

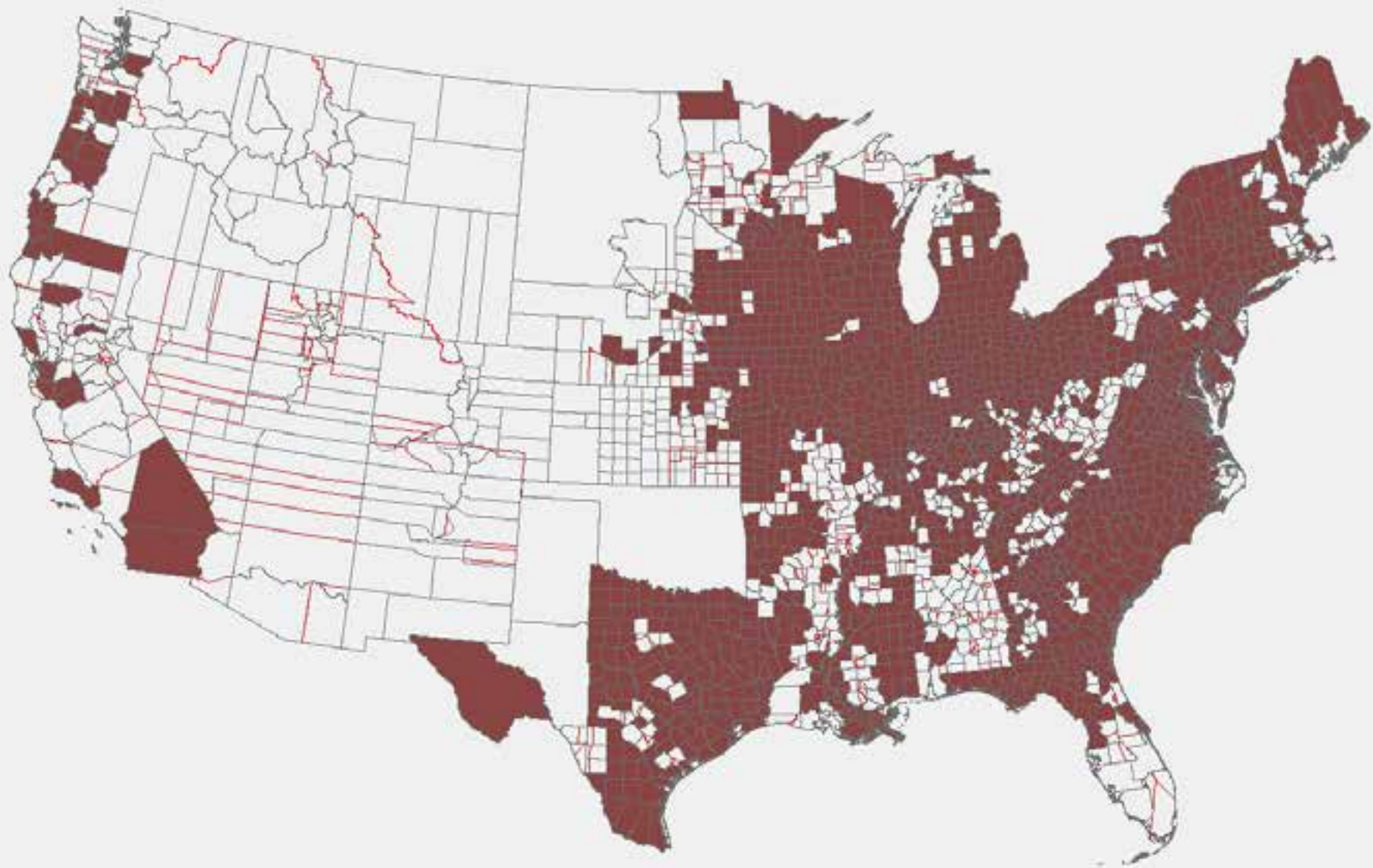
The background features a complex geometric pattern of overlapping triangles and polygons in various shades of blue, yellow, and purple. In the upper-left quadrant, there is a small, semi-transparent inset of a map showing a grid of land parcels, likely representing a rasterized map.

