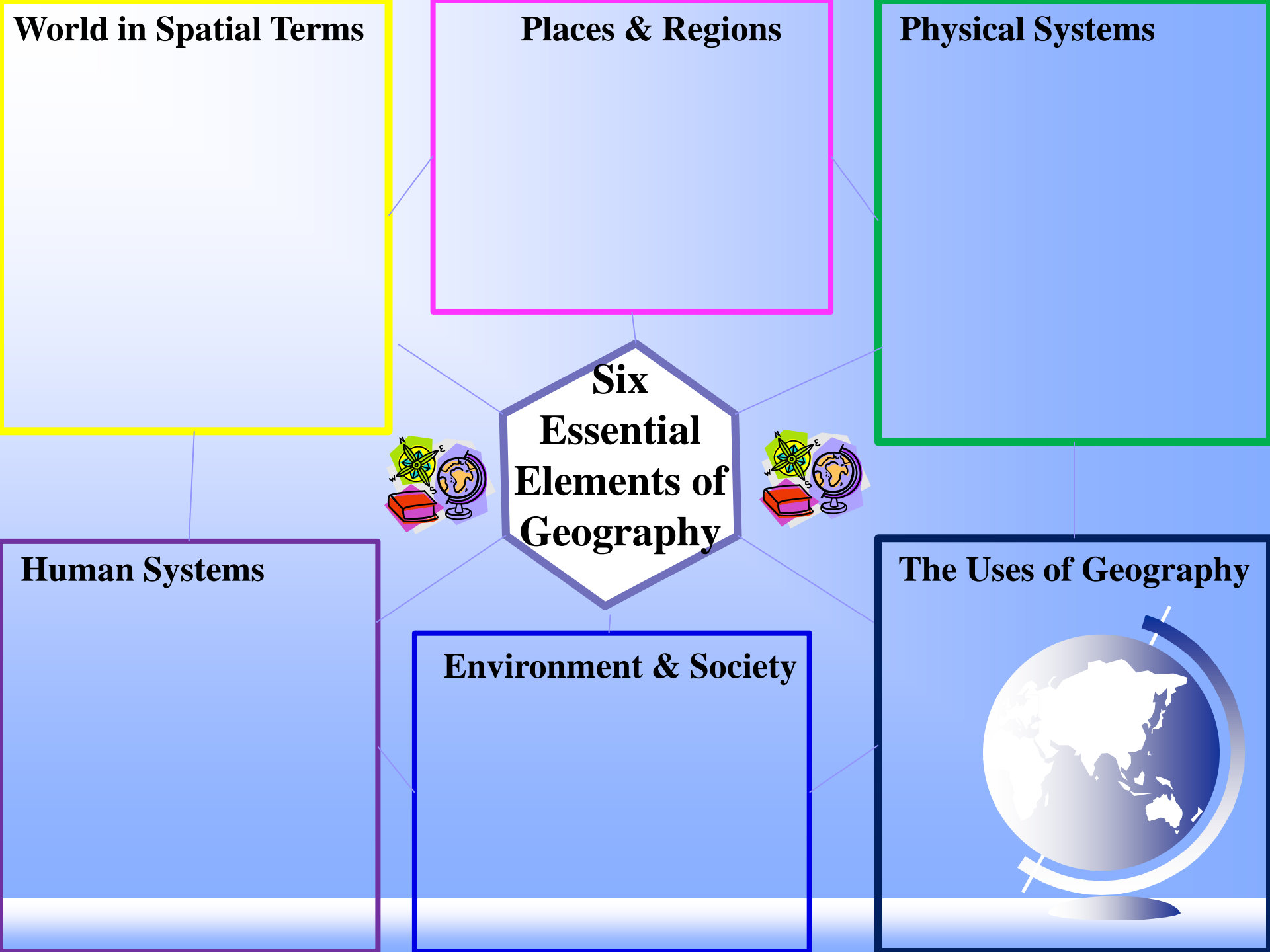
*The geographically
informed person
knows and
understands:*



The 6 essential elements of Geography

- A. The World in Spatial Terms
- B. Places & Regions
- C. Physical Systems
- D. Human Systems
- E. Environment & Society
- F. Uses of Geography





World in Spatial Terms

Places & Regions

Physical Systems

**Six
Essential
Elements of
Geography**

Human Systems

Environment & Society

The Uses of Geography



A. The World in Spatial Terms

1. How to use maps and other geographic representations, tools, and technologies to acquire, process, and report information.
2. How to use mental maps to organize information about people places, and environments.
3. How to analyze the spatial organization of people places, and environments on Earth's surface.



Ex. Satellites



SuperFuror: the satellite, based on France's Multi-Mission Spacecraft bus, will be built by Airbus and launched by France with an Ariane 6 in 1995, carrying French and US payload. The Multi-Mission Vehicle has been ordered (Airbus)

Ex. Farm Field Patterns



◆ 1. Absolute Location

a. exact location

b. the address



◆ 2. Relative Location

- a. How a place is related, or connected to other places
- b. The interdependence of places.



Houston Port

B. Places and Regions

4. The physical and human characteristics of places.
5. That people create regions to interpret Earth's complexity.
6. How culture and experience influence people's perceptions of places and regions.



PLACE

☞ Human and Physical Characteristics

Identify the locations of the following pictures. What physical and human characteristics helped you make your decision?













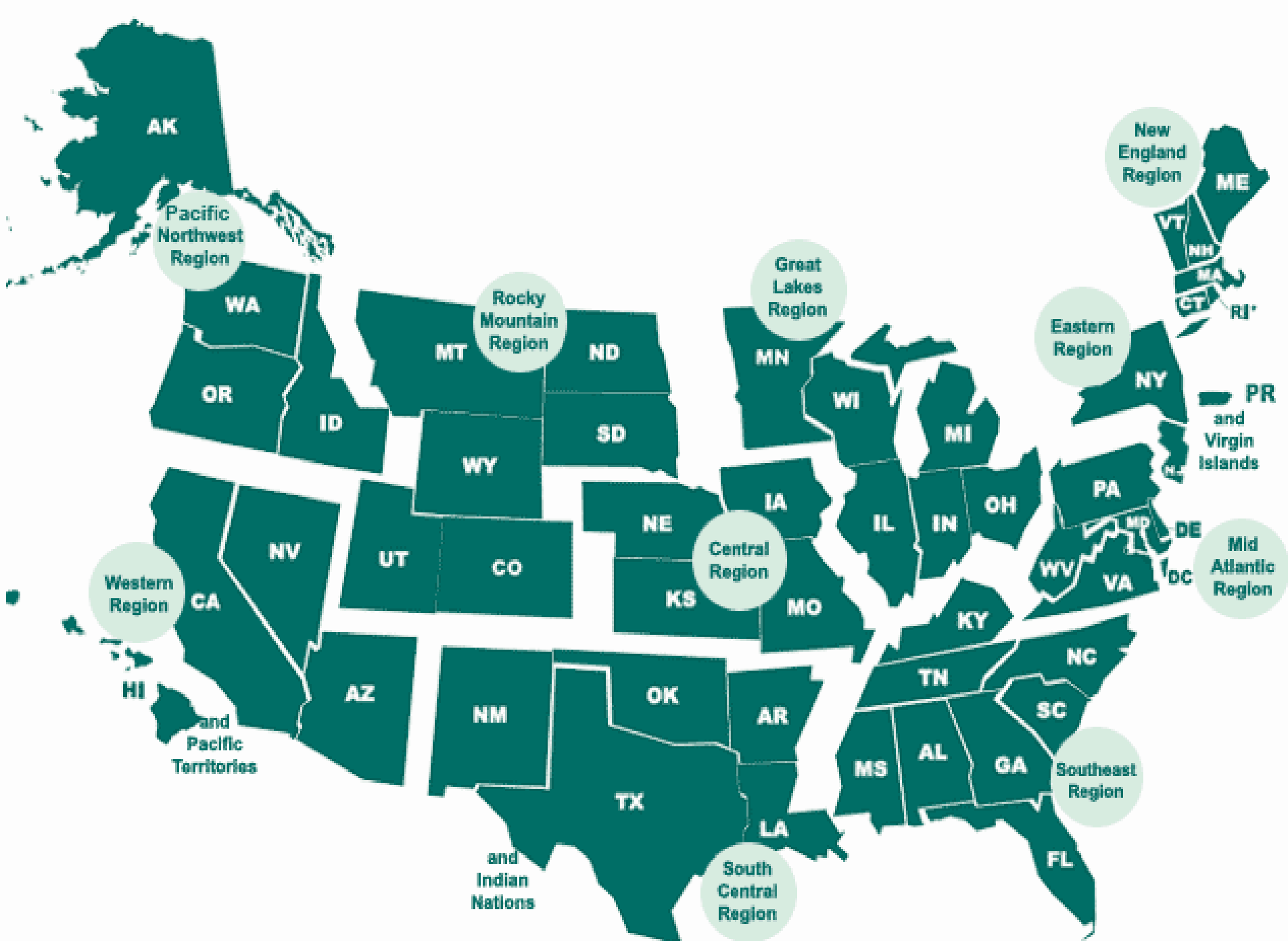


What is a Region?

- ➡ A **region** is an area with one or more common features that make it different from surrounding areas.









Panhandle
Plains

Pineywoods



Prairies
and
Lakes

Big Bend
Country

Hill
Country

South
Texas
Plains

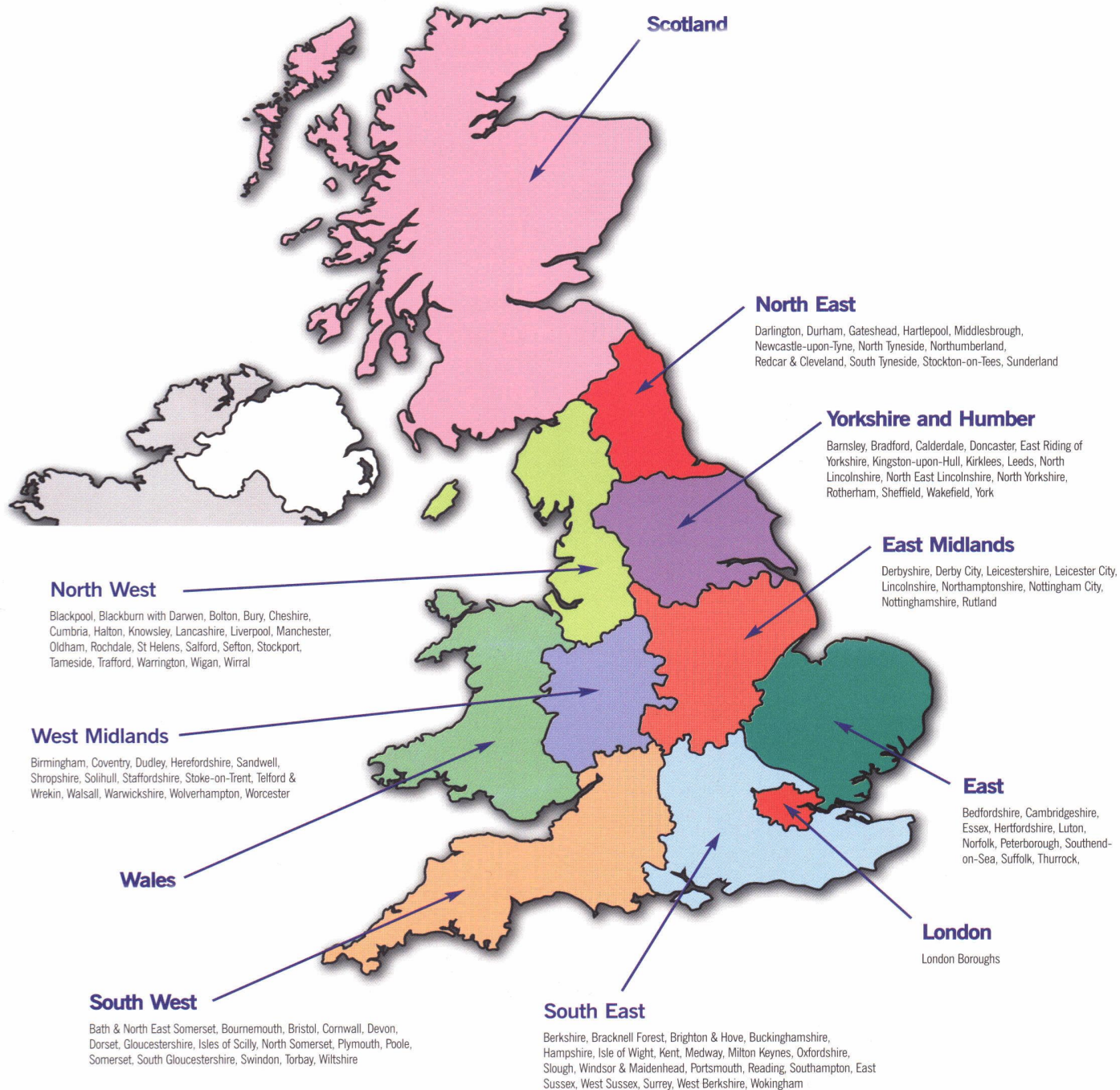
Gulf
Coast

How are regions defined?

**They are defined by their
physical & human
characteristics**



REGIONS





Panhandle
Plains

Pineywoods

Prairies
and
Lakes

Big Bend
Country

Hill
Country

South
Texas
Plains

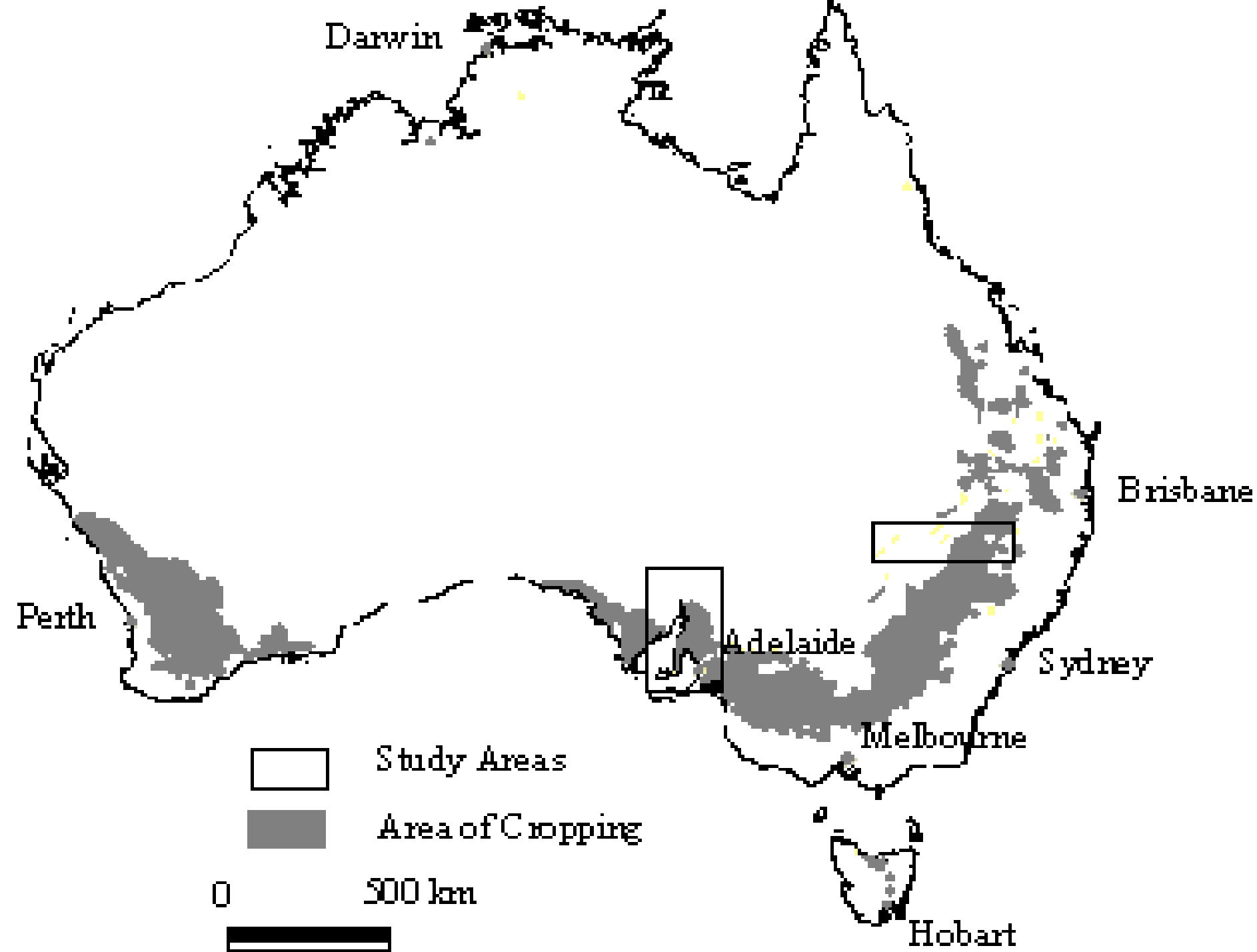
Gulf
Coast

What are the types of regions?

