

The Northwoods Vernacular Region as Defined by Hydrology and Sportsmen's Activities

Project by Roger Schulz Adviser Professor Joseph P. Hupy
Department of Geography and Anthropology



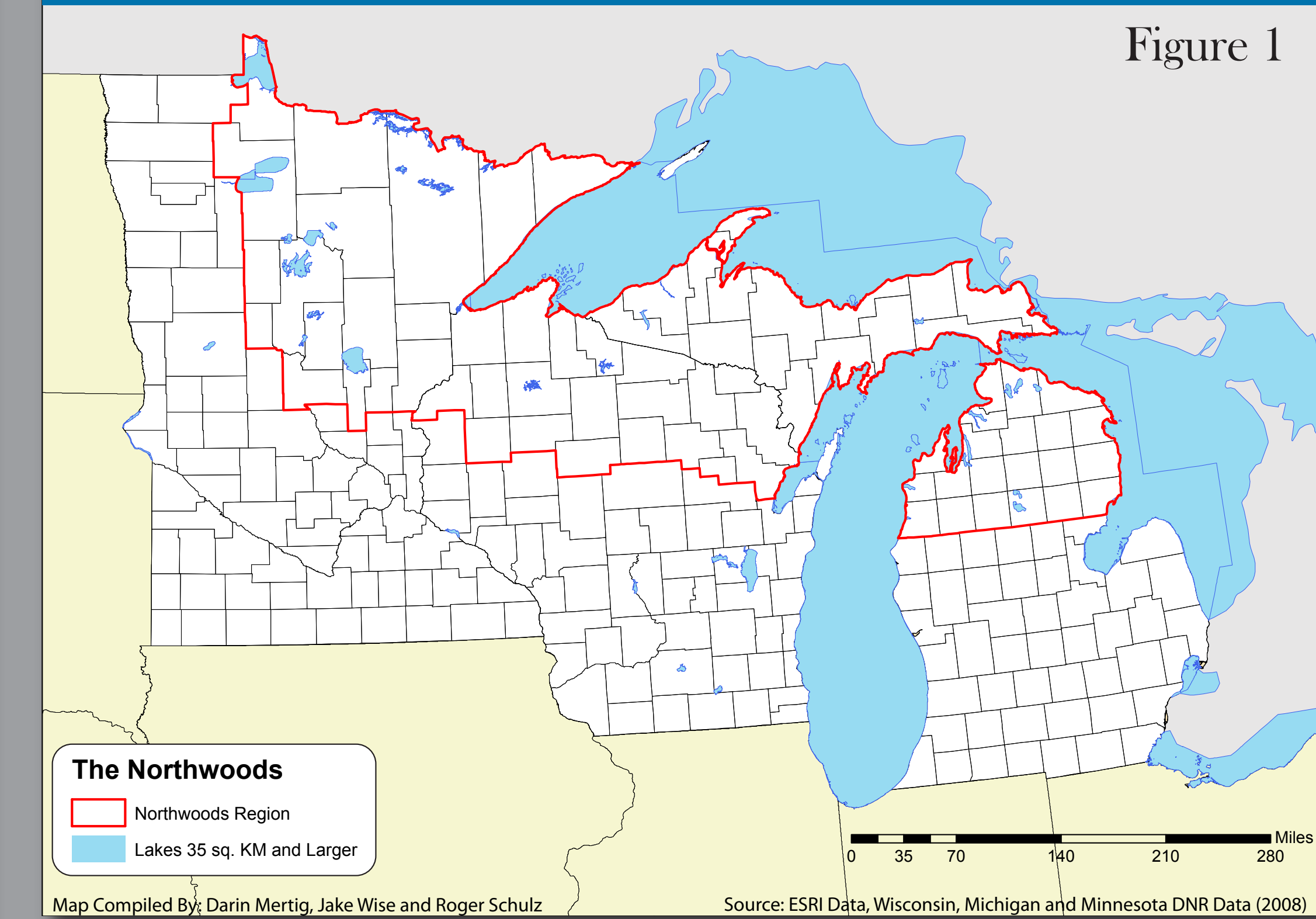
Abstract

For many Americans the northern part of Wisconsin, Michigan, and Minnesota holds something extraordinarily special. Among the trees, lakes, rivers, and streams there is a common belief declaring this a unique region in our majestic country. Therefore, what constitutes the Northwoods as a unique region is what guided this research endeavor. As fishing and hunting are seen as a unique component of the Northwoods, we applied fishing and hunting license sales per county, and lakes with lodges and resorts on them to define the Northwoods as a region. This study used data obtained from Wisconsin, Michigan, and Minnesota Department of Natural Resources, including hunting and fishing license sales. Normalization of the data came from ESRI™ Census population data. To be more specific, the type of region that is being defined is a vernacular region. In this study, the unity was found in the sales of fishing and hunting license sales per county, and the density of resorts on big lakes of 35 square kilometers. Numerous convincing trends can be ascertained when the data are used to create an ArcGIS™ geodatabase and thoroughly analyzed. The frequency of these geospatial trends allows for a vernacular region to emerge.