Using Rasterization to Overcome Boundary Changes

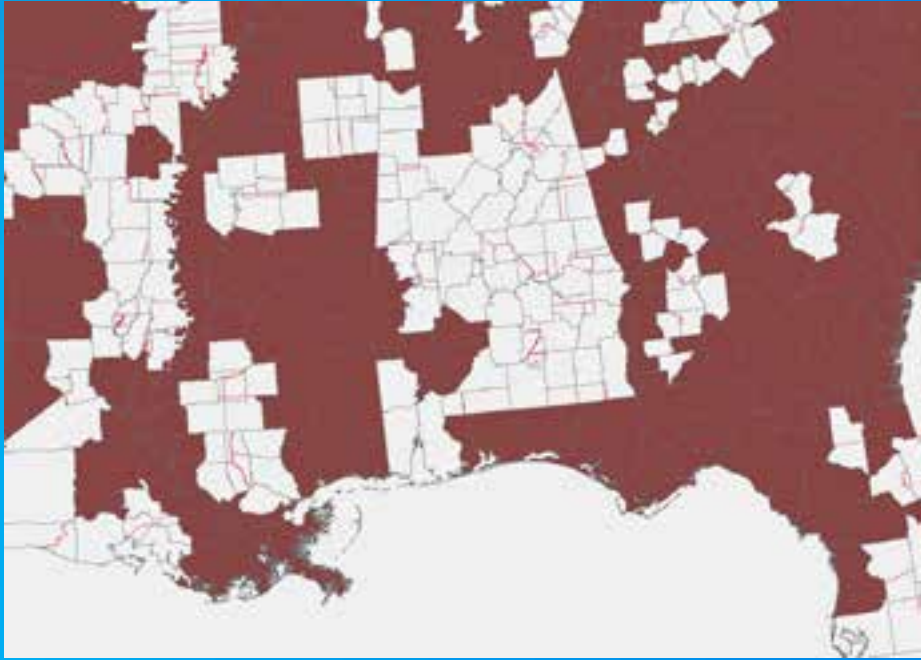
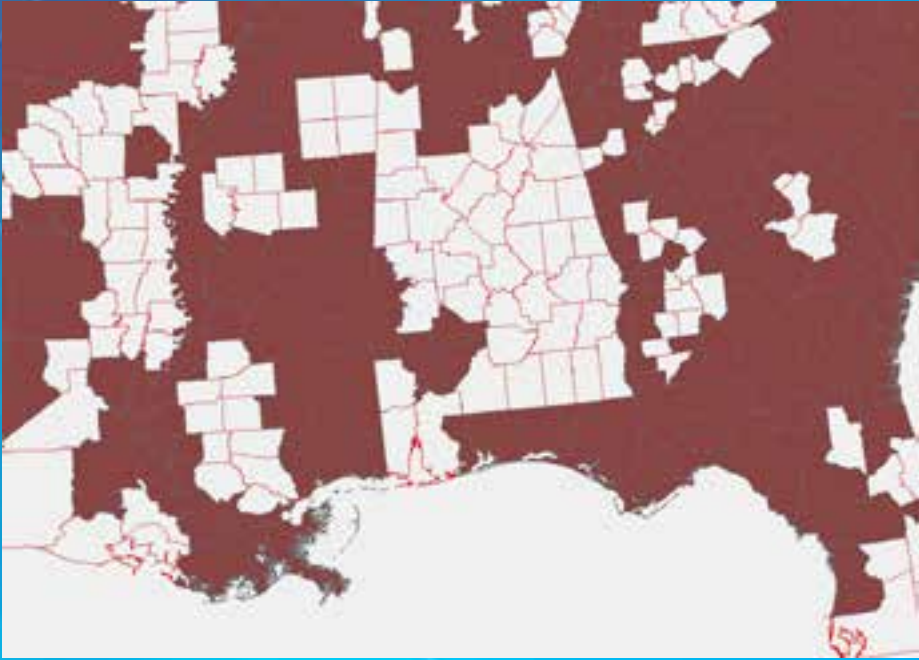
Andy Bradford
Bradford Mapping

