Background

- Pet academic project of mine for over 40 years.
- Mapping changes in population density.
- Paper maps and Mylar in the late 1960s.
- Used a blueprint set of historical county.
- My seminar students worked on various versions as GIS operations improved.
- Creating boundaries for counties in early censuses has always been the major problem.
- University of Minnesota released a new set of historical county maps as shapefiles and an associated database of county populations for each census decade 1790-2010.
Sources

PURPOSE

- Outline methodology.
- Discussion of results.
- Summarize what results tell us.
Frontier
What does it mean?
The Significance of the Frontier in American History

- Frederick Jackson Turner
- Public Lecture at Chicago World’s Fair in 1893
- Salient feature of American intellectual life for 100 years
- Turner suggested a quantitative definition
- Six people per square mile isopleth
- This study uses 10 people per square mile
Qualitative/Literary definitions

- Boundary between civilization and wilderness
- Boundary between the steppe and the sown
- Edge of cultivation
- Edge between Europeans and First Peoples
Methodology

- Calculate centroids of county polygons for each census decade.
- Calculate county areas (square miles)
- Join to population database
- Calculate population per square mile for each census year point file.
- Use Spatial Analyst to create an interpolated surface of density per square mile
- Create a grid surface and contours for visualization
- Generate animations for better visualization
- Caveat – centroids of larger western counties may not correspond to population clusters.
This Presentation

- Map by map excursion through time
- Highlight changes over time
- Discuss the openings and barriers revealed in the maps
- Demonstrate the historical importance of the 20” isohyet
- Mark the persistent edge of the “cultivation” frontier
- Illuminate the importance of “urban” frontiers in the west in the 20th – 21st centuries.
1970

Population Density
Per square mile
- 10
- 50
- 100
- 500
- 1,000
- > 1,000

Colors represent different density levels:
- Green: < 10
- Yellow: 10-50
- Orange: 50-100
- Red: > 1,000
Questions”