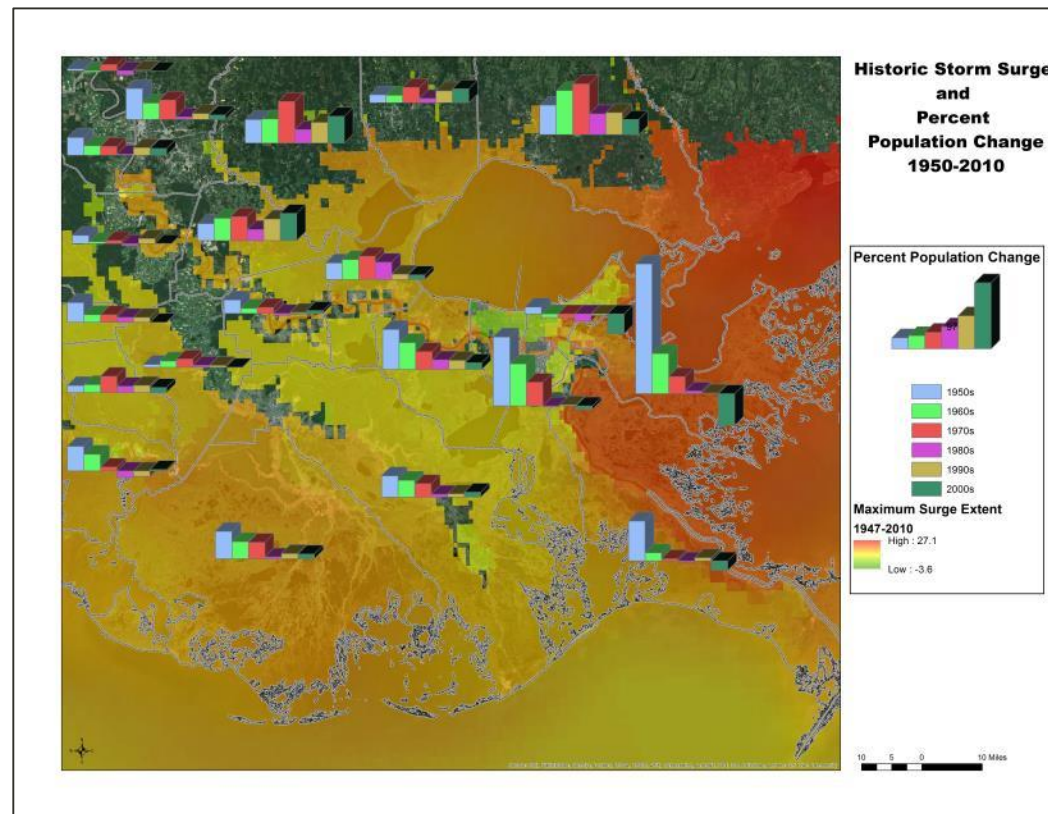




THE WATER INSTITUTE
OF THE GULF

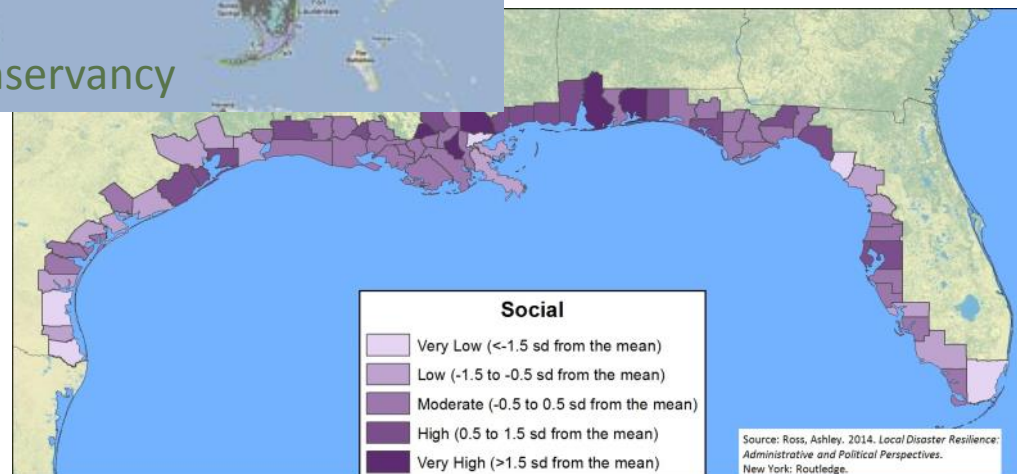
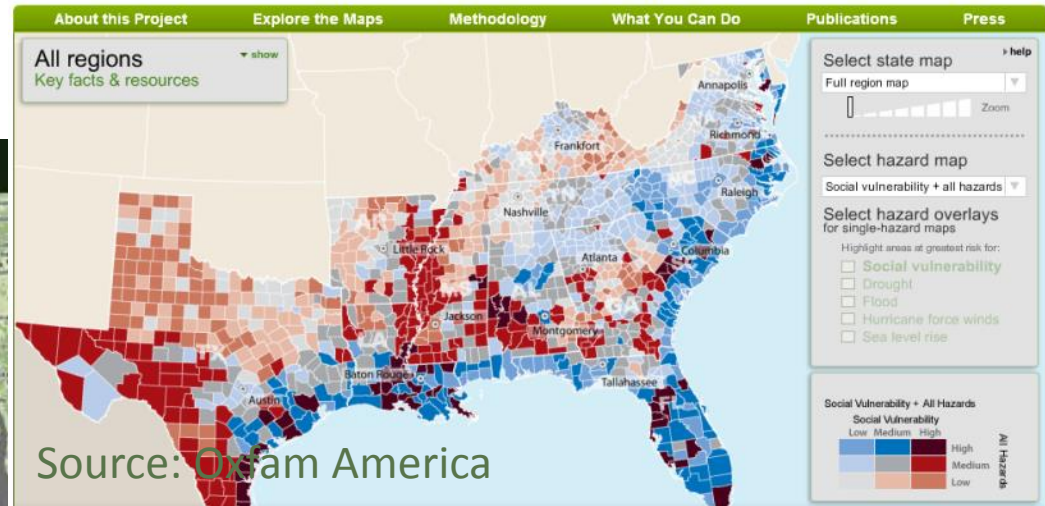
A PLACE OF CONSTANT CHANGE

Mapping Community Resilience in Coastal Louisiana, 1950-2010

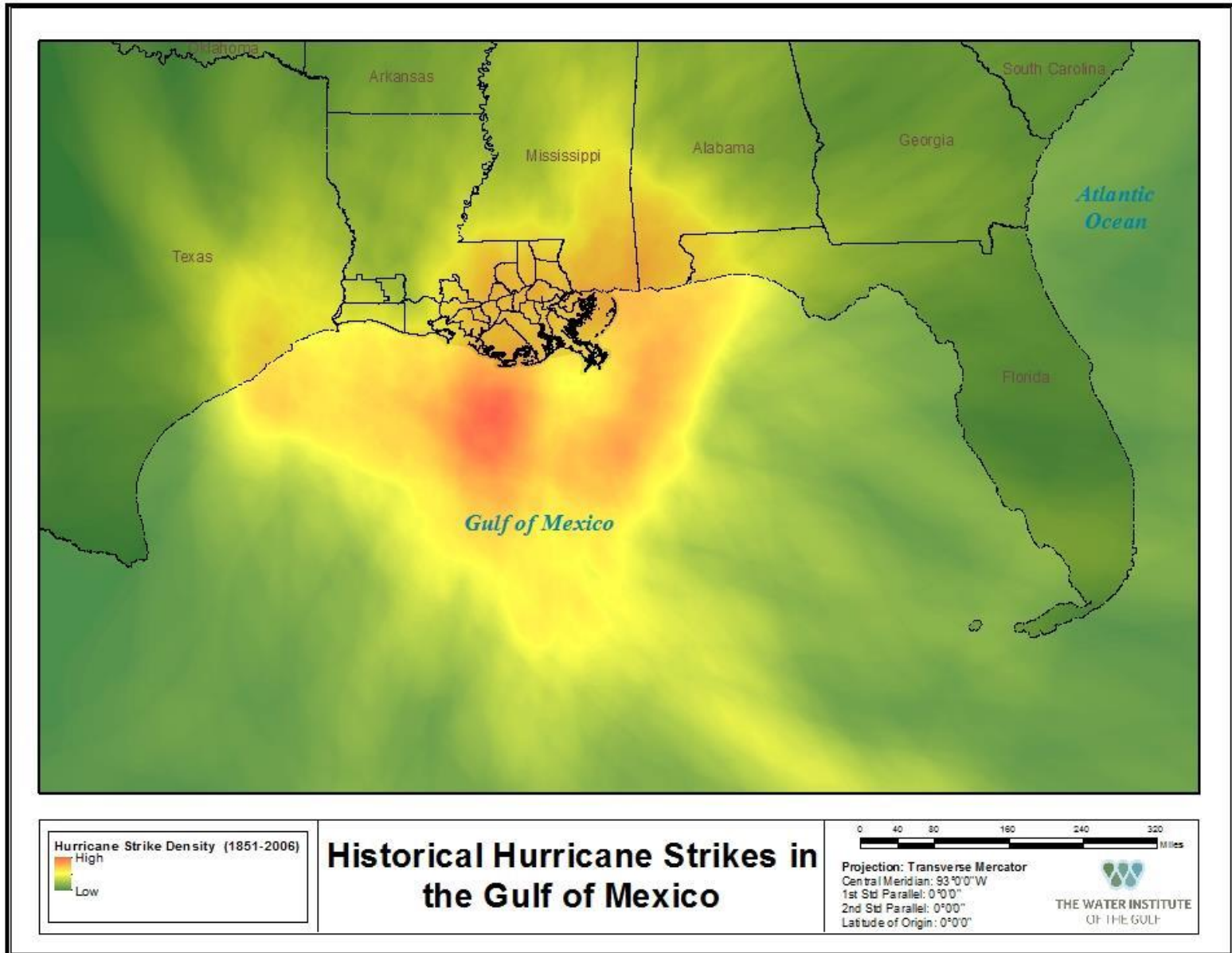


Resilience is often treated as a static event...But is it really?

 **OXFAM America** Vulnerability and Climate Change in the US Southeast



Historical Hurricanes, 1851-2006



Why is Historical Resilience Important?

Without Understanding That Resilience is an Historical Process, Communities Cannot Fully ...

- ◆ Anticipate Multi-Hazard Threats
- ◆ Respond to Hazards Events
- ◆ Recover from Disasters
- ◆ Reduce Vulnerability to Hazard Threats



A Place of Constant Change: Mapping Community Resilience in Coastal Louisiana (1950-2010)

This research is part of an ongoing project examining the historical adaptation of communities to Louisiana's Coastal Zone...

💧 Ethnic Populations

- Persistence in Place
- Arrival of Immigrants
- Cultural Heritage and Traditions

💧 Population Distribution and Change

- Urbanization and Rural Decline
- Community Relocation

💧 Economic Change

- Fisheries, Agriculture, Forestry, and Minerals

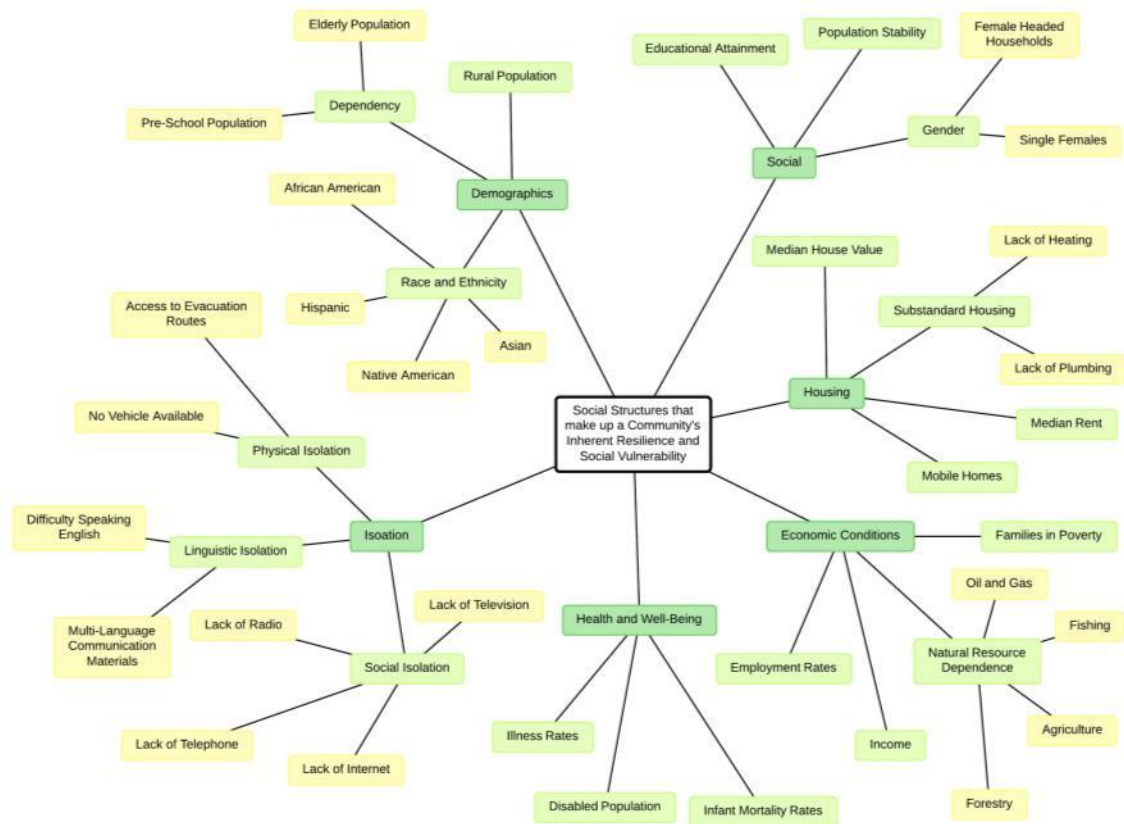
💧 Adaptation and Loss of Resilient Practices

- Living on High Ground
- Living Behind Levees
- Changes in Housing Types

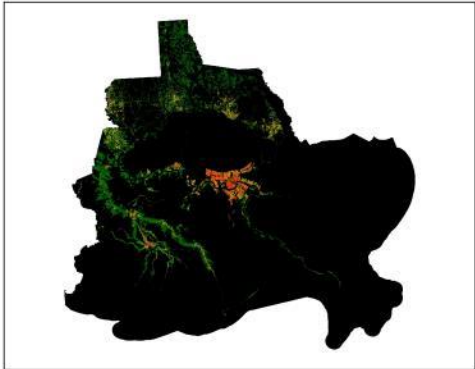
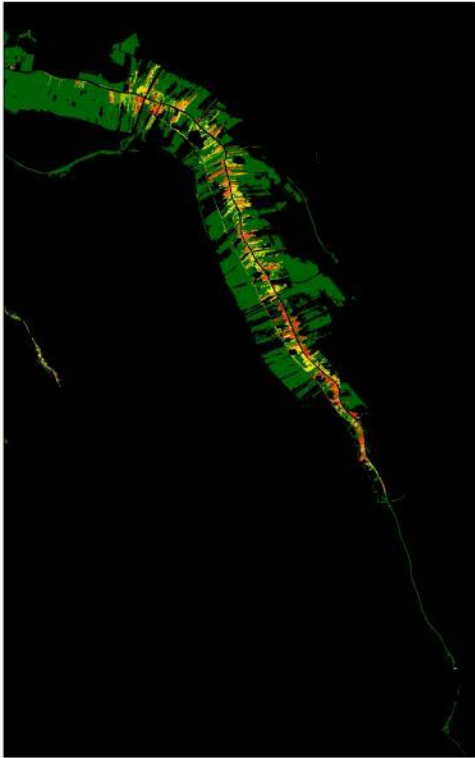
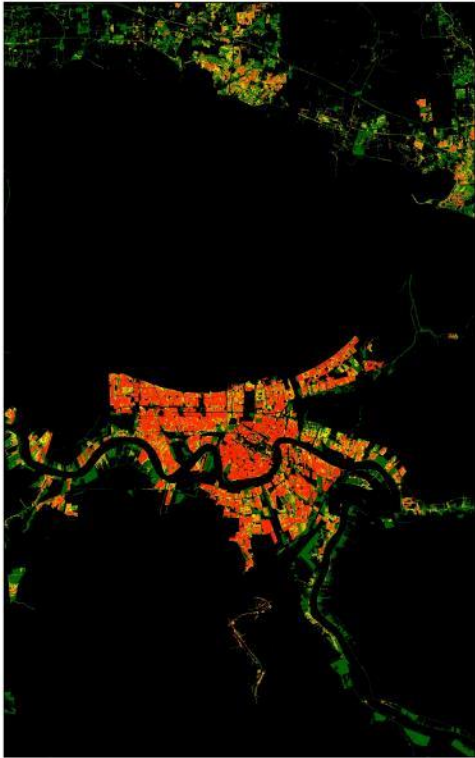
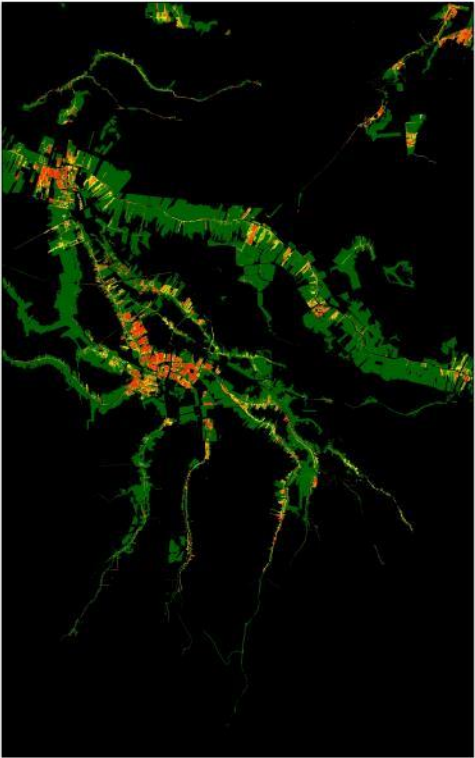


Factors that Determine a Community's Inherent Resilience and Social Vulnerability...

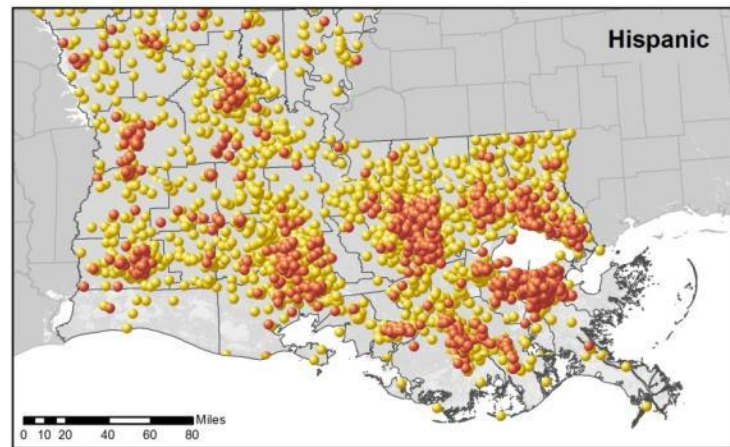
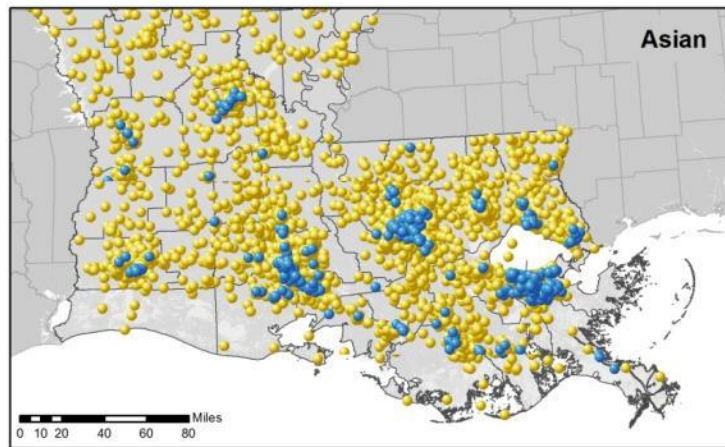
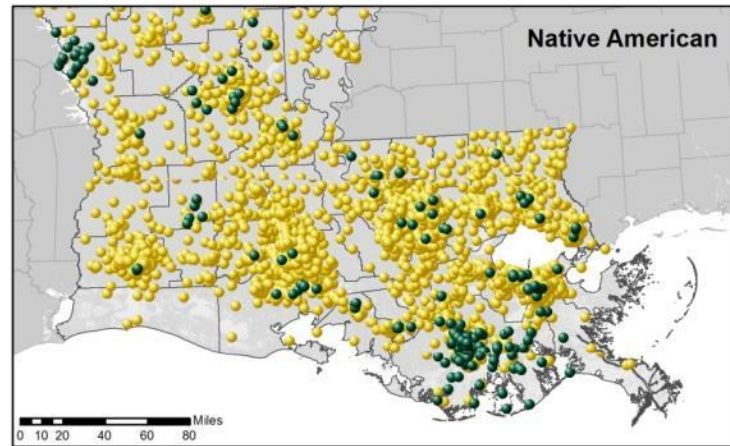
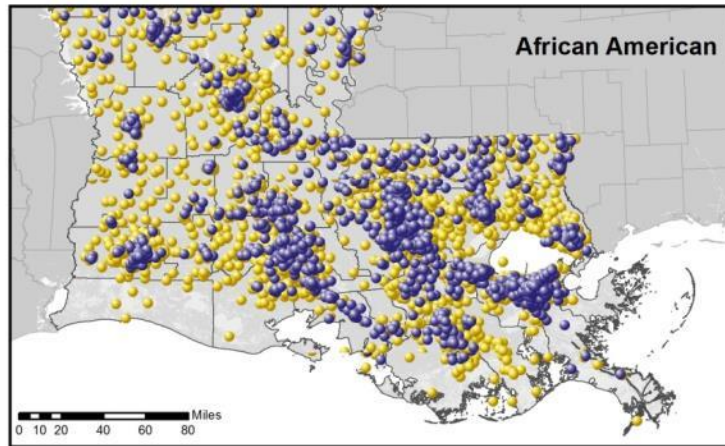
- ◆ Demographics
- ◆ Social Variables
- ◆ Housing Conditions
- ◆ Economic Conditions
- ◆ Access and Communications
- ◆ Community Health and Well-Being



Population Density Patterns in Southeast Louisiana



Distribution of Minority Population in Coastal Shoreline and Coastal Watershed Parishes (2010)

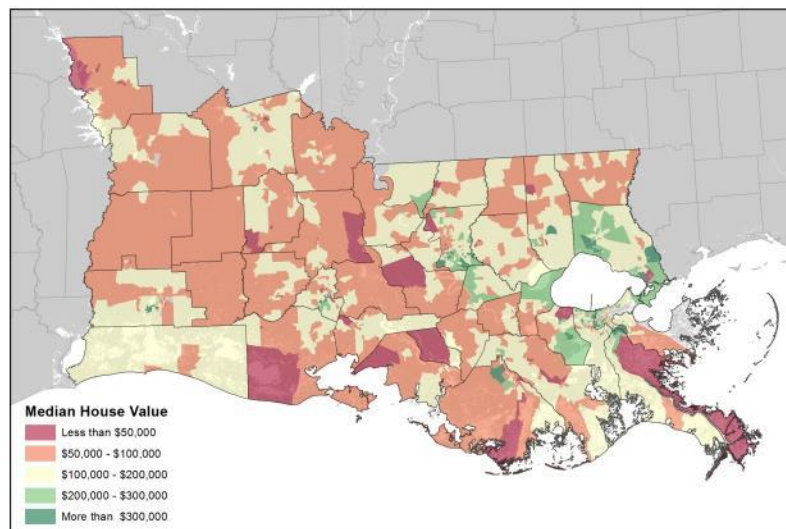
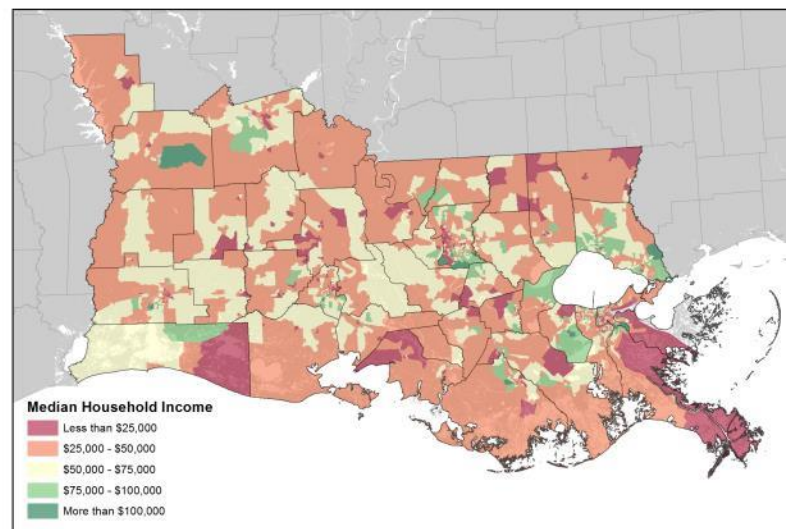
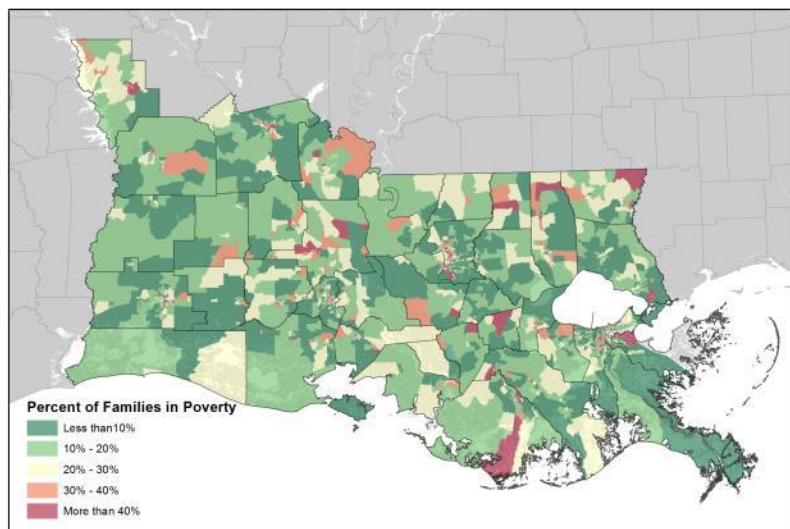


Population Density

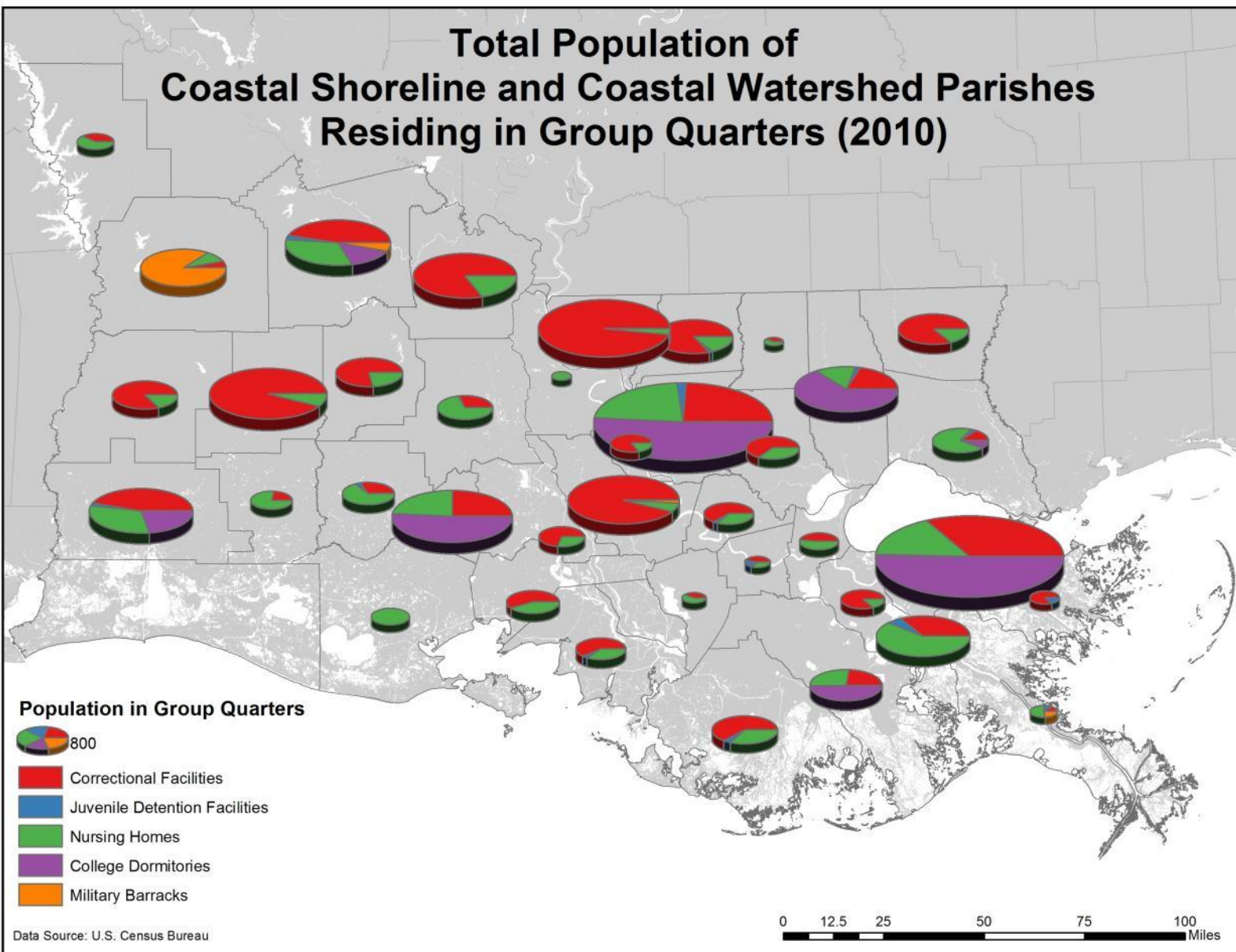
Data Source: U.S. Census Bureau

- Total Population
1 Dot = 1,000 People
- African American
1 Dot = 500 People
- Asian
1 Dot = 100 People
- Hispanic
1 Dot = 100 People
- Native American
1 Dot = 100 People