- a. **Formal**: same as a uniform region—has some characteristic that is measurable in common







b. **Functional**: defined by a
set of activities or
interactions



Laura Cantrell NYC Subway Map



Muzzling By The Flowered Vine



Every Action

- ☐ Matador
- ☐ i-Tunes
- ☐ Amazon (UK)

 Key to Subway lines

- Biography
- Press Quotes
- Song-by-Song

○ Connections

- [Download Map](#)
- [Send to a Friend](#)
- [Live Dates](#)



MountainViews Newspaper Magazine

La Canada Pasadena So. Pasadena San Marino Altadena Arcadia Sierra Madre Monrovia Bradbury Duarte Irwindale Azusa Glendora La Verne

Online Videos

www.MVNnews.com

City Navigation



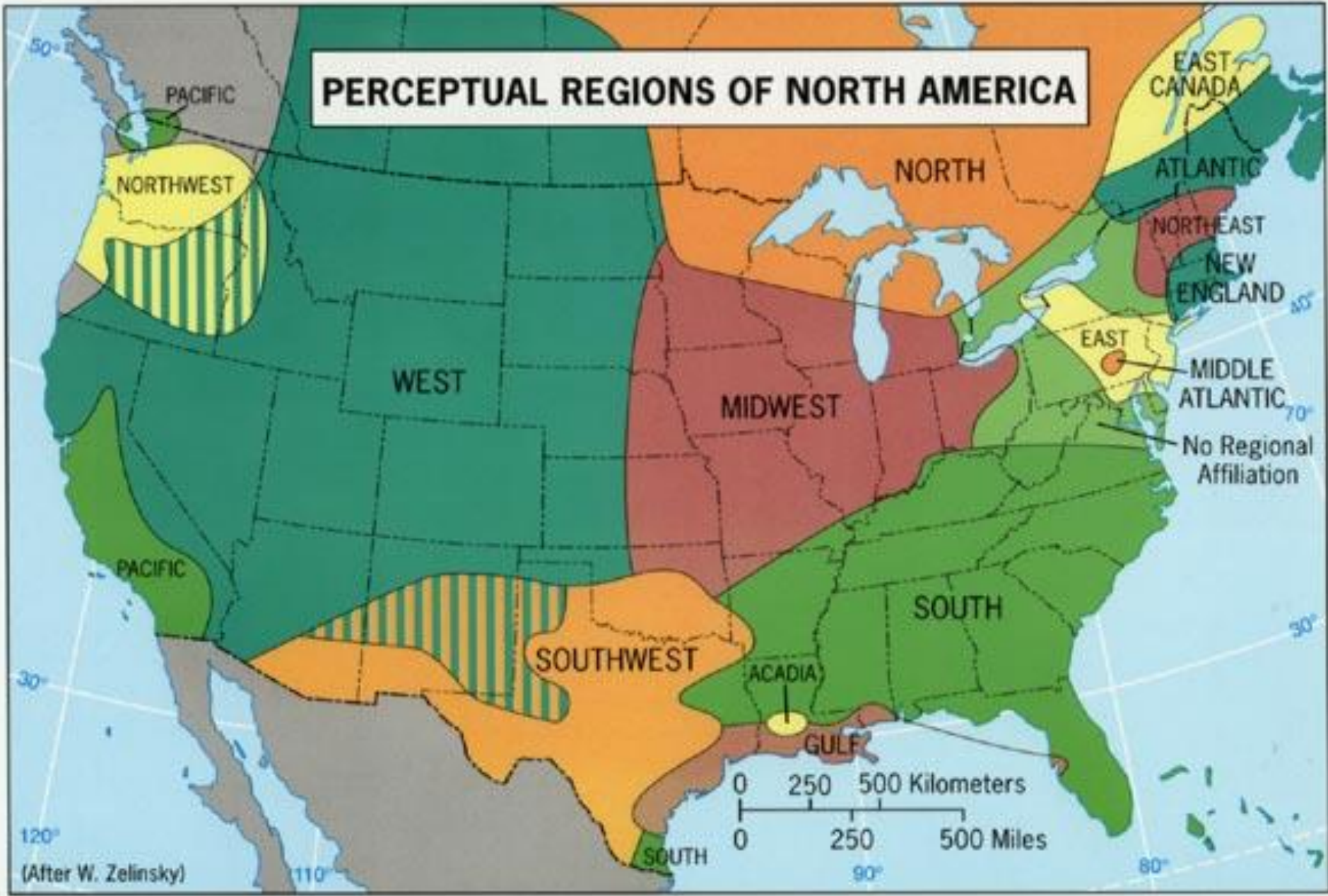
Largest Circulation & Distribution In The Foothills

Monthly Readership of Over 500,000

Monthly Internet Hits of Over 150,000

c. **Perceptual**: regions that
reflect human attitude or
feelings



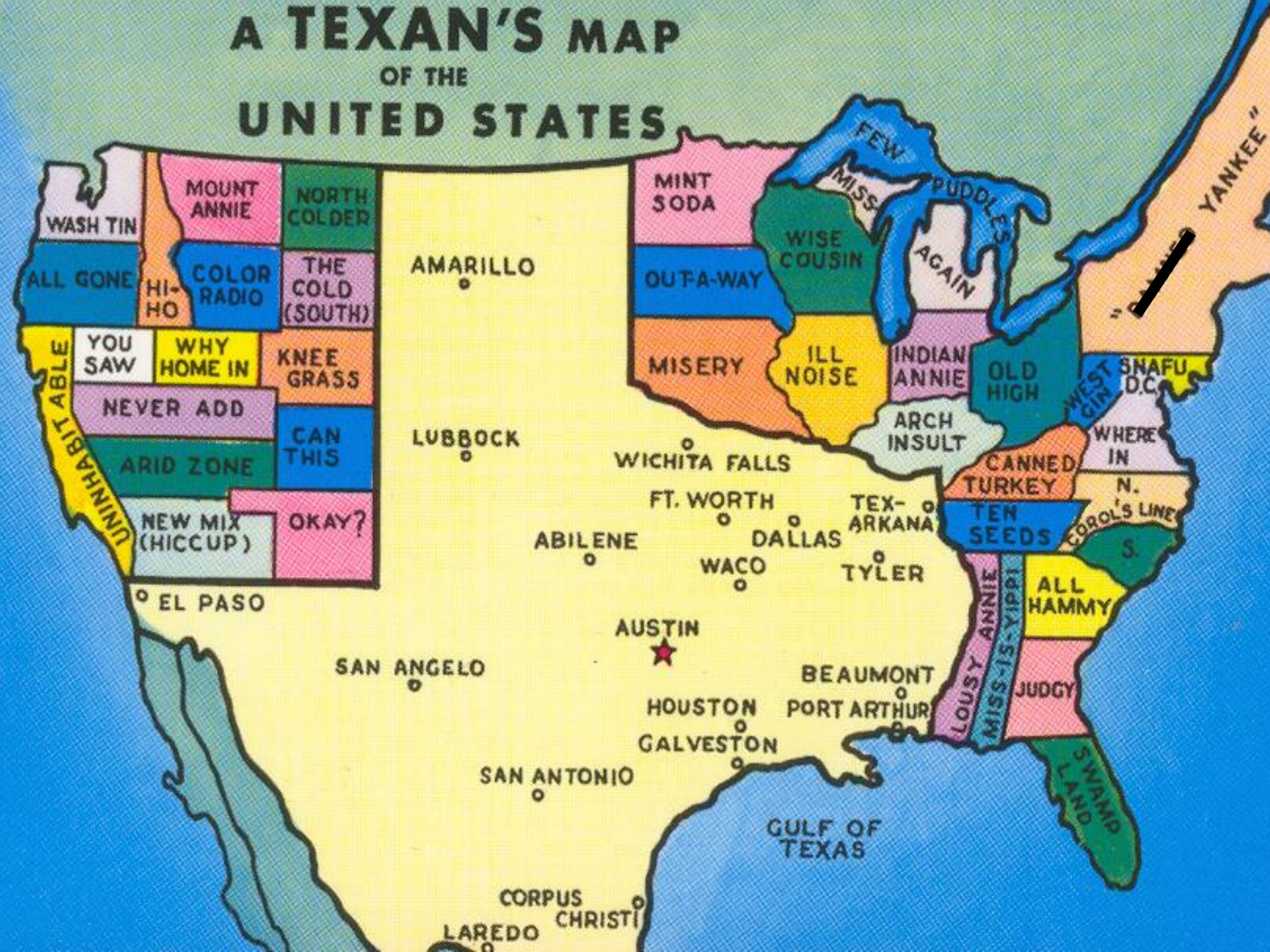


Source: From W. Zelinsky, "North America's Vernacular Regions," *Annals of the AAG*, 1960, p. 14.

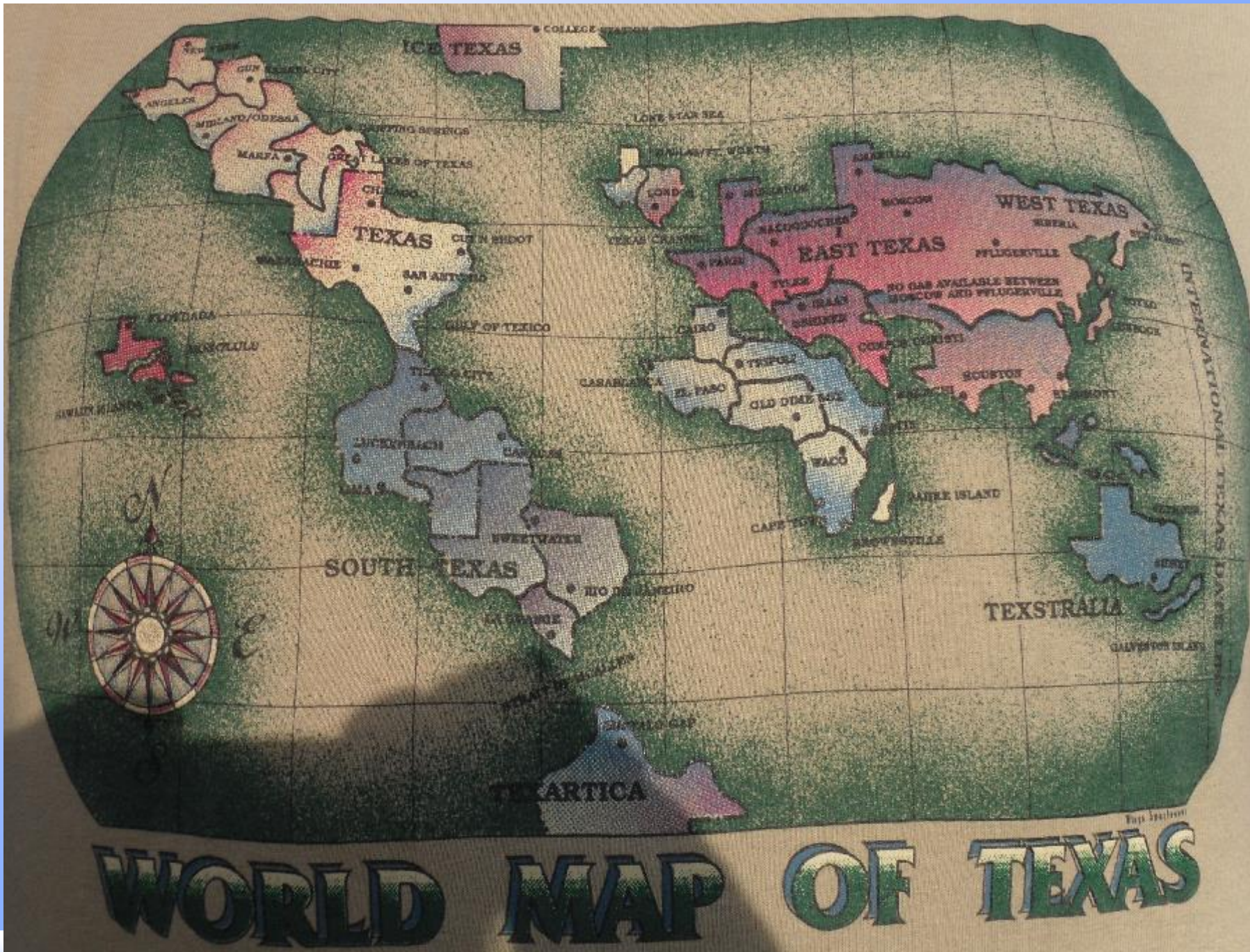
THE UNITED Countries OF Baseball



A TEXAN'S MAP OF THE UNITED STATES



How many Texas shapes can you see?



colorado...



