Basics of G.I.S.
(Geographic Information System)

Contextualizing Cooperatives
By David Arfa
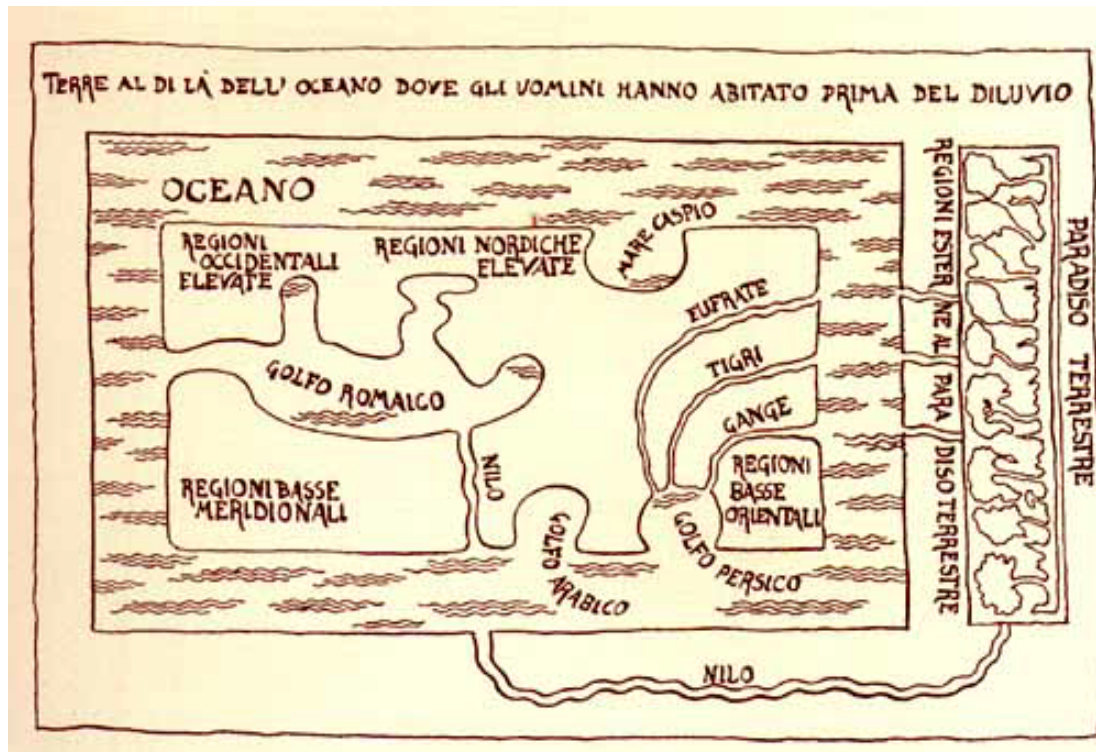(Stone Soup Coop- Ashland House, Chicago)
For NASCO Institute 2010

Introductions…

- What is your name and preferred gender pronoun?

- What coop do you live at? Where is it?

- What do you want out of this workshop?

- What is your relationship to computers?

Introduction to cartography

- Maps are a great mix of art history, information, and values about the world

Mapping beliefs

Jeruselam is in the center

Eden is at the top which is the east (check out the rivers)

Jesus and the angels are ruling over

- Maps are essentialized views of the world
- They highlight very specific features
- Data is developed about things that are valued by their creator
- I consider my own location primarily by street address (streets become fundamental to my concept of space)