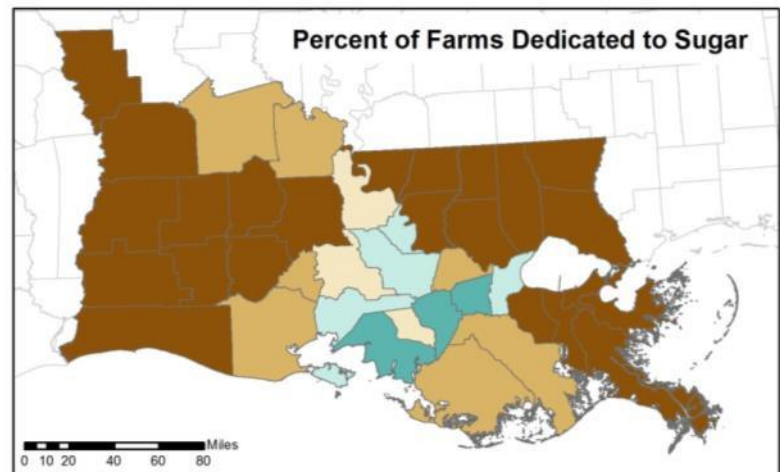
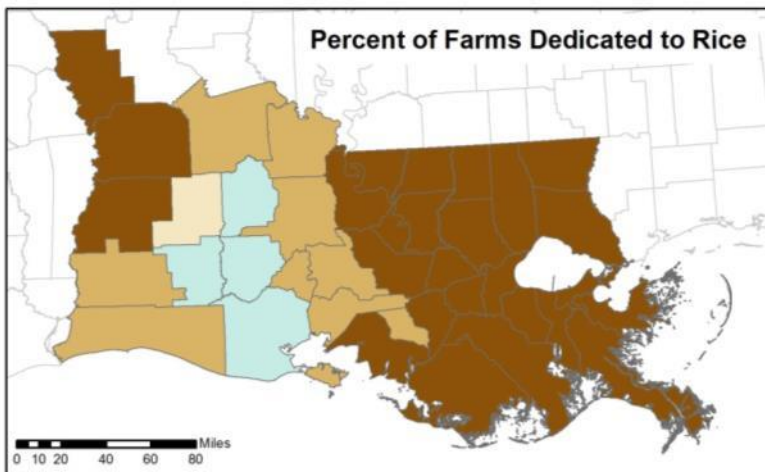
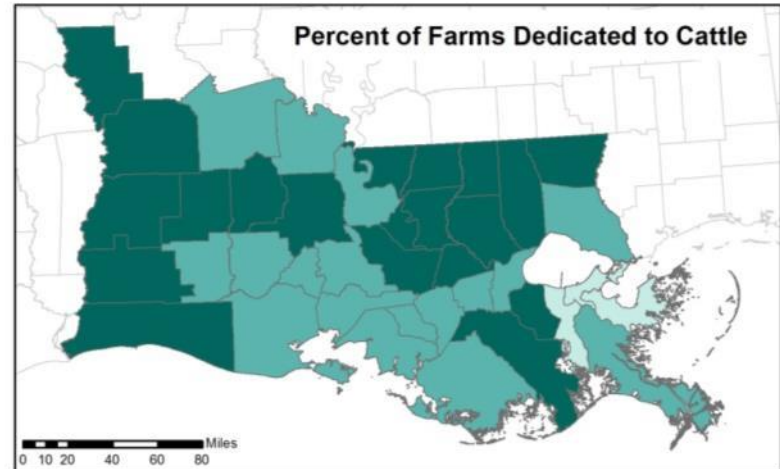
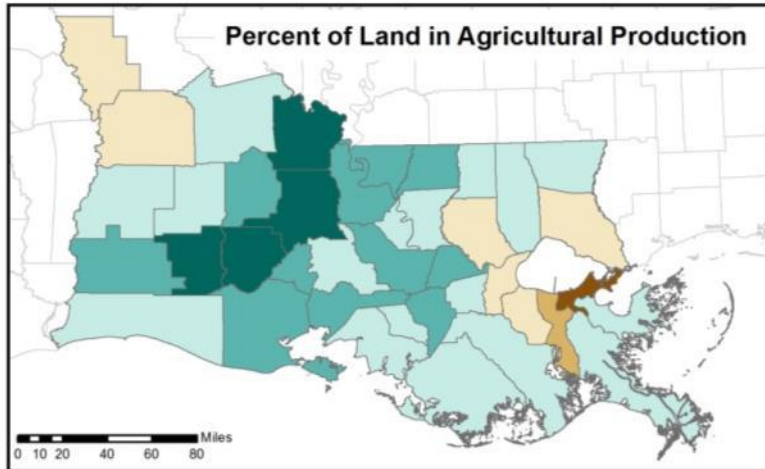




Total Population of Coastal Shoreline and Coastal Watershed Parishes Residing in Group Quarters (2010)



Farming and Agriculture in Coastal Shoreline and Coastal Watershed Parishes (2010)

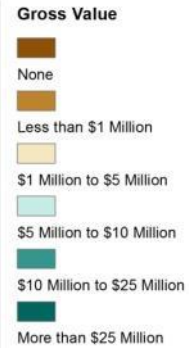
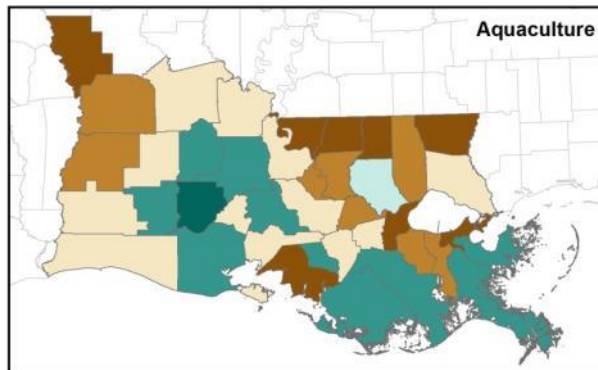
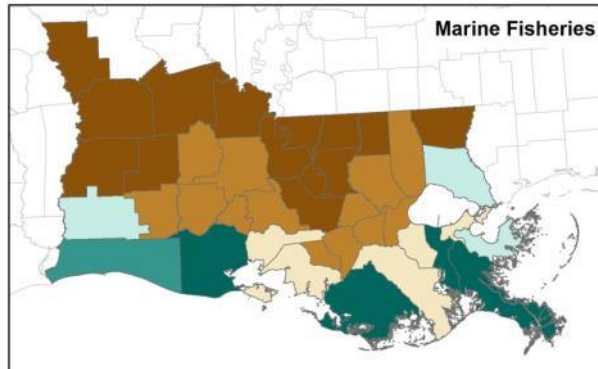
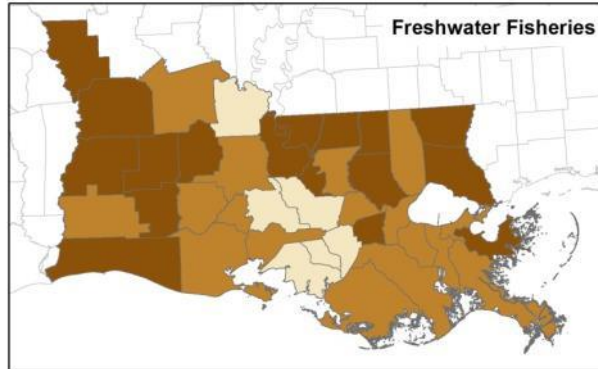


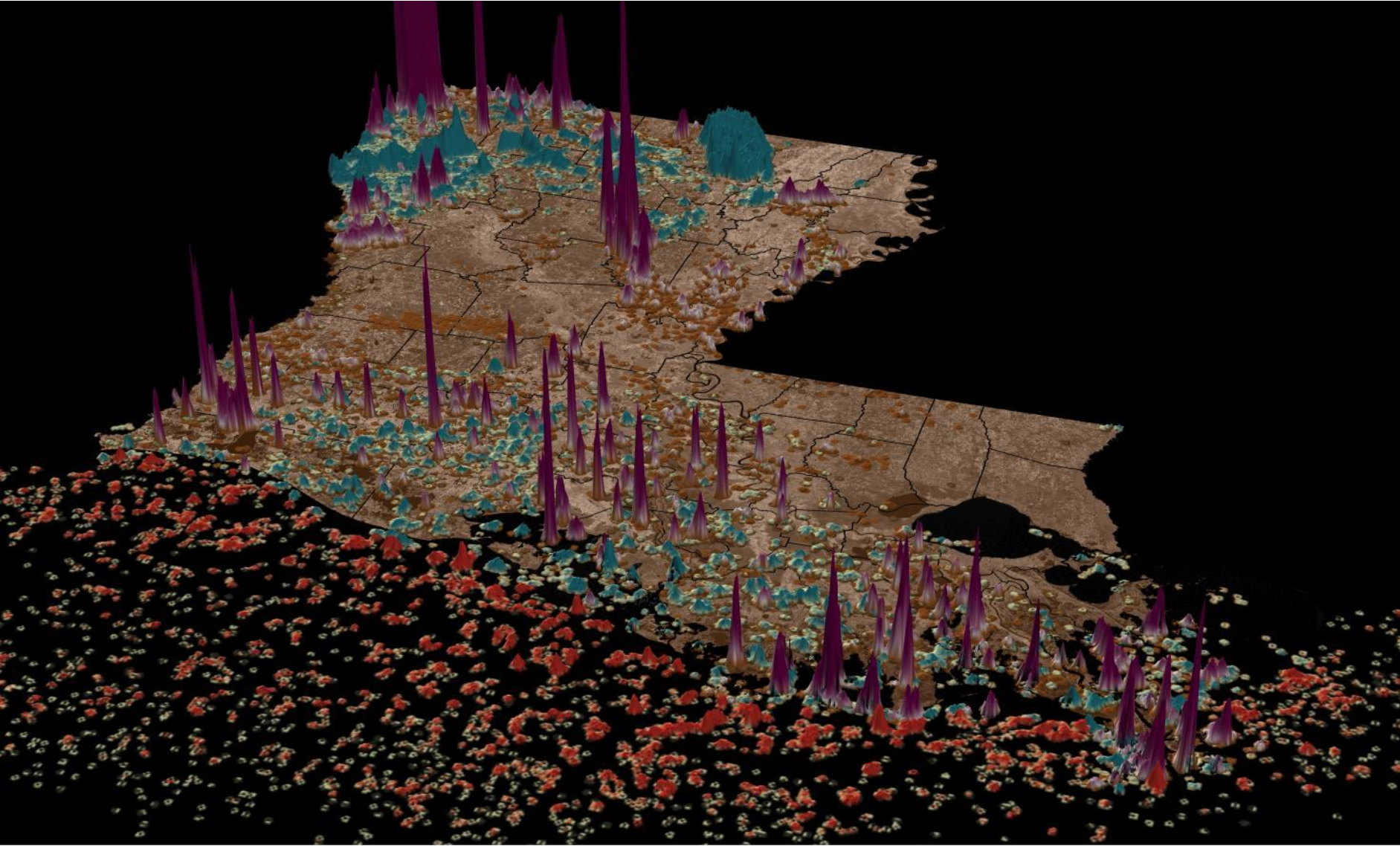
Percent of Farmland Less than 1% 1.1% - 5% 5.1% - 10% 10.1% - 25% 25.1% - 50% More than 50%

Data Source: U.S. Department of Commerce, Bureau of the Census; U.S. Department of Agriculture, National Agricultural Statistics Service



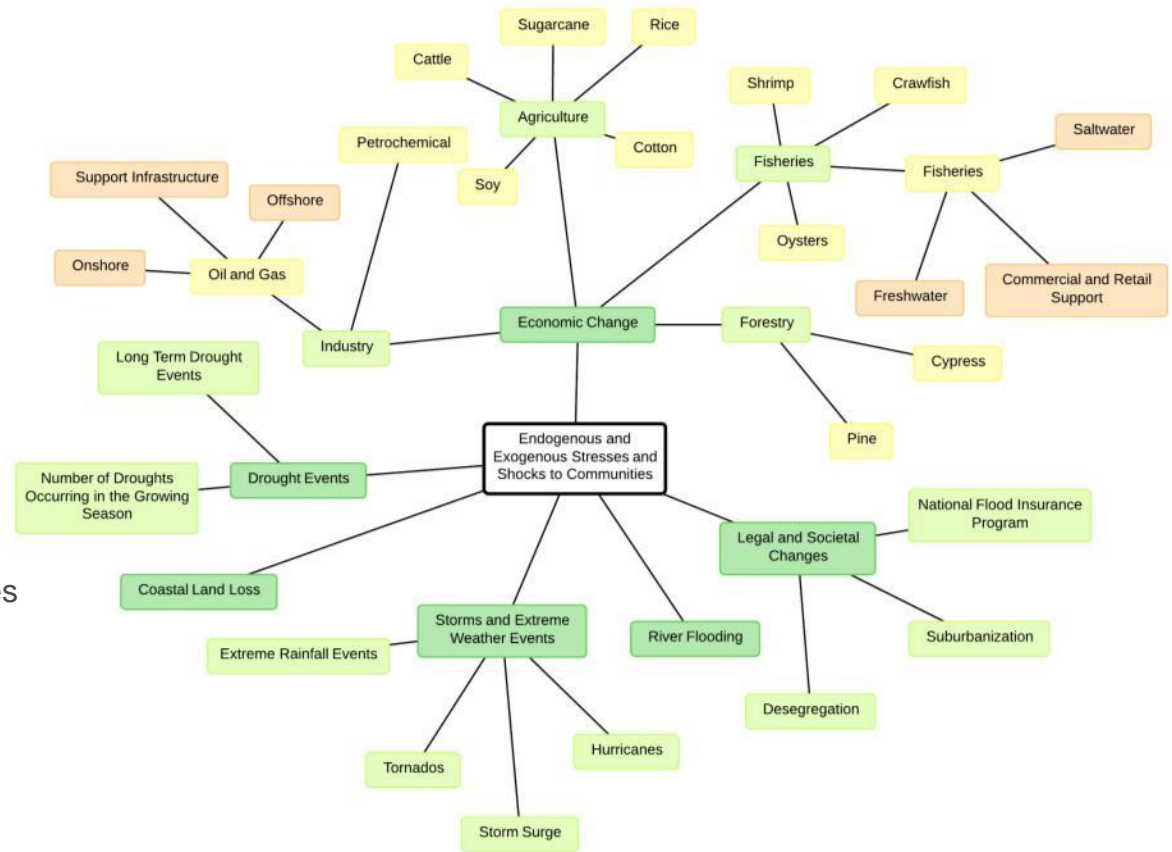
Total Value of Fisheries and Aquaculture in Coastal Shoreline and Coastal Watershed Parishes (2010)

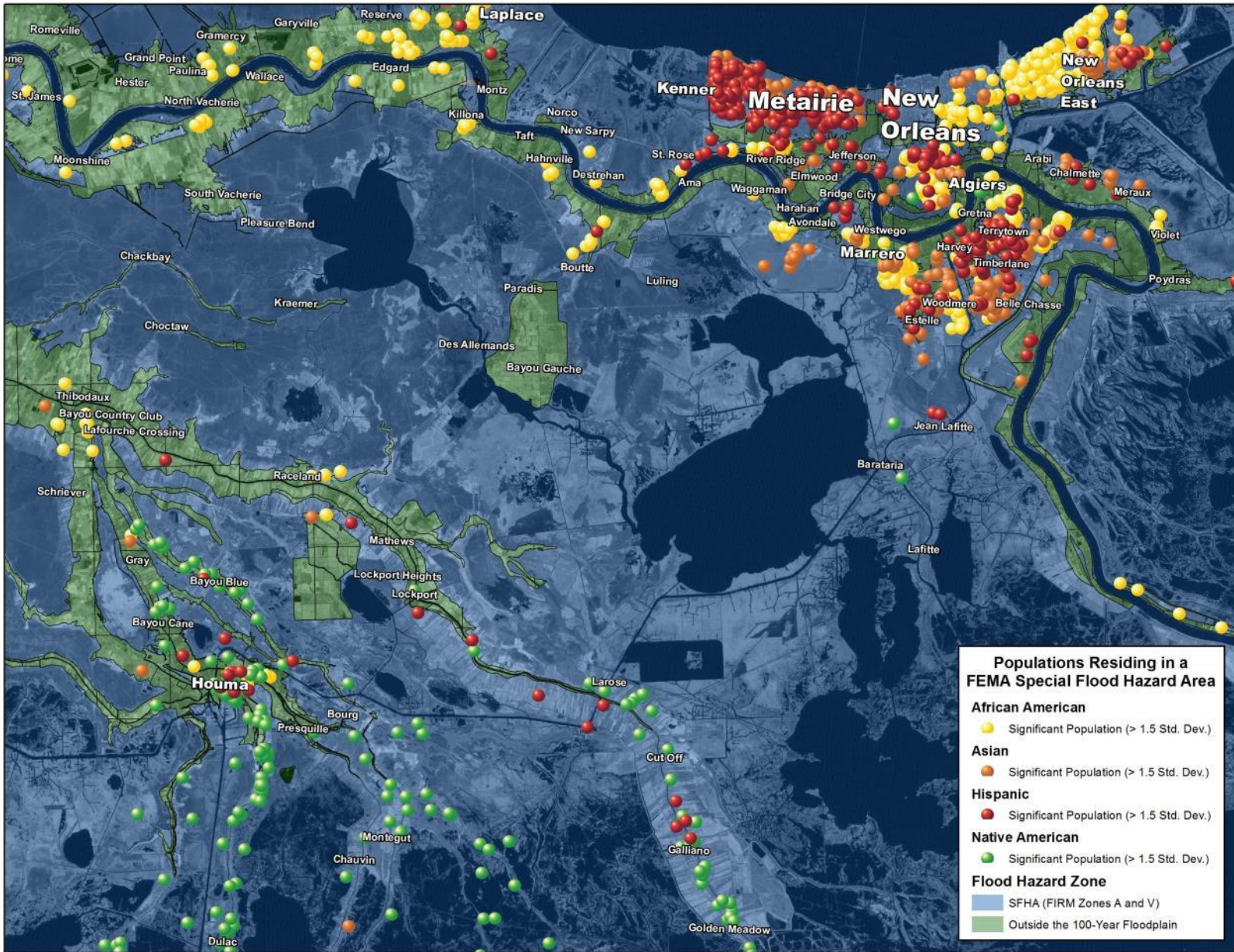




Both exogenous drivers and endogenous processes can lead to changes in the social and physical landscape..

- ◆ Extreme Weather Events
- ◆ Economic Conditions
- ◆ Coastal Land Loss
- ◆ Drought
- ◆ River Flooding
- ◆ Legal and Societal Changes



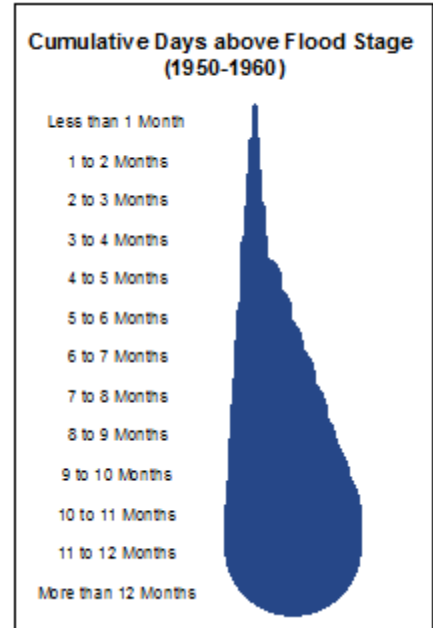
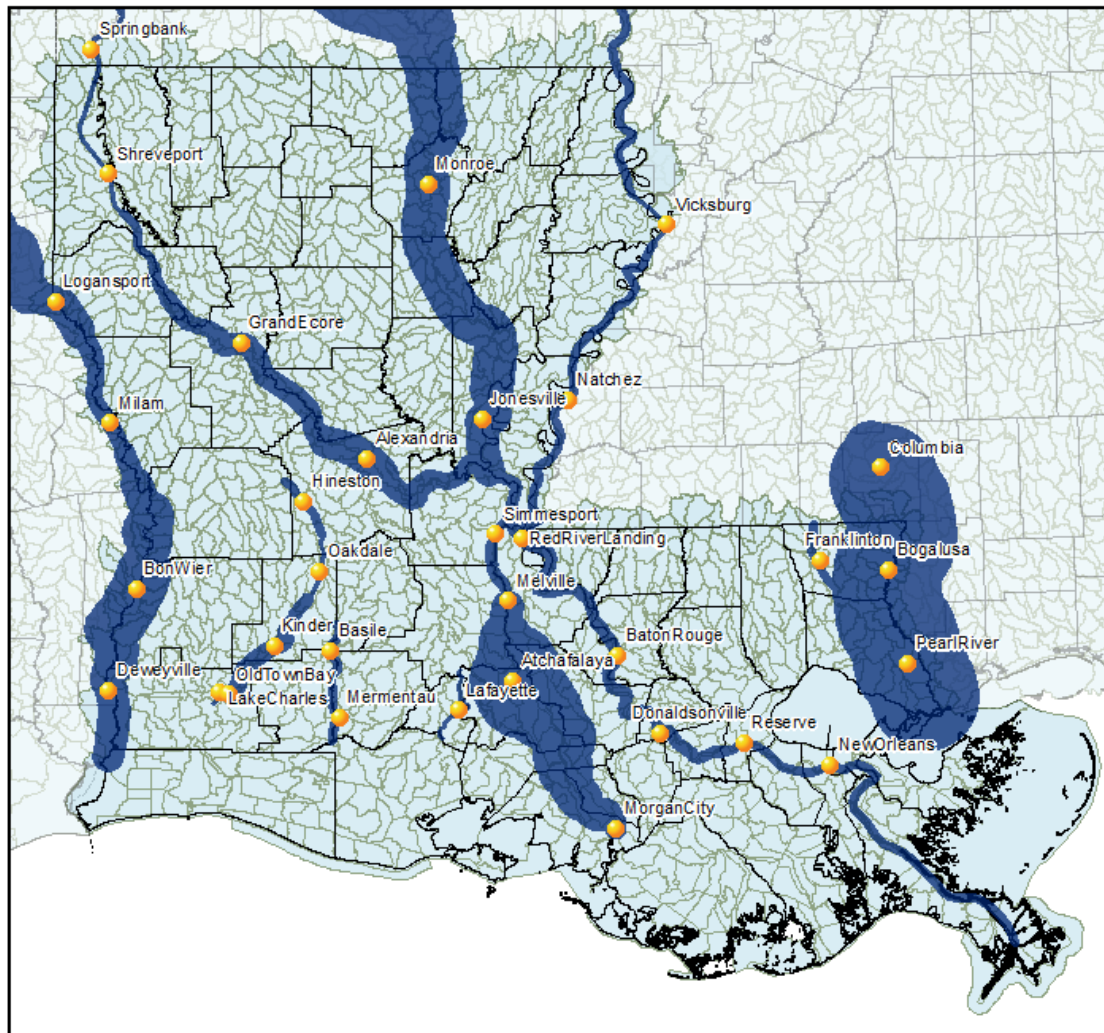


Two main categories of disturbance...

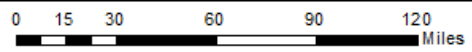
- Exogenous Discrete Events or System Shocks
 - The impact of a single shock on resilience could be measured in a single decade
 - It might take a generation to learn how a region changes as a result of repeated shocks

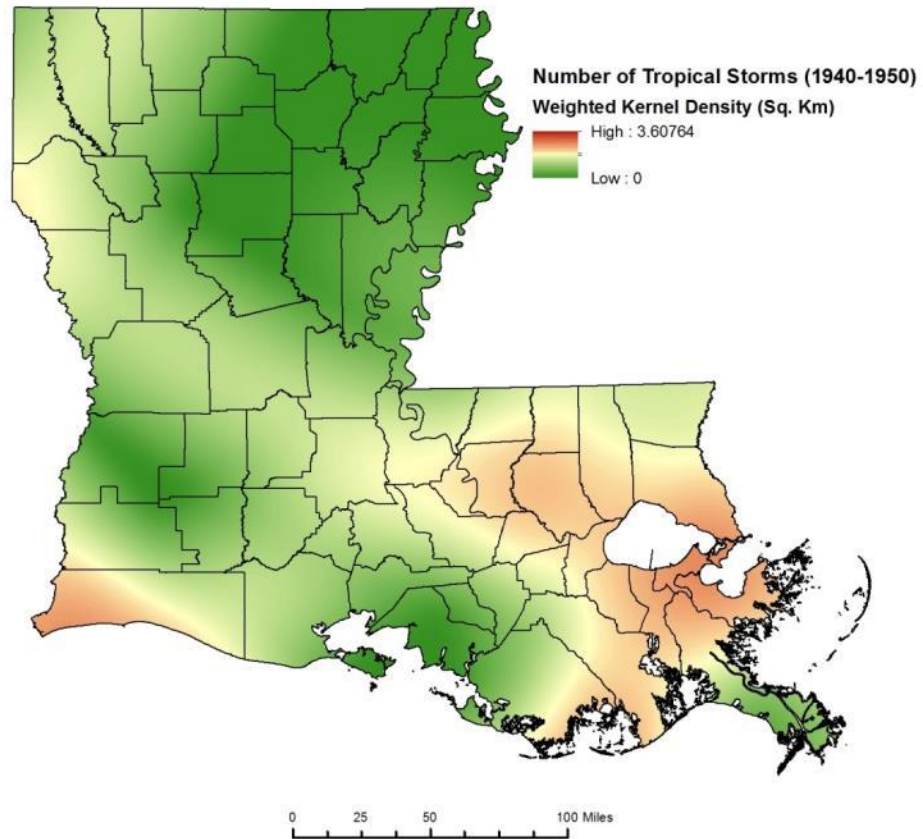


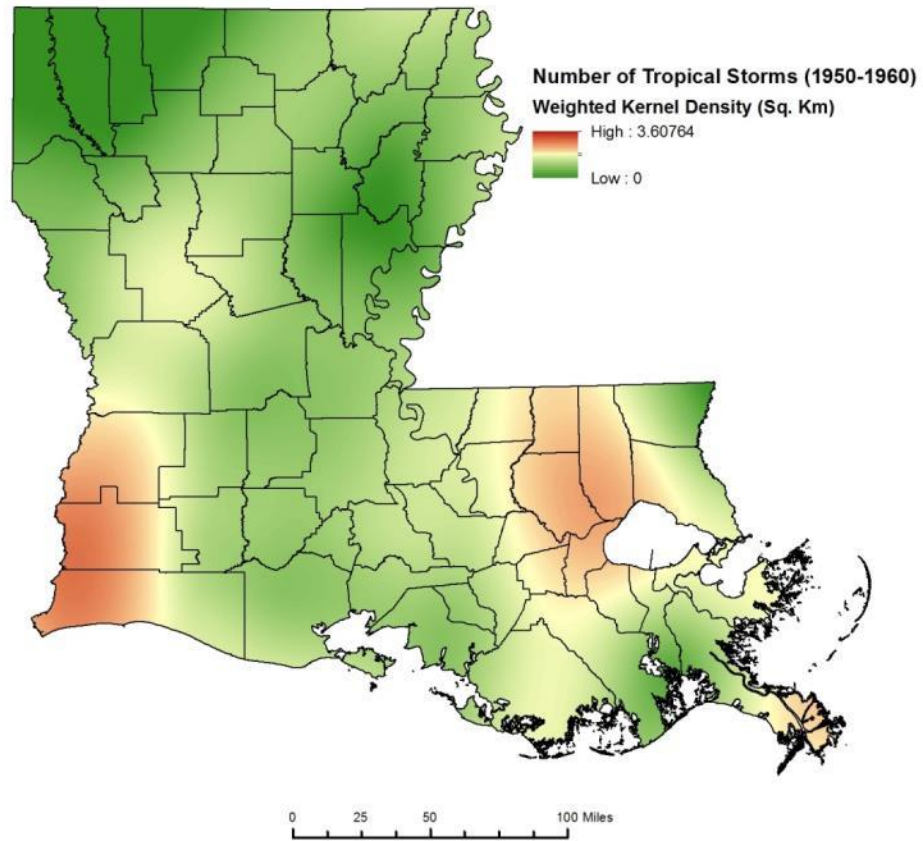
Total Days Above Flood Stage by Decade at Selected River Gages in Coastal Louisiana

