Cliography
Historical Geospatial Analysis

Digitizing

Digitizing historical documents is the first step in creating GIS data. It is preferable to digitize using high-resolution equipment. High-resolution scanners usually produce the highest quality digitization. However high-resolution cameras are important for documents that are either too large or fragile to pass through a scanner. If an establishment does not offer professional digitization, an inexpensive alternative can be using a standard digital camera to take many overlapping photos of a document – later using Adobe Photoshop to stitch them back together, creating a mosaic.

Georeferencing

Conceptually, georeferencing can be understood as stretching the map over a globe in order to more accurately represent real world space and location. Using ArcGIS, I georeferenced (referencing to a coordinate system) a total of 36 maps of historical Hartford, CT. Georeferencing historical maps allows the GIS analyst to produce accurate spatial and geographic analysis. Once georeferenced, it is important to chose an appropriate map projection.

IDEA

Historical GIS has been emerging as advancements in digital technology have led to the development of comprehensive GIS software packages, such as ArcGIS. Michael Howser, Head of Digital Scholarship and Data Curation at University of Connecticut Libraries, agreed to serve as a mentor for this project.
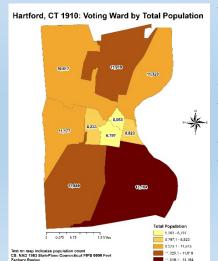
The scope of this research is to explore the methods involved in historical geospatial analysis. I have assigned the name Cliography to this research, reflecting the disciplines from which it draws: Clio (history) and Graphics (the study and practice of using visualizations as an analyzing process).

This poster will cover digitizing, georeferencing, heads-up digitizing, and geoprocessing historical documents such as maps and print census records. Focusing on historical Hartford, CT, I was successful in developing a geodatabase containing 36 spatially referenced maps (ranging from 1640-1982), as well as associated feature classes or derivative data.

To conclude this research, I will be adding the geospatial data to the Map and Geographic Information Center's website. This website, and others like it, are essential to the infrastructure of this research by providing researchers online access to extensive spatial data.

Heads-Up Digitizing And Geoprocessing

Once the historical documents are digitized and georeferenced, an analyst can begin to heads-up digitize geographic features of the map – creating GIS files called feature classes. These feature classes can be geoprocessed. Geoprocessing is a method of GIS analysis which can be conveniently informative when trying to observe spatial variations in historical datasets. Historical datasets, such as historical census records, can be digitized manually or by using Optical Character Recognition (OCR) software. Once this data is digital, it can be added to the GIS. For instance, the image to the left is a heads-up digitized map of Hartford, CT voting wards in 1910 which has been joined with census records. Joining the census data to the spatial data, ArcGIS allows the researcher to visualize the population spread in Hartford at the turn of the 20th century.

ZCR: April, 2015