Map of Mexico City subway

Omits all other aspects of the city
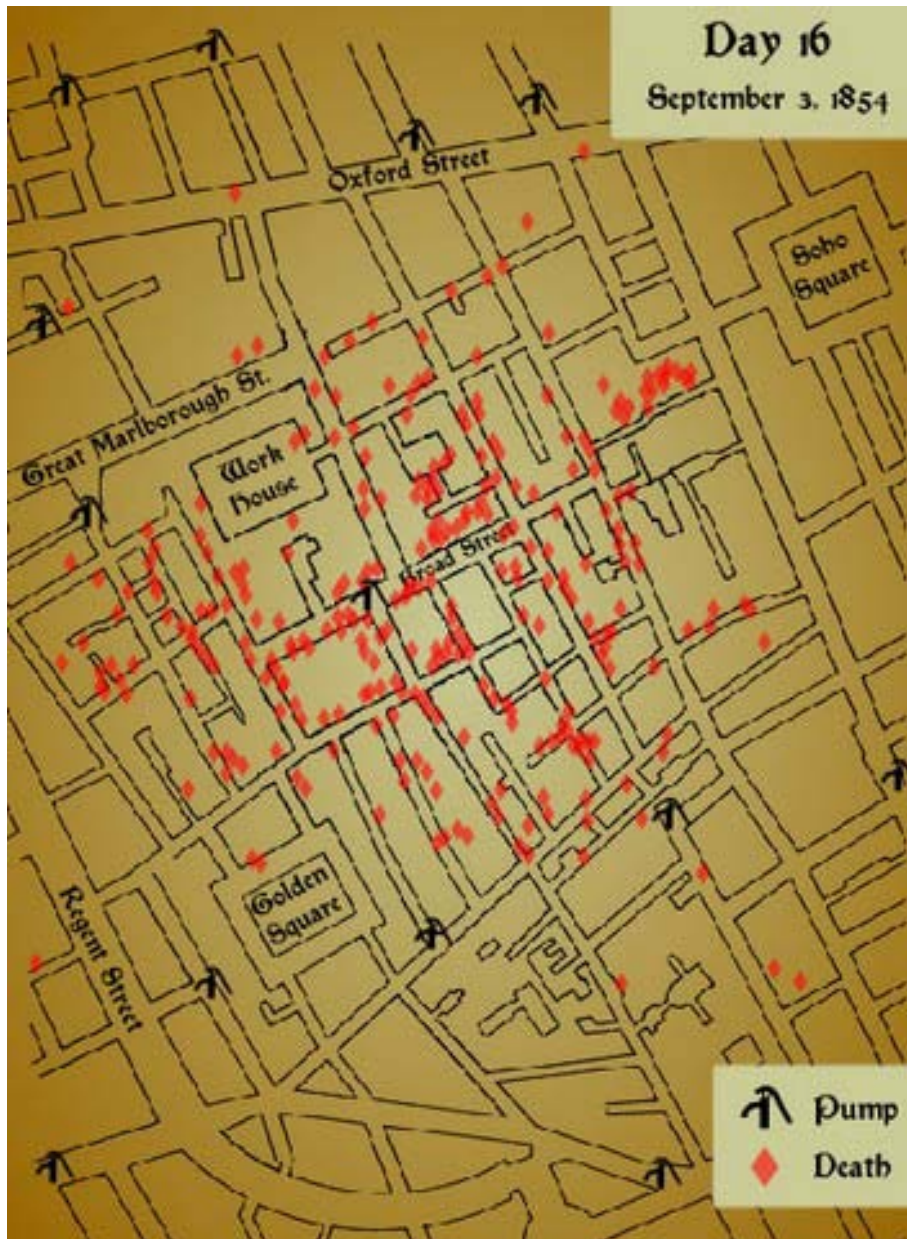
All lines are angular and simplified

National Geographic Map of Offshore Oil

Highlights oil rigs (the dots at the top represent rigs) and ocean depth (the shades of blue)

Power of GIS

- Mixes databases with map drawing
- Every point, line, or polygon feature can hold a variety of data
- Capable of highlighting spatial relationships through layers of data (BE CAREFUL with this)

Day 16
September 3, 1854

Oxford Street

Soho Square

Great Marlborough St.