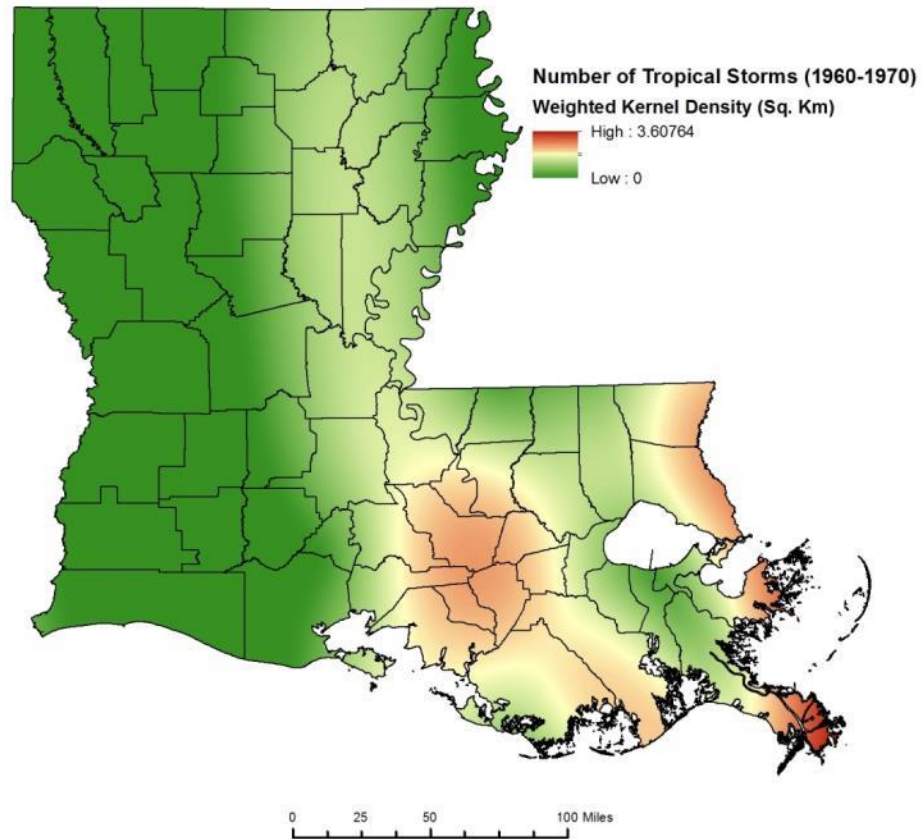


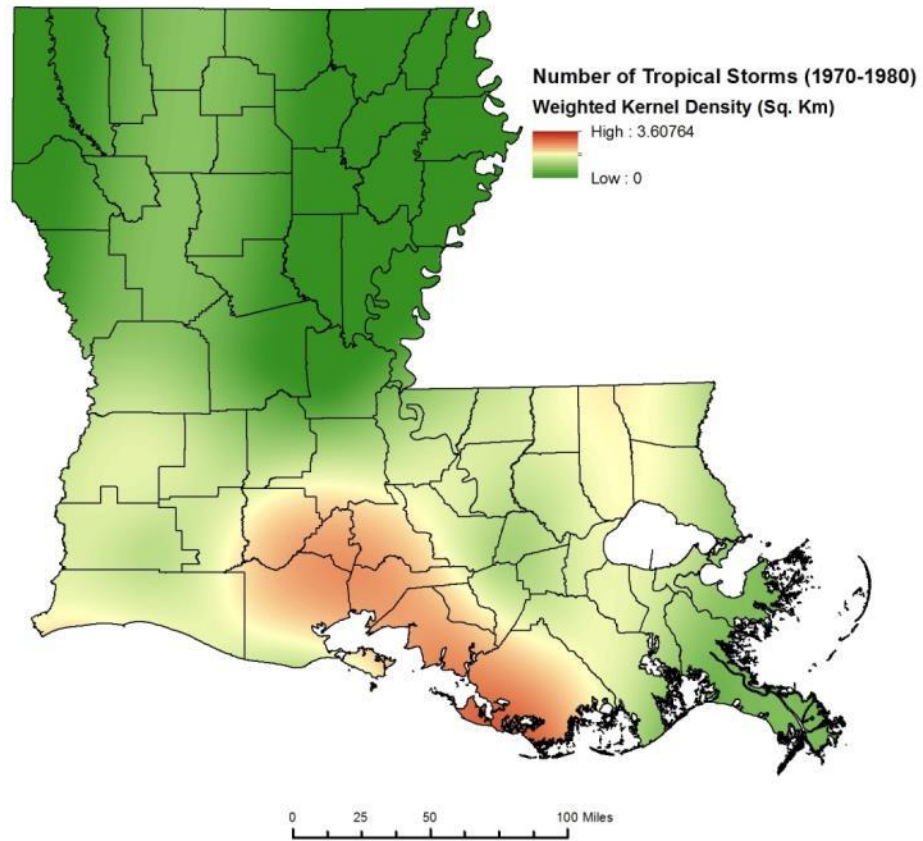
Data Source: U.S. Department of Commerce, Weather Bureau

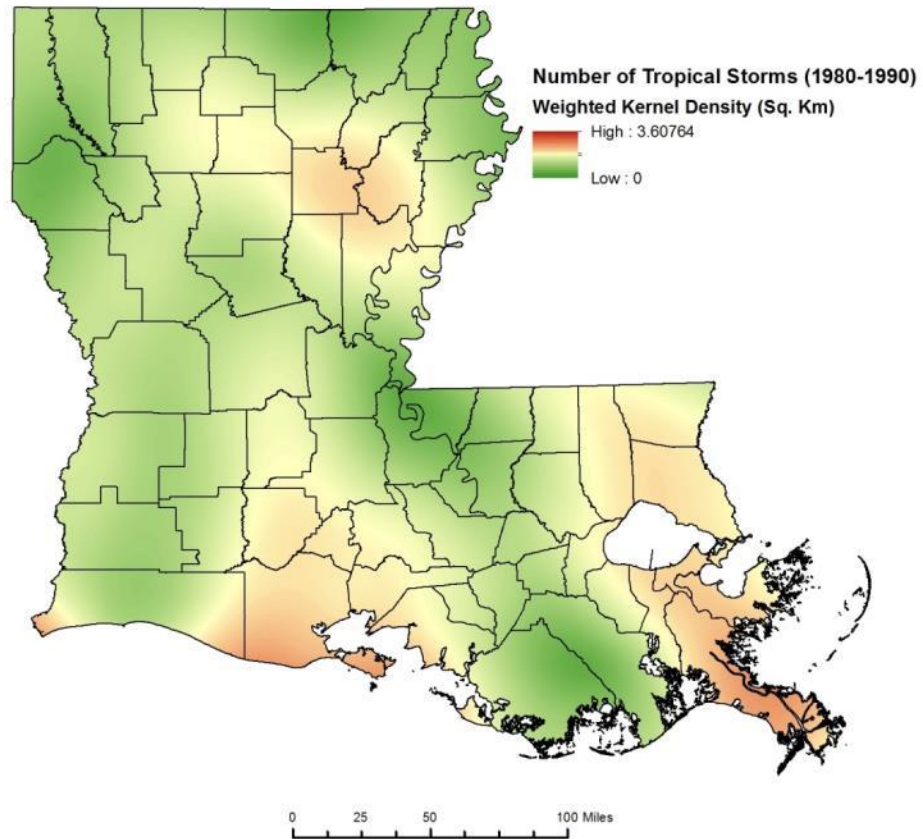


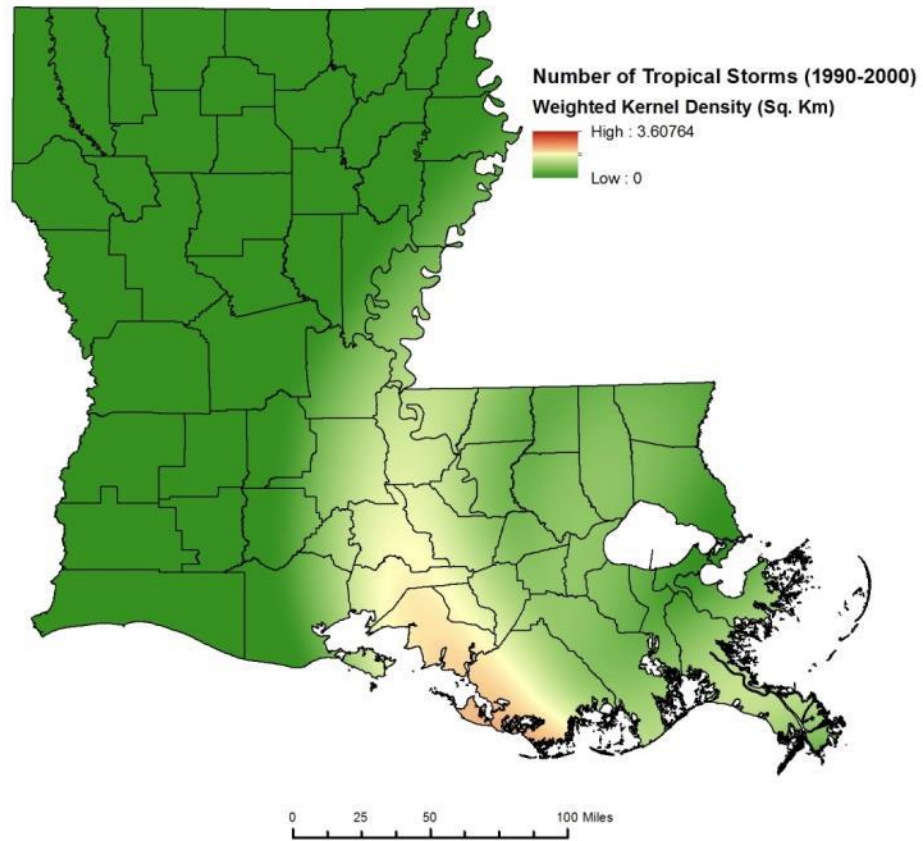


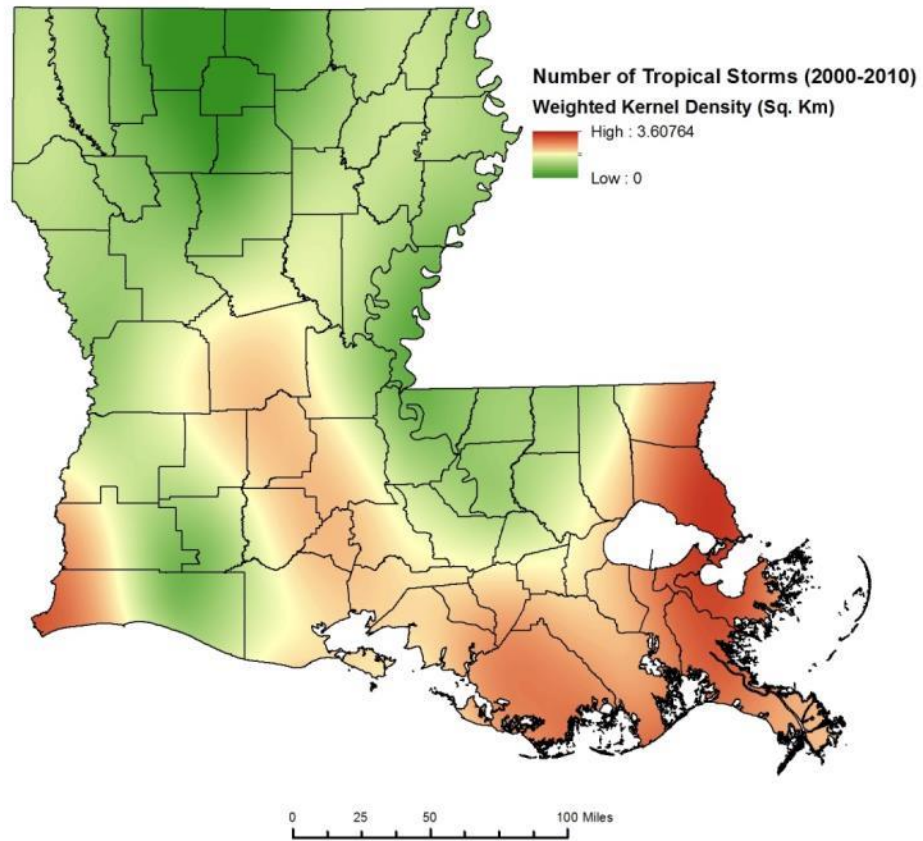


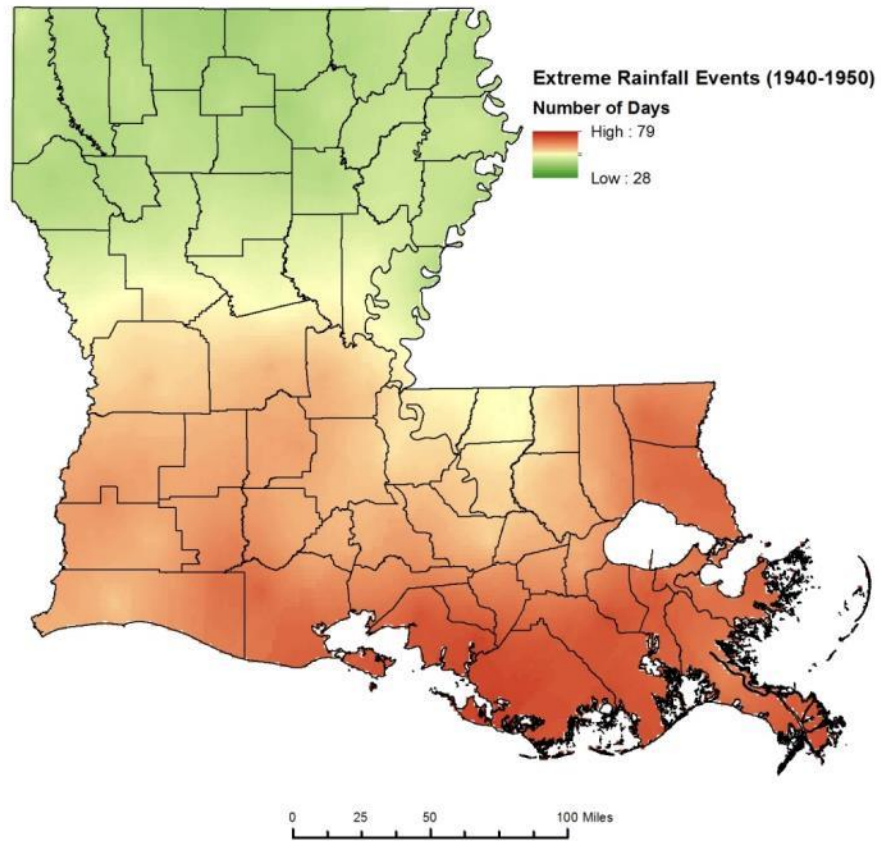


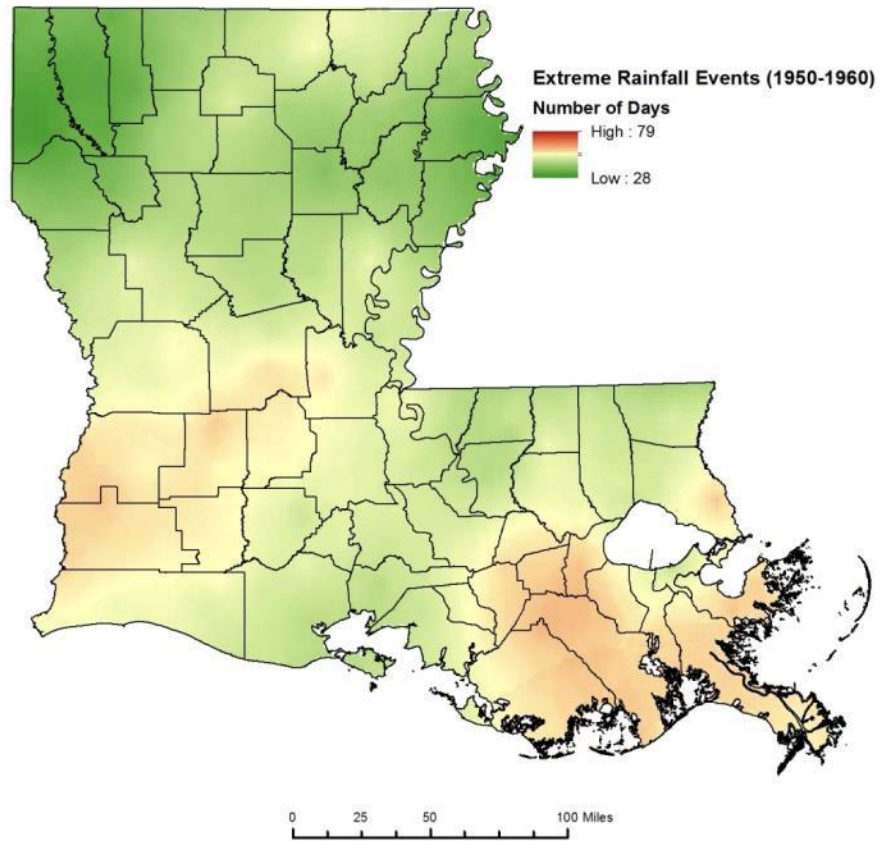


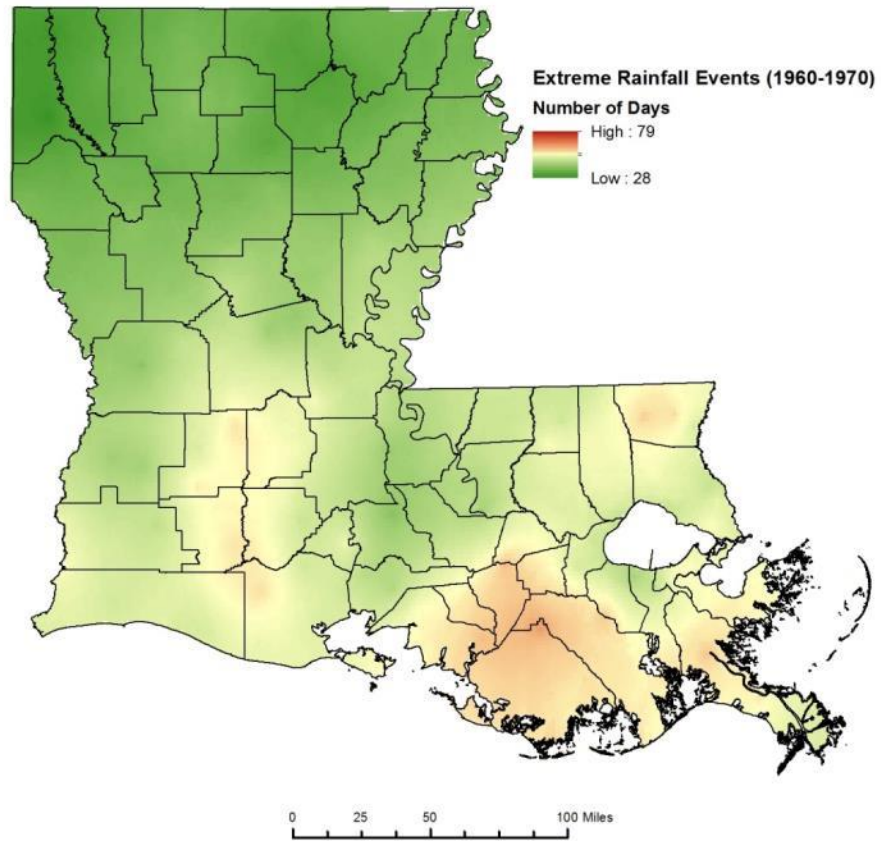


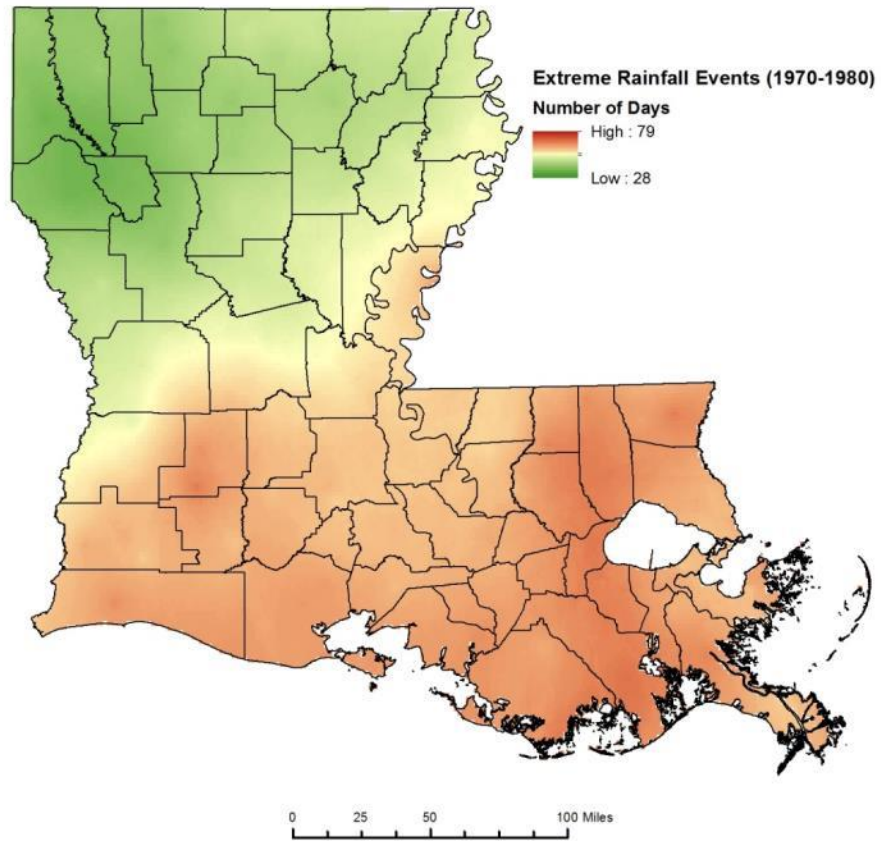


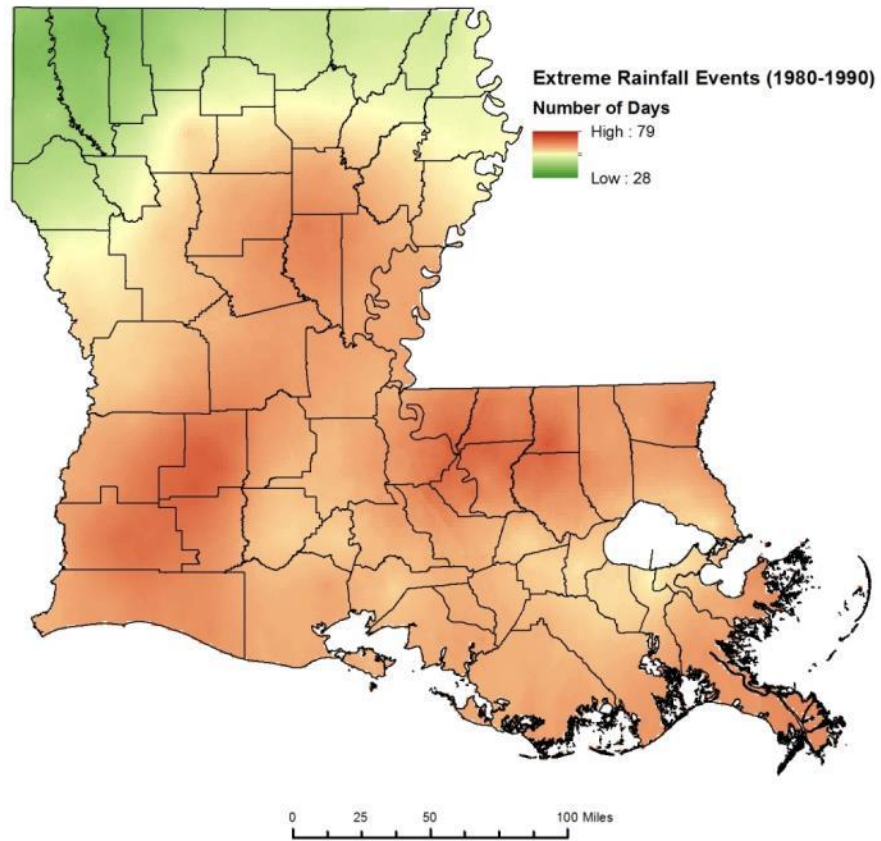


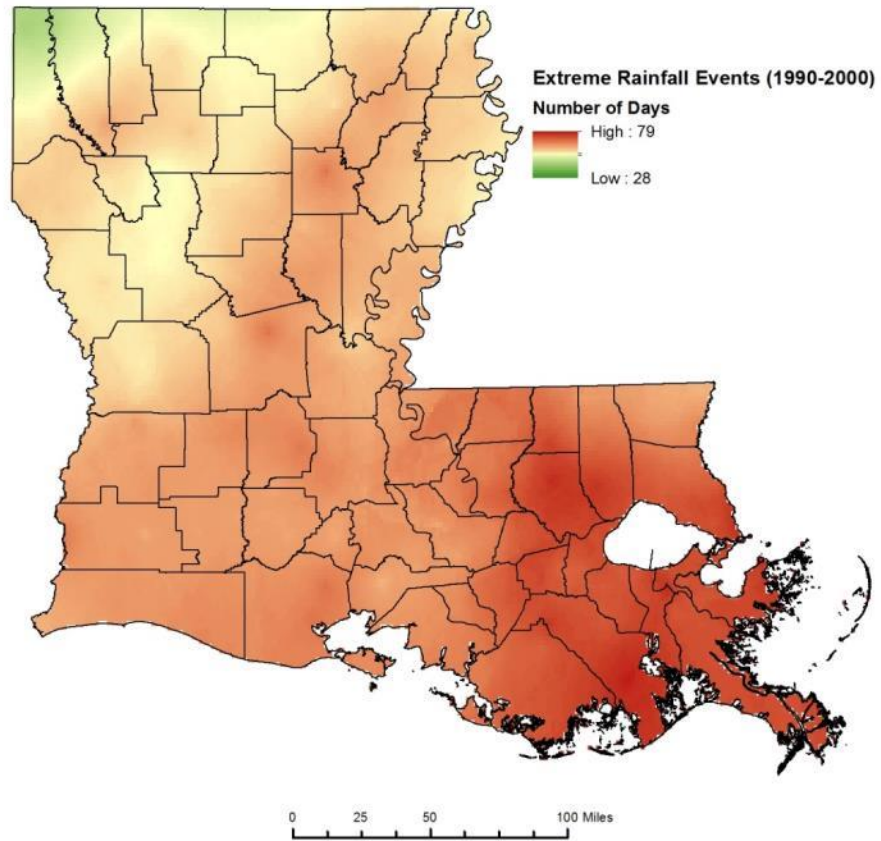


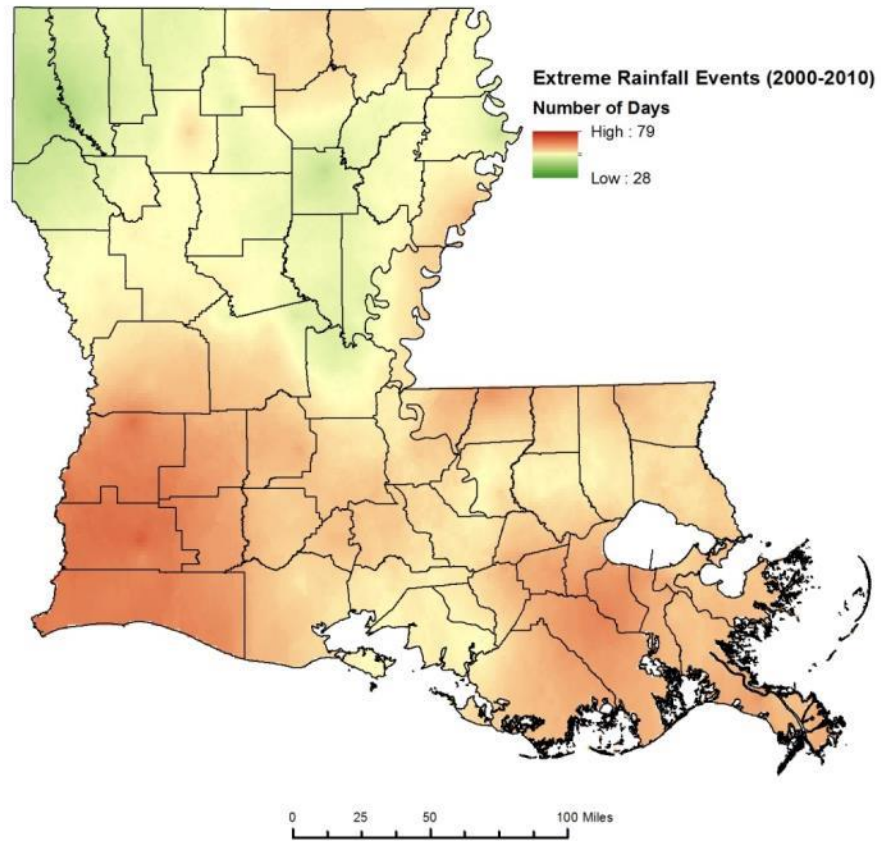










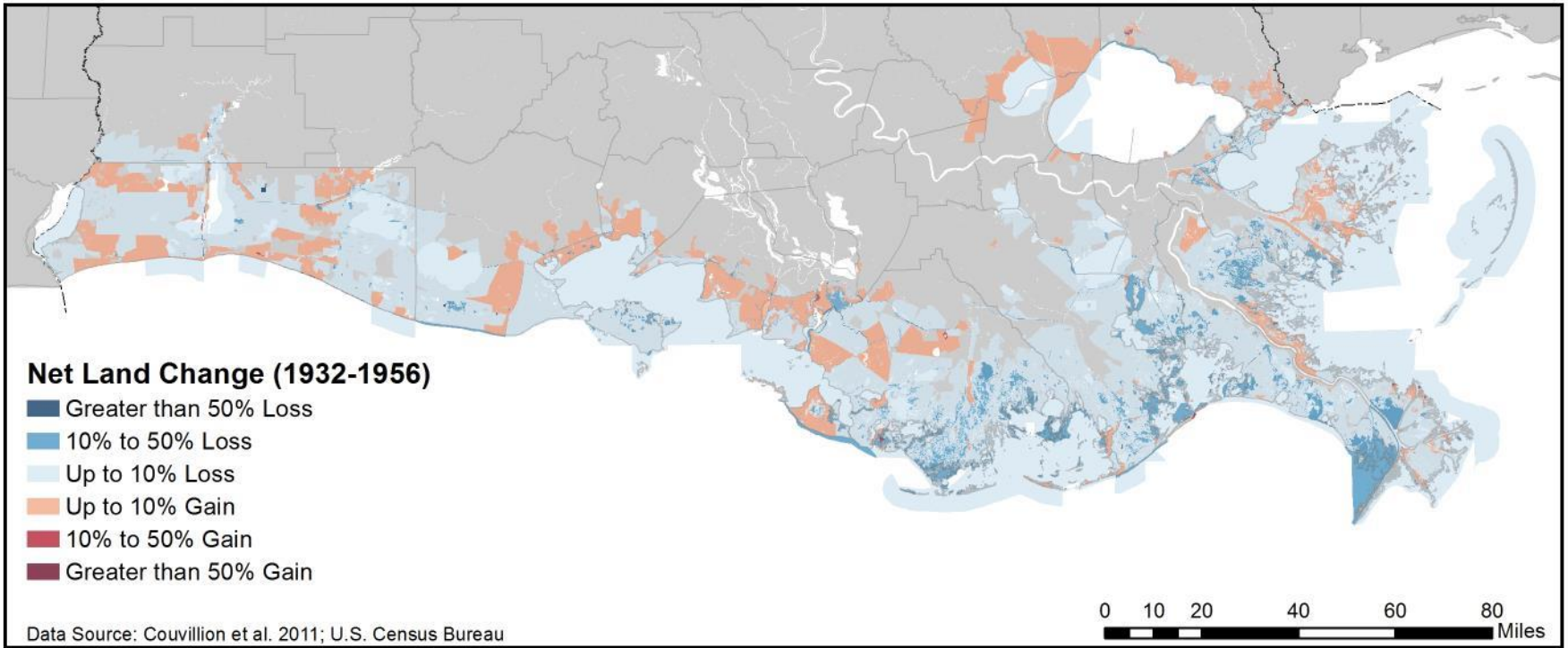


Two main categories of disturbance...