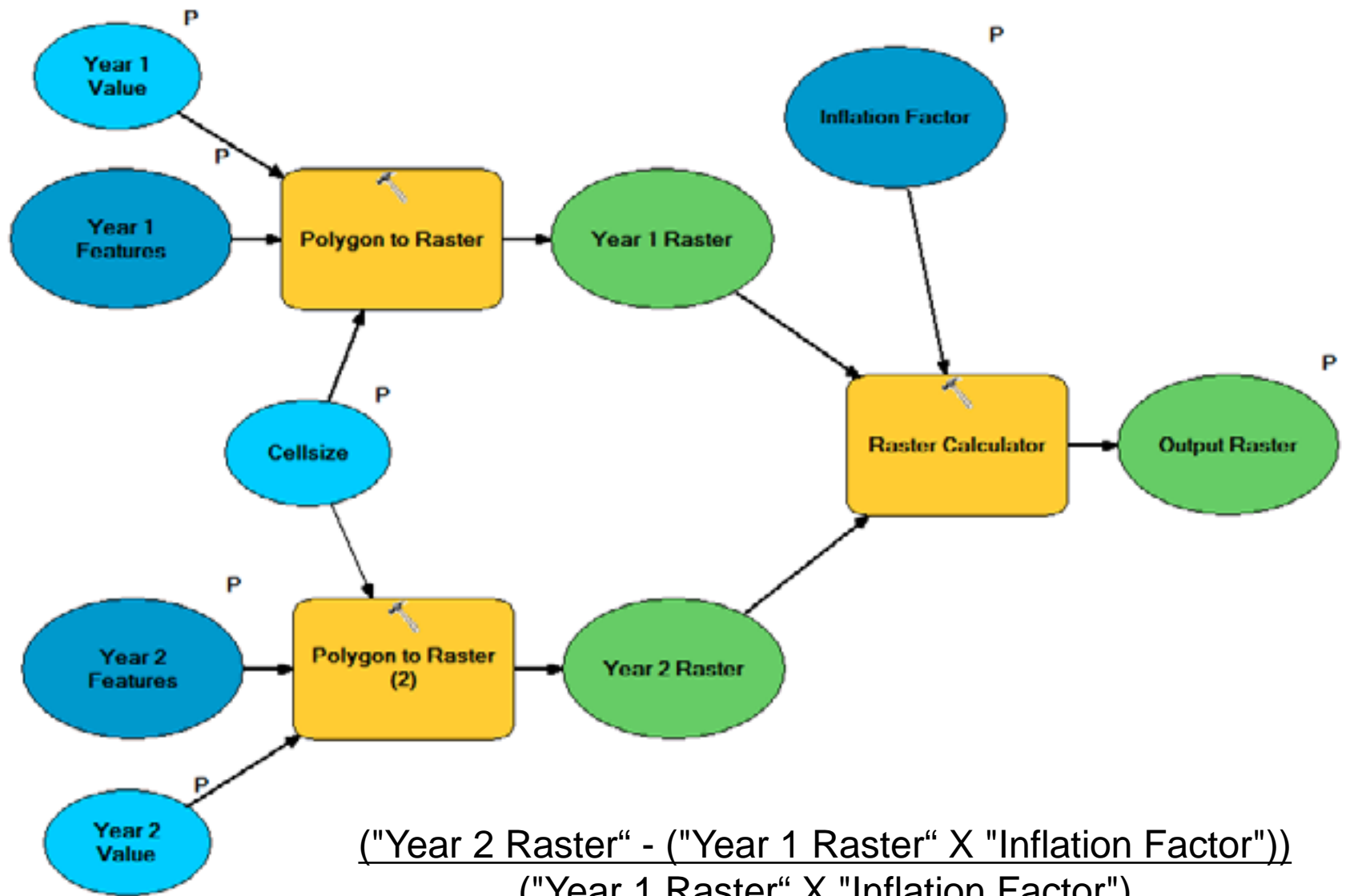
Study: Land Values, 1860-1870

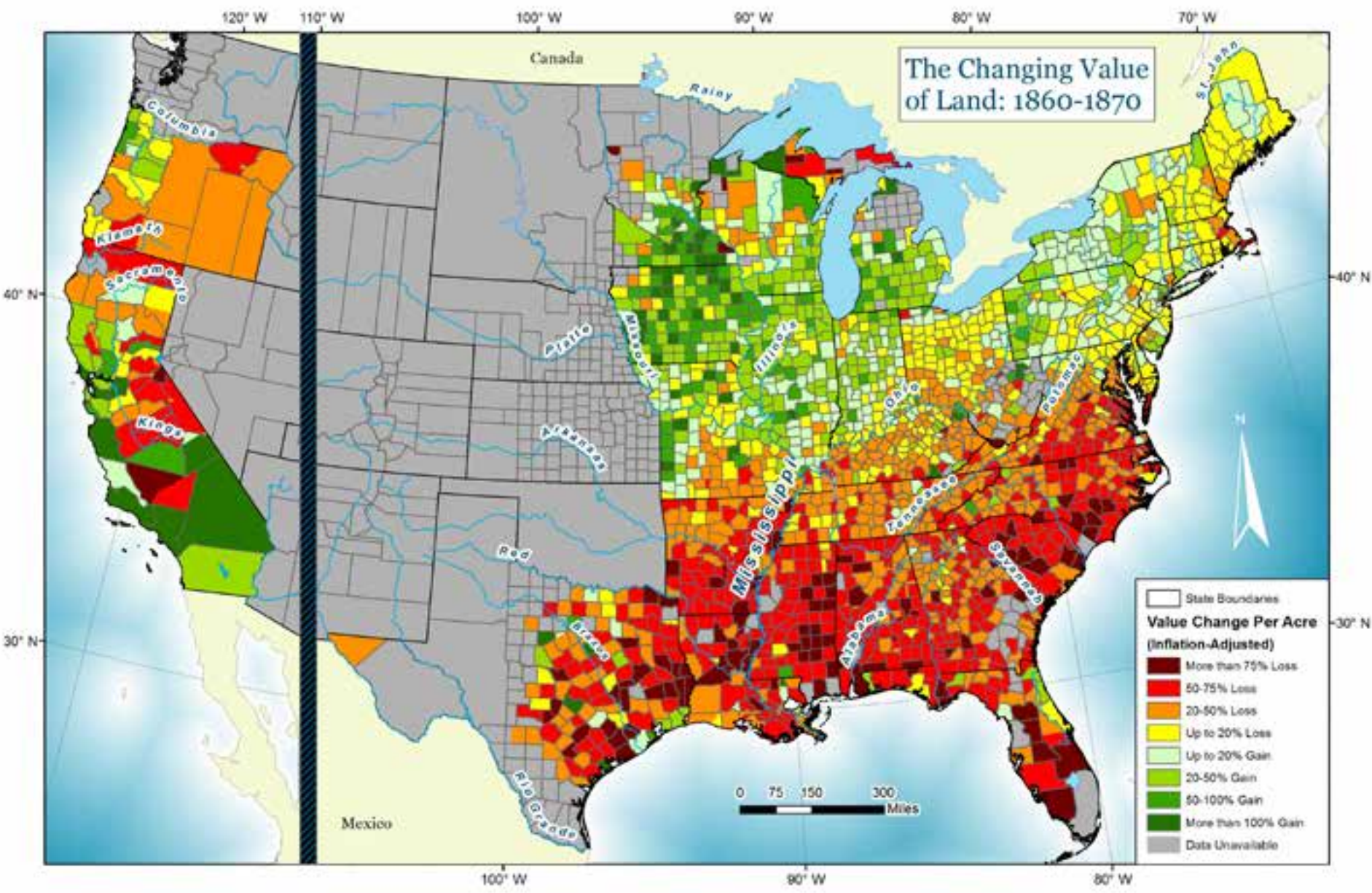
- How did the Civil War and the first 5 years of Reconstruction affect land values across the US?
- Given wildly varying land values (min: \$1, max: \$7309) changes needed to be expressed in % difference
- Data Source: County Average Land Values, US Agricultural Census, 1860 & 1870
- From National Historical GIS (nhgis.org)
- Data in contemporary dollars per acre
- 40% inflation 1860-1870