...we're perfect

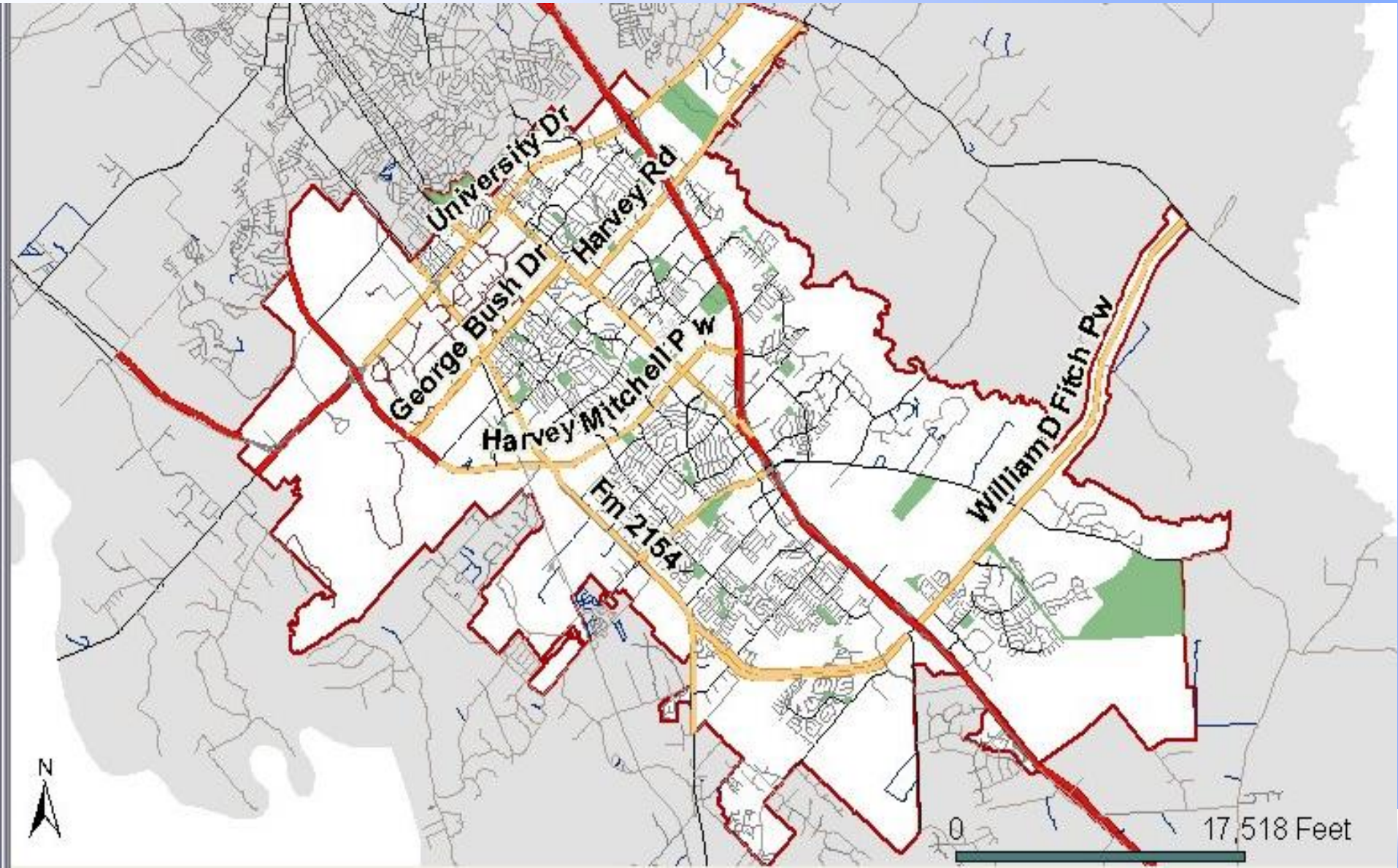
12/24/20

**What would be an
example of a
Formal Region?
Functional?
Perceptual?**



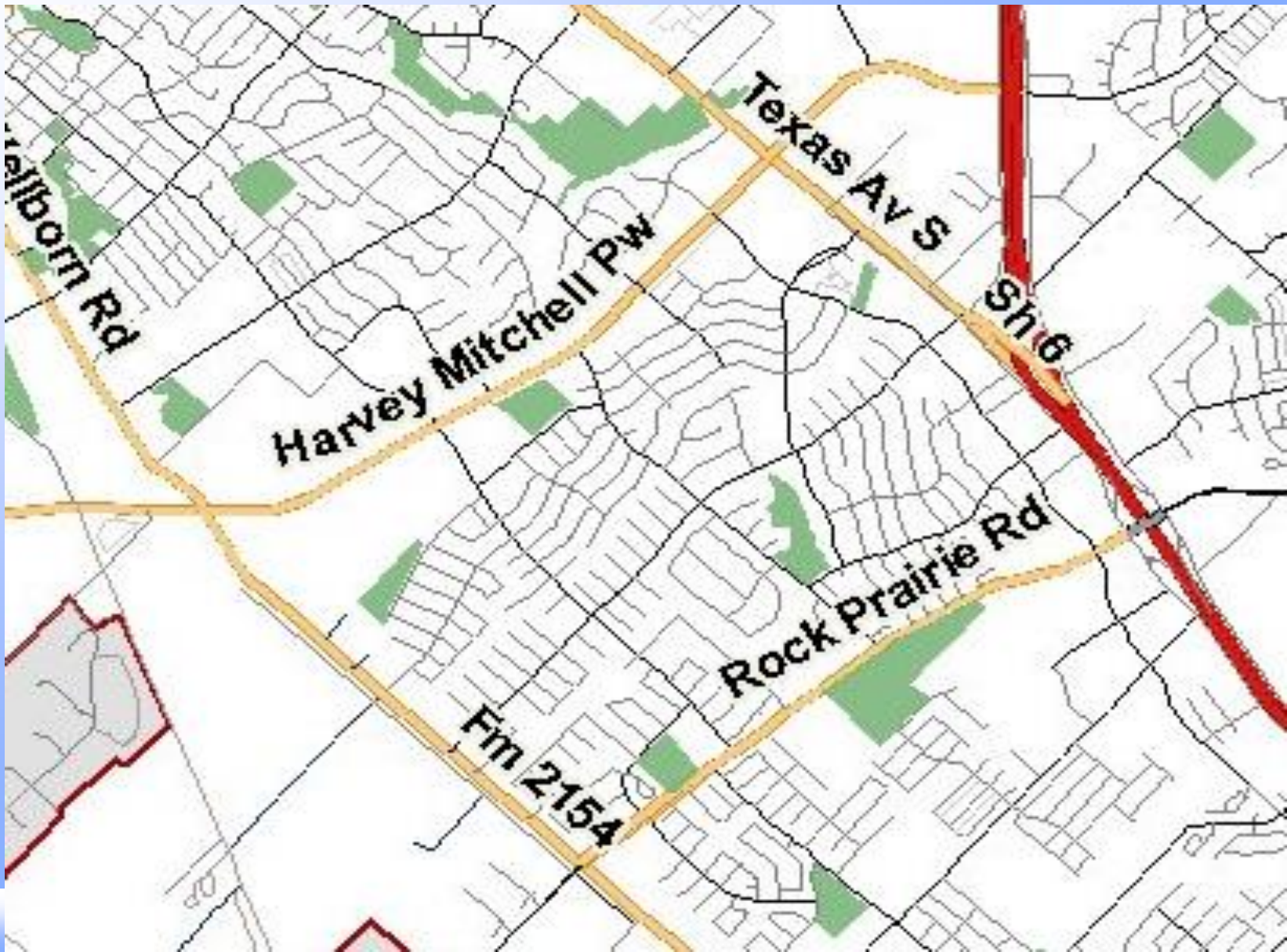
👉 What type of region?

College Station, Texas

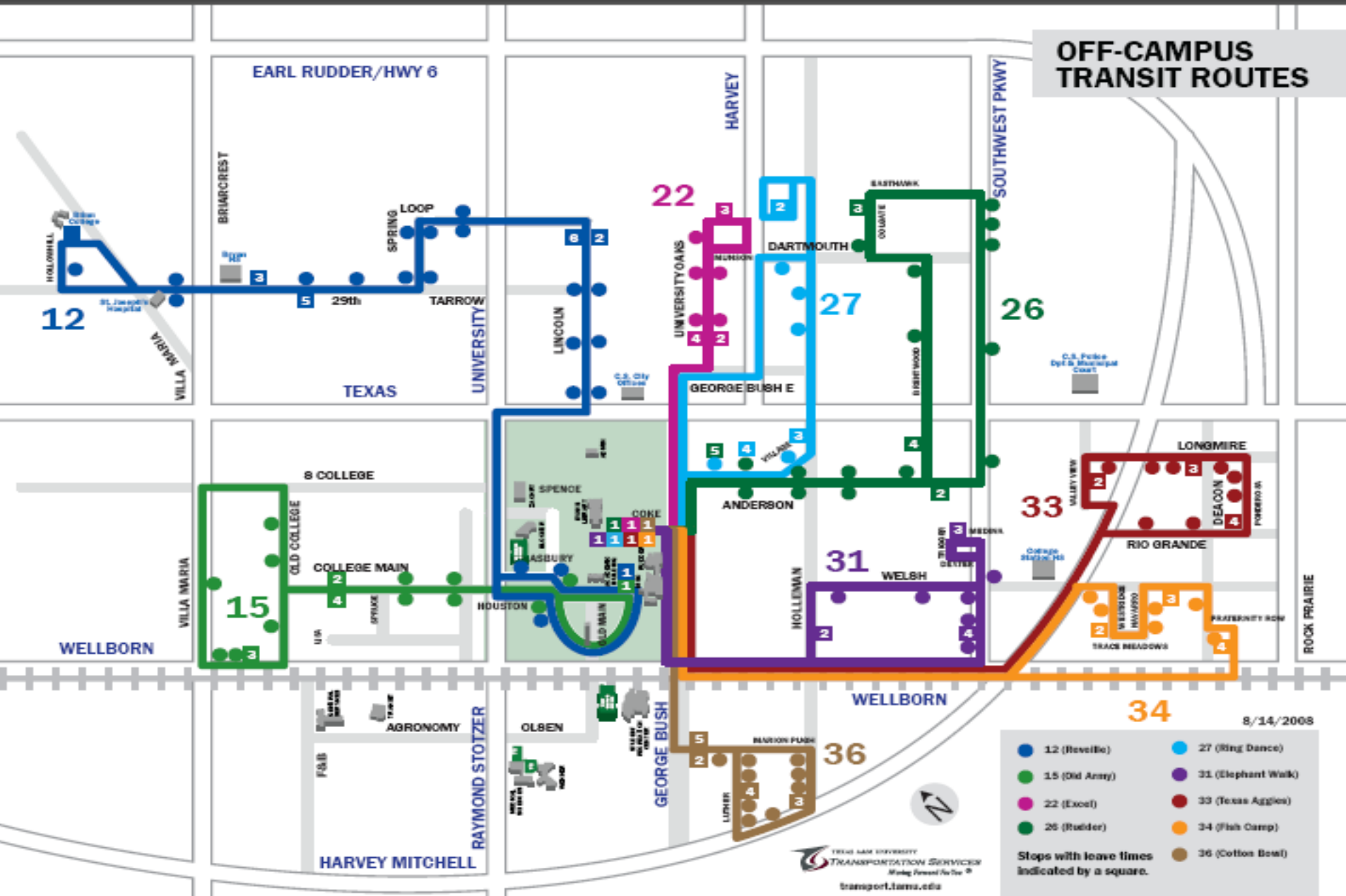


☞ What type of region?

Southwood Valley



What type of region?



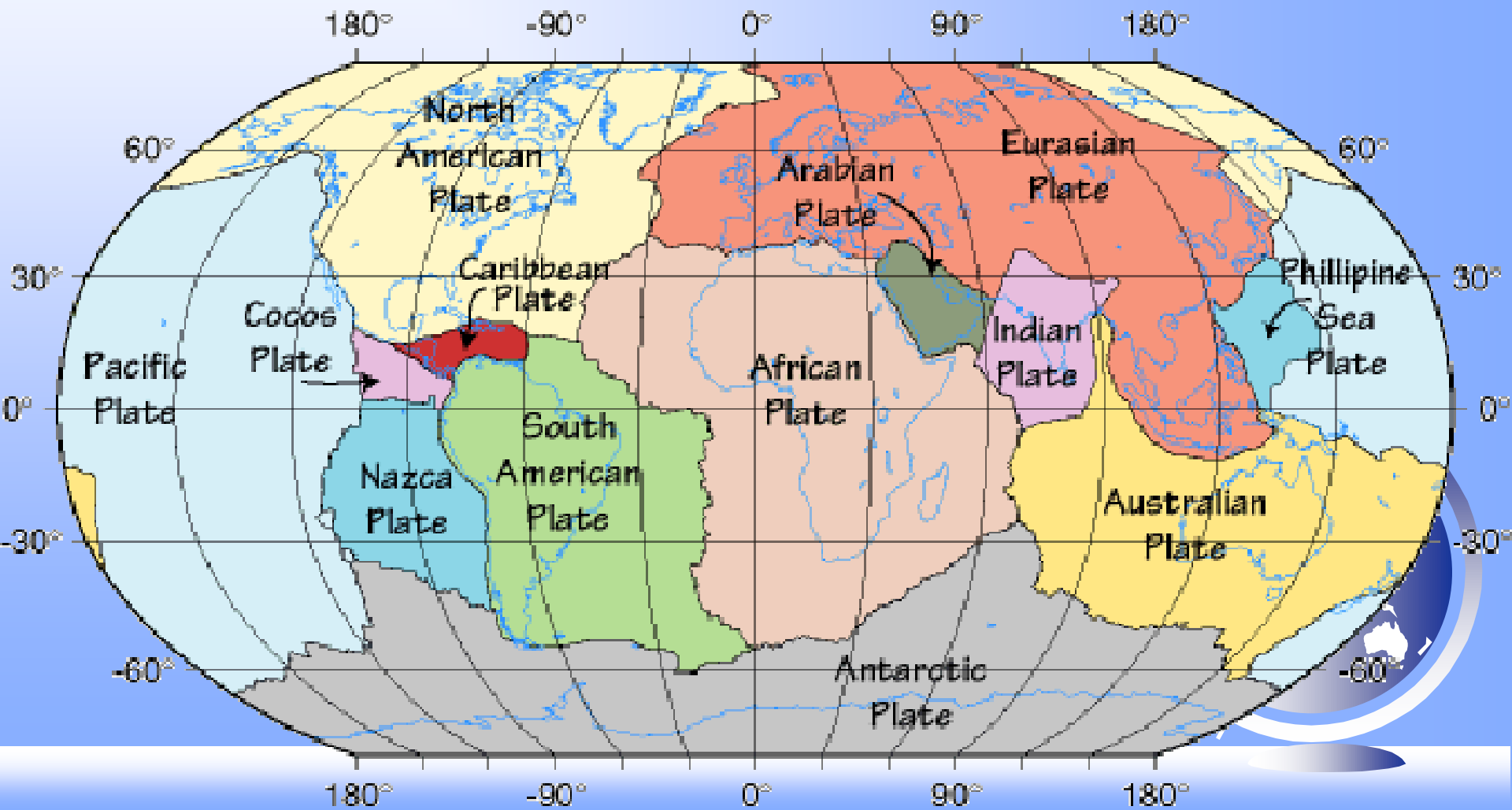
C. Physical Systems

7. The physical processes that shape the patterns of Earth's surface.

8. The characteristics and distribution of ecosystems on Earth's surface.



Ex. Tectonic Plates



Ex. El Nino



D. Human Systems

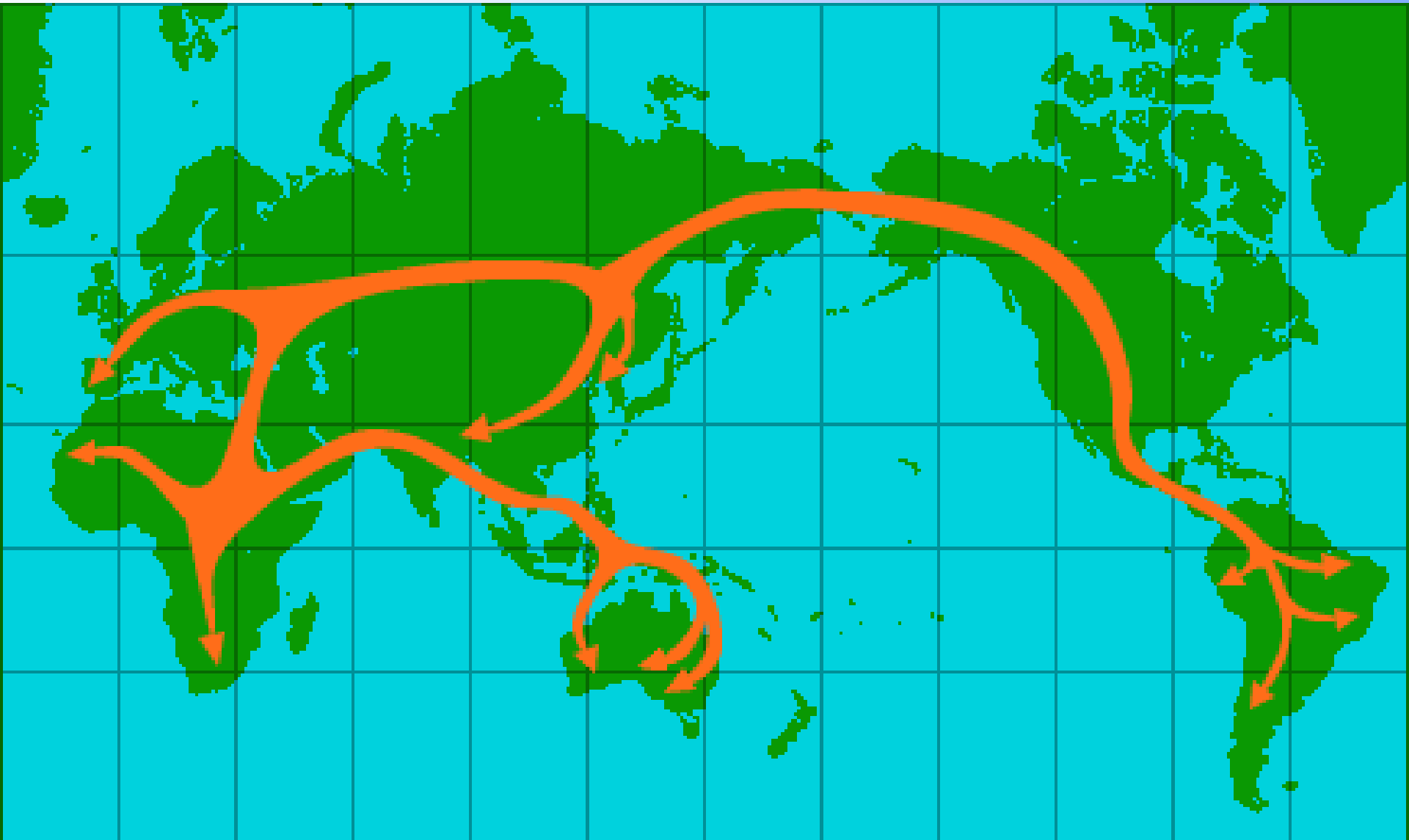
9. The characteristics, distribution and migration of human populations.
10. The characteristics, distribution and complexity of Earth's cultural mosaics.