Work house

Broad Street

Golden Square

Regent Street

Pump
Death

Map of Cholera outbreak

One of the first maps related to health geography

Shows relationship between Broad Street well and cholera death

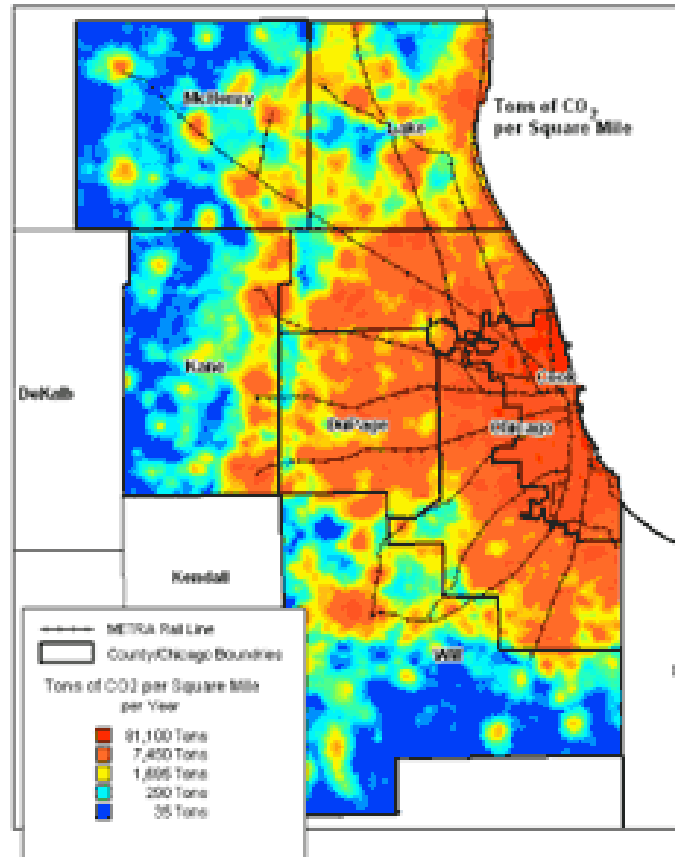Example of a point map

Two Views of Cities and CO$_2$

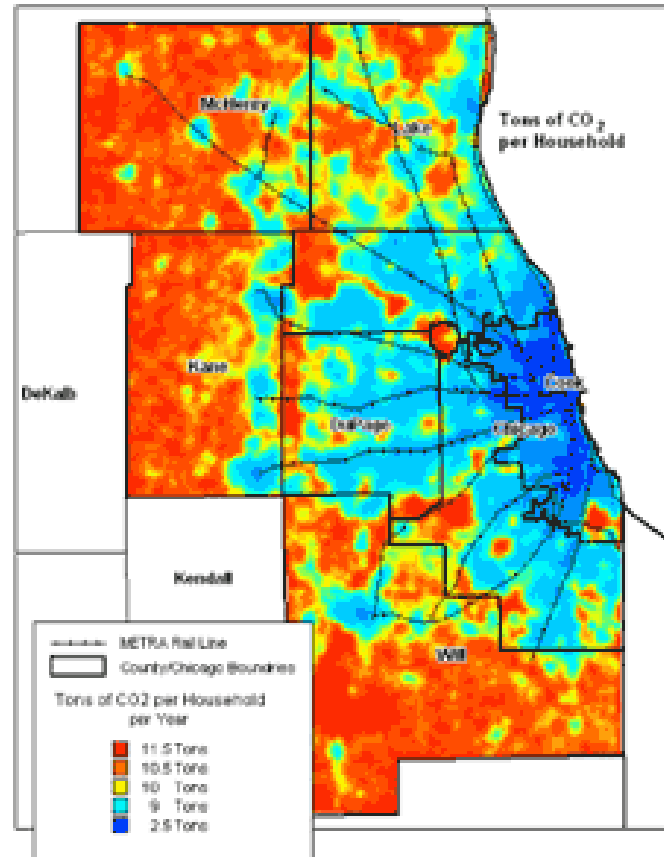CO$_2$ Generated by Automobiles in the Chicago Region per Year

Traditional View:
Cities produce large amounts of GHGs.

Emerging View:
City dwellers produce relatively low amounts of GHGs.

Each color represents one fifth of the land area on each map.