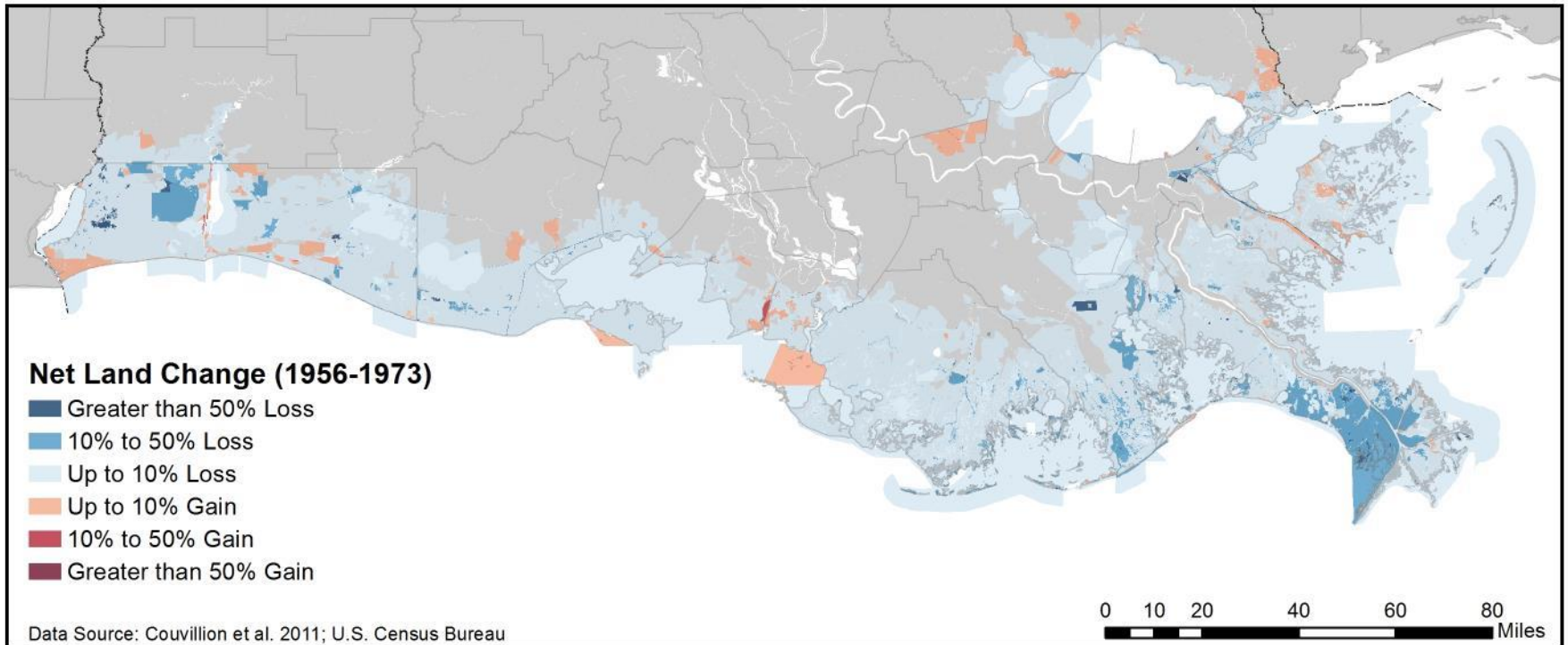
- Exogenous Discrete Events or System Shocks
 - The impact of a single shock on resilience could be measured in a single decade
 - It might take a generation to learn how a region changes as a result of repeated shocks
- Endogenous Slow-moving Challenges or “Slow Burns”
 - More than a generation of observations might be necessary to understand the resilience of communities to slow burn challenges



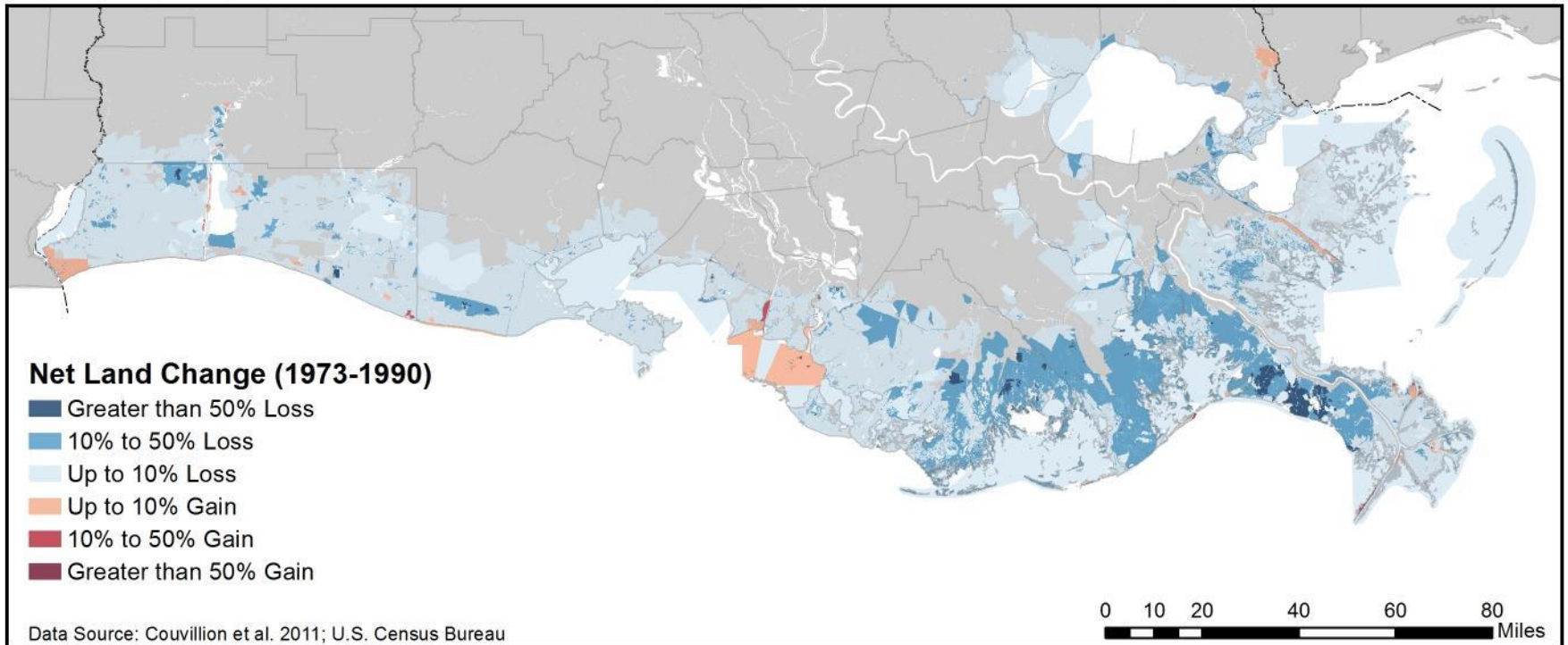
Land Area Change in Coastal Louisiana by Census Block



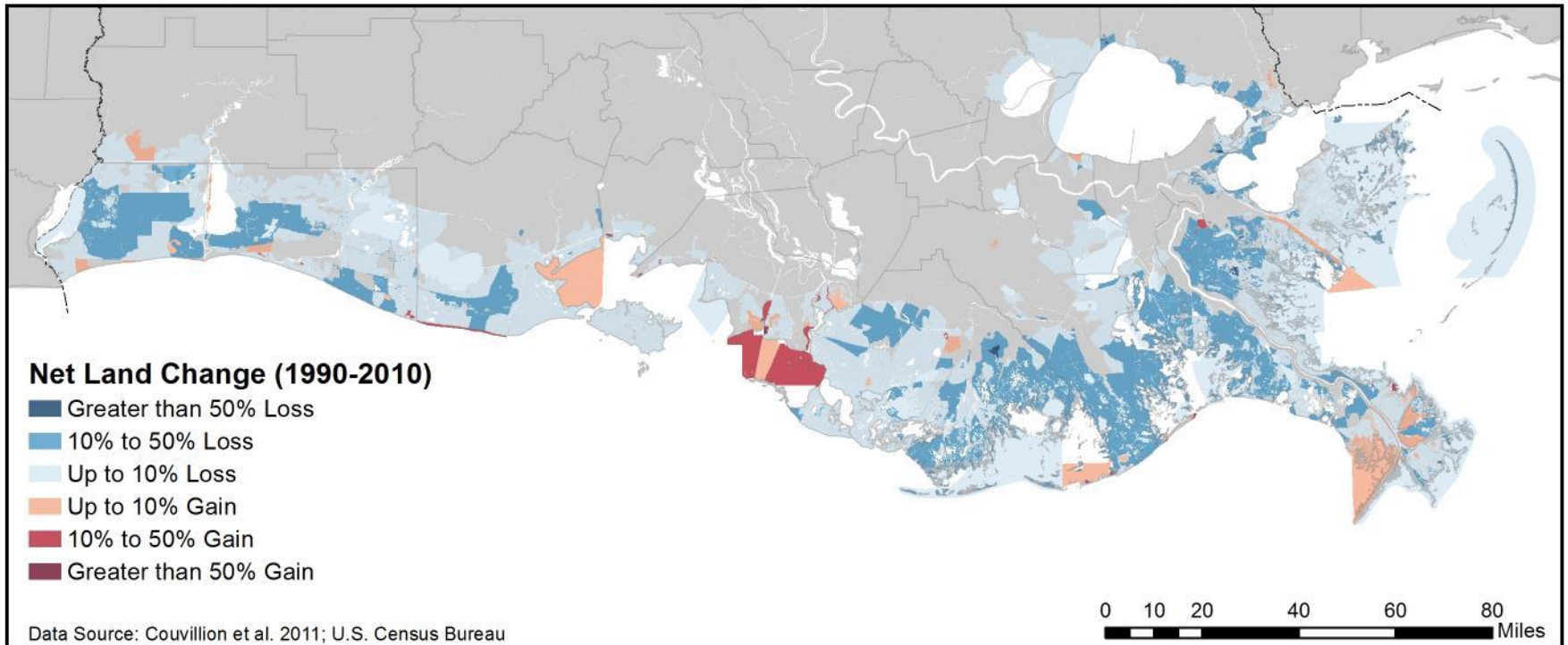
Land Area Change in Coastal Louisiana by Census Block



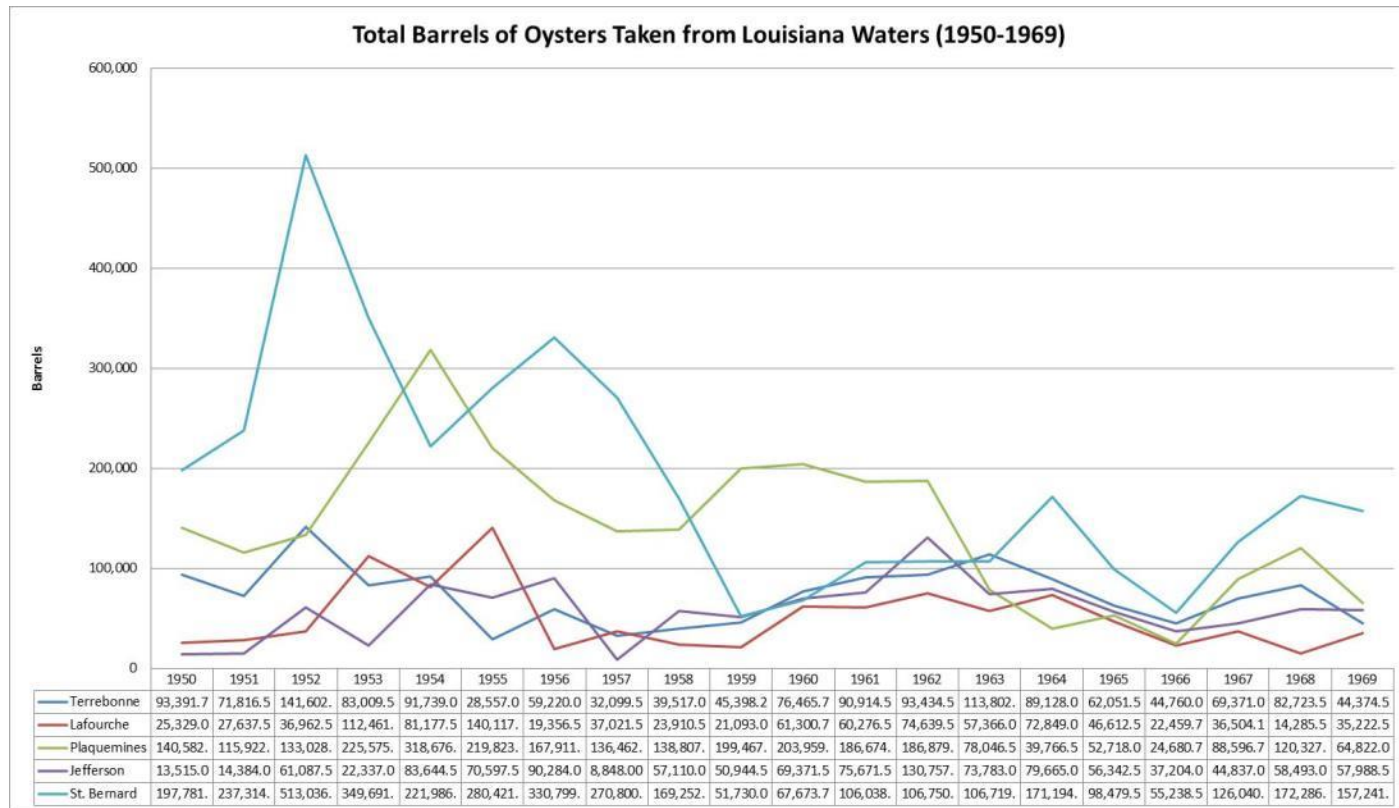
Land Area Change in Coastal Louisiana by Census Block



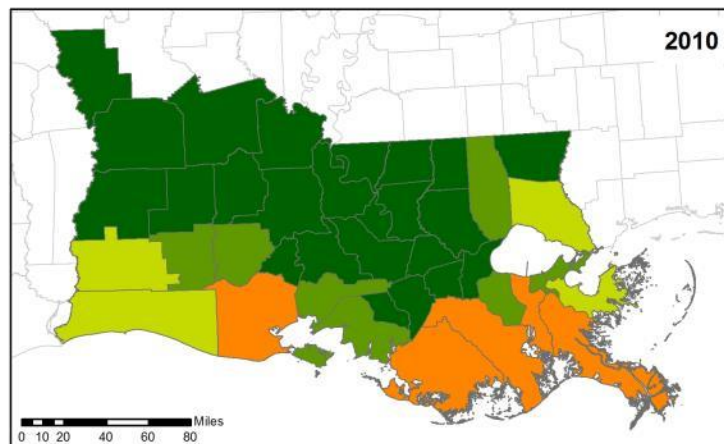
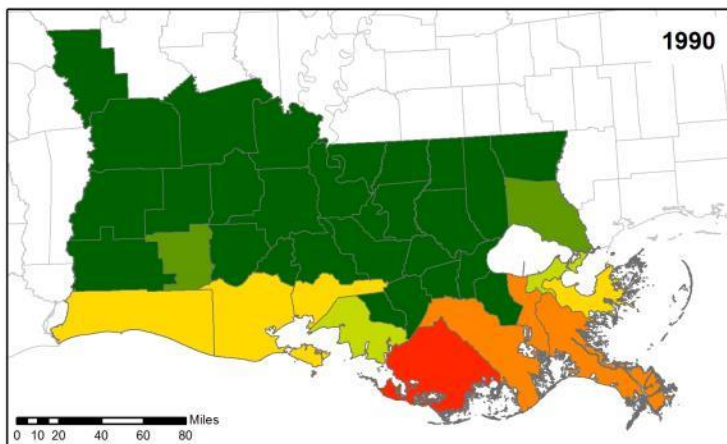
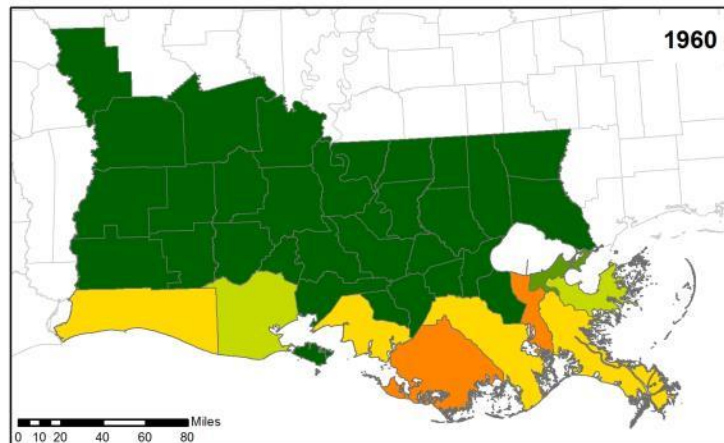
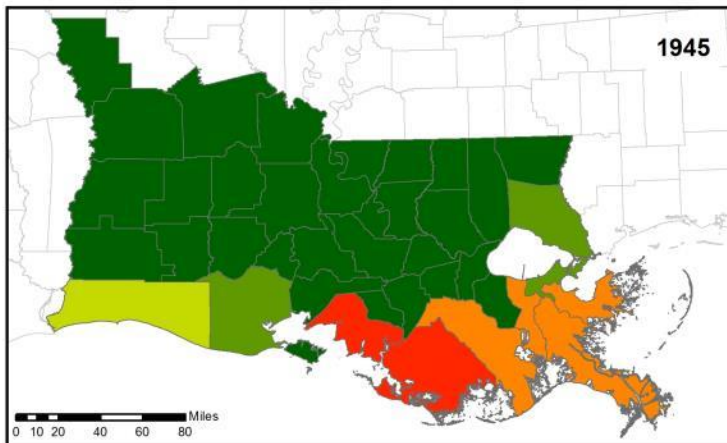
Land Area Change in Coastal Louisiana by Census Block



The degree to which a community is reliant upon Natural Resource Extraction is an important driver of change...



Pounds of Shrimp Landed in Coastal Parishes

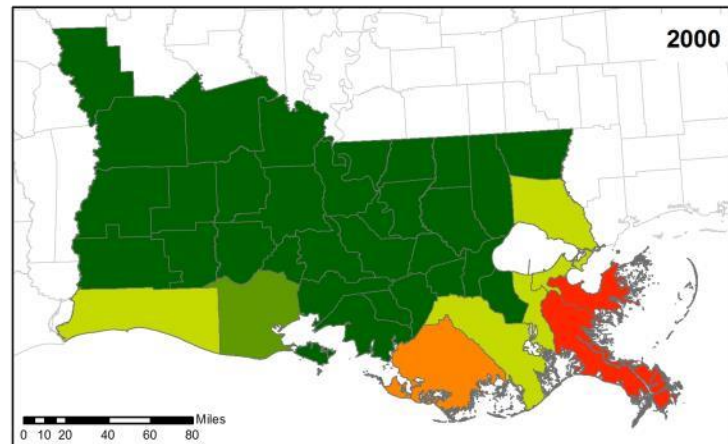
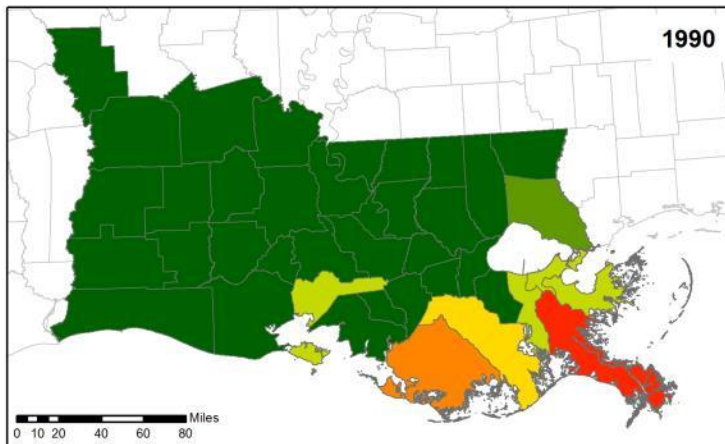
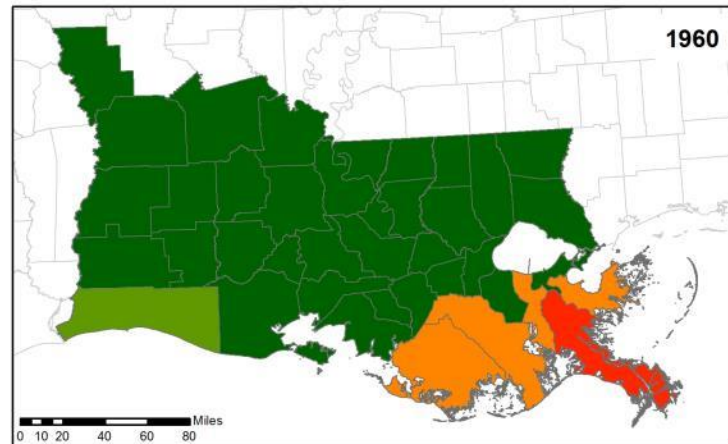
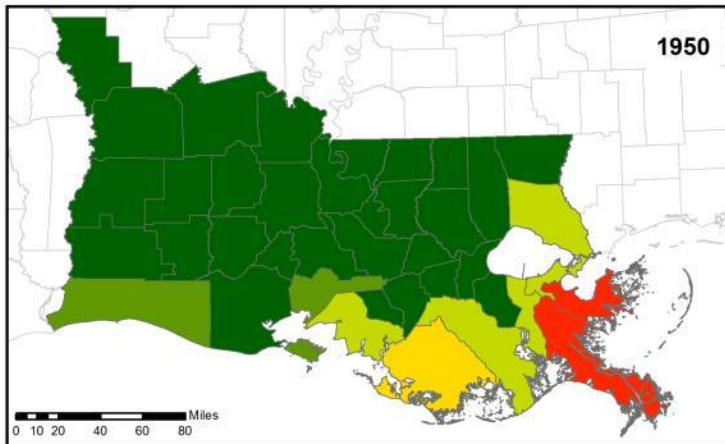


Total Pounds Landed ■ None ■ Less than 1 Million ■ 1 - 5 Million ■ 5 - 10 Million ■ 10 - 25 Million ■ More than 25 Million

Data Source: U.S. Department of the Interior, Bureau of Commercial Fisheries; NOAA National Marine Fisheries Service



Pounds of Oysters Landed in Coastal Parishes

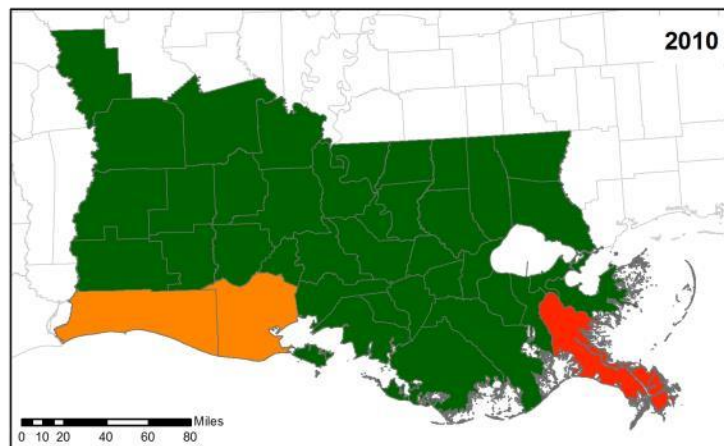
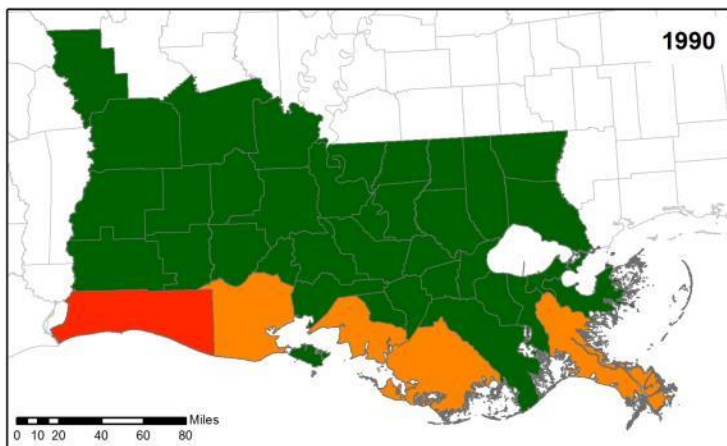
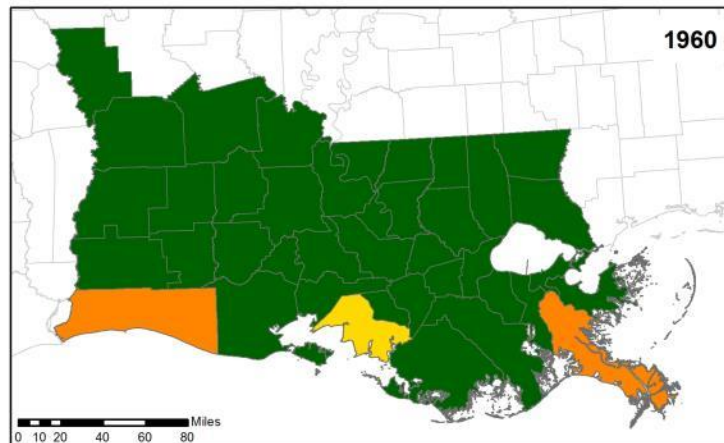
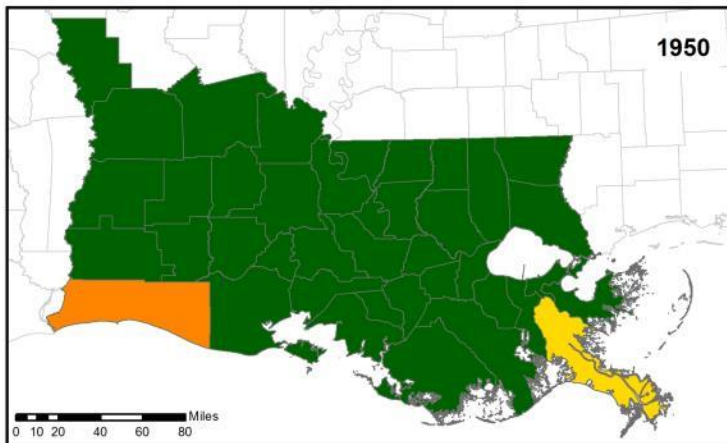


Total Pounds Landed ■ None ■ Less than 100 Thousand ■ 100 - 500 Thousand ■ 500 Thousand - 1 Million ■ 1 - 2.5 Million ■ More than 2.5 Million

Data Source: U.S. Department of the Interior, Bureau of Commercial Fisheries; NOAA National Marine Fisheries Service