11. The patterns and networks of economic interdependence.
12. The processes, patterns, and functions of human settlement.
13. How the forces of cooperation and conflict among people influence the division and control of Earth's surface.



Ex. Migration Patterns



Ex. Conflicts /War



Diffusion

1. Spatial Interaction

- a. *Definition*—movement of people, materials and ideas or information across the earth.

b. How?

- 1) Transportation
- 2) Communication

[*Diffusion*--spread of an idea or invention.]



☞ 2. Regional Variation [Spatial Differentiation]

- ◆ a. *Definition*--not all places are centrally located or are easily accessible.
- ◆ b. People, materials and ideas are spread differently across space.



An historical example of an idea that diffused around the world is the “use of the cow”.



What were
....some of the barriers to diffusion?

More people in East Asia and Tropical Africa are lactose intolerant—do not drink milk or eat cheeses very often



The Himalayas acted as a barrier between India and China. Their cultures are very different.

Religious taboos in India—do not eat meat

Culturally many people do not accept the practice of bull fighting



The Masai did not migrate out of East Africa and Europeans did not migrate to Africa due to the Sahara Desert.



What were
.....impacts on current cultures?

East Asian recipes rarely use beef,
milk, or cheeses



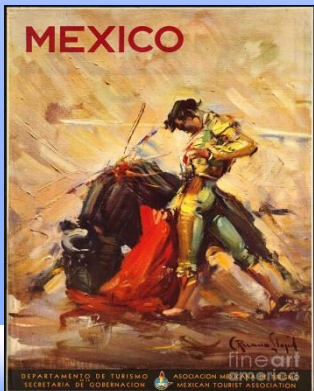
In India meat is not eaten by
many people due to religious
taboos.



The use of the cow is similar between
Europe and the areas they settled.



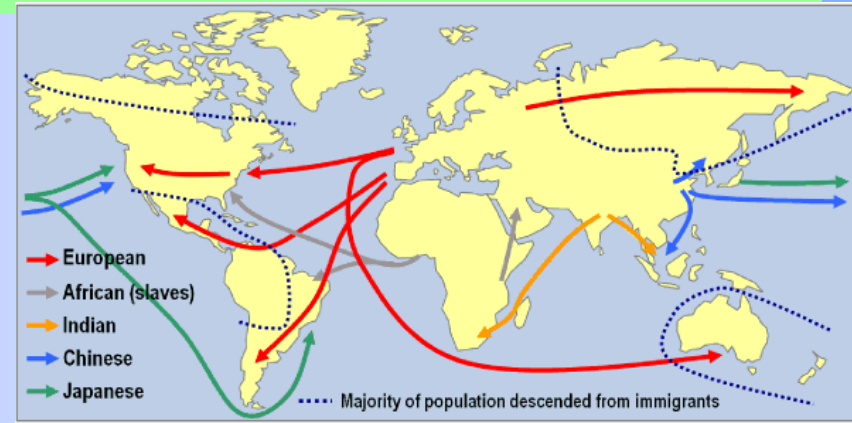
Bull fighting is practiced in areas
settled by the Spanish



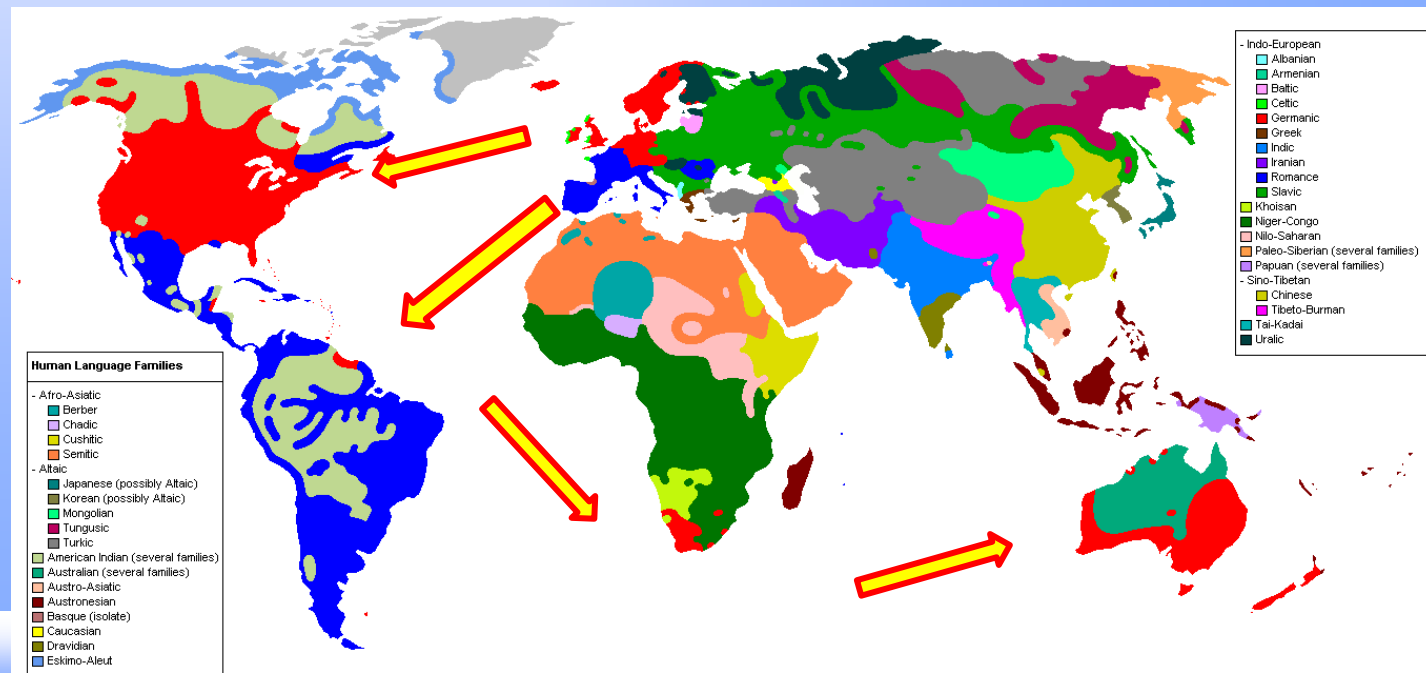
What were

....some of the things that promoted diffusion?

The migration of Europeans to the Americas, South Africa, Australia—they took their cultures with them



European languages help in communication to the areas they settled.



Review

Barriers to Diffusion

PHYSICAL

- Distance
- Oceans
- Mountain
- Desert
- ?

CULTURAL/HUMAN

- Language
- Enemies/Conflict
- Taboos
- Religion does not accept new idea

Promotes Diffusion

PHYSICAL

- Distance--neighbors
- Accessible—harbor, river, existing transportation network

CULTURAL/HUMAN

- Communicate—Trade Language
- Friends—already share ideas
- Need the (technology)

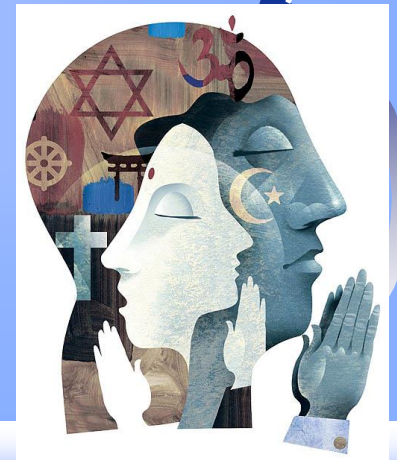
Can you think of **other examples** of diffusion around the world that spread differently due to physical and cultural conditions?

- How do people view dogs? As pets?
As workers? As food?



- What about chickens? Do people eat chickens? Eggs? Fighting birds?

- What about beliefs? Are religions practiced differently around the world? Where are there similarities? Differences?



3. Spatial Distribution

- ◆ a. Definition--the spread of people, elements or characteristics



☞ **b. Three aspects/parts:**

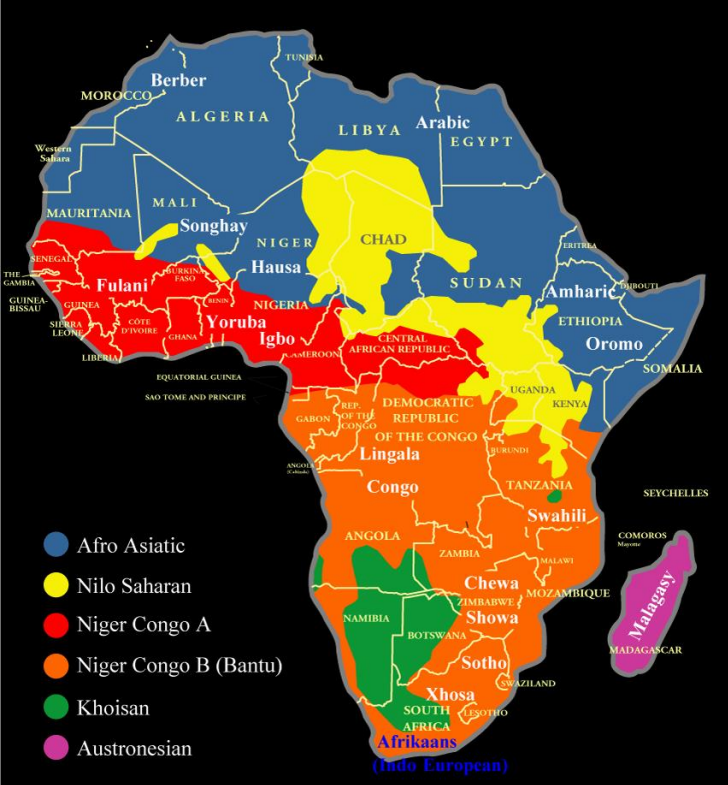
- ◆ **1. *Density*--frequency of occurrence of a characteristic within a given area. (How much of something is found in a given area?)**



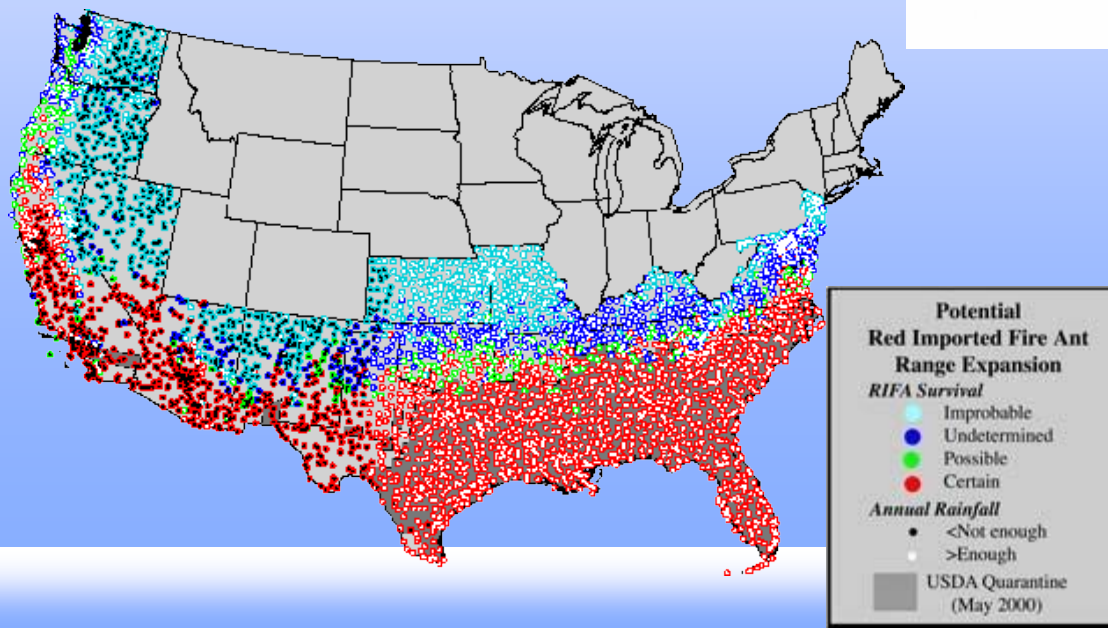
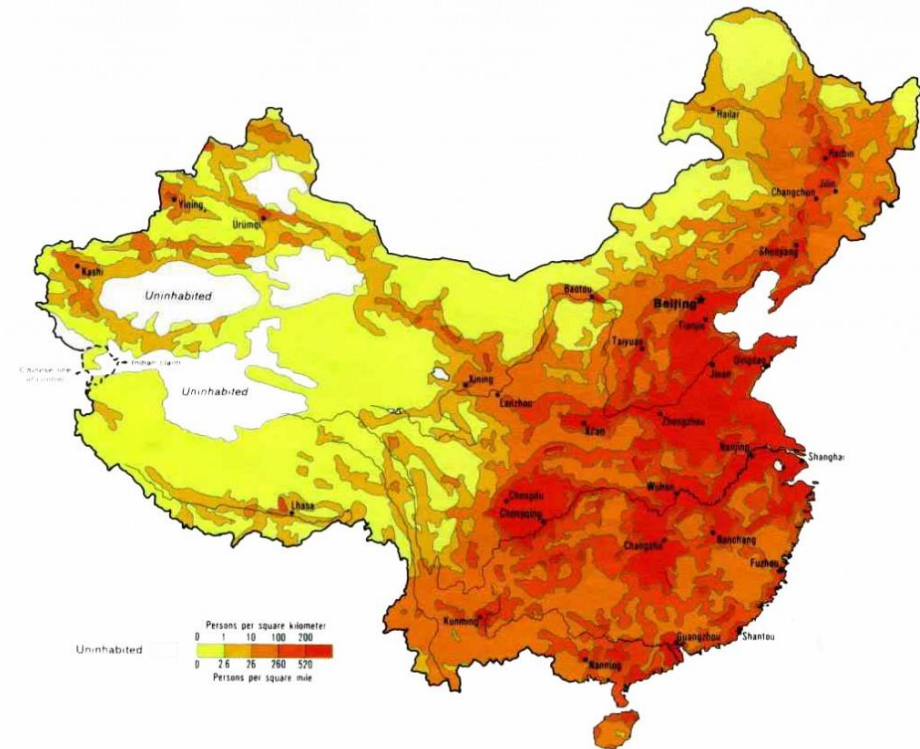
◆ 2. *Dispersion*--the extent of the spread of the characteristic within a given area. (Where is it found?)