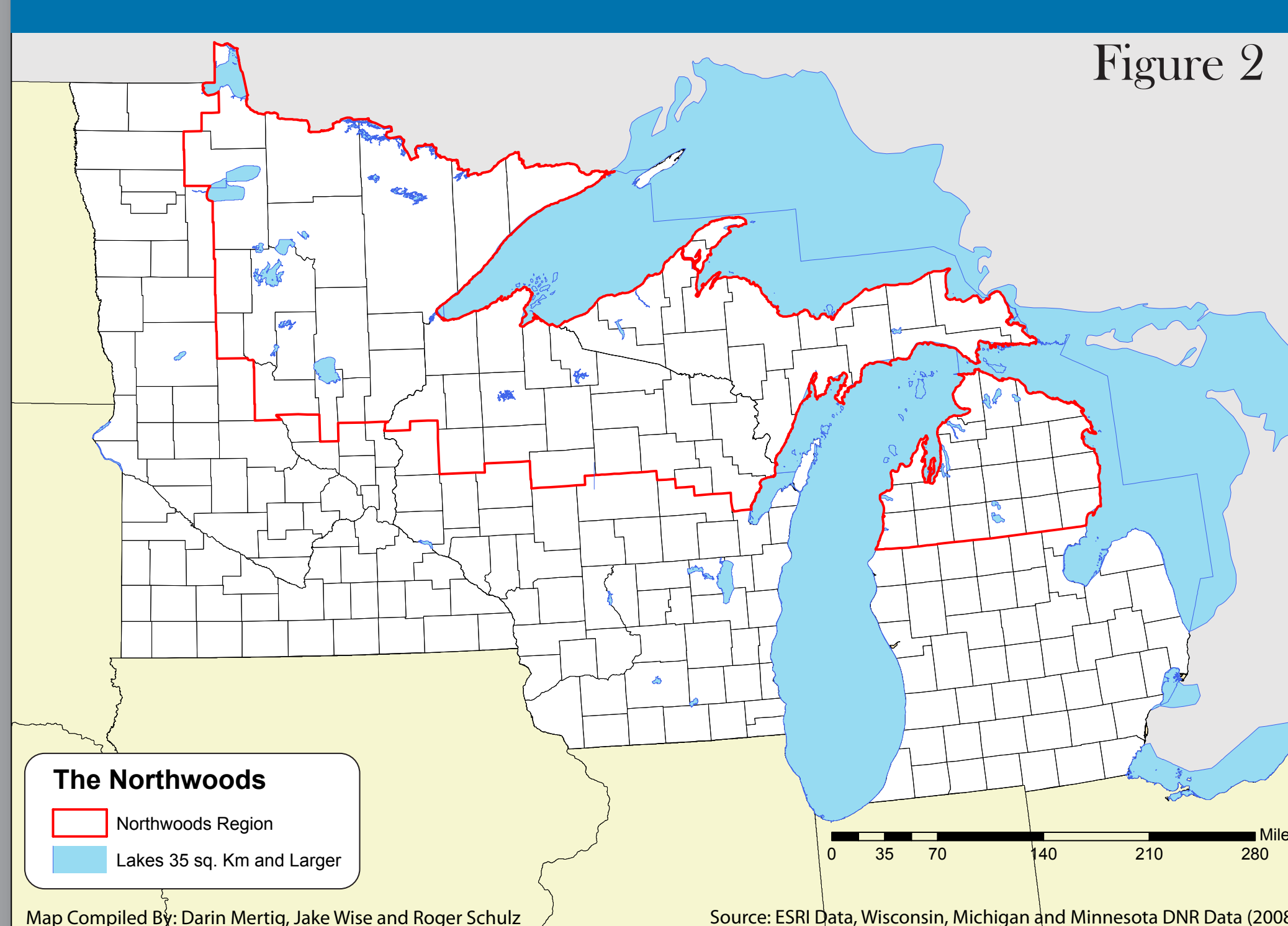
Methods

In order to define the Northwoods as a region based on fishing and hunting license sales, the DNR (Department of Natural Resources) of Wisconsin, Michigan, and Minnesota became the primary source of data. Each state's data was compiled in different formats, so in order to utilize this data it was necessary to manipulate and restructure the data to one uniform format. The data was normalized for compatibility within ArcGIS™, and then joined with county level spatial data attributes. To define the Northwoods by resorts on lakes, criteria were set to decide what lakes are included in the analysis. Criteria applied included: size of 35 square kilometers, the lake must have a name, Great Lakes are excluded, and water body must be a lake, not a stream, marsh, ditch, or pond. Using Google Earth™ the locations of each resort on the lakes that met the criteria were found and the data were recorded by latitude and longitude in an Excel spreadsheet. A cluster analysis was performed in ArcGIS™ to determine the density of resorts within the study area. Areas with high density were then used to delineate the Northwoods as a region.