Pounds of Menhaden Landed in Coastal Parishes

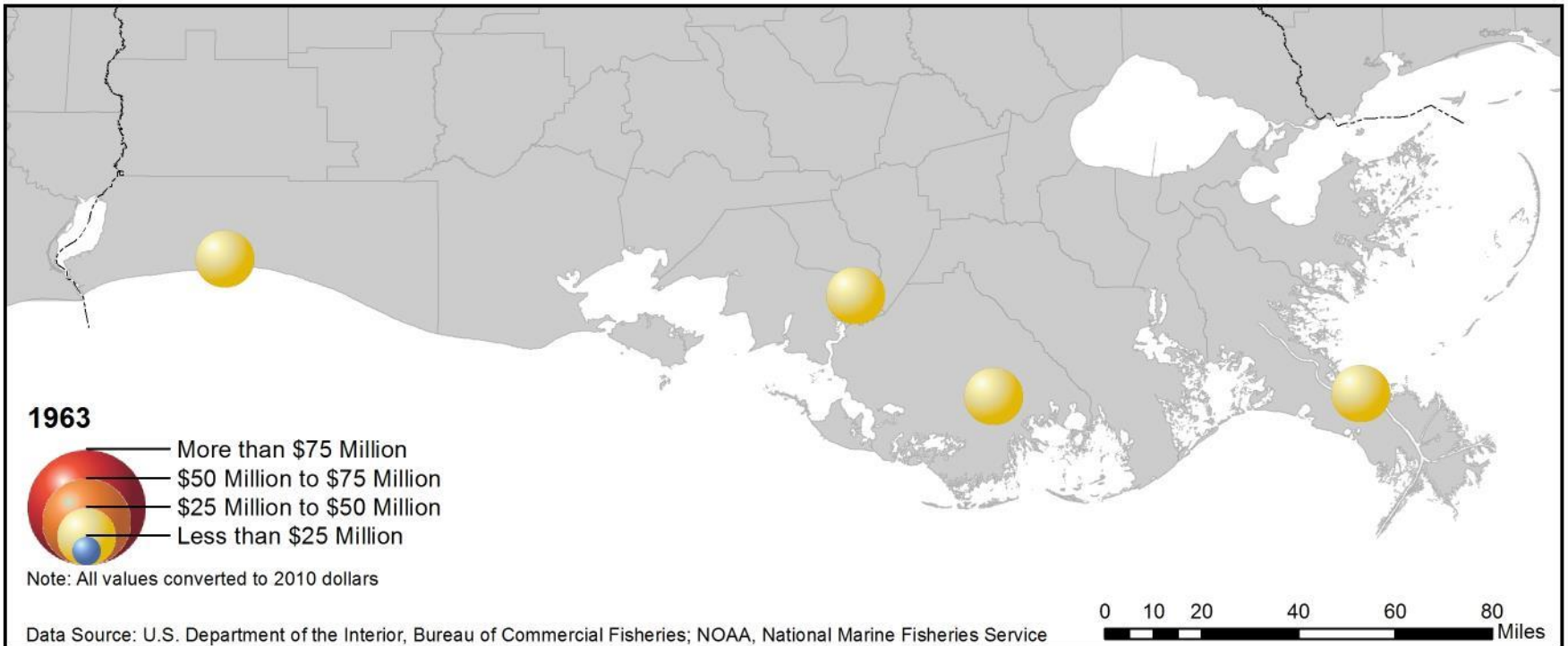


Total Pounds Landed ■ None ■ Less than 10 Million ■ 10 - 50 Million ■ 50 - 100 Million ■ 100 - 250 Million ■ More than 250 Million

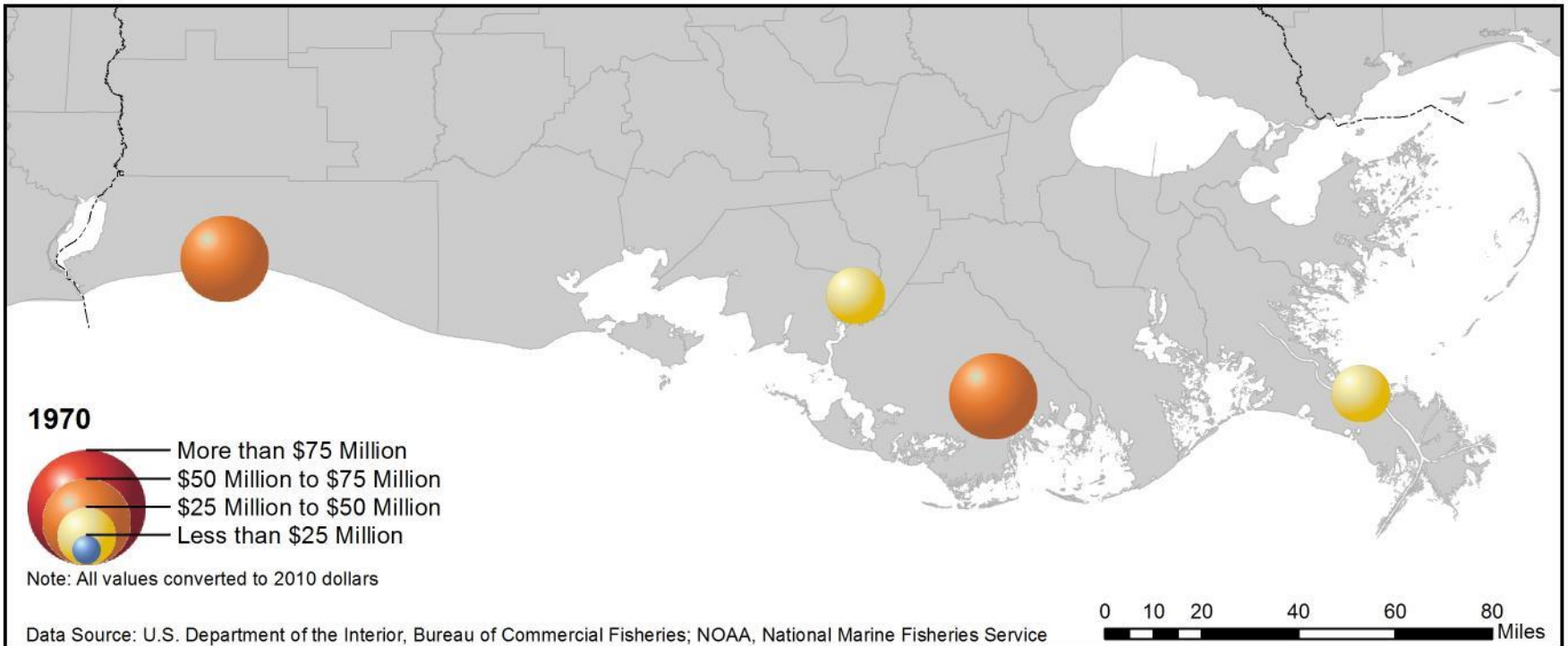
Data Source: U.S. Department of the Interior, Bureau of Commercial Fisheries; NOAA National Marine Fisheries Service



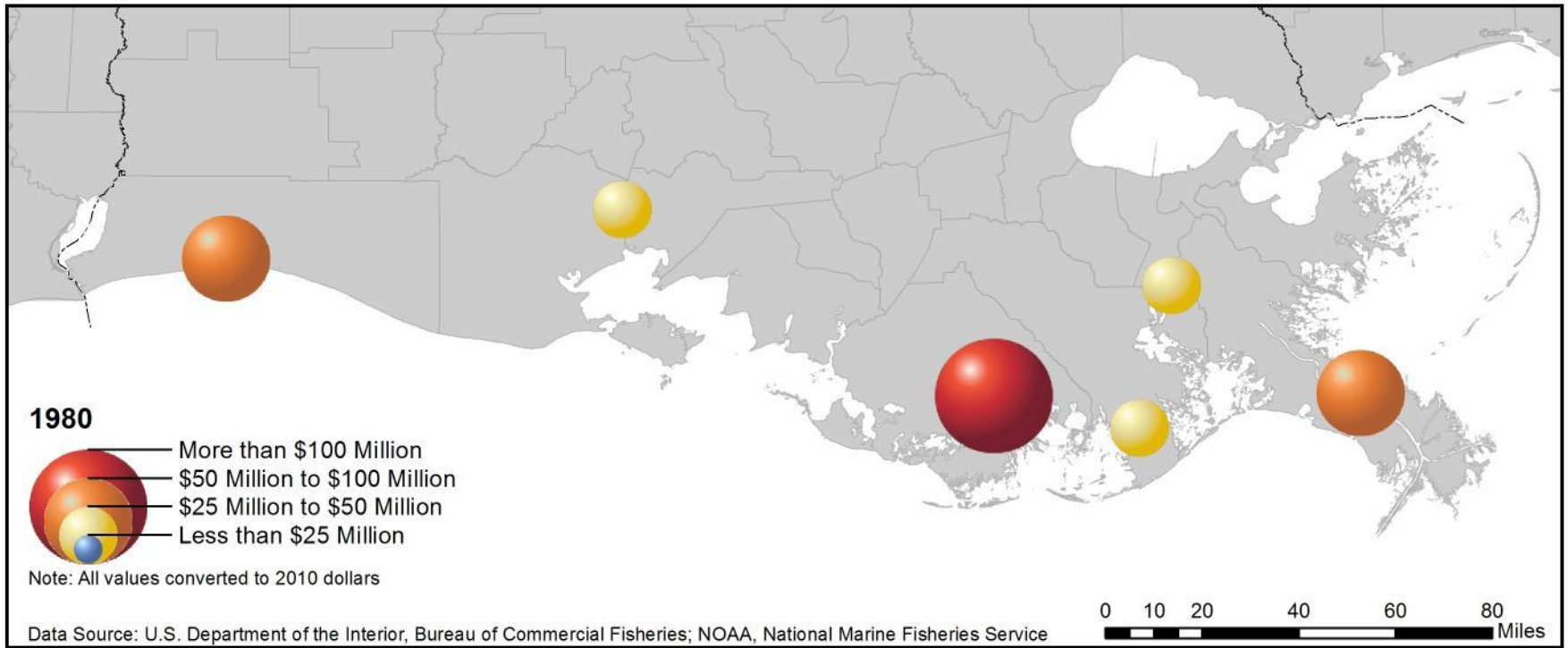
Value of Fish and Shellfish Landed at Major Louisiana Ports



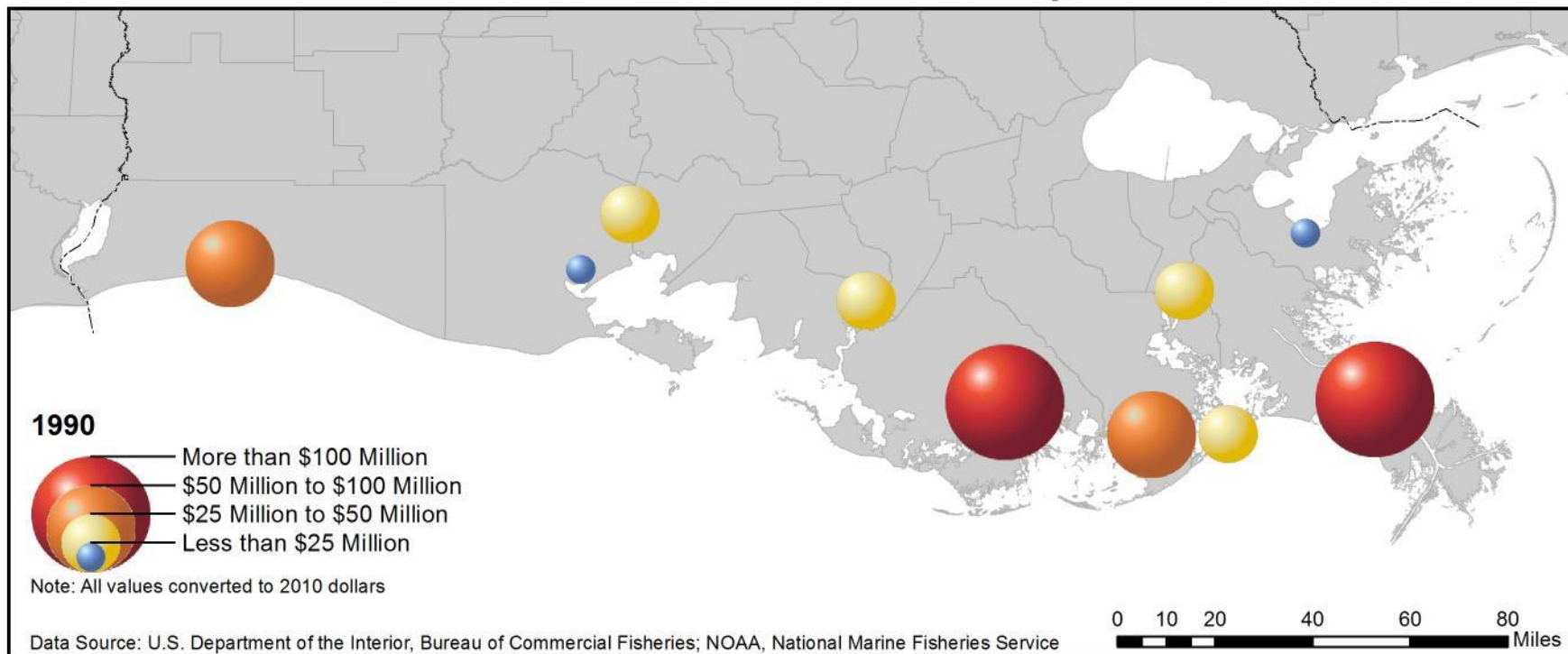
Value of Fish and Shellfish Landed at Major Louisiana Ports



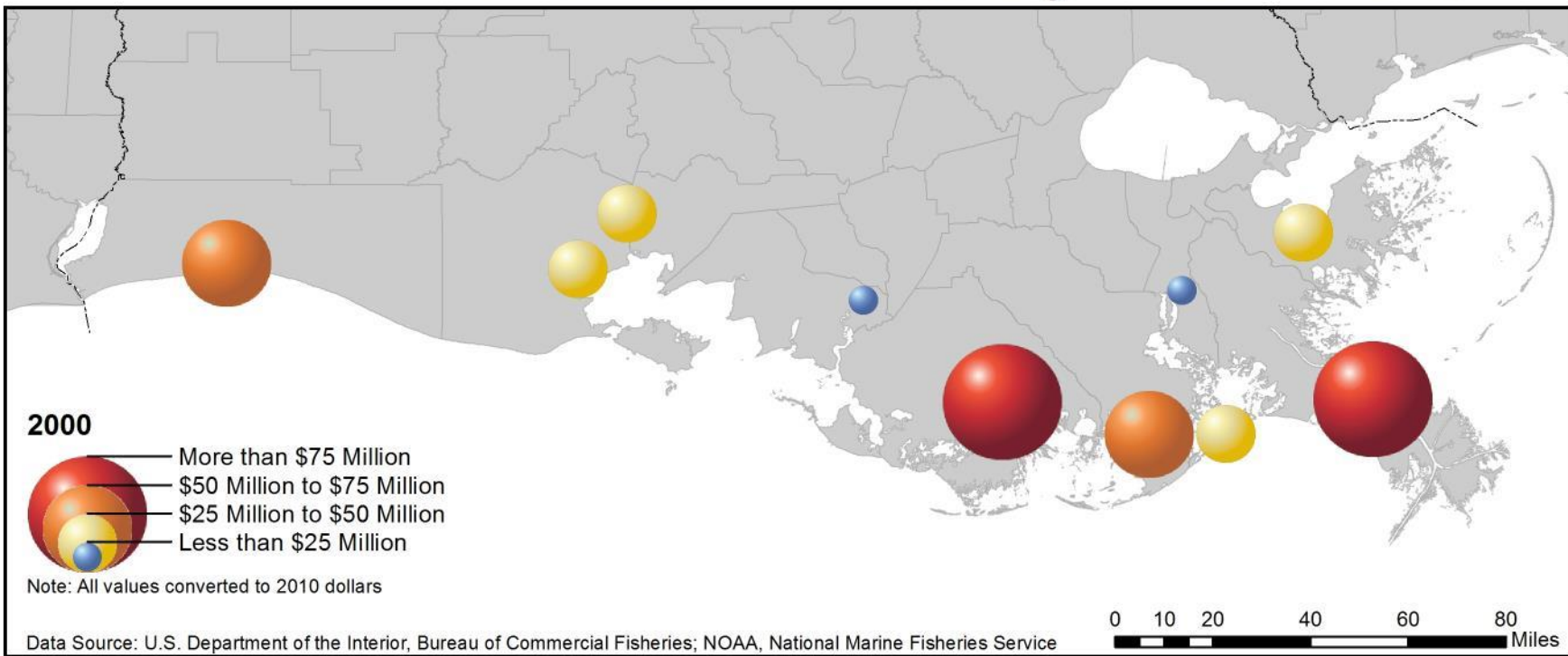
Value of Fish and Shellfish Landed at Major Louisiana Ports



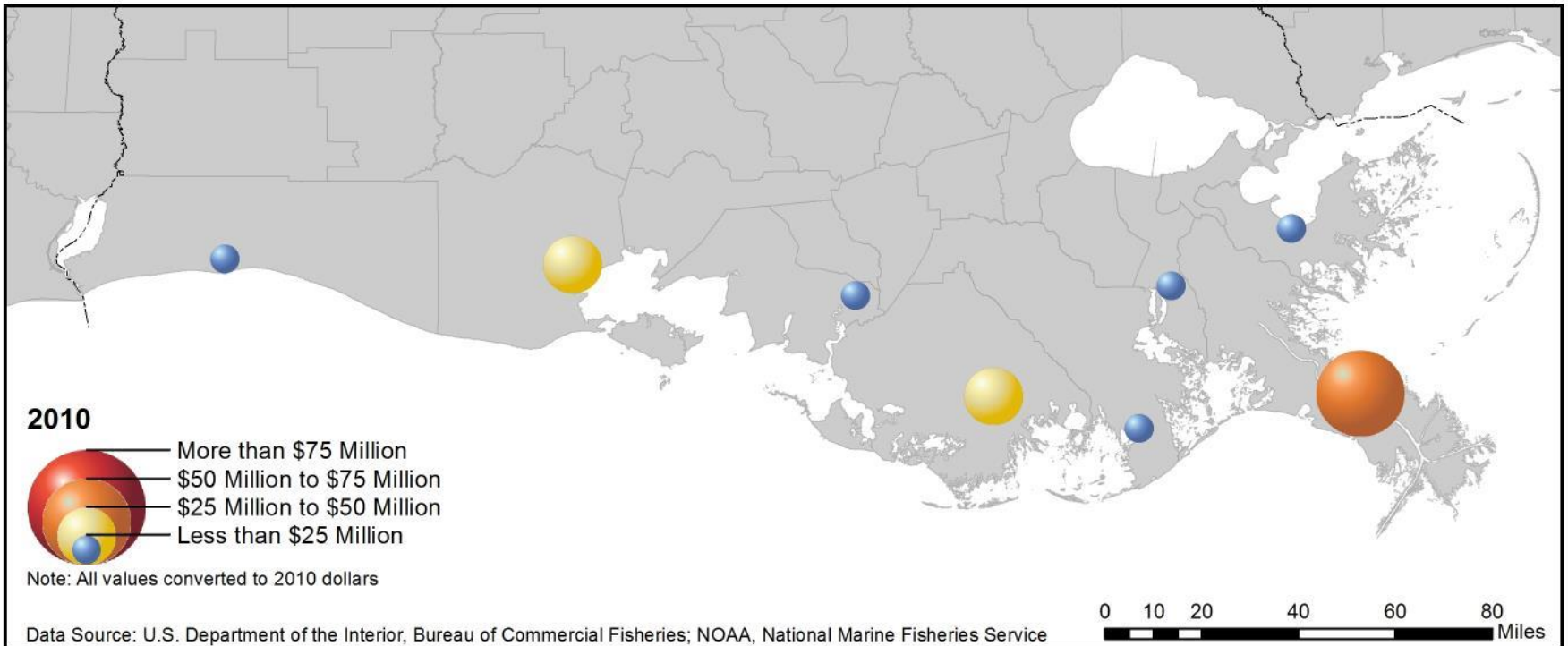
Value of Fish and Shellfish Landed at Major Louisiana Ports



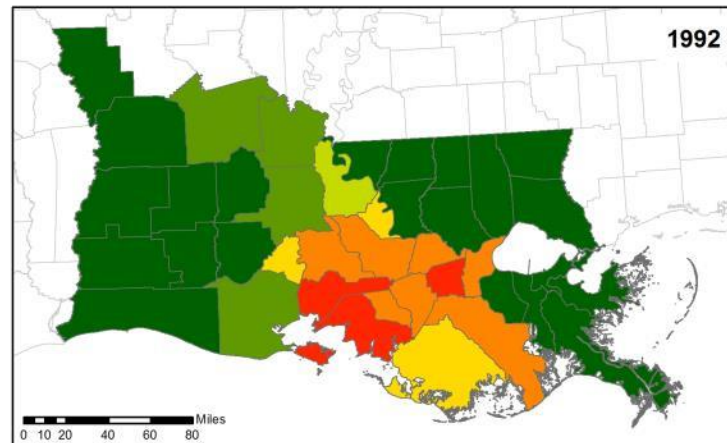
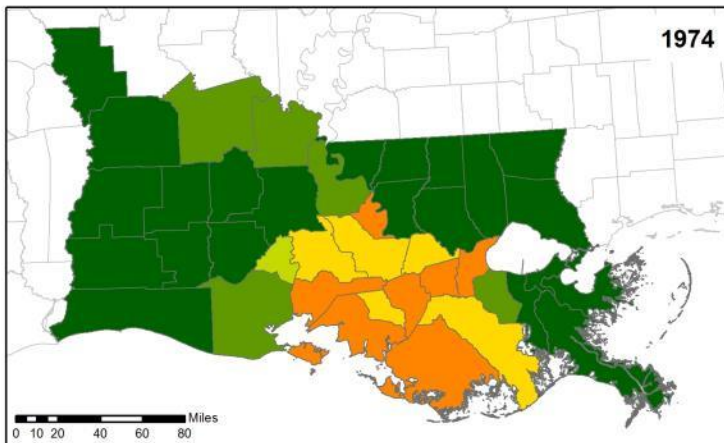
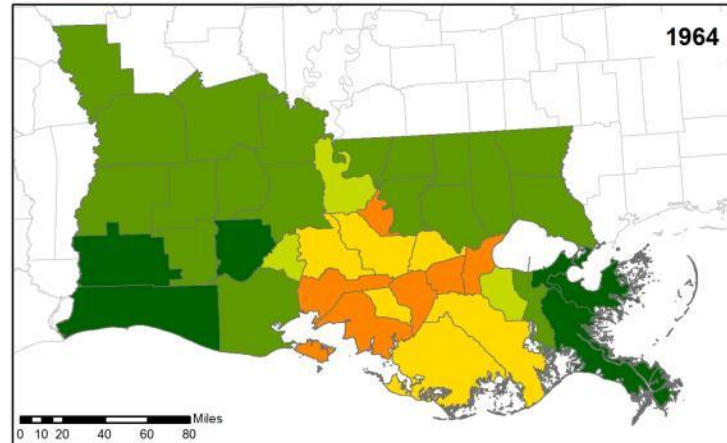
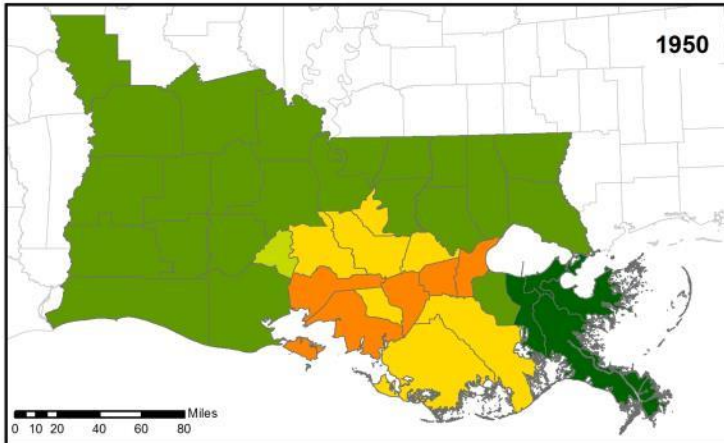
Value of Fish and Shellfish Landed at Major Louisiana Ports



Value of Fish and Shellfish Landed at Major Louisiana Ports



Sugar Production as a Proportion of Total Acres of Farmland

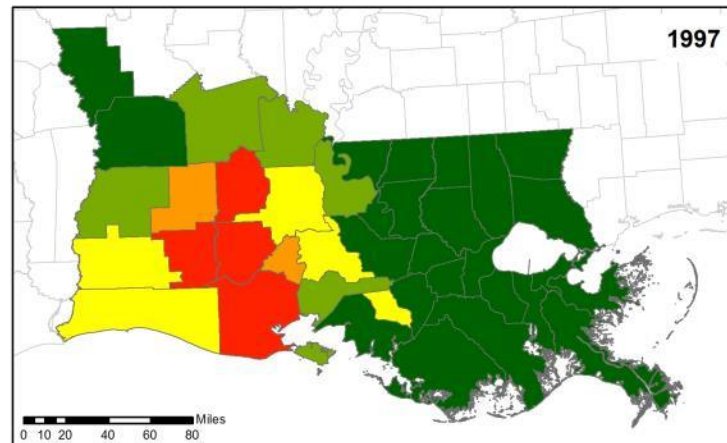
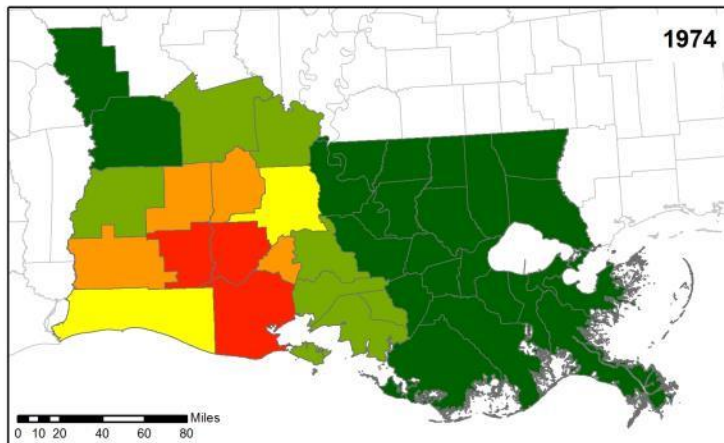
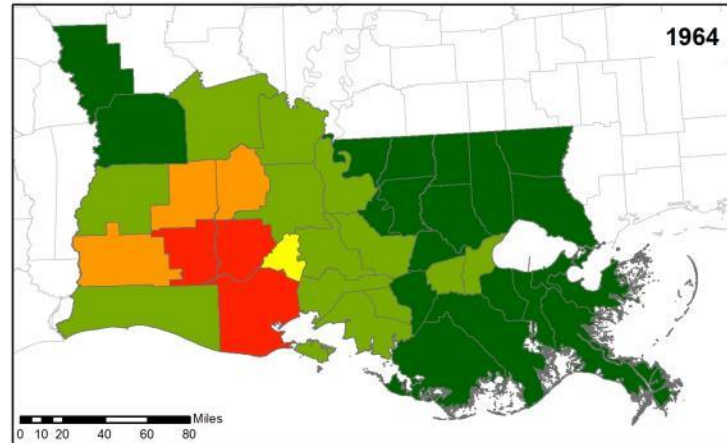
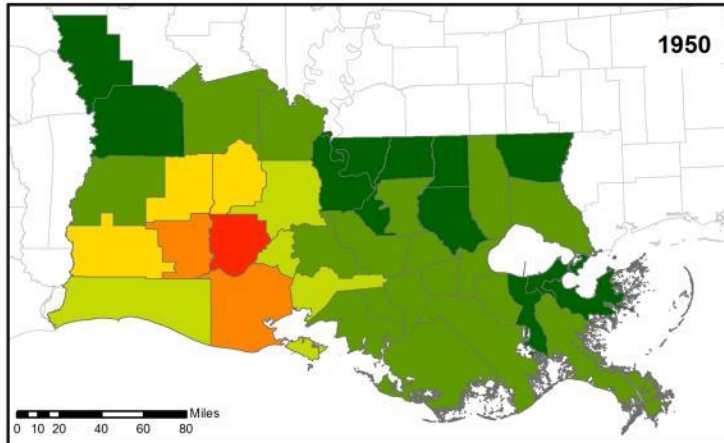


Percent of Farmland ■ None ■ Less than 5% ■ 5.1% - 10.0% ■ 10.1% - 25.0% ■ 25.1% - 50.0% ■ More than 50%

Data Source: U.S. Department of Commerce, Bureau of the Census; U.S. Department of Agriculture, National Agricultural Statistics Service