Different methods of quantifying data leads to a very different impression
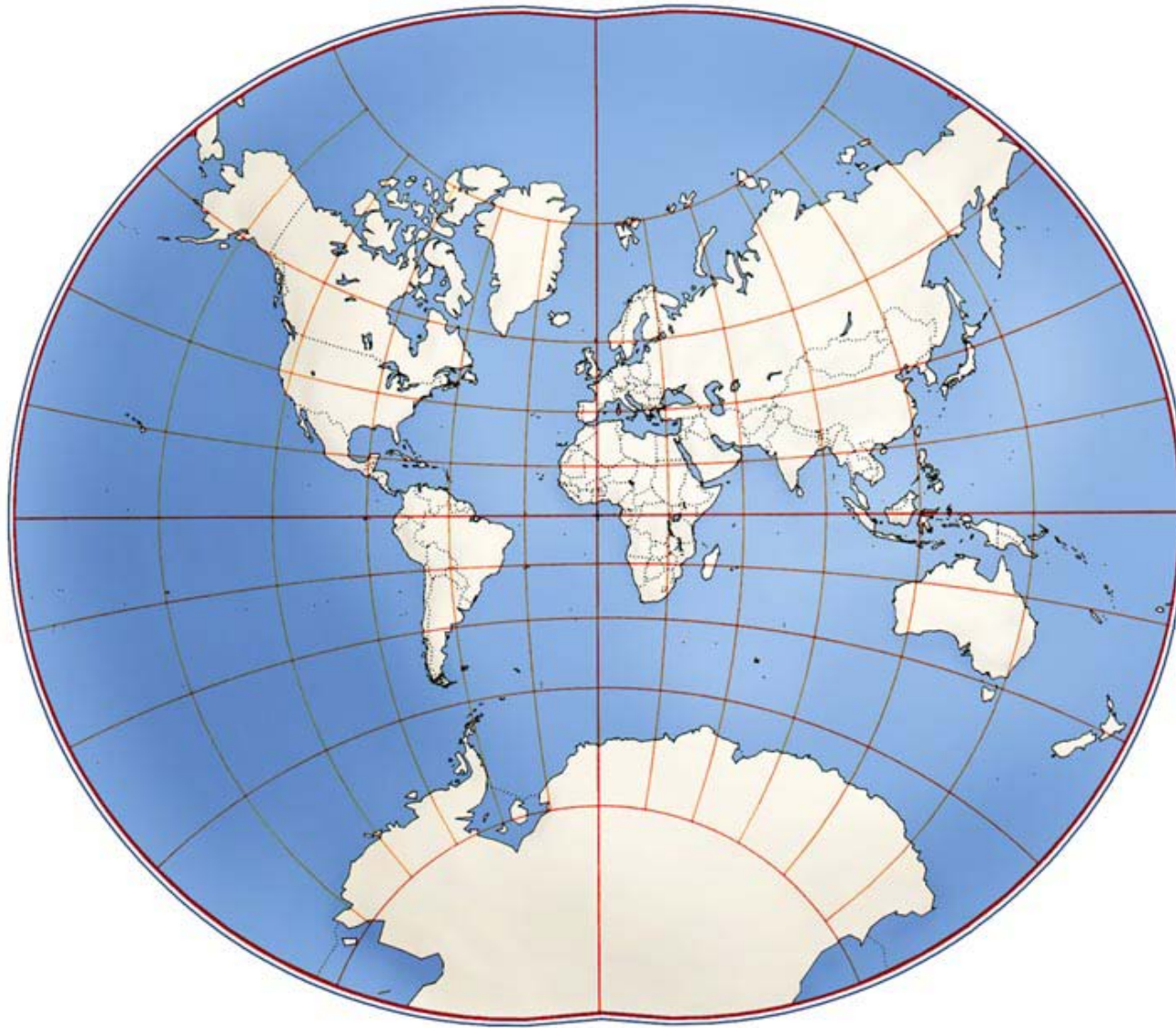
Example of a graduated color map

Projections

- All map data layers have a projection
- Projections are a mathematical interpretation of a spherical surface on a flat surface
- Most dramatically seen in world maps

Waldseemuller Map (first European map to show Americas- c. 1507)

Warps the globe, shows more detail in areas that were surveyed

Peters Projection (stretched in the center)

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Carlos Multi-Conformal Reduc. Factor = .55 Scale = 90

Wendy Carlos invented this projection

Electronic music composer (most famous for her electronic arrangements of Beethoven in *A Clockwork Orange*)

A very disorienting projection that appears to use satellite imagery

Data Sources

- There are a lot of free data sources
- Be aware of data quality- there is a wide range
- Government data usually is consistent and high quality
- Check the date the data was made, is it still relevant? Is it still synchronized with your other data layers?

Check out these suggestions for data:

Google "(name of city or place) gis data" e.g. "chicago gis data"

Census.gov (for Census related data)

Google "(name of state or place) gis clearinghouse"

Check academic websites for downloadable shapefiles

Organize your data well!!

Now let's learn uDig…

You dig???