Introduction to Geographic Information Science

NRC 585

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Syllabus Review
Natural Resources Jobs Projection
What is a GIS?

• “A GIS is a computer based system to aid in the collection, maintenance, storage, analysis, output, and distribution of spatial data”

• With GIS, we can ask (and answer) the question of ‘where’, not just ‘what’
Also, fun maps
Frequency of red hair in Europe
What you need to succeed (with GIS)

• Be organized!
  – It’s likely that you’ll create a lot of similar files as you’re working with lab data and your own data
  – You will not remember what you did to create the ‘temp1’ file the day after you create it. Keep notes, name things in ways that you’ll remember
  – Keep a log of useful tools – ArcGIS naming conventions are not always intuitive
What you need to succeed (with GIS)

- Be organized!
- Try not to get frustrated

Stress Reduction Kit

**Bang**

**Head Here**

Directions:
1. Place kit on FIRM surface.
2. Follow directions in circle of kit.
3. Repeat step 2 as necessary, or until unconscious.
4. If unconscious, cease stress reduction activity.
What you need to succeed (with GIS)

• Be organized!
• Try not to get frustrated
  – Get started early
  – Save your work often
  – Use Google instead of ArcGIS help
  – Ask someone if you can’t solve it yourself
What you need to succeed (with GIS)

- Be organized!
- Try not to get frustrated
- In GIS, there are many paths to the same answer
Lab Logistics

• Labs are available on the U: Drive (you can find the link on your syllabus and on the course website)
Assignments for Tomorrow (Friday)

- Get a USB drive for this class (I recommend 4-8 GB – GIS data can take a lot of space)
- Download and unzip Lab 1 (from the U: drive) to your USB drive
Lab Logistics

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- Labs are located in Morrill II 212
Lab Logistics

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• Labs are located in Morrill II 212

• Learning commons computers also have ArcGIS installed – as long as you’ve saved your work to your USB, you can work on labs from anywhere on campus
First modern atlas (1570)
Another modern atlas?
Dr. John Snow’s map of cholera outbreaks in London, 1854
Suitability analysis example: Where’s the best location for a new doggie daycare in Seattle?
Customer Suitability

Combined Criteria:
- Median Household Income
- Average Age
- Percent of Condominiums
- Percent of Professionals
- Annual Spending on Pets
Distance Suitability

Combined Criteria
- Distance to competition
- Distance to Parks
- Distance to Arterials
- Proximity to Central Business District
After combining Customer Suitability, Distance Suitability and parcel criteria, you end up with a map of potential properties that meet all of your requirements.
Example: Emergency Planning

Priority evacuation sites in Louisiana

What information could the priority levels be based upon?
California Fire Threat: What sorts of info could be used to create this map?
Environmental Justice: What sorts of data could be used to create this map?
Animal Movement: What applications does this map have?
Deforestation: What sorts of data were used to create this map?
Map of the day: Visualization

wind map

October 29, 2012
9:59 pm EDT
(time of forecast download)

top speed: 45.1 mph
average: 9.3 mph

1 mph
3 mph
5 mph
10 mph
15 mph
30 mph
Class Exercise

• What information is presented in your map?
• Think of two different questions you could use this information to answer.