Rice Production as a Proportion of Total Acres of Farmland

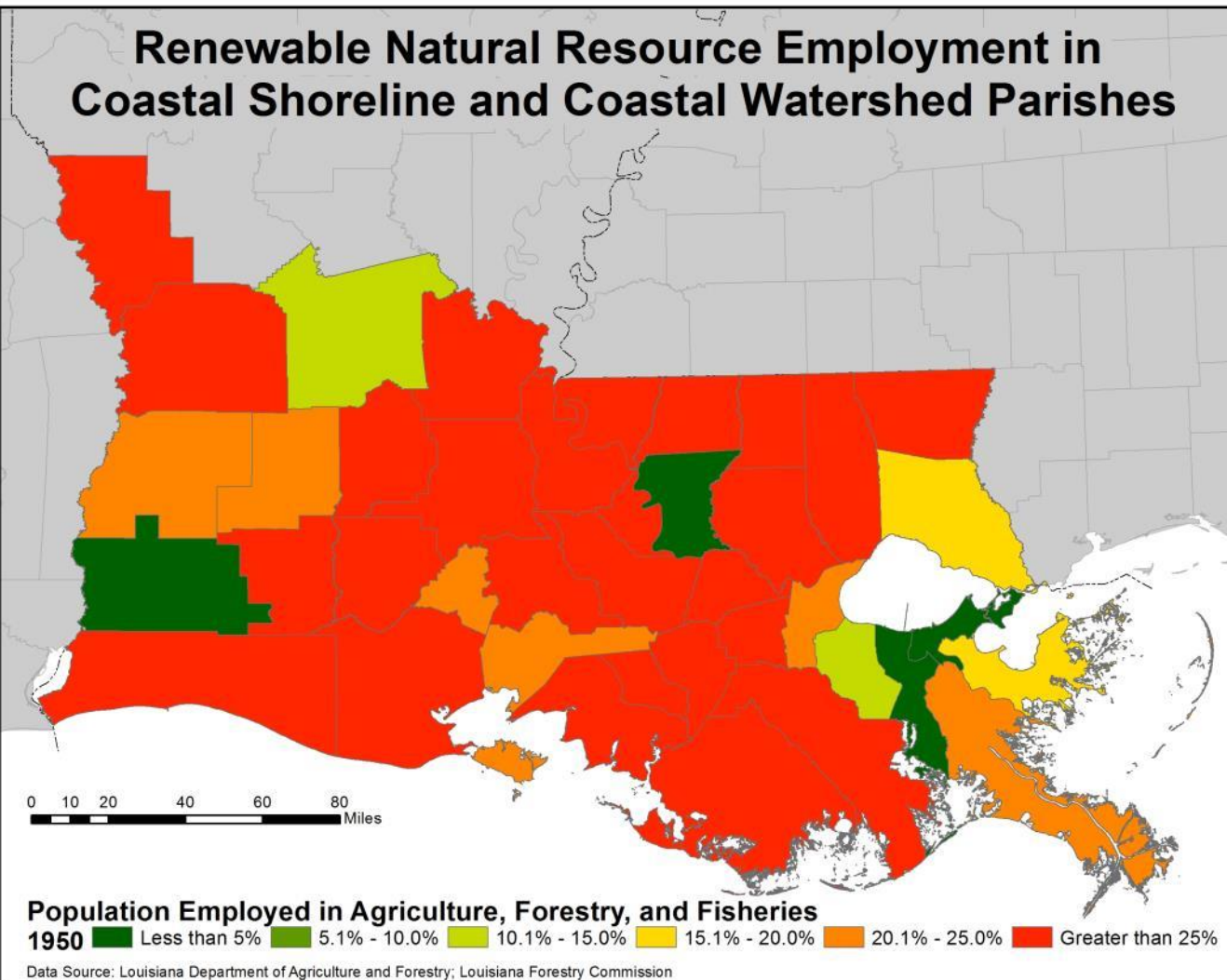


Percent of Farmland 0.0% 0.1% - 5.0% 5.1% - 10.0% 10.1% - 25.0% 25.1% - 33.3% 33.4% - 50.0%

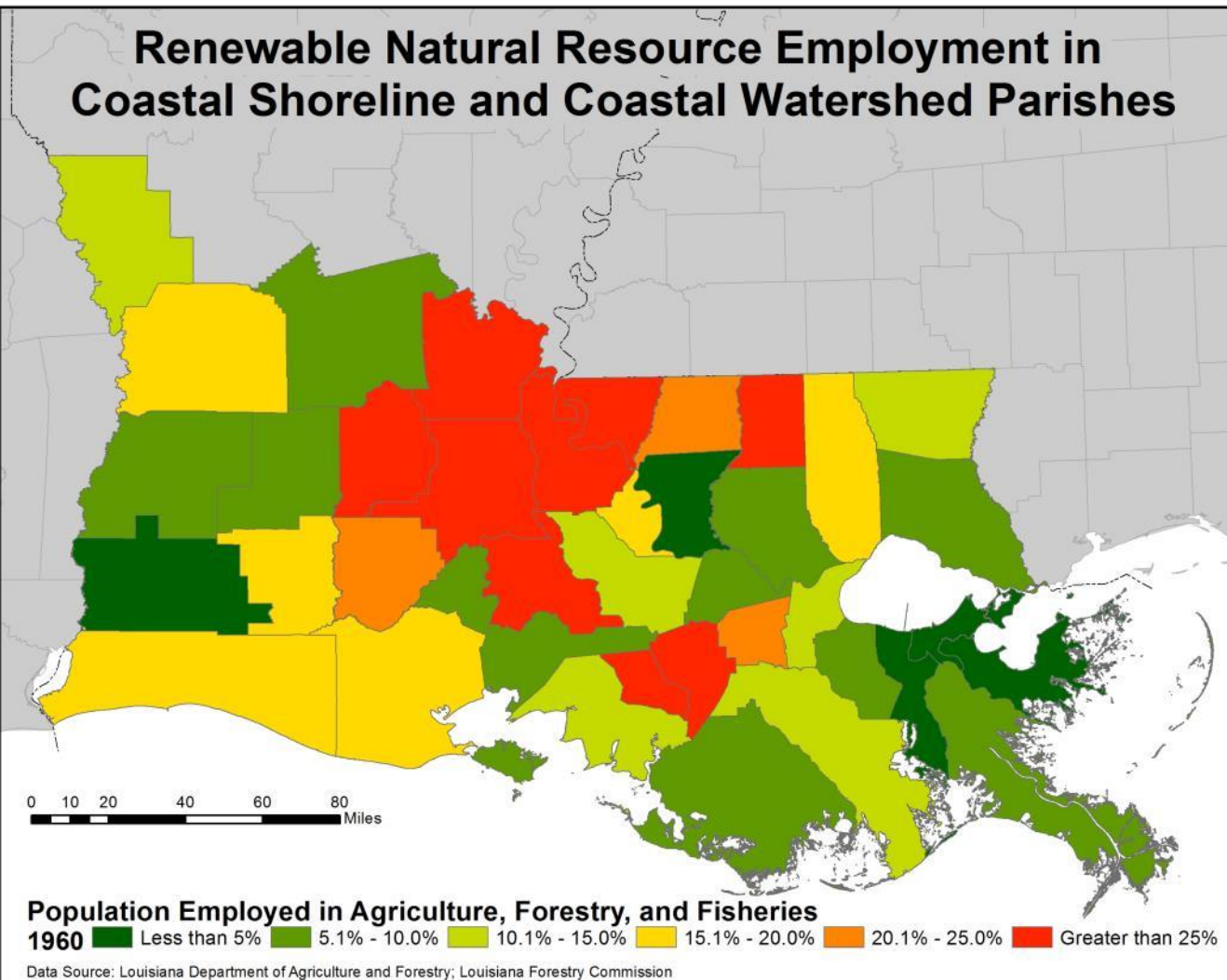
Data Source: U.S. Department of Commerce, Bureau of the Census; U.S. Department of Agriculture, National Agricultural Statistics Service



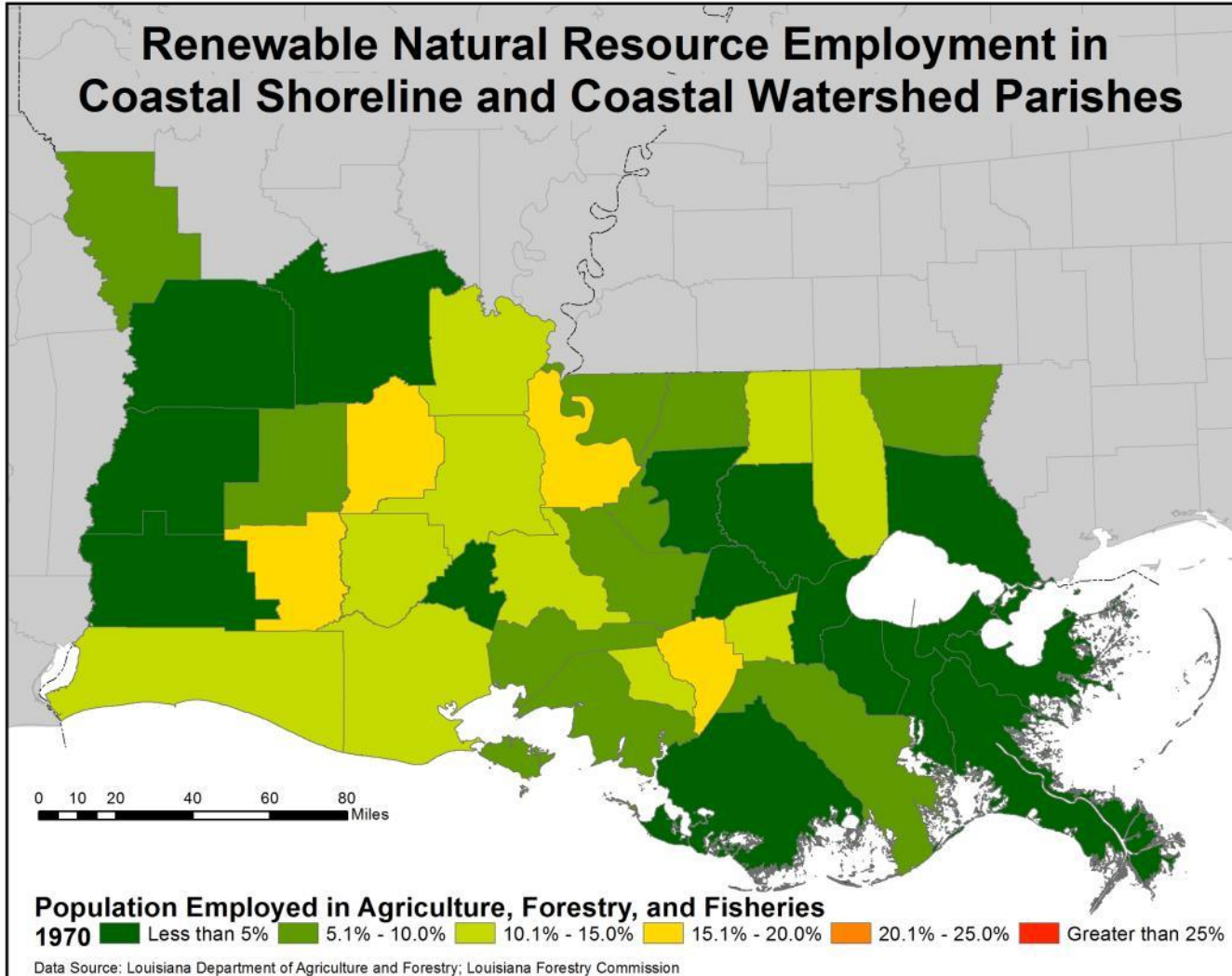
Renewable Natural Resource Employment in Coastal Shoreline and Coastal Watershed Parishes



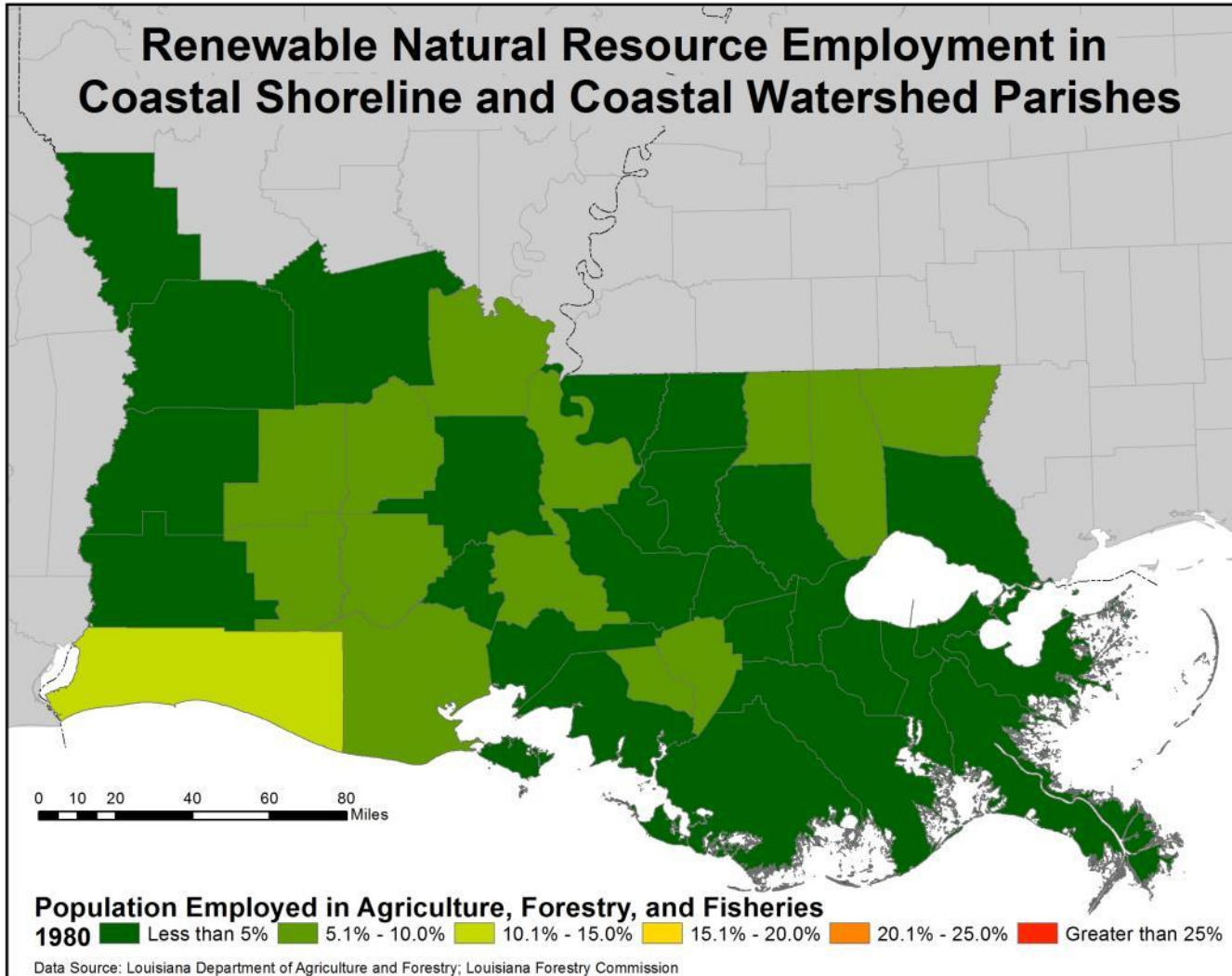
Renewable Natural Resource Employment in Coastal Shoreline and Coastal Watershed Parishes



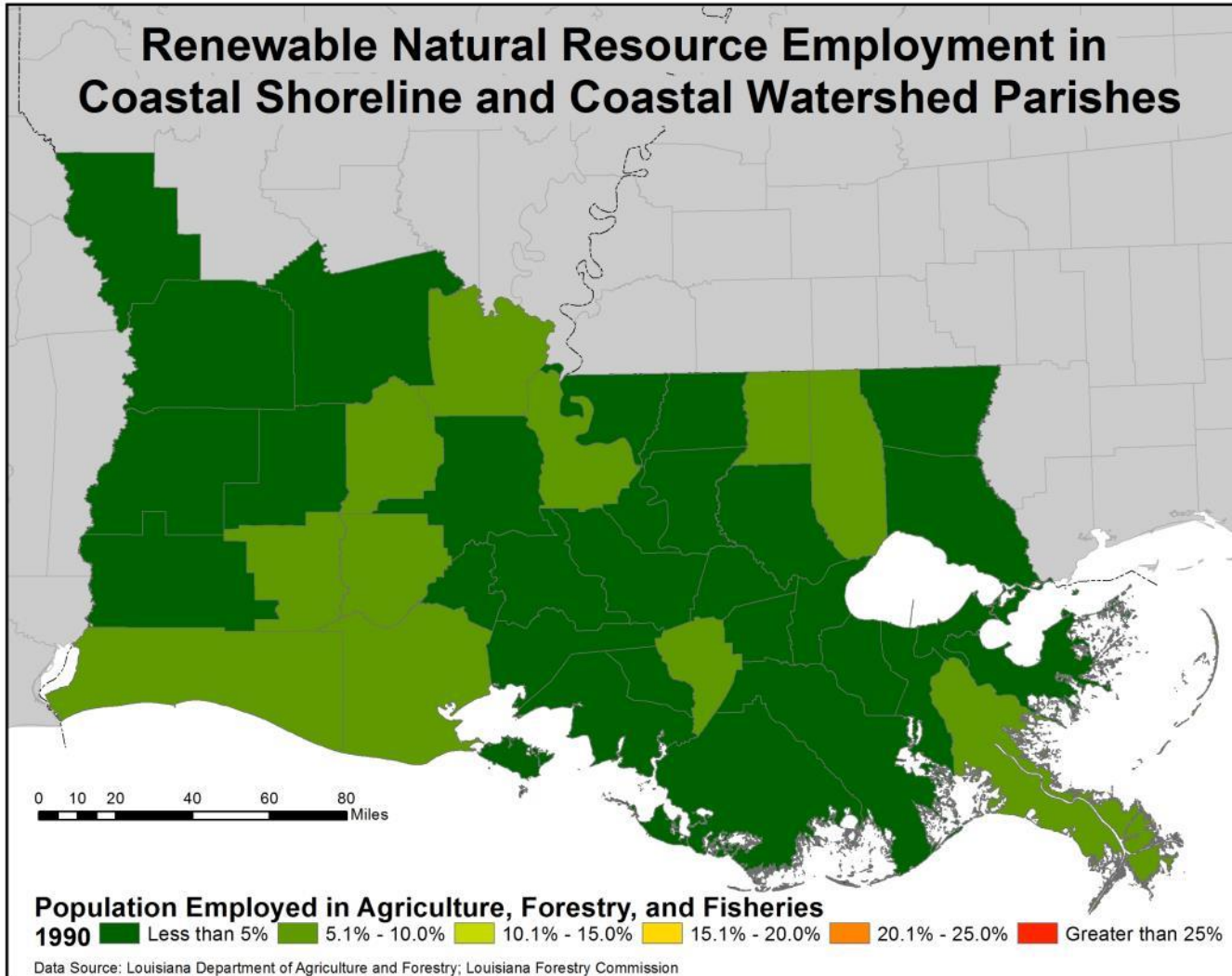
Renewable Natural Resource Employment in Coastal Shoreline and Coastal Watershed Parishes



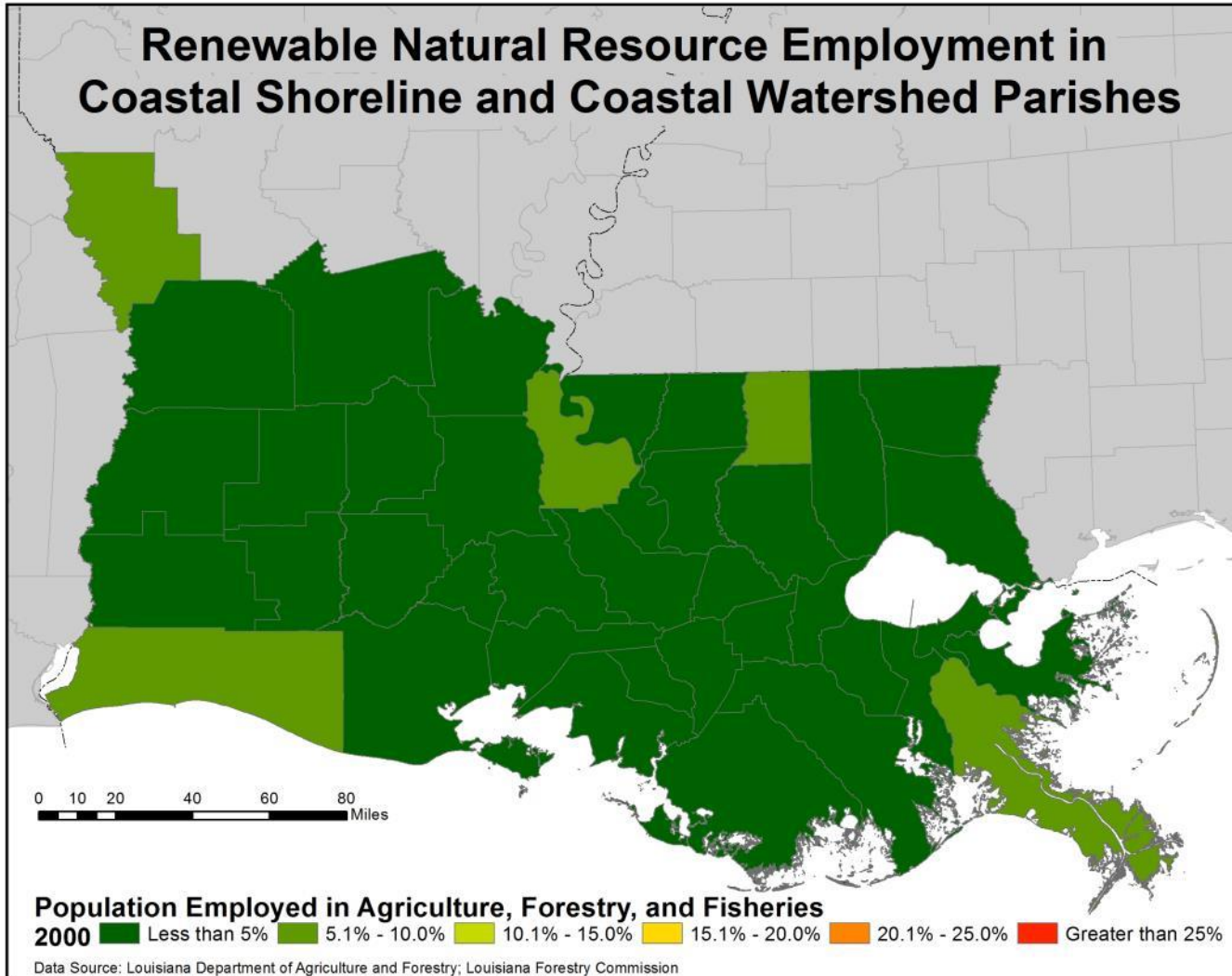
Renewable Natural Resource Employment in Coastal Shoreline and Coastal Watershed Parishes



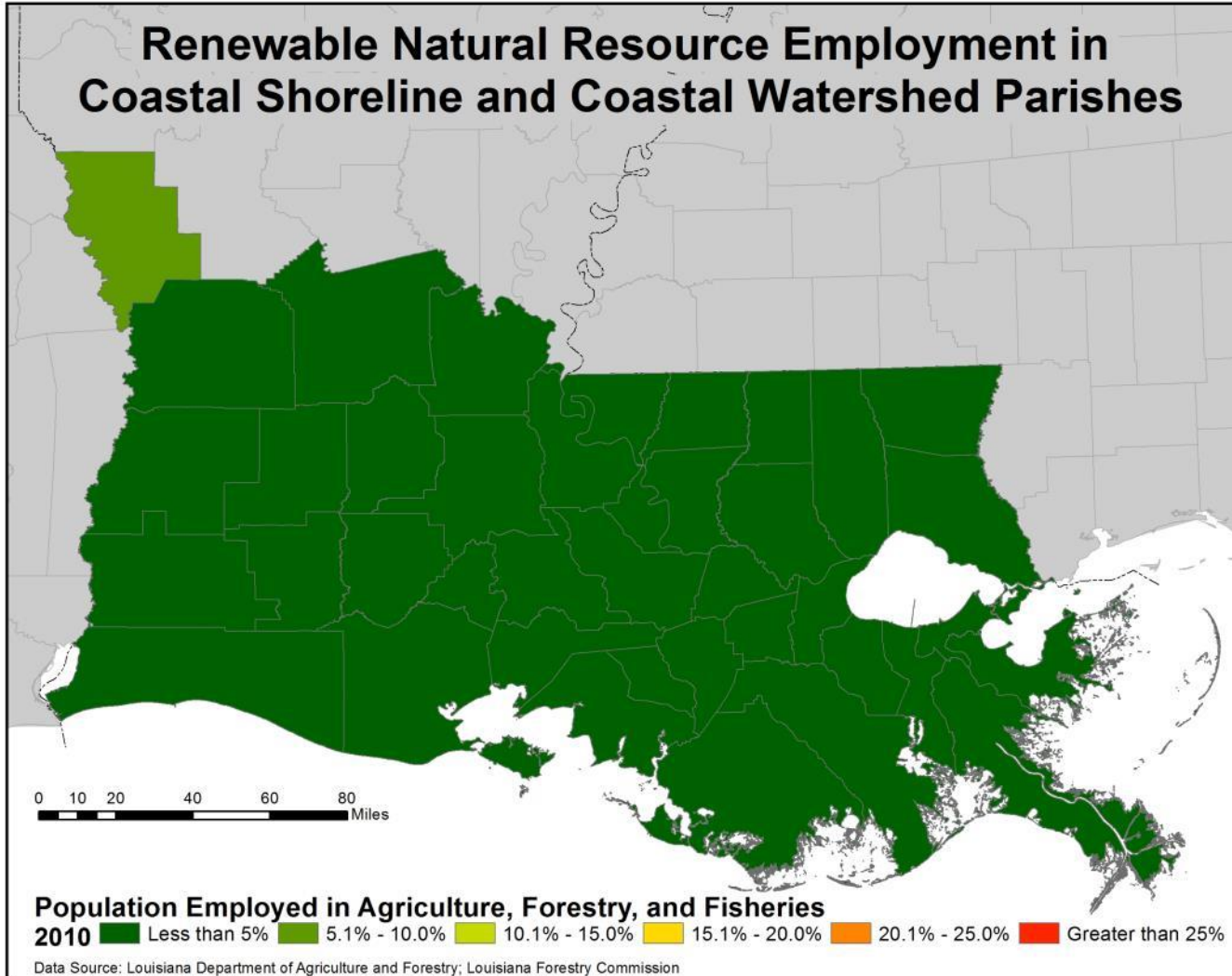
Renewable Natural Resource Employment in Coastal Shoreline and Coastal Watershed Parishes



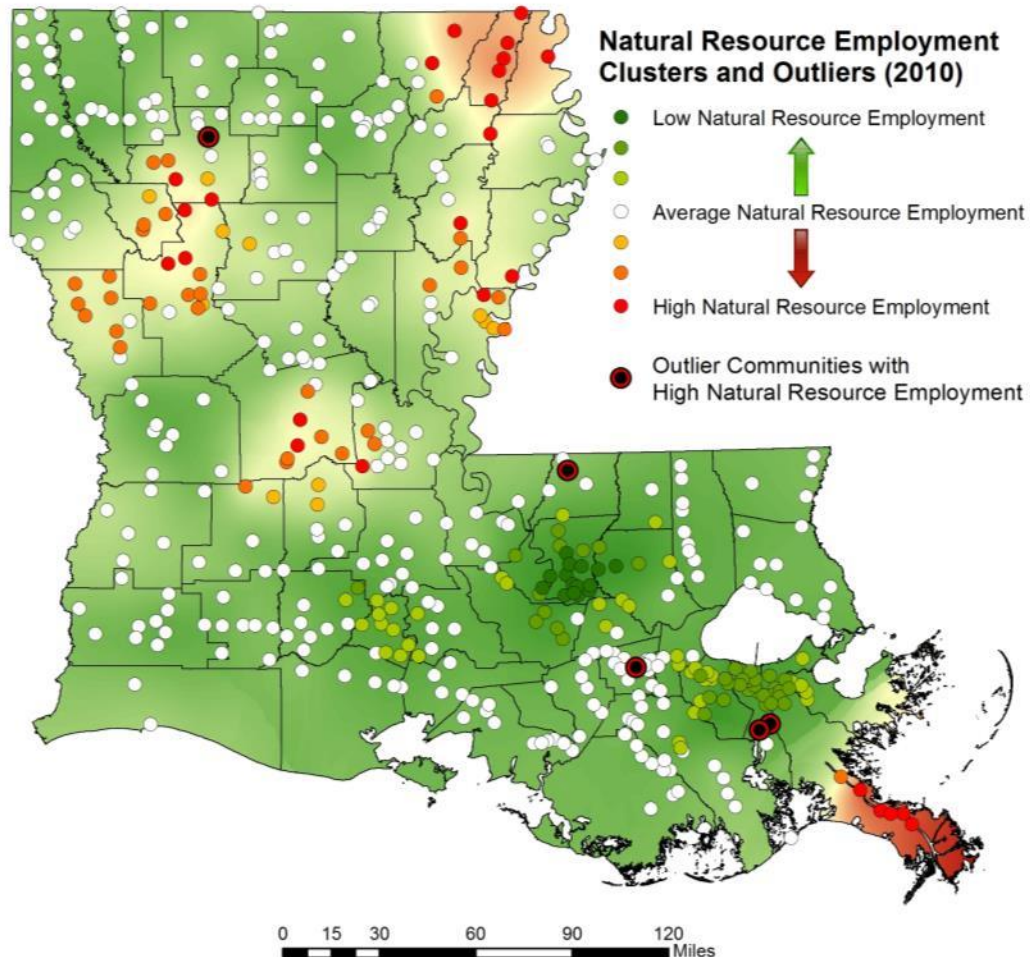
Renewable Natural Resource Employment in Coastal Shoreline and Coastal Watershed Parishes



Renewable Natural Resource Employment in Coastal Shoreline and Coastal Watershed Parishes