◆ 3. *Pattern*--geometric arrangement (How is it spread?)





China: Population Density



E. Environment and Society

14. How human actions modify the physical environment.

15. How physical systems affect human systems.

***Adapt:* People change their lives to fit the land.**

***Modify/Change:* People change the land to meet their needs.**

***Depend:* People depend on the natural resources.**

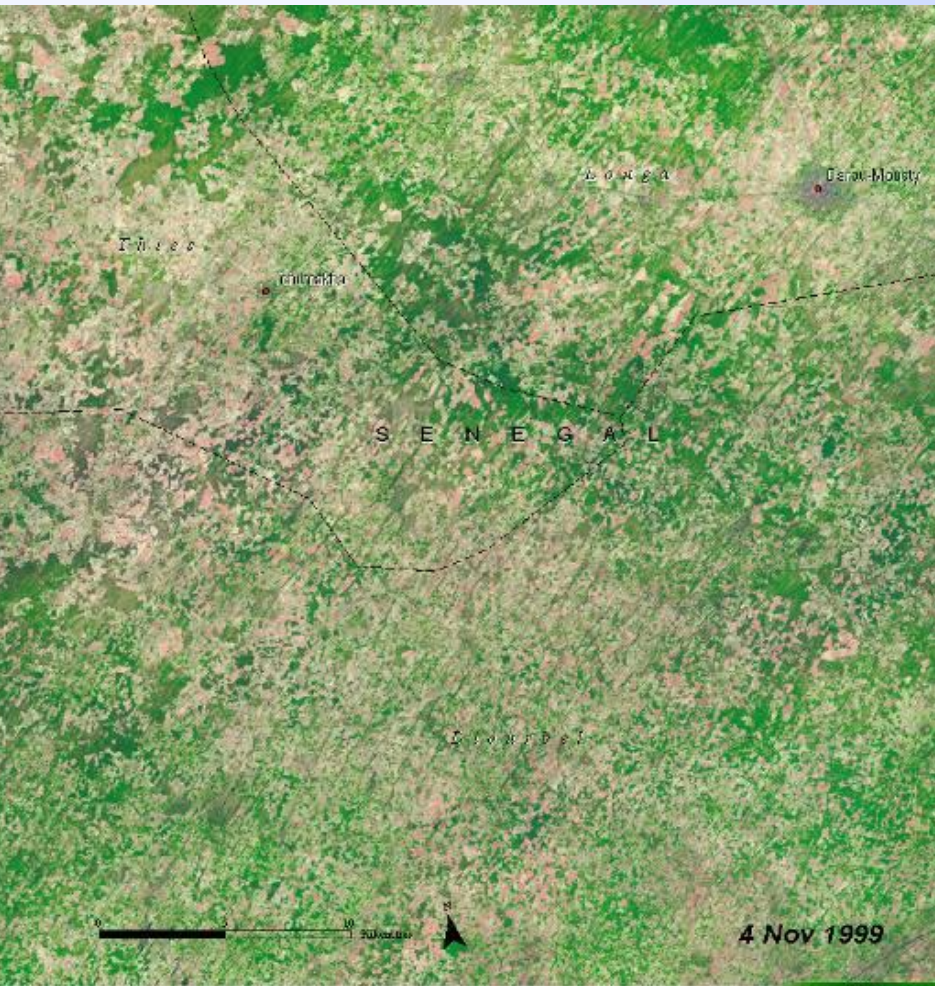
16. The changes that occur in the meaning, use, distribution, and importance of resources.



**Ex.
Water
Needs
/Uses**



Ex: Rain Forest Destruction



F. The Uses of Geography

17. How to apply geography to interpret the past.

18. How to apply geography to interpret the present and plan for the future.



August 31, 2005 -- 10 AM
There was a massive State and Local failure!

**Levees that broke
were recently
upgraded!**

**Unused Buses
Water Two Feet Deep**

60 Buses

**Roads are clear
with traffic.**

**Unflooded Areas of New Orleans
had plenty of food, water, and
supplies that could have been trans-
ported to the Center and Dome.**

**Dry route to safety or needed supplies.
Governor Blanco actually barred the
Red Cross from delivering supplies!**

**Algiers --New Orleans
The area is dry. Available
food, water, and shelter.**

**Unused Buses at Dome
with access to Highway**

**Several buses in parking lot
of the Convention Center.**

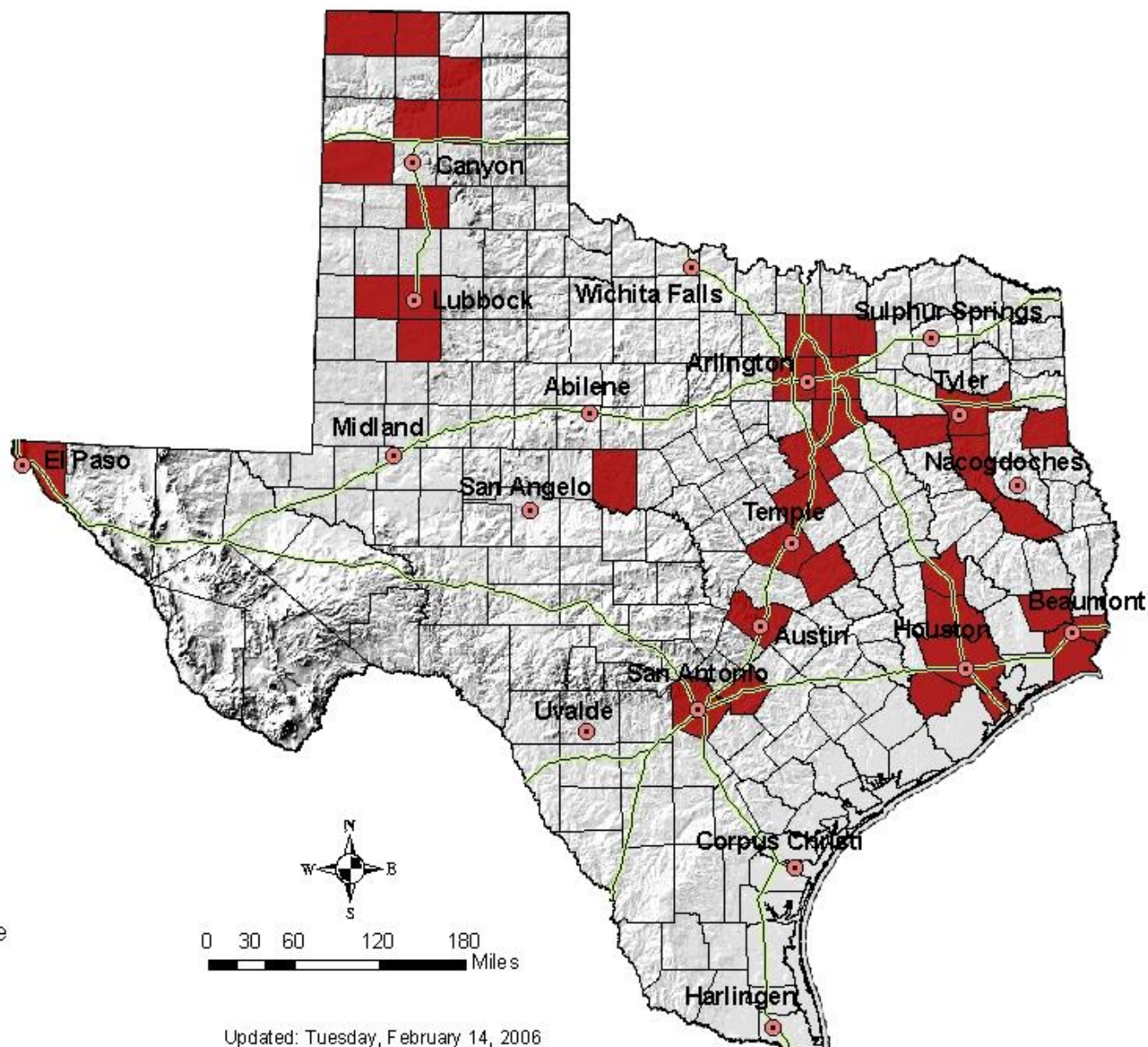
**On-Ramp Clear
Trucks on Highway**



Ex. Katrina Evacuation

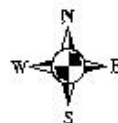


Texas Counties With West Nile Neurological Disease in humans, 2005



Legend

 Positive



0 30 60 120 180
Miles

World in Spatial Terms

Maps
GIS
Satellites
Mental Mapping

Spatial Organization

Places & Regions

Physical Char.

Human Char.

Formal
Functional
Perceptual

Physical Systems

Plate Tectonics
Hazards--Earthquakes,
Volcanoes,
Tsunamis

Climate
Hurricanes
Tornadoes

Six Essential Elements of Geography



Human Systems

Migration
Culture
 Ethnicity
 Beliefs
 Government
 Language
 Institutions

Environment & Society

Flooding
Levees—natural/manmade
Resources
Accessibility
Adaptability
Change

The Uses of Geography

Past

Present

Future



CAREERS IN GEOGRAPHY



- ➡ Human Geography
- ➡ Historical Geography
- ➡ Political Geography
- ➡ Economic Geography
- ➡ Medical Geography



☞ Population (Demographics)
Geography

☞ Urban & Regional
Planning

☞ Physical Geography



☞ Regional Geography

☞ Environmental
Geography

☞ Cartography

☞ Geographic
Information Analysis
& Display



I. Map Skills Review

A. Definitions

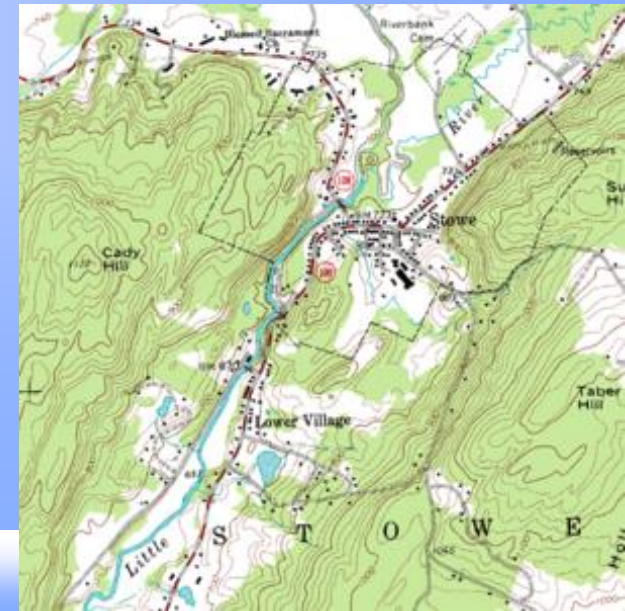
- 1. Globe--a model of Earth--3 D**
- 2. Map--a two dimensional representation of all or part of the Earth's surface.**



**a. Mental Maps-- visual
or verbal maps**

b. Standard Maps

**1) General Information Maps--
gives general information about a
place (location, size, distance,
political or cultural
features, physical
features, etc.)**



2) Thematic Maps-
-show more
specific
information,
often on a single
theme or topic.
(Population,
Economic Maps,
Climates, Religions,
Languages, etc.)



B. Main Concepts of Standard Maps

*“Mental maps should have a **TOAD**.”*

*“Standard maps need
TOADS or **TODALS**,*

*and some maps need **s** or **IGs**!”*

TODALSIGs

T=Title: What, where and when

O=Orientation: Cardinal and
Intermediate Directions



D=Date: When was the map made?

A=Author: Who made the map?

L=Legend: What do the
symbols mean?

	Visitors only, metered (8 a.m.-5 p.m., M-F)
	Visitors & UAF decal
	Gold decal only (7 a.m.-5 p.m. M-F)
	UAF decal or purchased permit
	Restricted parking/No parking
	No parking unless otherwise posted
	Motorcycle parking
	Handicapped parking
	Parking permit kiosk

S=Scale: What is the map distance?

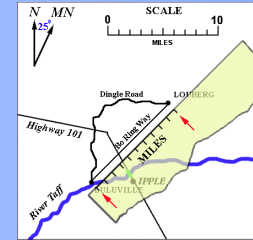
Verbal

1 inch = 1 mile

Ratio

1:63,360

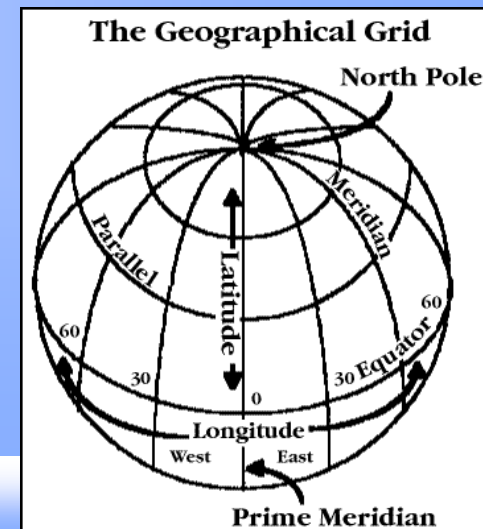
Graphic



I=Index: Map address of a place.

G=Grid: Locates places on the map.

Arbitrary Grid



s=Source: Where is the map information from?

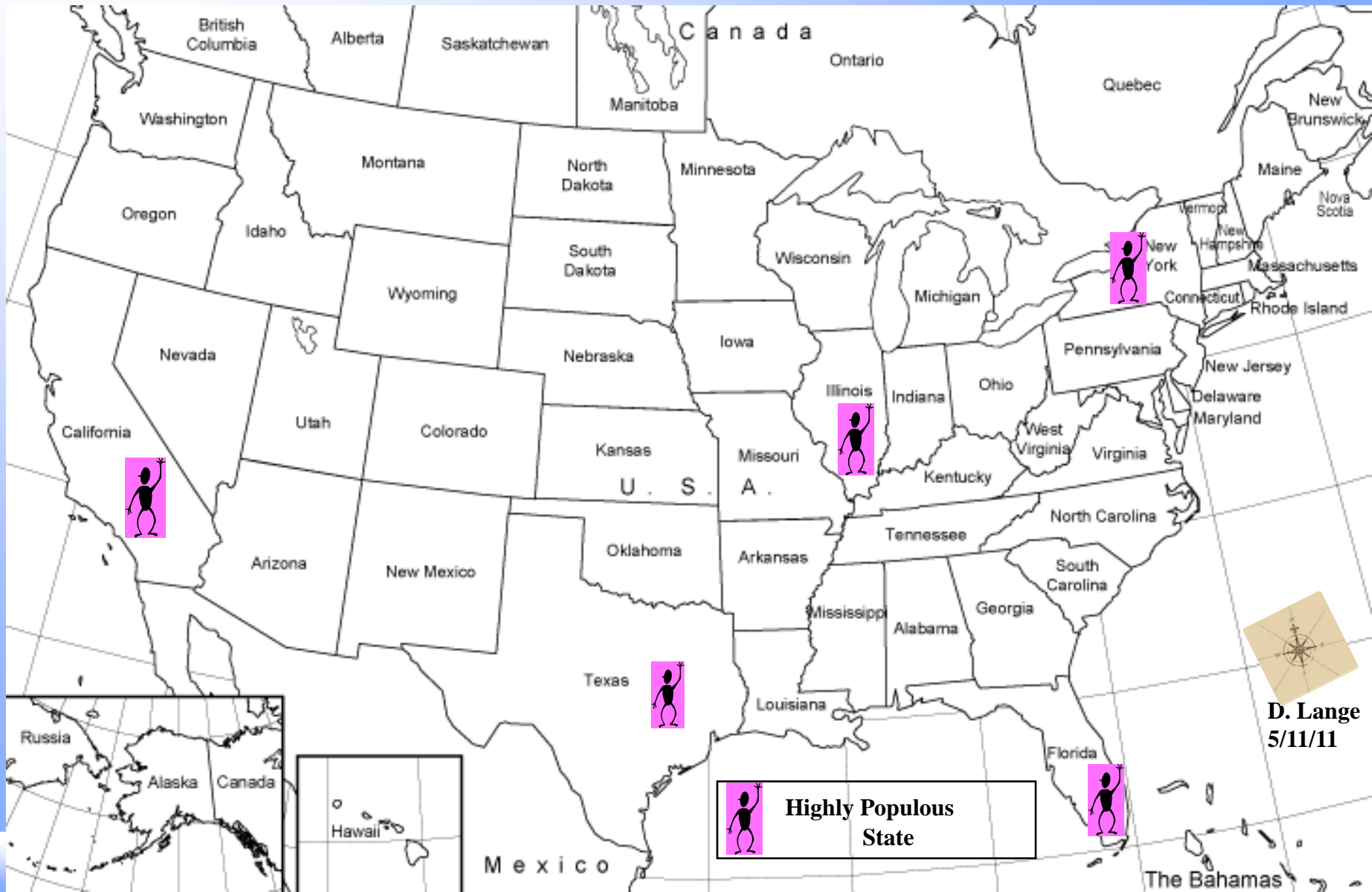
(Written in MLA work cited format.)