Boundary Changes







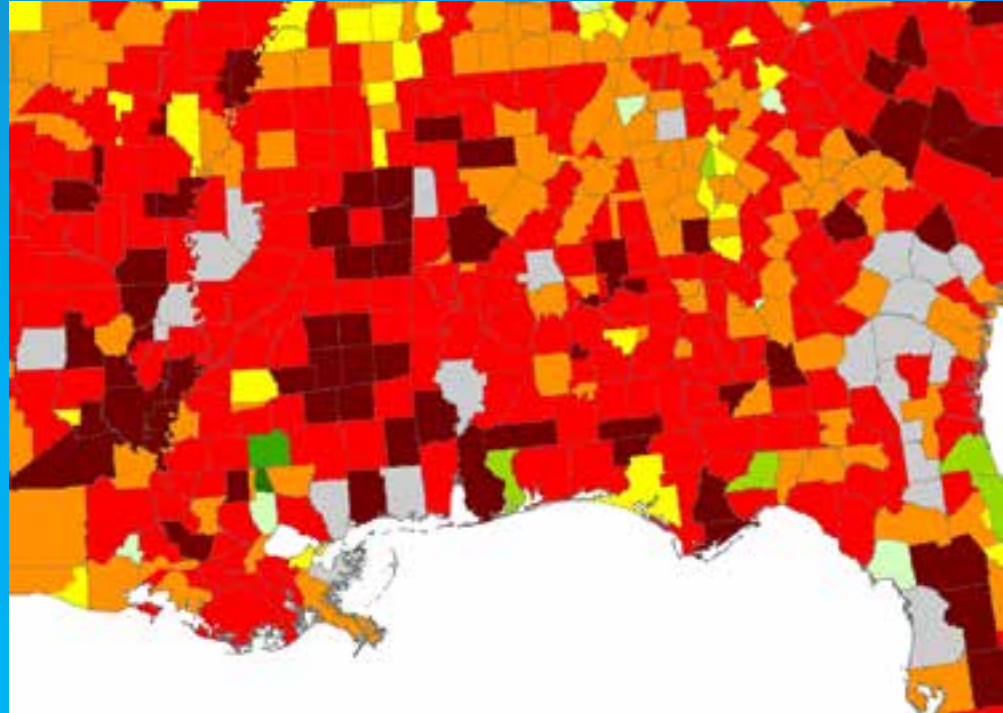
The Changing Value of Land: 1860-1870

- State Boundaries
- Value Change Per Acre (Inflation-Adjusted)**
 - More than 75% Loss
 - 50-75% Loss
 - 20-50% Loss
 - Up to 20% Loss
 - Up to 20% Gain
 - 20-50% Gain
 - 50-100% Gain
 - More than 100% Gain
 - Data Unavailable

0 75 150 300 Miles

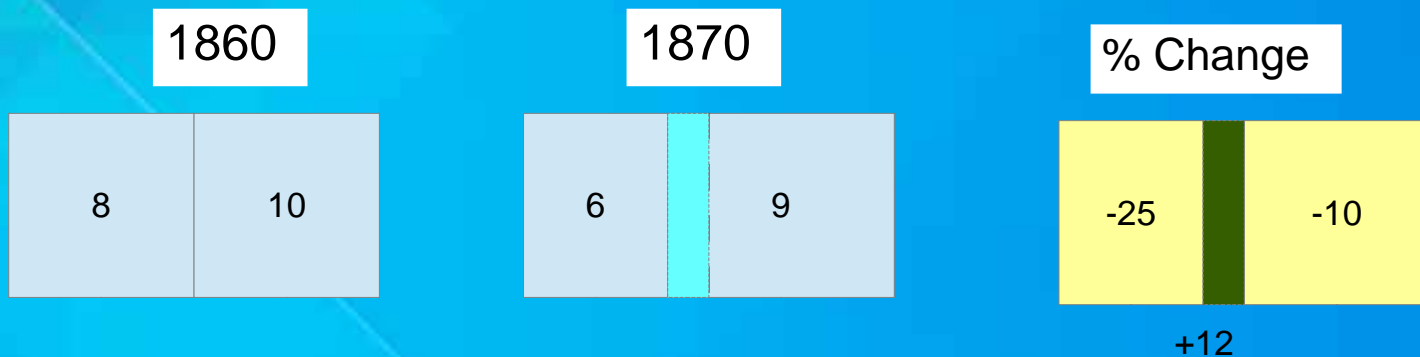
Advantages

- Easy to model
 - No statistics with difficult-to-interpret results
 - Can adjust equation for total rather than % change
- Raster can be averaged to jurisdiction boundaries for correlation with other variables



Faults

- No weighting with other variables
- Some slices that change jurisdictions can have difference values that are out of sync with either their origin or destination polygons, or regional trends.



Land Value Data Source: 1860&1870 Census of Agriculture, retrieved from NHGIS.

County Boundary Data: Minnesota Population Center.

National Historical Geographic Information System: Version 2.0. Minneapolis, MN: University of Minnesota 2011.

Lakes and Rivers: US Census Bureau

Continent: ESRI

Data Sources