Regional Clusters of Natural Resource Employment in Louisiana Communities

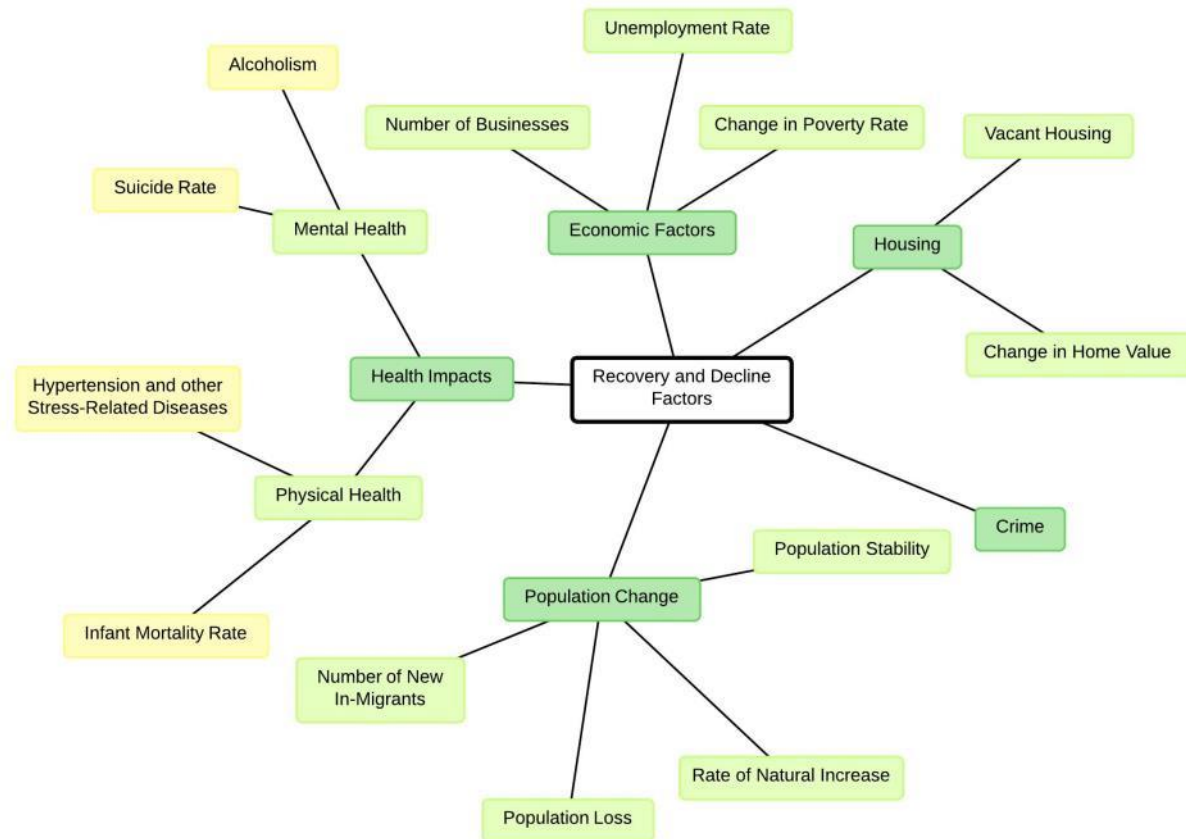


Data Source: U.S. Census Bureau

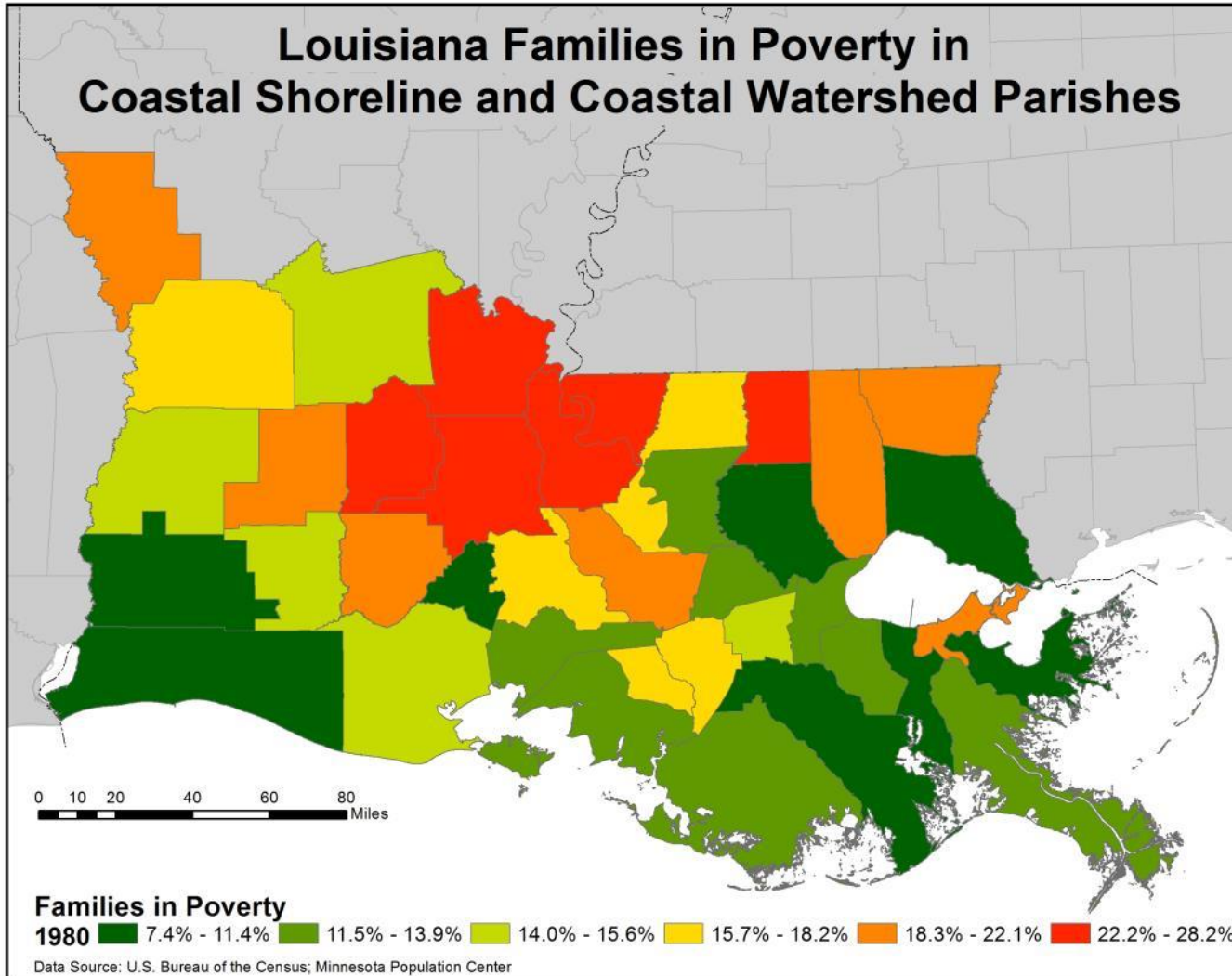


Factors that Determine the Degree to which a Community is in Recovery or Decline...

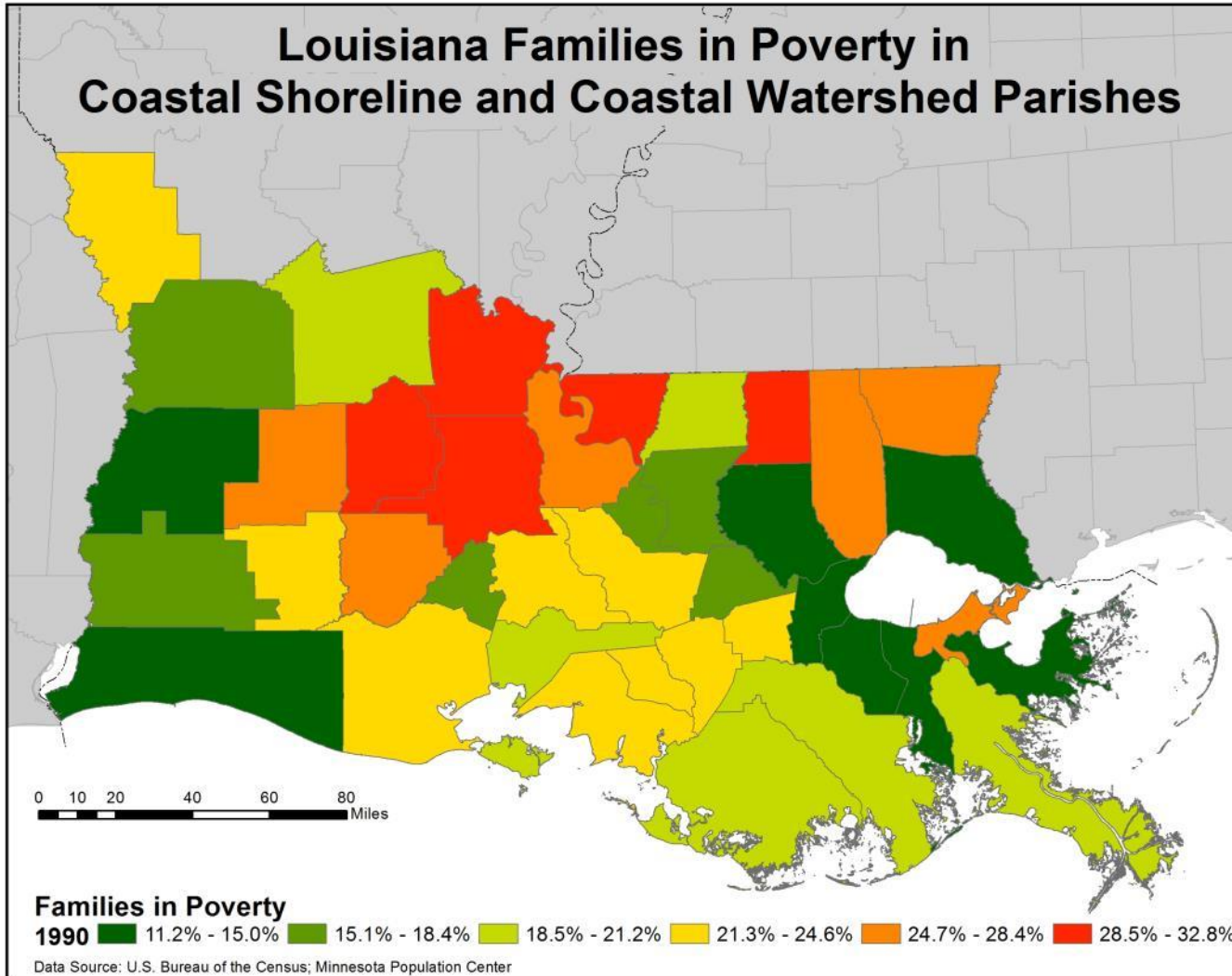
- ◆ Population Change
- ◆ Economic Conditions
- ◆ Housing Conditions
- ◆ Crime
- ◆ Health Impacts



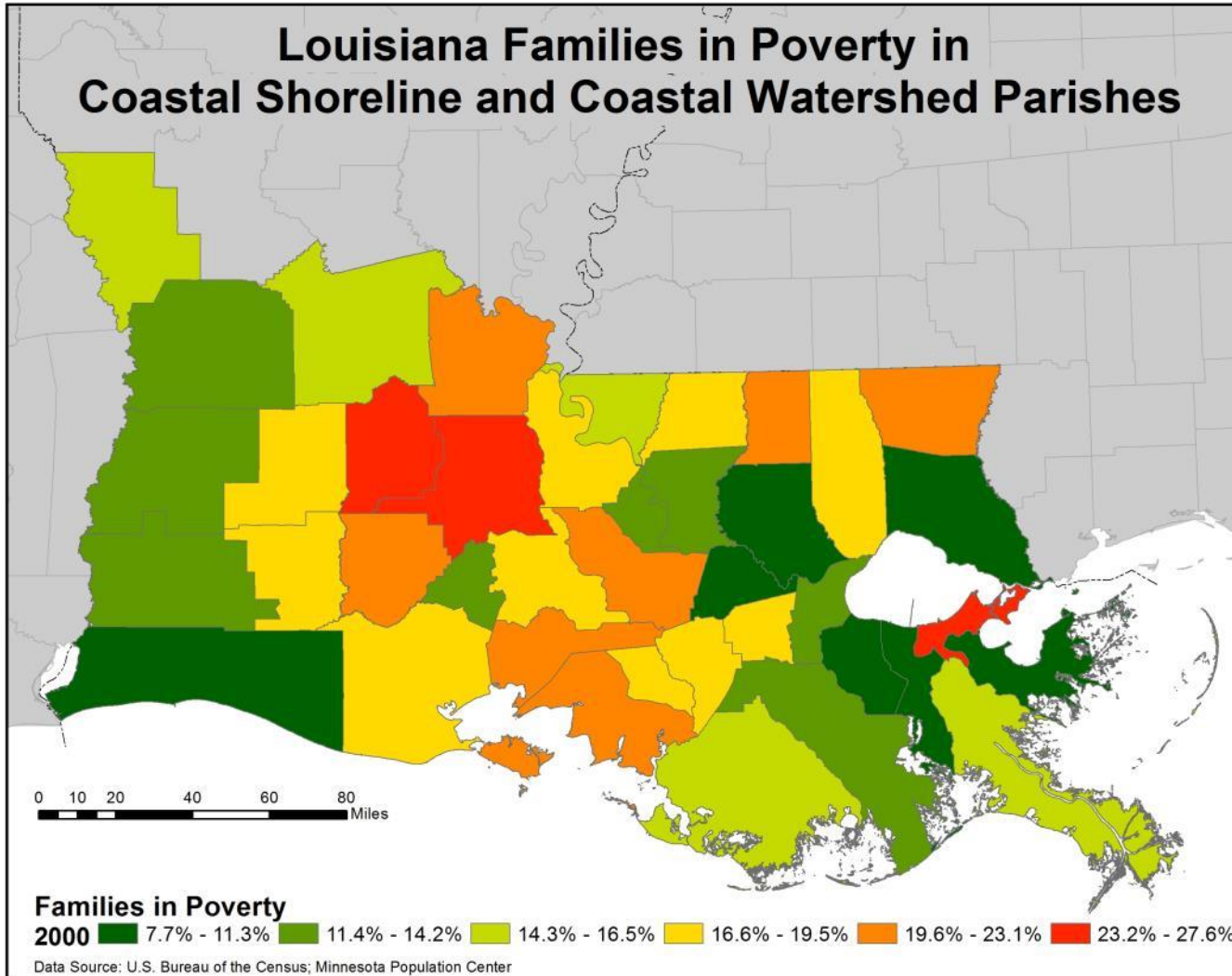
Louisiana Families in Poverty in Coastal Shoreline and Coastal Watershed Parishes



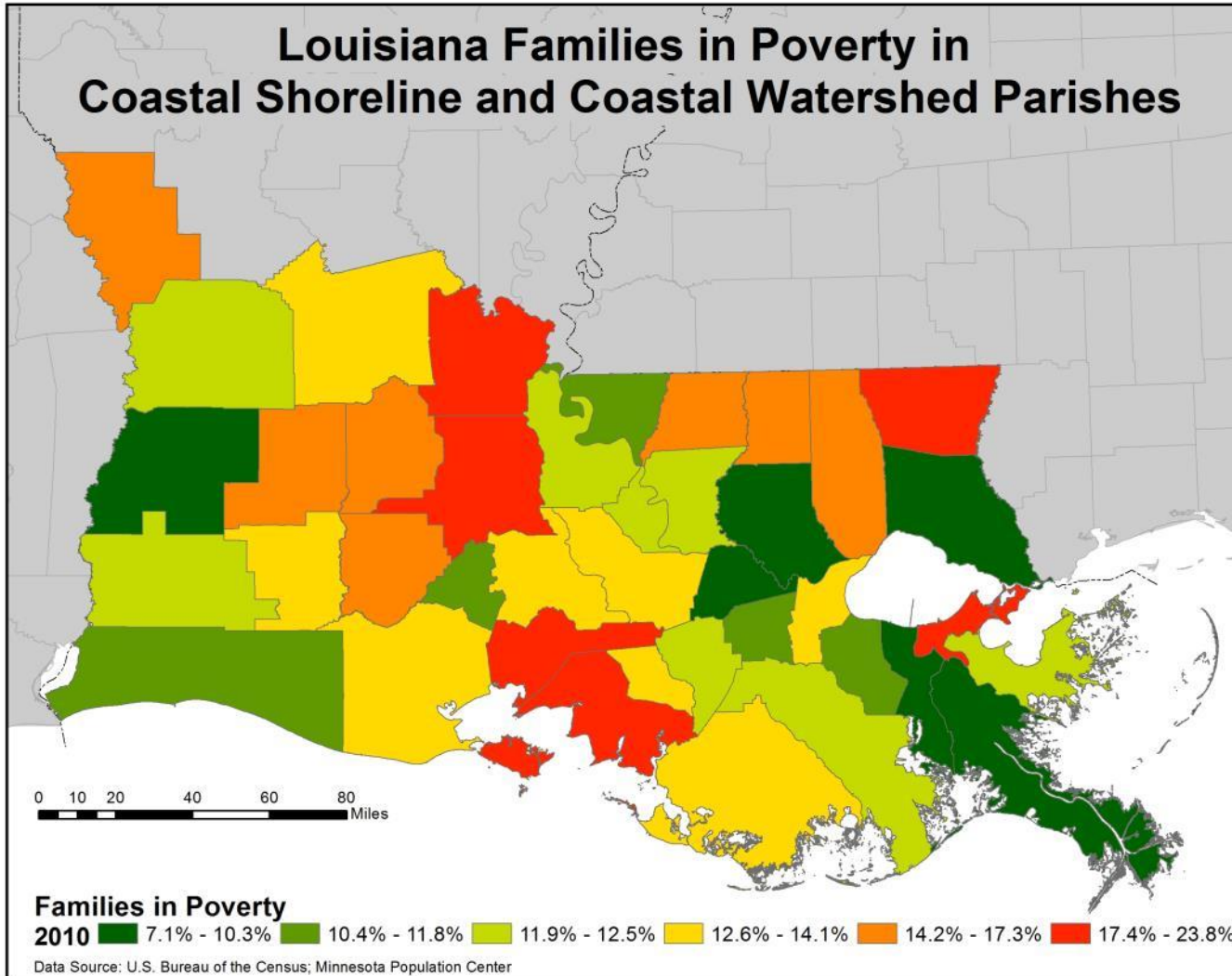
Louisiana Families in Poverty in Coastal Shoreline and Coastal Watershed Parishes



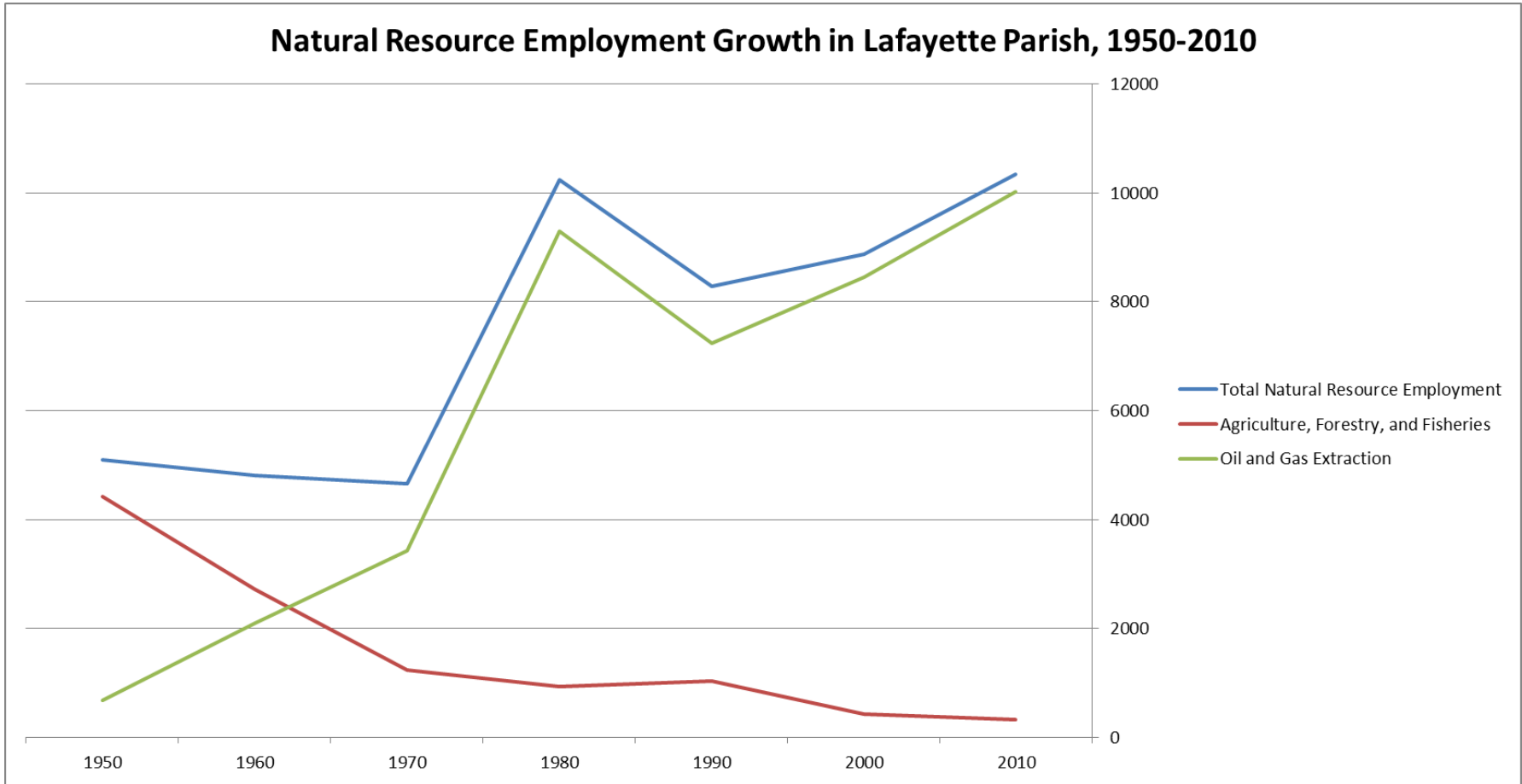
Louisiana Families in Poverty in Coastal Shoreline and Coastal Watershed Parishes



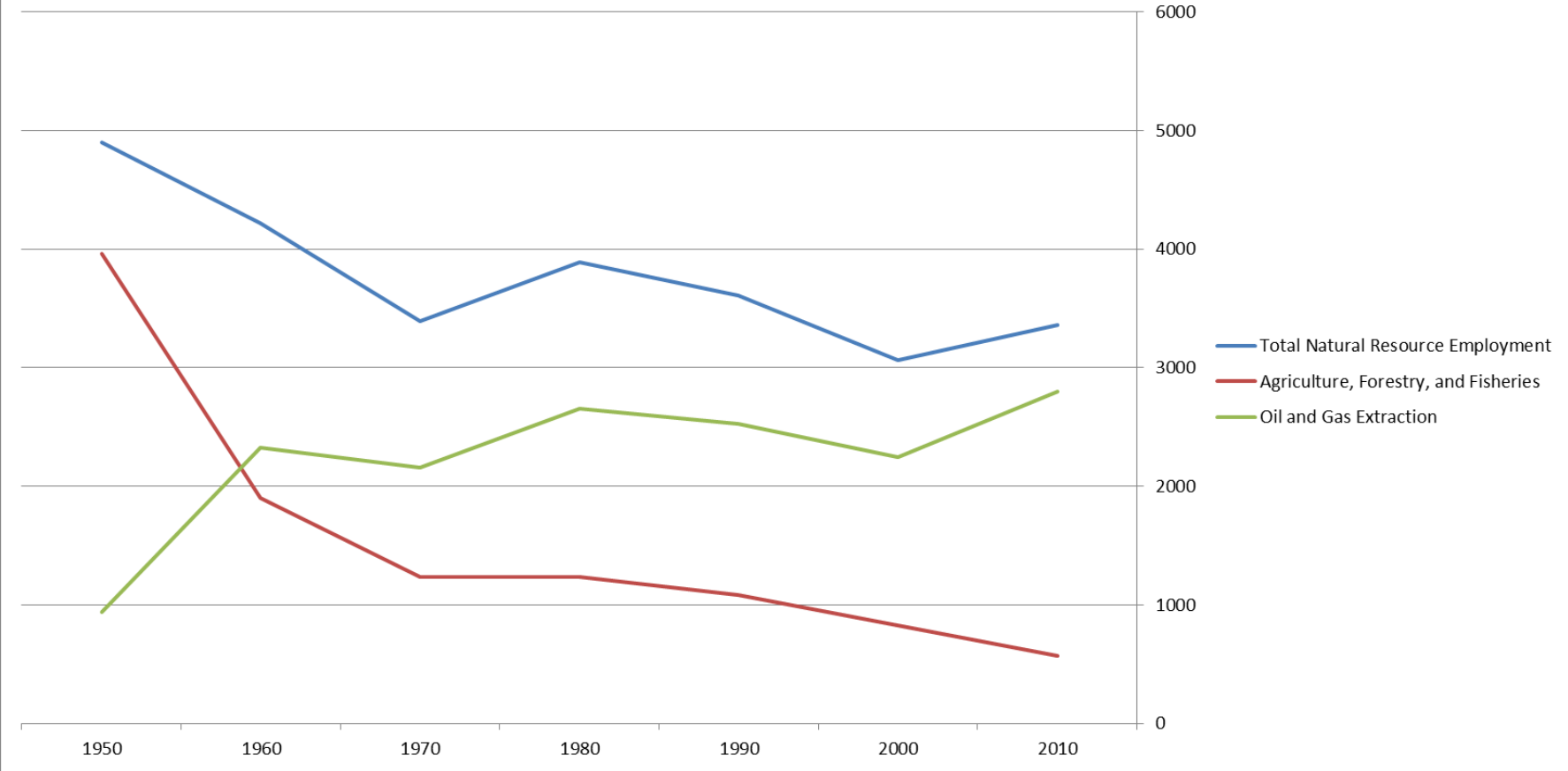
Louisiana Families in Poverty in Coastal Shoreline and Coastal Watershed Parishes



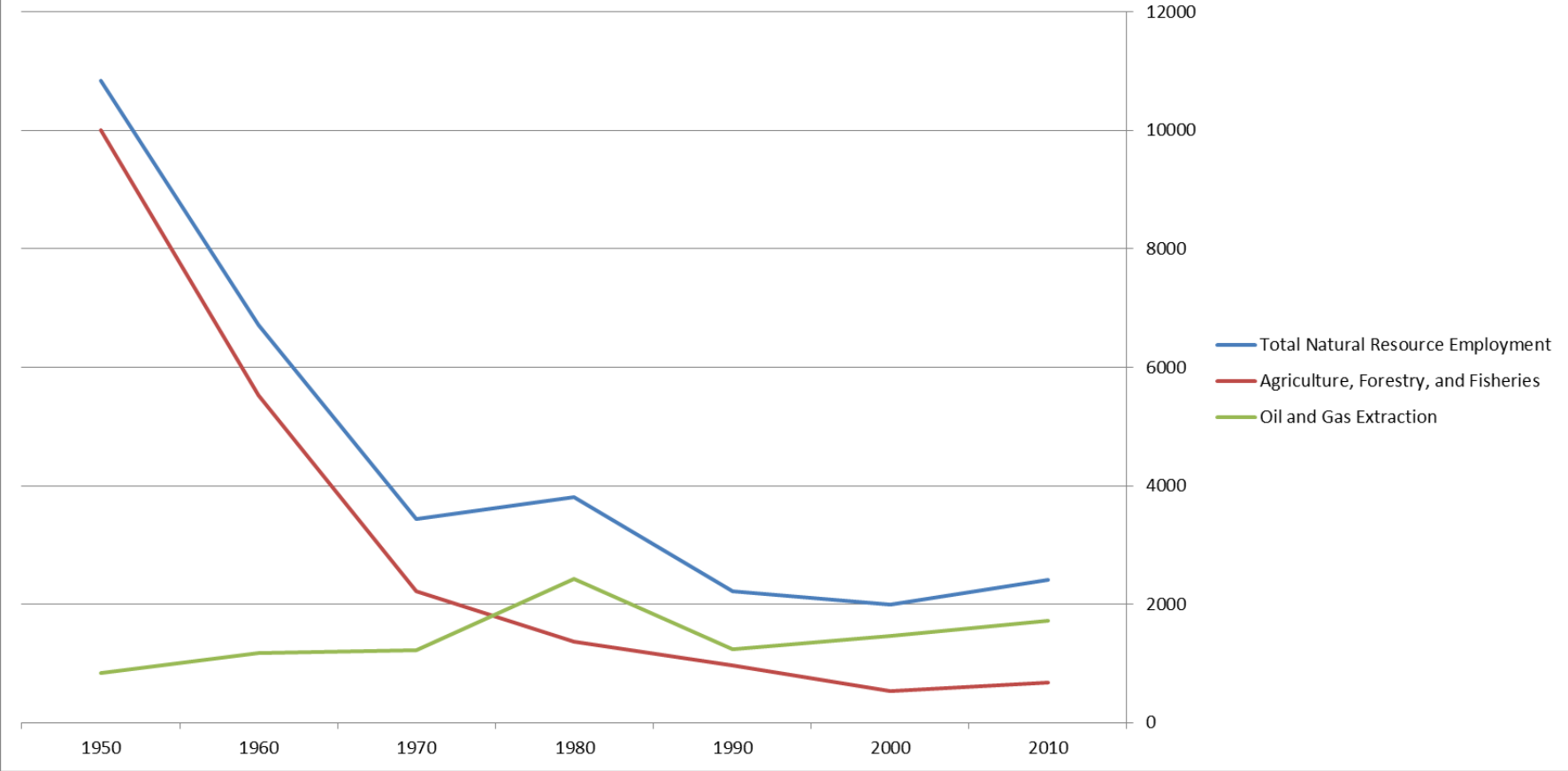
Natural Resource Employment Growth in Lafayette Parish, 1950-2010