Identify the TODALSIGs Elements On This Map

Five Most Populous States in the United States in 2010

Source: United States; Dept. of Commerce; Census Bureau; 2010 Population Data US Dept. of Commerce, 5 Feb. 2008; Web; 23 U.S. Census Bureau. (2011) *State & county Quickfacts*. Retrieved May 11, 2011 from <http://quickfacts.census.gov>



D. Lange
5/11/11

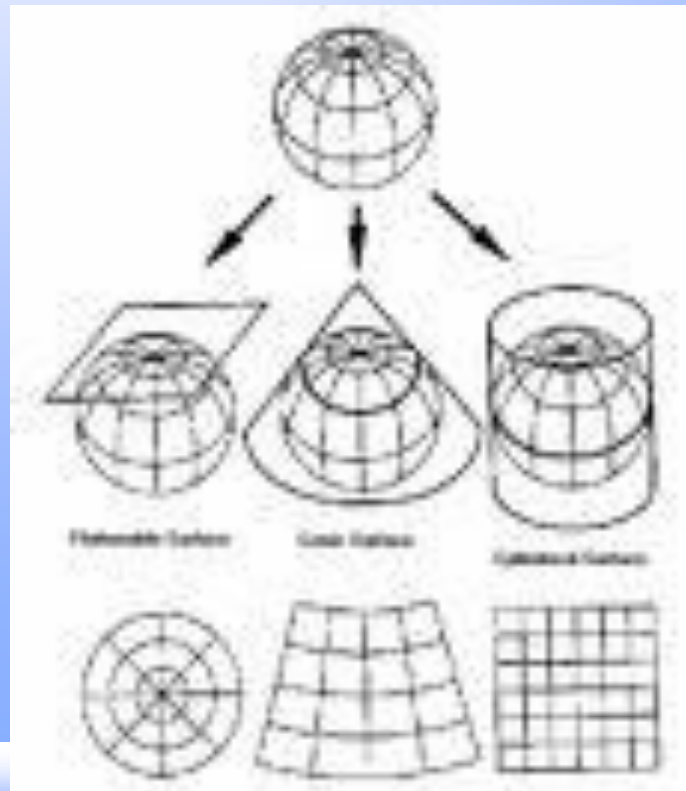
The Lost Aggie Map

- You will be drawing a map of the College Station area
- Your map must include:
 - Labeled streets
 - Elements of the map- TODALS
 - Places a new Aggie or some new to our community would need to know—they must be placed on the map accurately
 - Symbols or color coding for your legend/key
 - COLOR! CREATIVITY
- Your map should be neat, creative and **LEGIBLE**
- Turn in your rubric with your map



☞ C. Additional Information

- ◆ 1. Projection--a way of drawing the round Earth as a flat map.

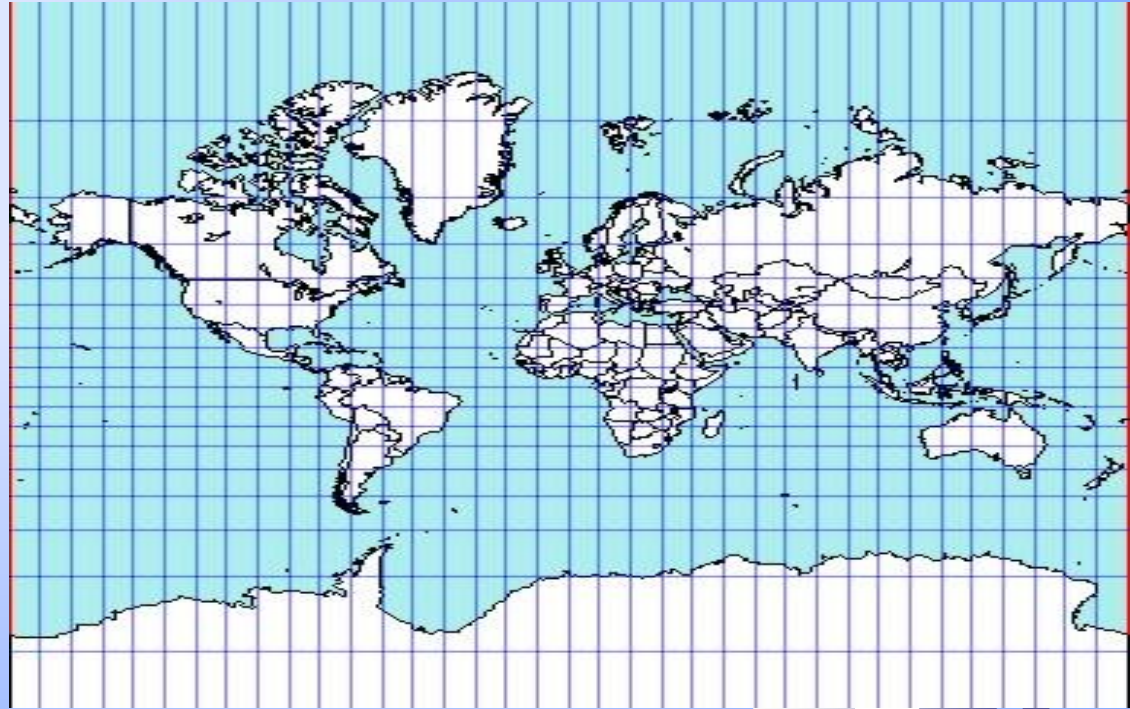


a. Three basic kinds of projections

1) Cylindrical Projection—based on a cylinder



Mercator



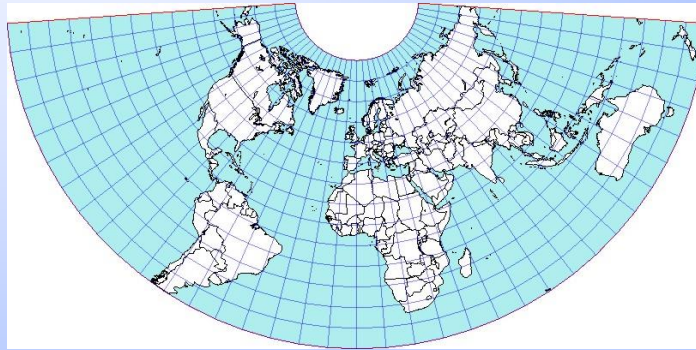
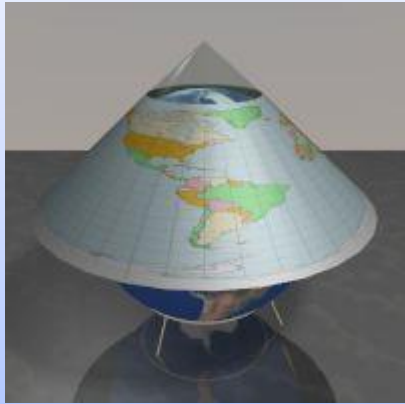
a) Used by navigators because it shows true direction & shape

b) Exaggerated land masses at high latitudes

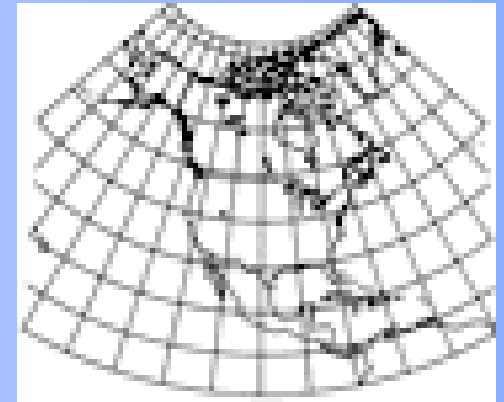


Why do some people think that Greenland is a continent?

2) **Conic Projection--based on a cone shaped piece of paper--usually just a portion of the earth.**



Example: Lambert Equal-Area

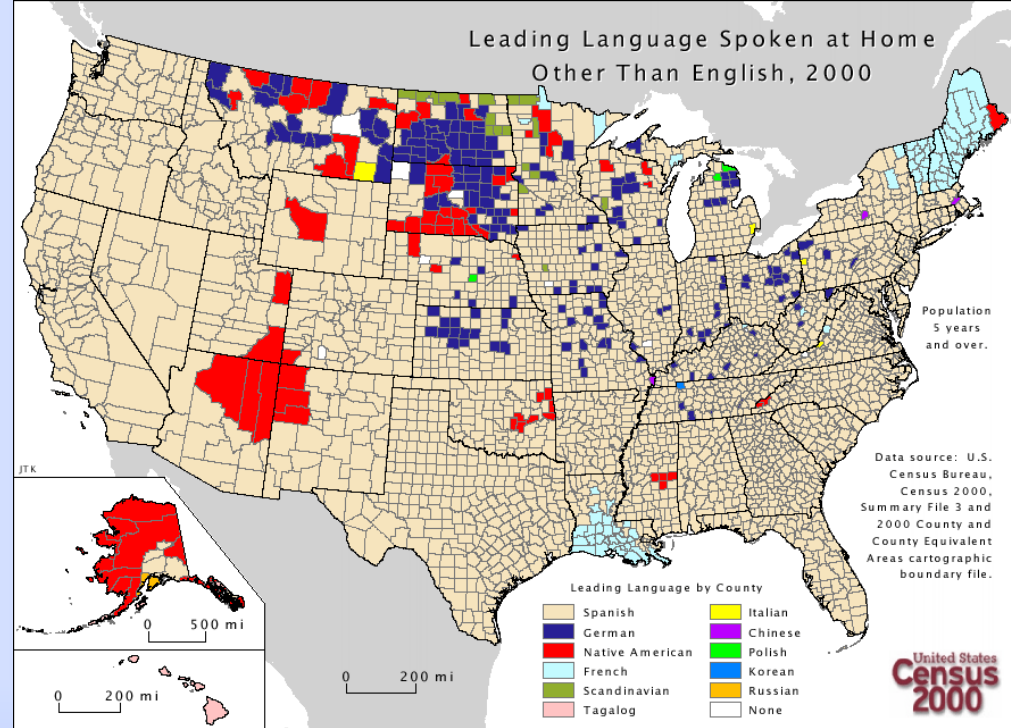


Example: Albers Equal-Area

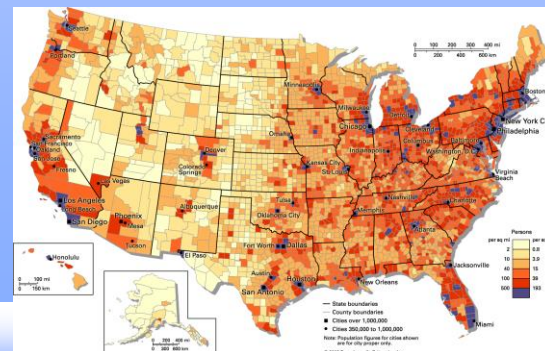
- a) **Accurate for areas with long east-west dimensions**
- b) **Not as accurate for areas that mostly extend north-south**



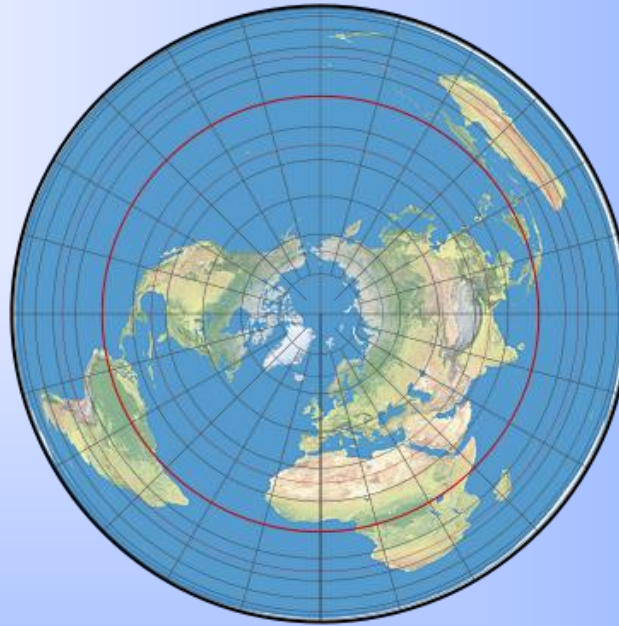
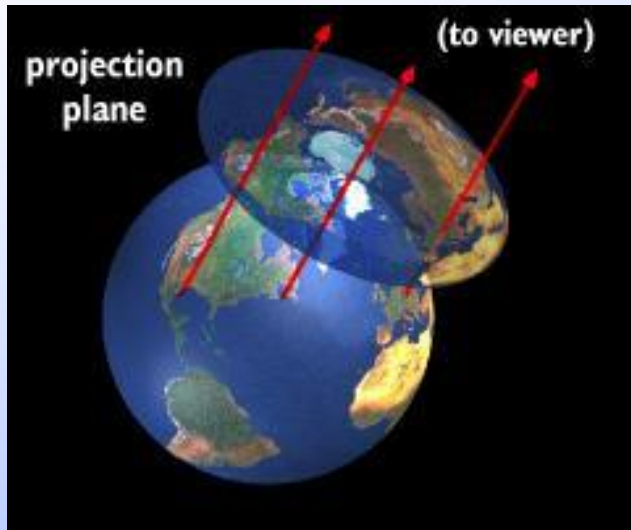
c) Usually used for country maps.



d) Usually used to compare distributions between countries.



3) Planer or Zenithal Projection-- centered on one point.

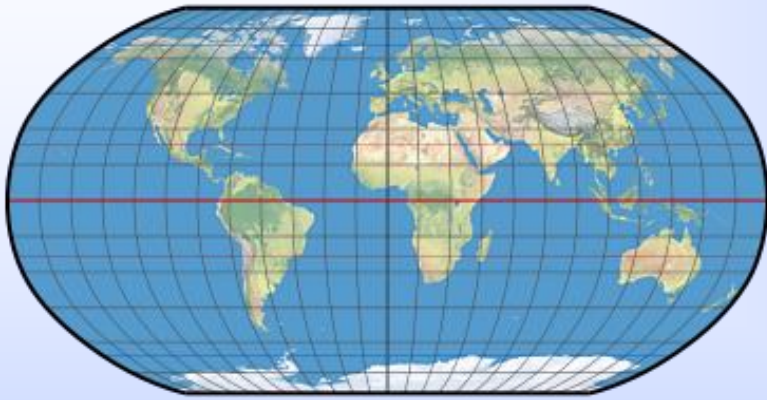


Lambert Azimuthal
Equal-Area

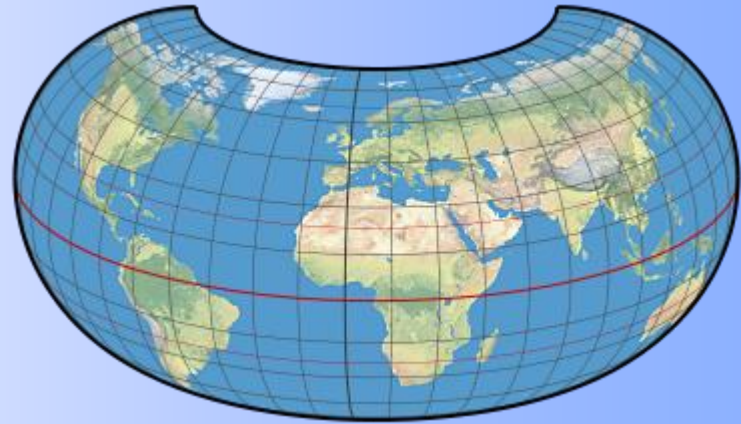
- a) Used by pilots and navigators because it shows true direction, distance and size
- b) Distorts shape



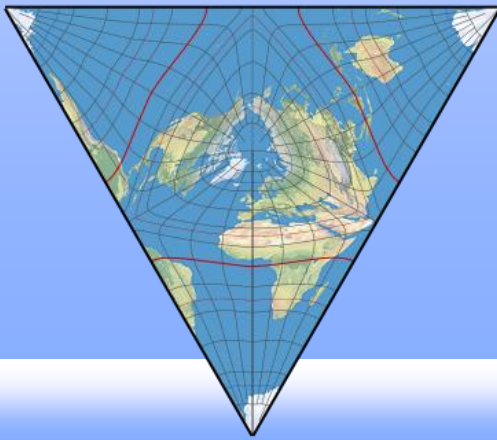
Other examples of projections



Robinson



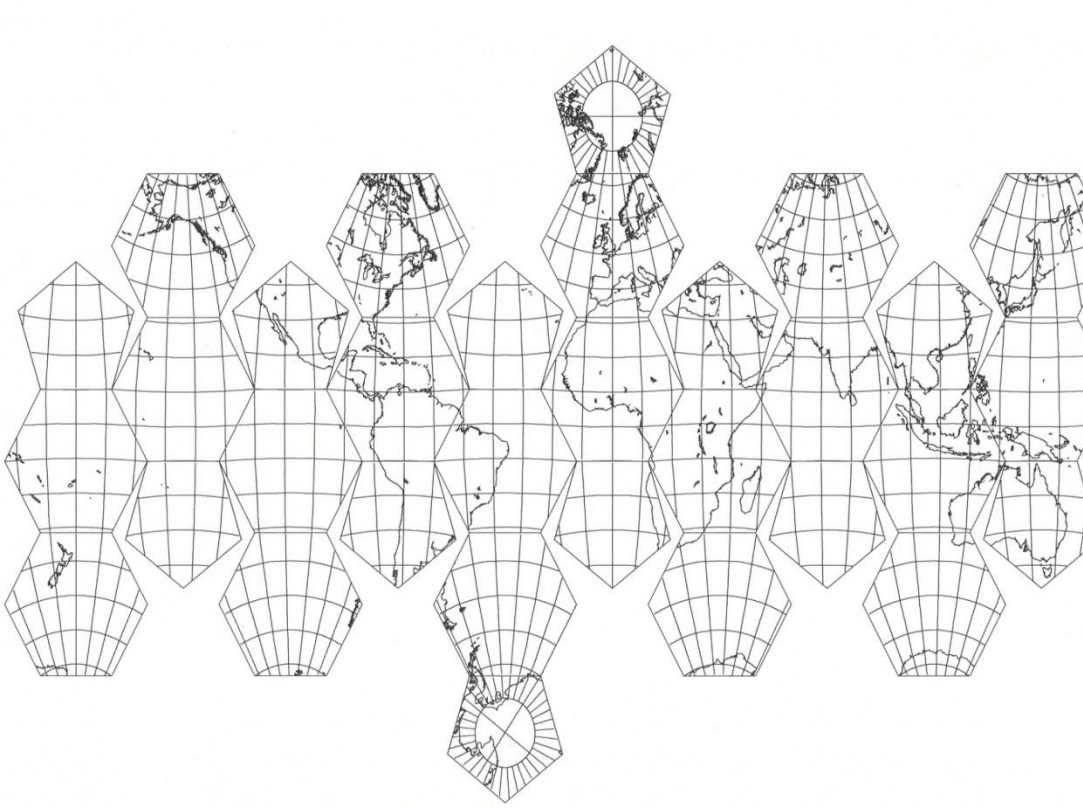
Armadillo Projection



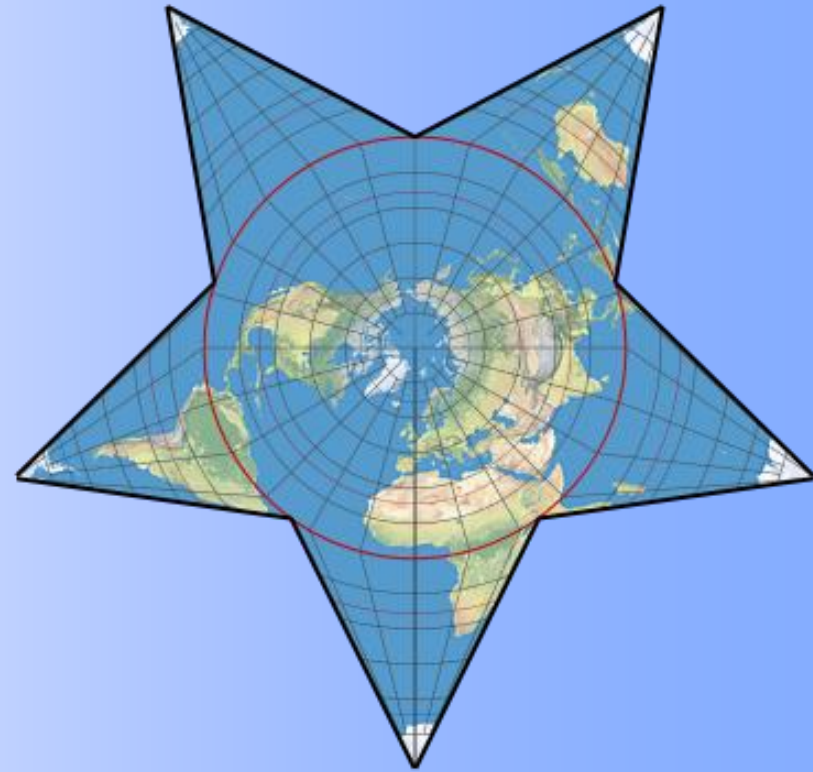
van Leeuwen

Canters EU





Equal-area Truncated Icosahedron



Berghaus Star; 1879





Is this
“Upside
down” map
of the world
wrong?

Why are
our maps of
the world
always
depicted the
way they
are?

A · U · S · T · R · A · L · I · A



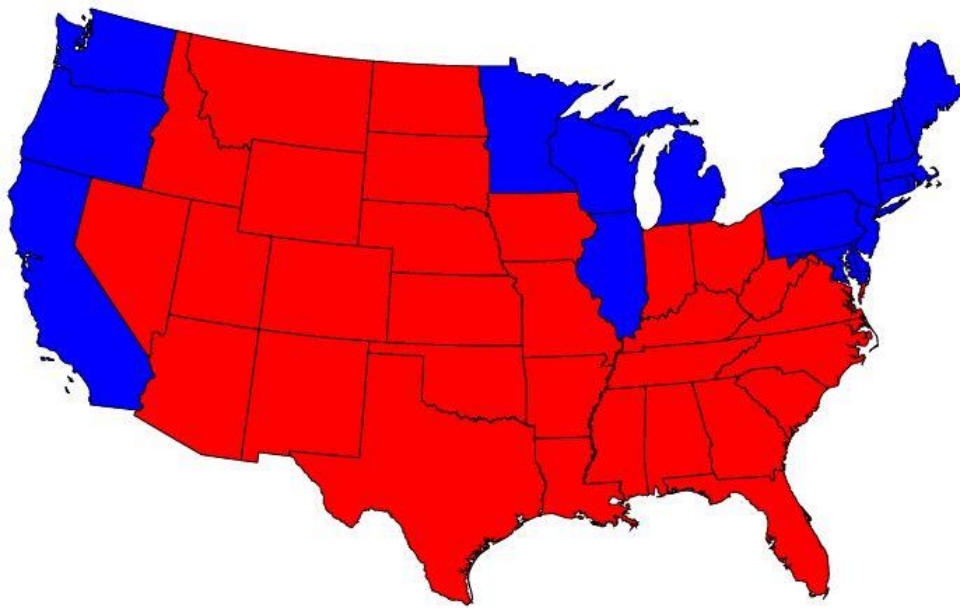
NO LONGER DOWN UNDER

Can people use maps (or any graphics) to persuade people to think in a certain way?

What feelings do colors usually provoke? **Black?** **Red?** **Yellow?** **Blue?** **Green?**
Think of range of categories? **i.e. 0 to 10** **or** **0 to 100**

Activity: If you wanted to make people feel safe so they would be willing to move to your town how would you show the following statistics? What if you wanted people to vote for an increase in taxes for additional police protection?

College Station	Bryan	Houston	Austin
Murder: 2	Murder: 2	Murder: 278	Murder: 27
Forcible Rape: 40	Forcible Rape: 81	Forcible Rape: 768	Forcible Rape: 226
Robbery: 17	Robbery: 85	Robbery: 10,985	Robbery: 1,251
Aggravated Assault: 105	Aggravated Assault: 443	Aggravated Assault: 11,957	Aggravated Assault: 1,649
Burglary: 384	Burglary: 971	Burglary: 26,522	Burglary: 7,240
Larceny or Theft: 2,276	Larceny or Theft: 2,963	Larceny or Theft: 72,032	Larceny or Theft: 32,259
Car Theft: 102	Car Theft: 176	Car Theft: 21,451	Car Theft: 2,771
Arson: 1	Arson: 21	Arson: 1,553	Arson: 140
Data Source: 2003 FBI Report of Offenses Known to Law Enforcement	Data Source: 2003 FBI Report of Offenses Known to Law Enforcement	Data Source: 2003 FBI Report of Offenses Known to Law Enforcement	Data Source: 2003 FBI Report of Offenses Known to Law Enforcement



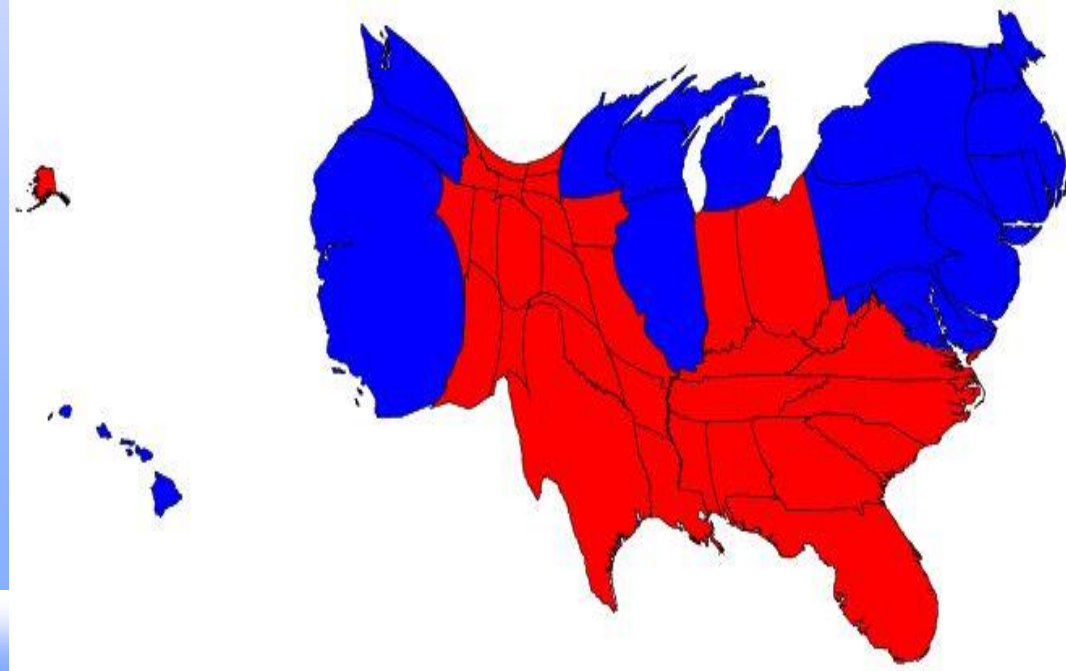
The map gives the superficial impression that the "**red states**" dominate the country, since they cover far more area than the **blue** ones. However, as pointed out by many others, this is misleading because it fails to take into account the fact that most of the **red states** have small populations, whereas most of the **blue states** have large ones. The **blue** may be small in area, but they are large in terms of numbers of people, which is what matters in an election.

Red = Republican (Bush) **Blue** = Democratic (Kerry)

We can correct for this by making use of a **cartogram**, *a map in which the sizes of states have been rescaled according to their population*. That is, states are drawn with a size proportional not to their sheer topographic acreage -- which has little to do with politics -- but to the number of their inhabitants, states with more people appearing larger than states with fewer, regardless of their actual area on the ground. Thus, on such a map, the state of Rhode Island, with its 1.1 million inhabitants, would appear about twice the size of Wyoming, which has half a million, even though Wyoming has 60 times the acreage of Rhode Island.

Here are the 2004 presidential election results on a population cartogram of this type

Maps and cartograms of the 2004 US presidential election results



Consider this 1914 German map of Europe. The Germans (in blue) and their Austrian allies (yellow) look relatively normal, without the grotesque or otherwise distorted heads and bodies found associated with the other European nations depicted.





This map is a Japanese propaganda caricature map from around 1941, depicting a U.S. blockade of Japan from the Philippines.





Camarades!

Telle est la situation!

En tout cas, la guerre est finie pour vous!

Vos chefs vont s'enfuir par avion.

A bas les armes!

British Soldiers!

Look at this map: it gives your true situation!

Your troops are entirely surrounded —

stop fighting!

Put down your arms!





This map demonstrates conflict taking place during the Cold War when Ronald Reagan was president. This map was created to be seen by Americans.





DISCLAIMER: Australian Radiation Services is aware of information about radioactive contamination being spread from the Japanese nuclear reactor incident released under the ARS logo and name. We wish to be clear that this information has not originated from ARS and as such distance ourselves from any such misinformation.

From the [Nuclear Regulatory Commission](#),
All the available information indicates weather conditions have taken the small releases from the Fukushima reactors out to sea away from the population. Given the thousands of miles between the two countries, Hawaii, Alaska, the U.S. Territories and the U.S. West Coast are not expected to experience any harmful levels of radioactivity.



b. Different Projections produce different types of maps--Four basic types

1) Conformal--the shapes (or forms) are correct. [distance, direction, and size are distorted]

2) Equivalent or Equal-Area--the size of places are correct

[shapes, distances, and directions are distorted]

3) Equidistance—distances are correct.