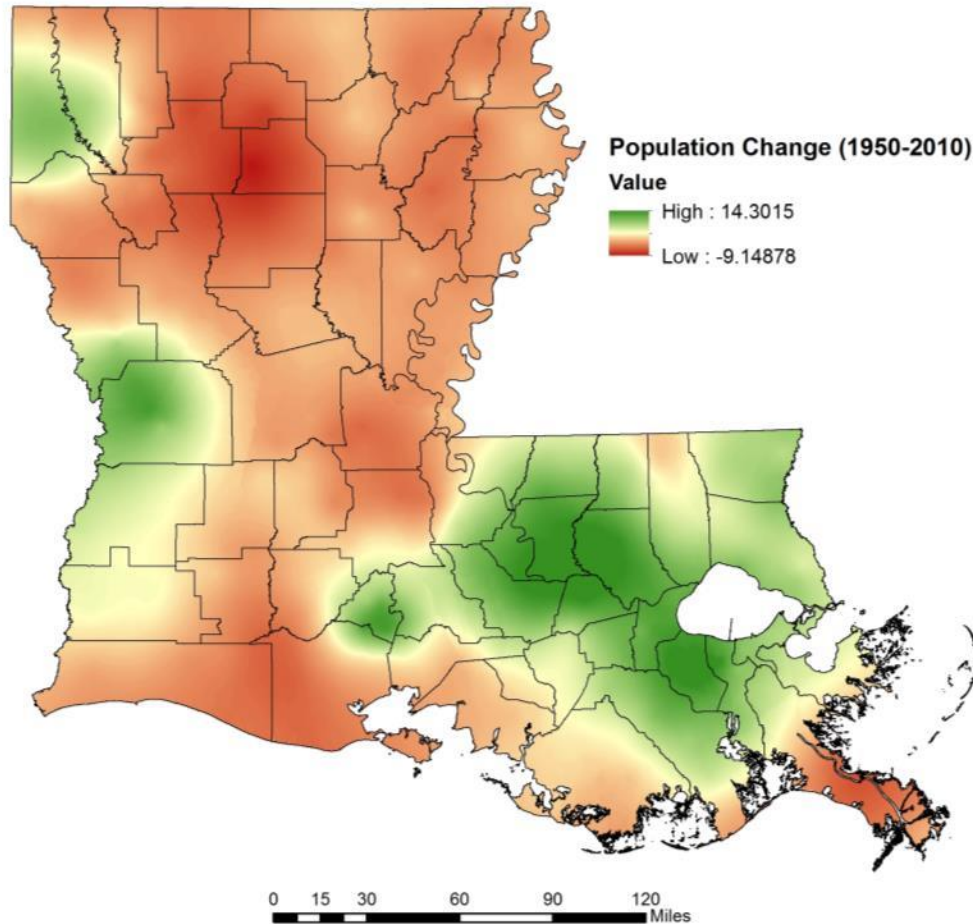
Natural Resource Employment Growth in Lafourche Parish, 1950-2010



Natural Resource Employment Growth in St. Landry Parish, 1950-2010

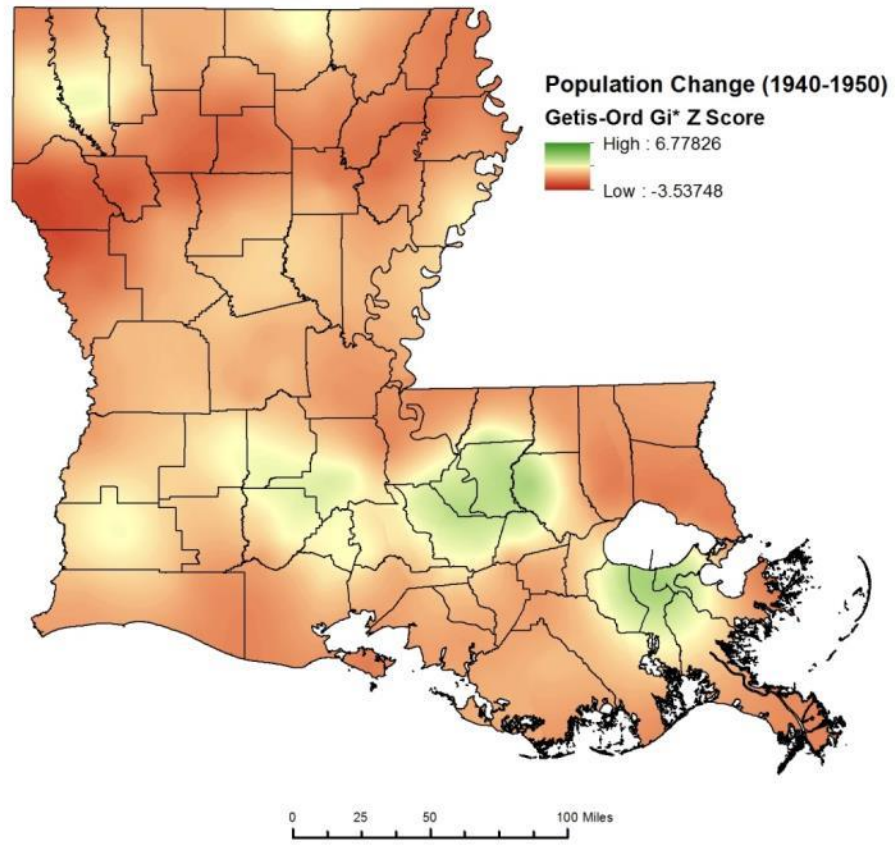


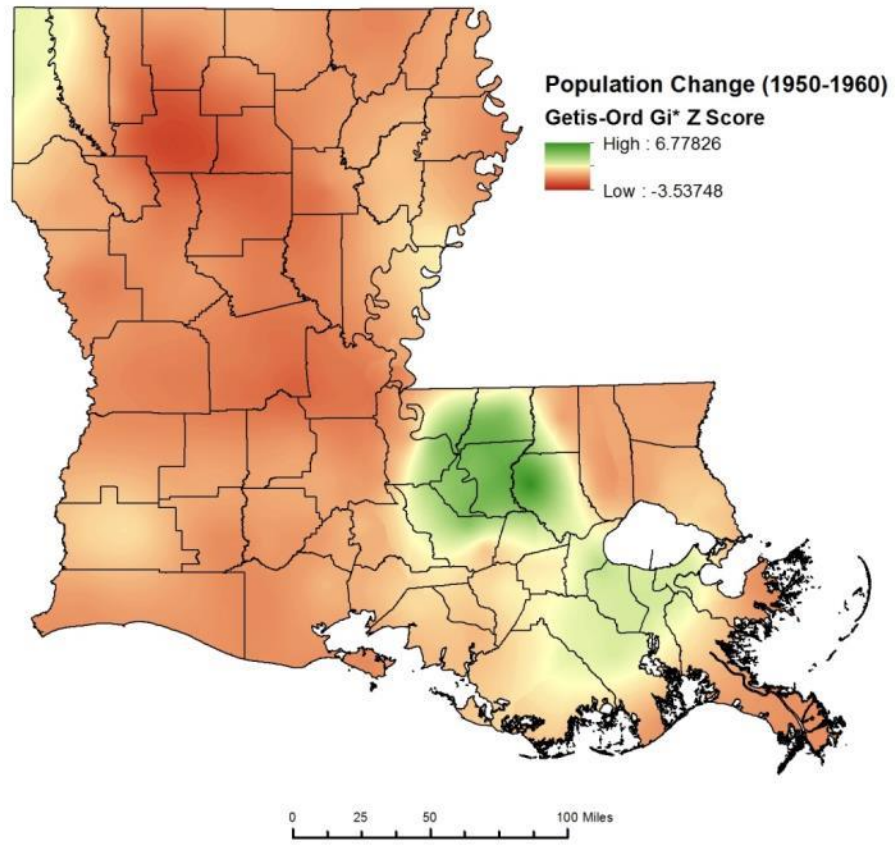
Regional Clusters of Community Growth in Louisiana (1950-2010)

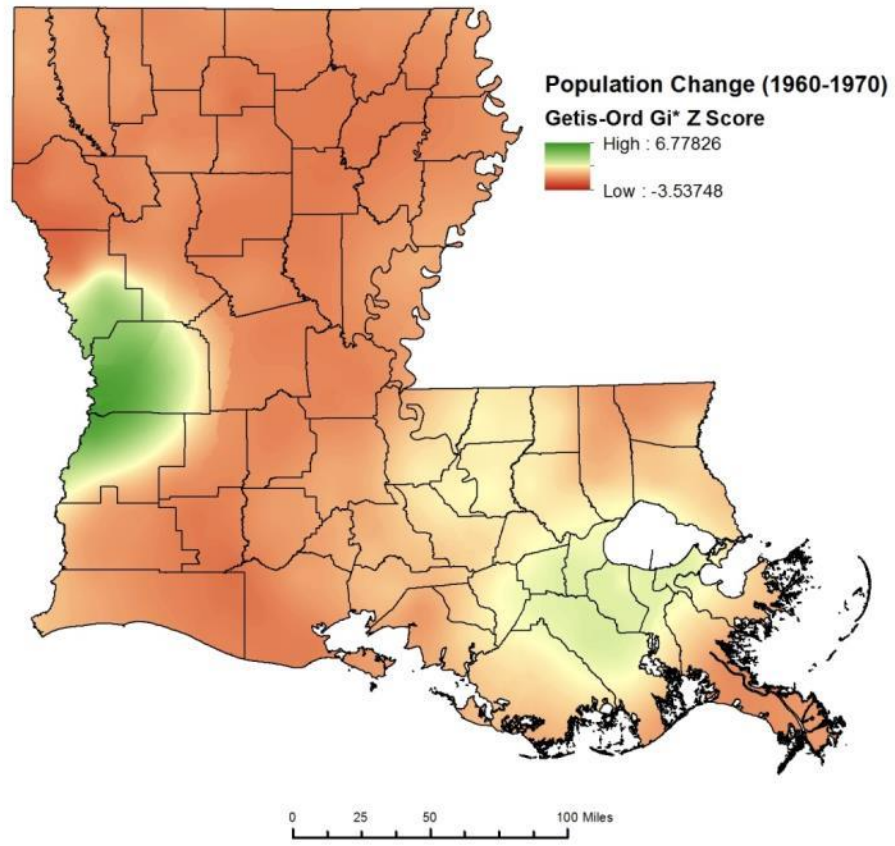


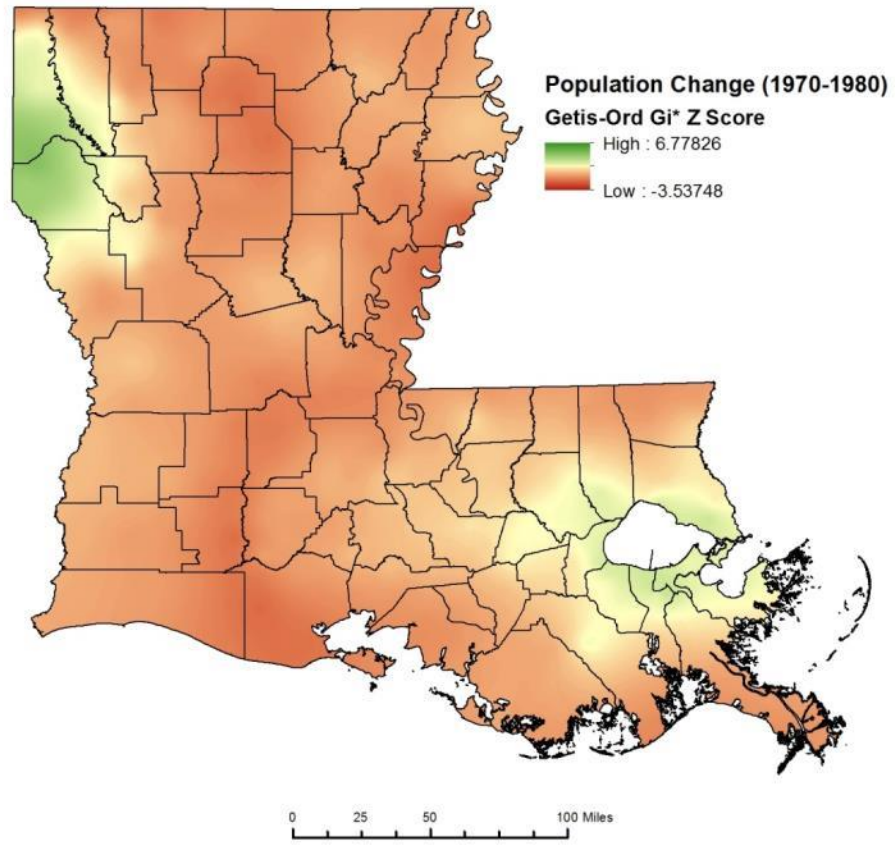
Data Source:

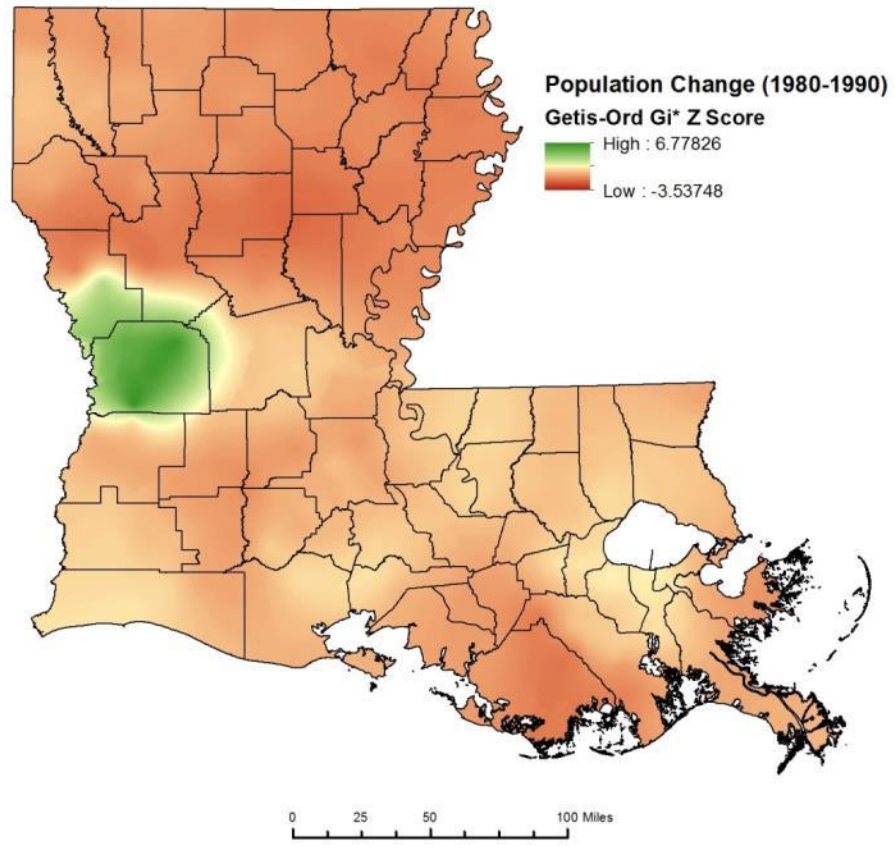


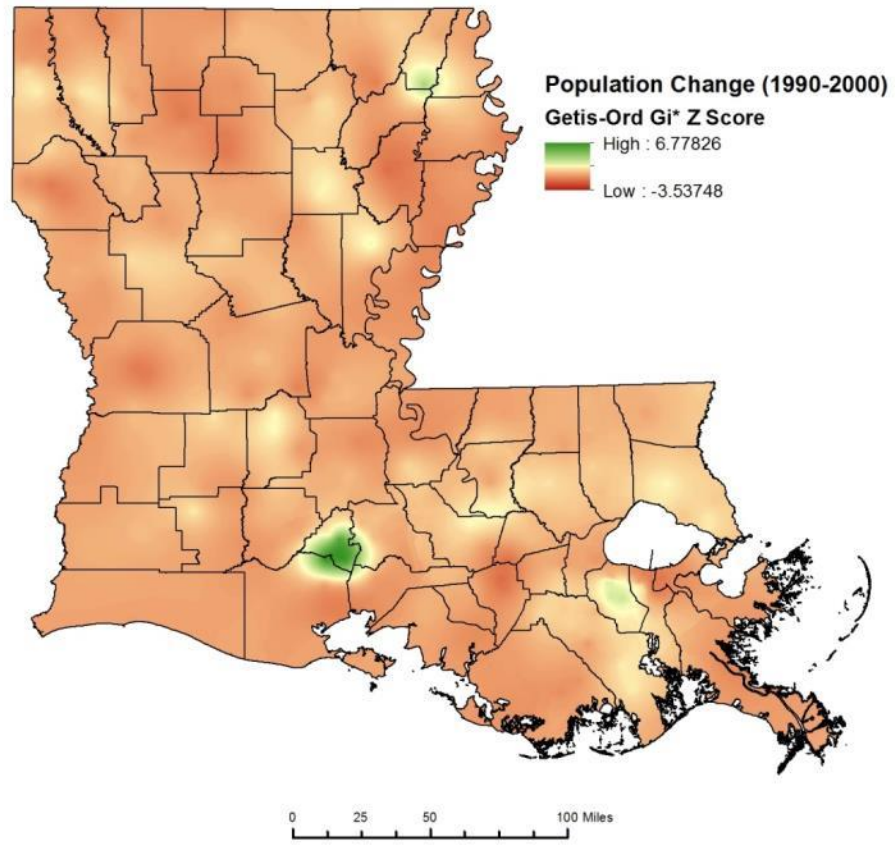


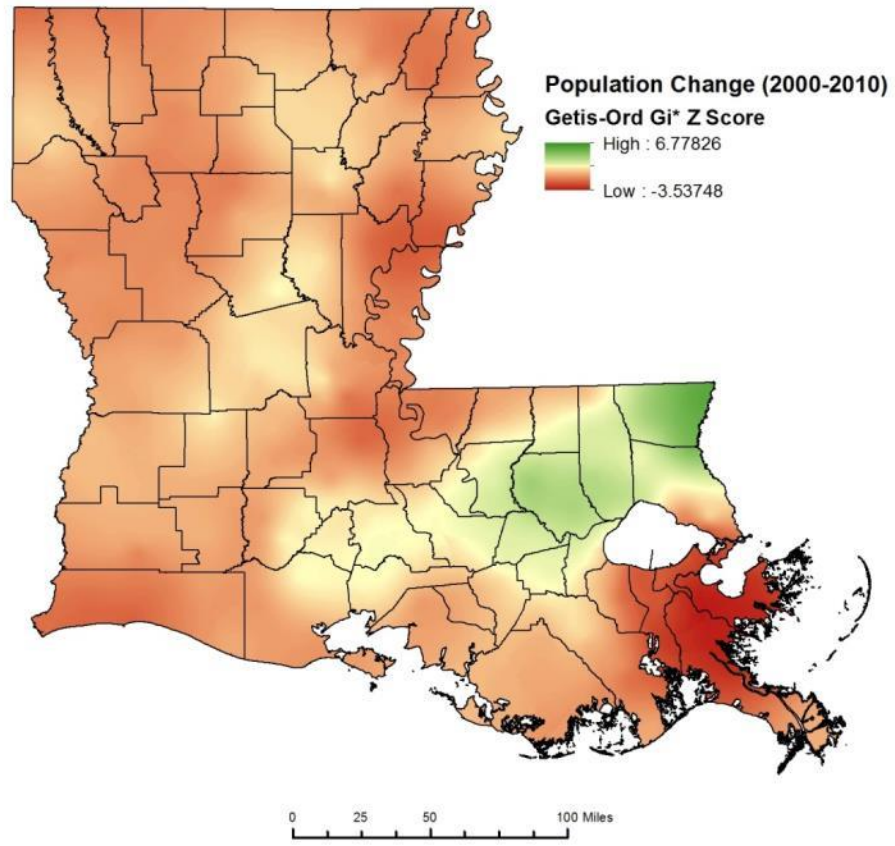




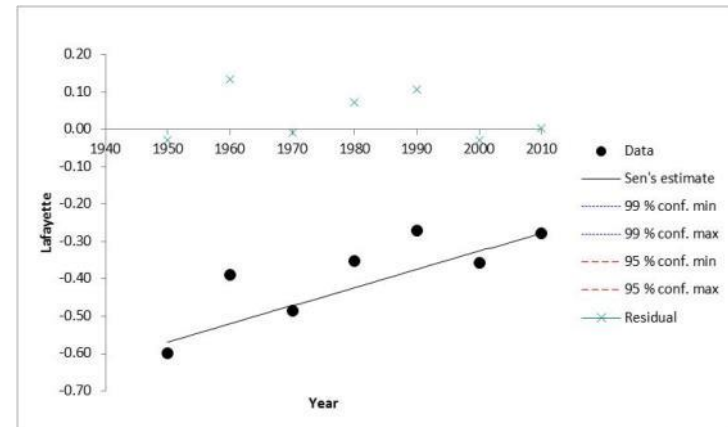
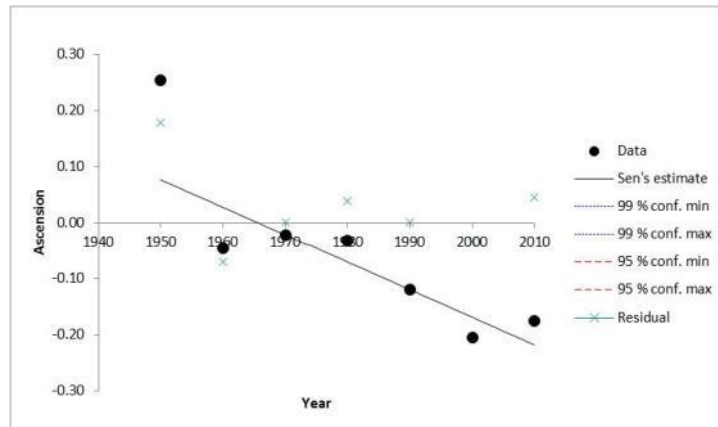
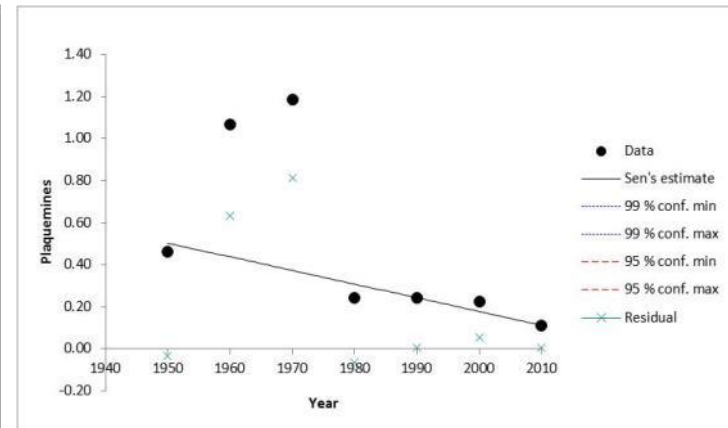
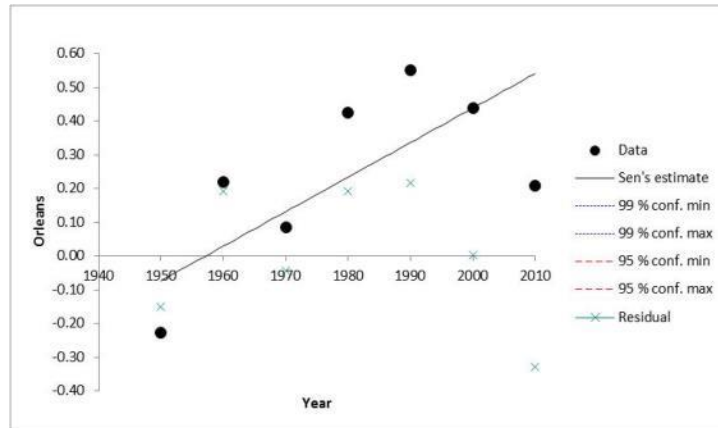




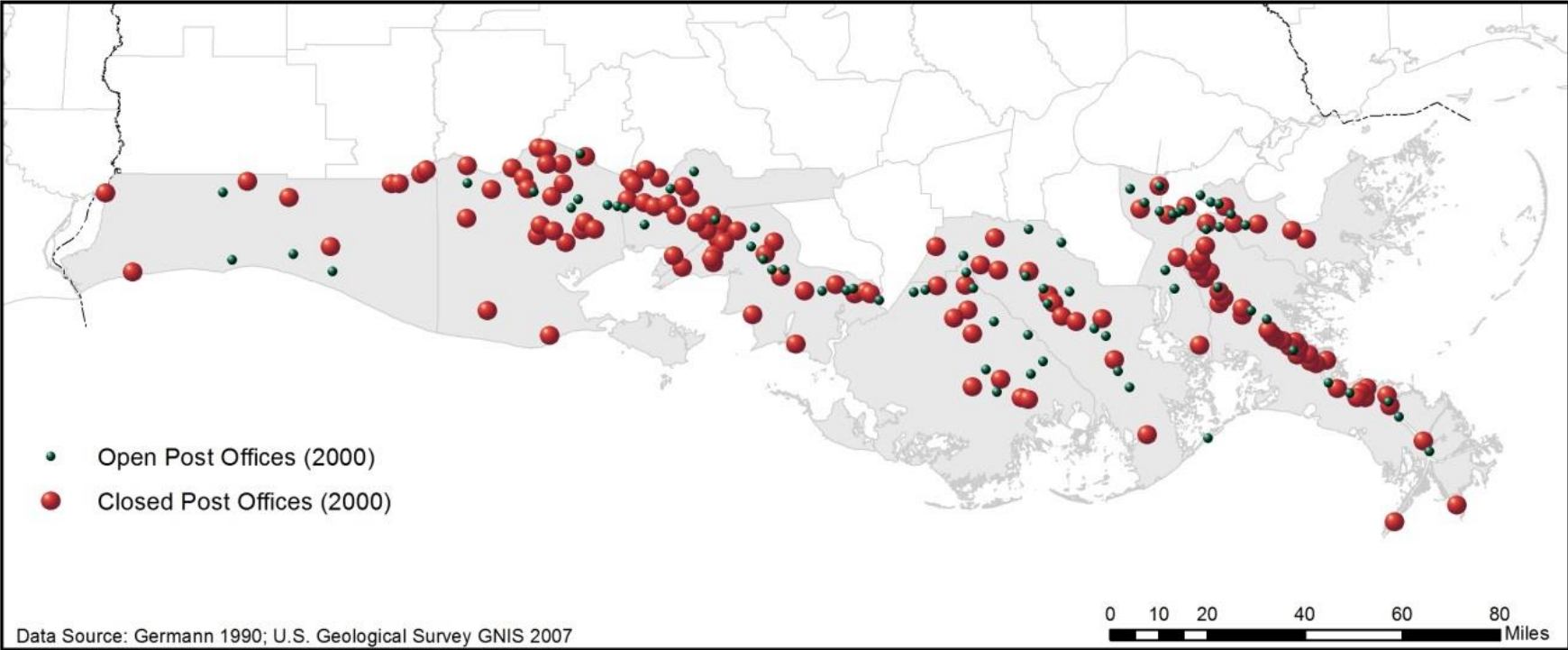




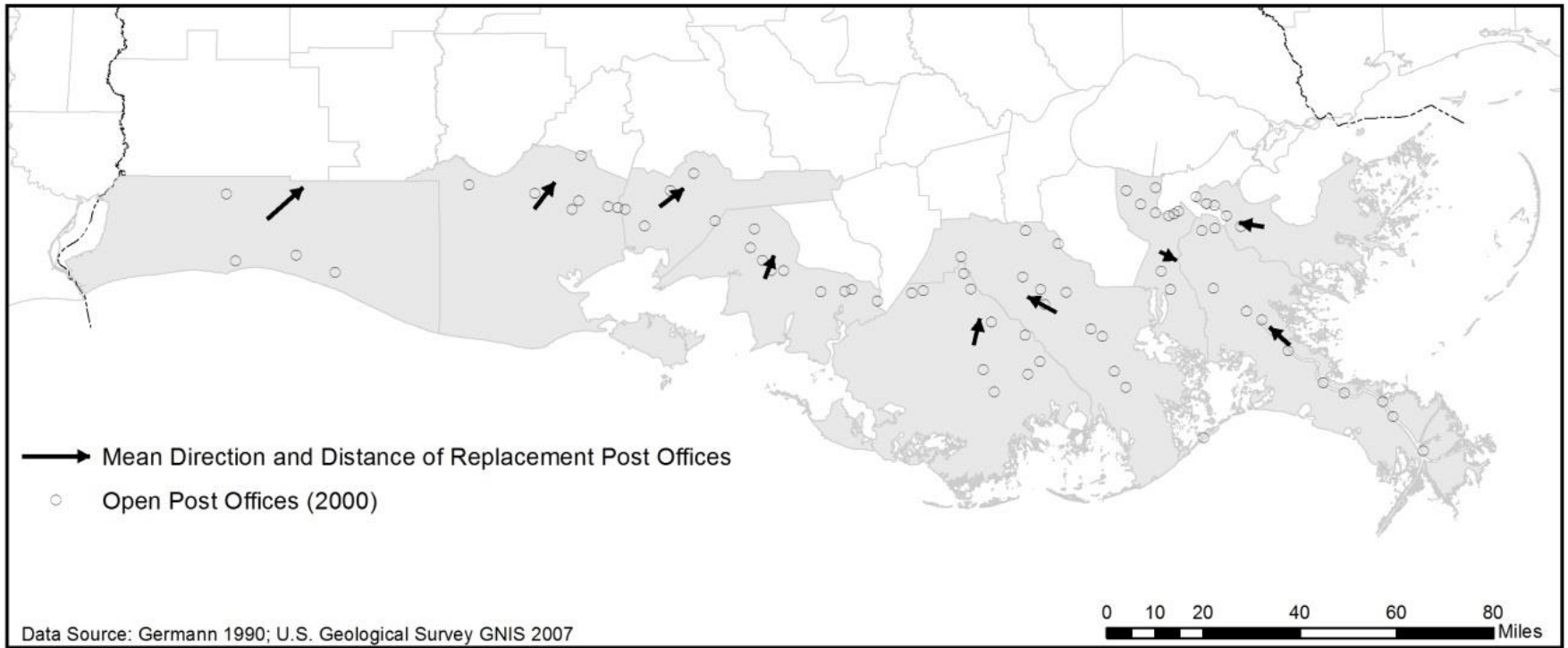
Demographic Vulnerability in Coastal Louisiana, 1950-2010



Louisiana Coastal Post Offices in the Twentieth Century



Louisiana Coastal Post Office Relocations



Thank You!

Questions?