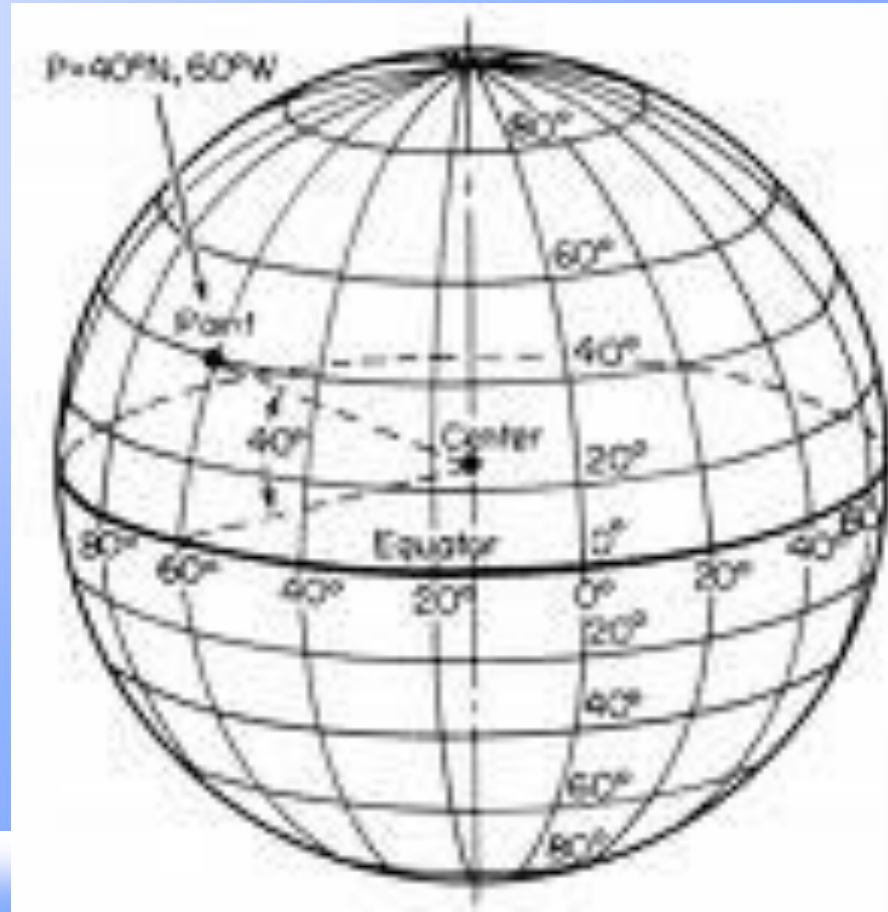
[shapes, size, and directions are distorted]

4) Azimuthal--directions are correct.

[shapes, size, and distances are distorted]



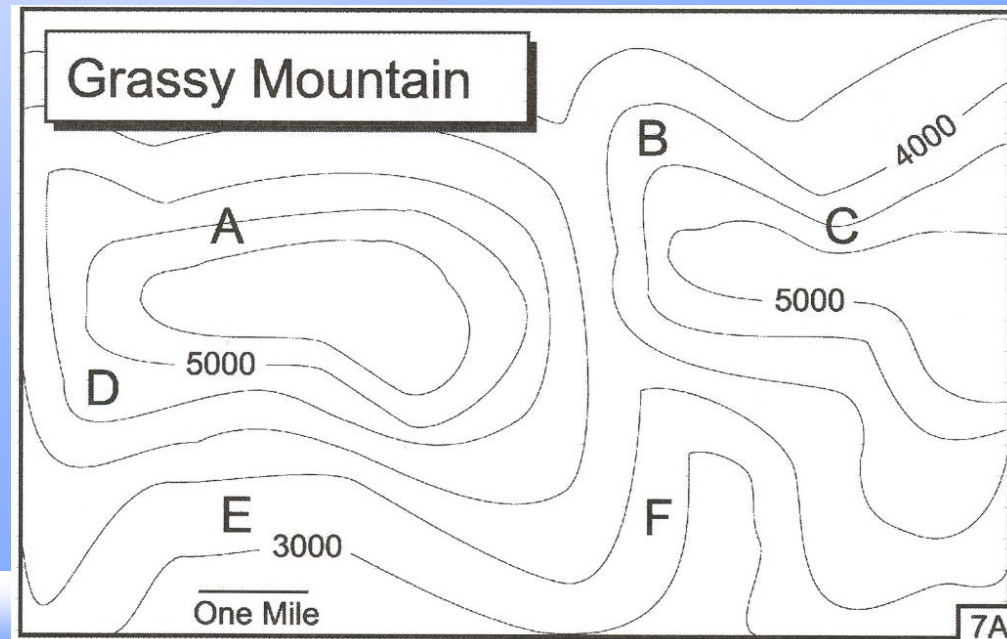
◆ 2. Locating Places-- Latitude/Longitude SEE HANDOUT



3. Specialized Maps

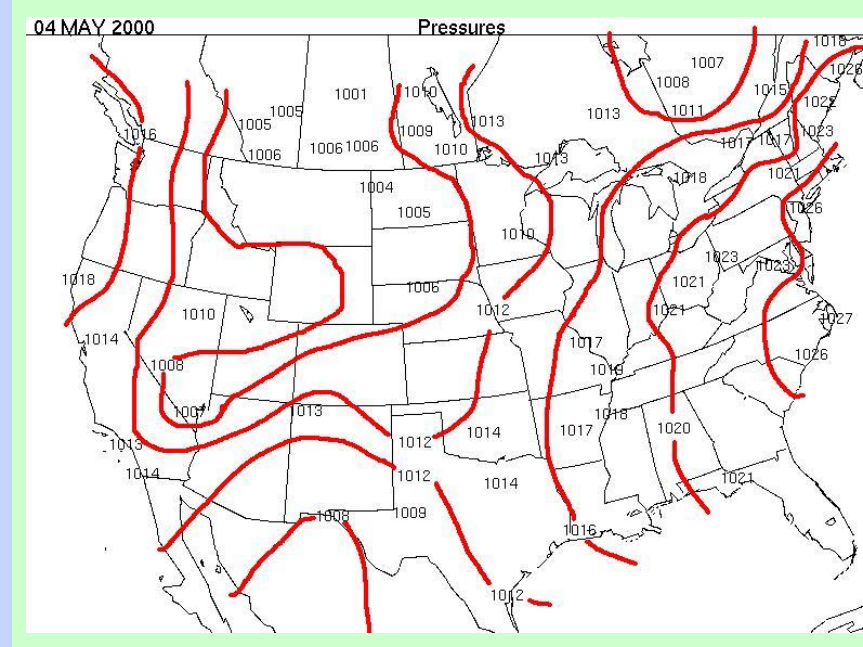
a. **Isopleth Maps**—type of map that uses isolines to connect points (or places) of equal value

1) **Contour Maps**—lines connect points with the same elevation



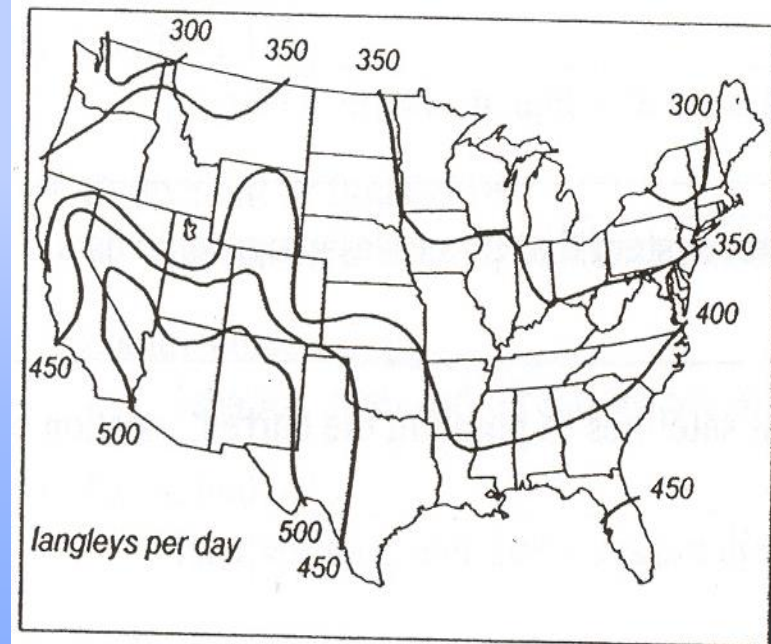
2) Barometric Pressure Maps

—Isobars connect places where the barometric pressure is the same



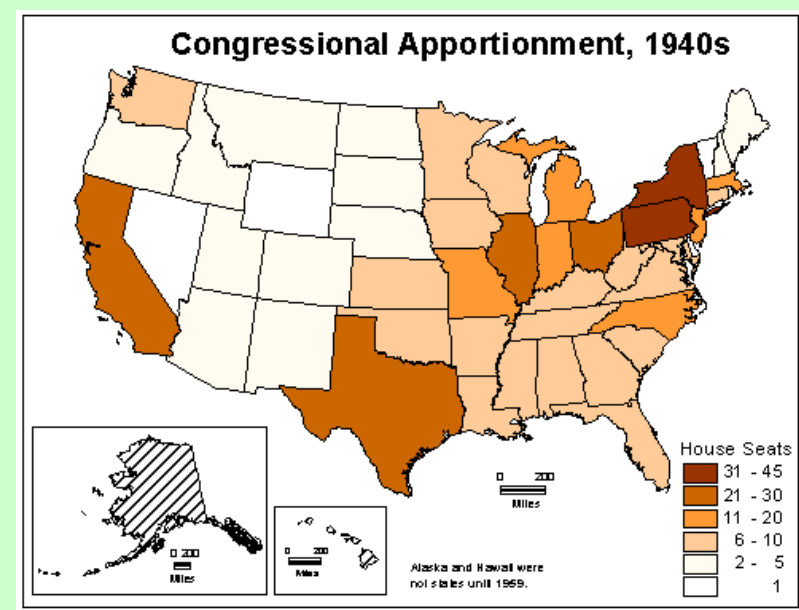
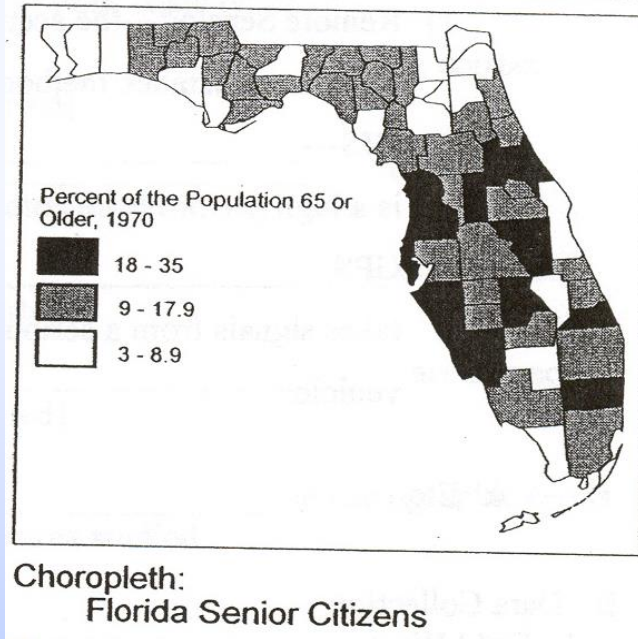
3) Temperature Maps

—Isotherms connect places with the same temperatures

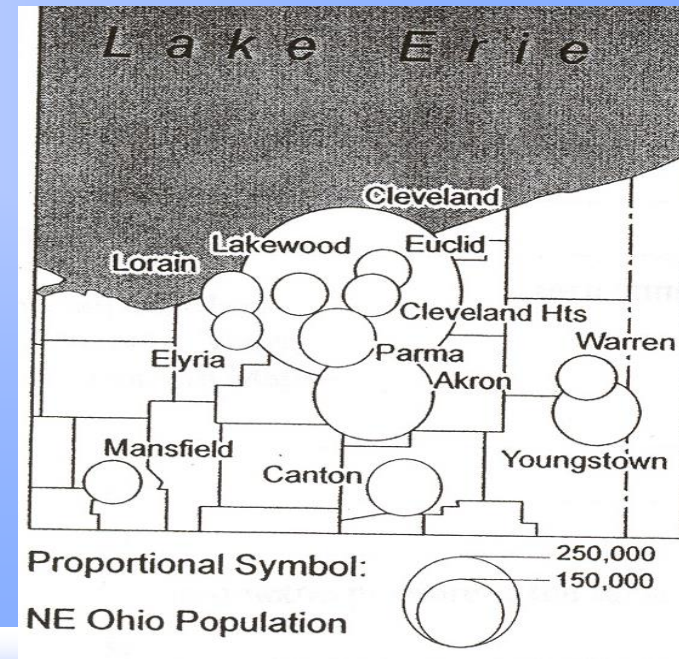


Isoline:
Average Daily Solar Radiation

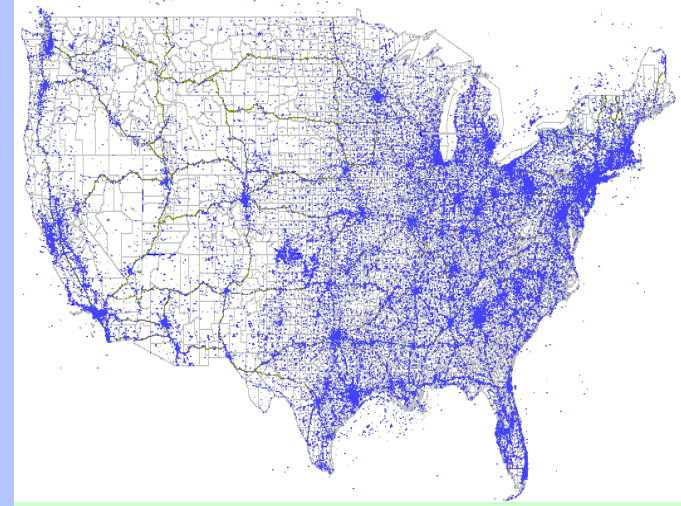
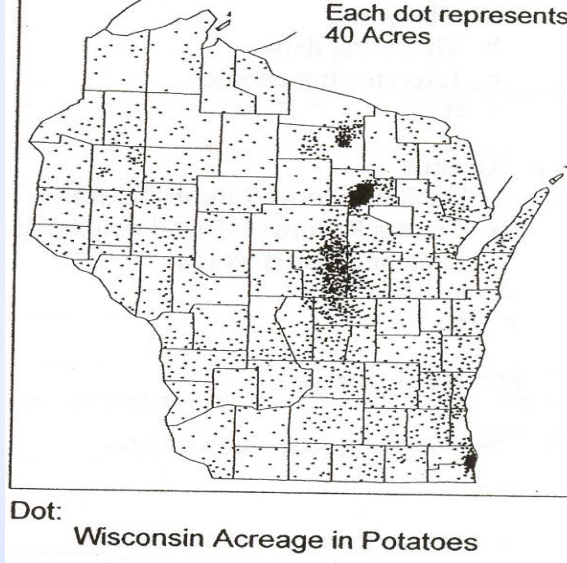
b. Choropleth Maps



c. Proportional Symbol Maps



d. Dot Maps



e. Topographic Maps



f. Contemporary Mapping

- 1) Remote Sensing—the acquisition of data about Earth's surface from a satellite or other long distance methods
- 2) GIS—Geographic Information System is a high performance computer system that processes geographic data. (Ex: Google Earth or Google Maps)
- 3) GPS—Global Positioning System takes signals from a series of satellites to pinpoint the current location of a vehicle.
- 4) Etc.



GIS: Examples

- [Google Earth](#)
- [Google Maps](#)
- [Weather Channel](#)
- [USGS](#)

**How might this information help people?
Can you think of other examples?**