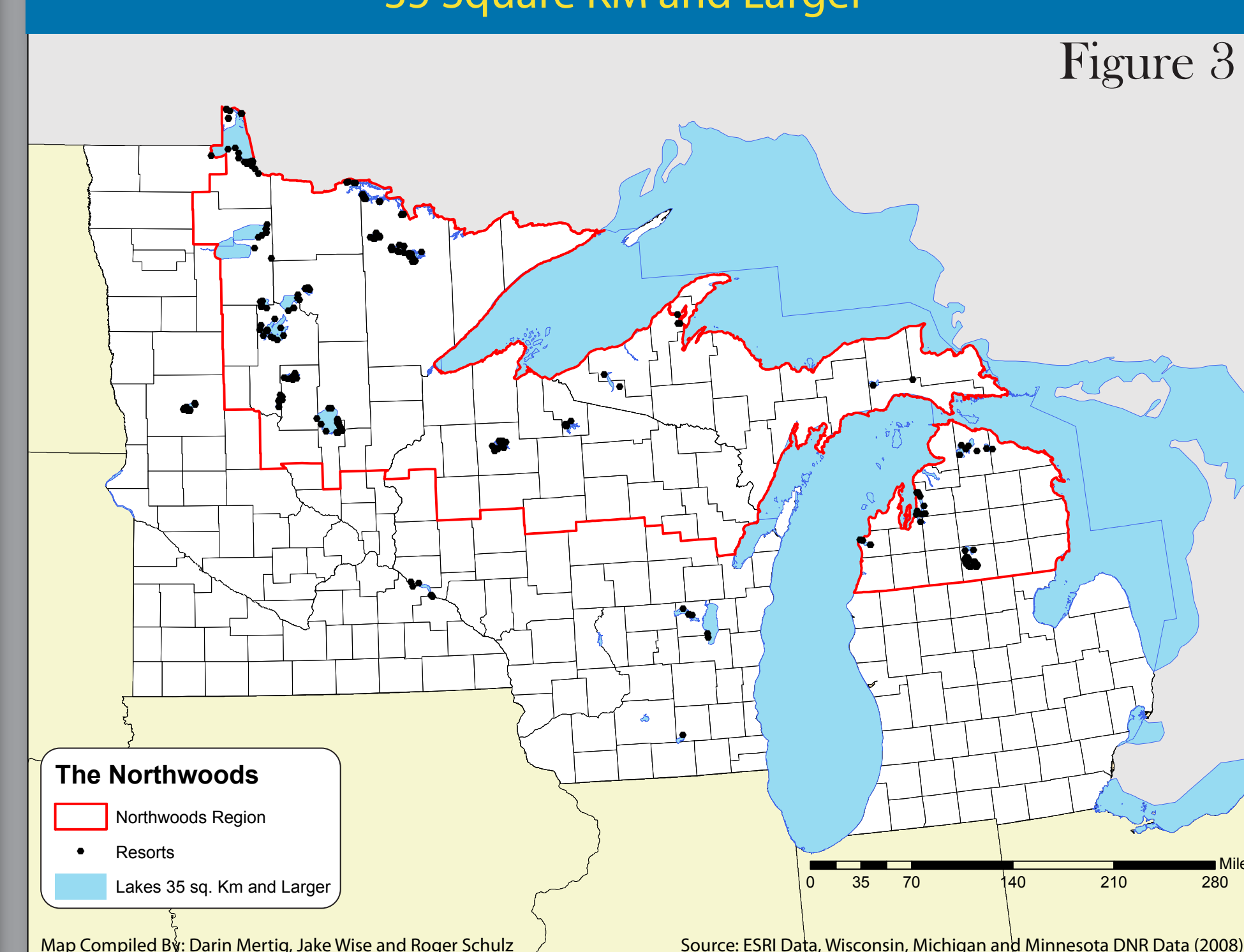
Northwoods Delineated Region



Lakes 35 Square Kilometers and Larger



Resorts located on Lakes 35 Square KM and Larger



Counties with Resorts on 35 sq km Lakes Outside of Northwoods

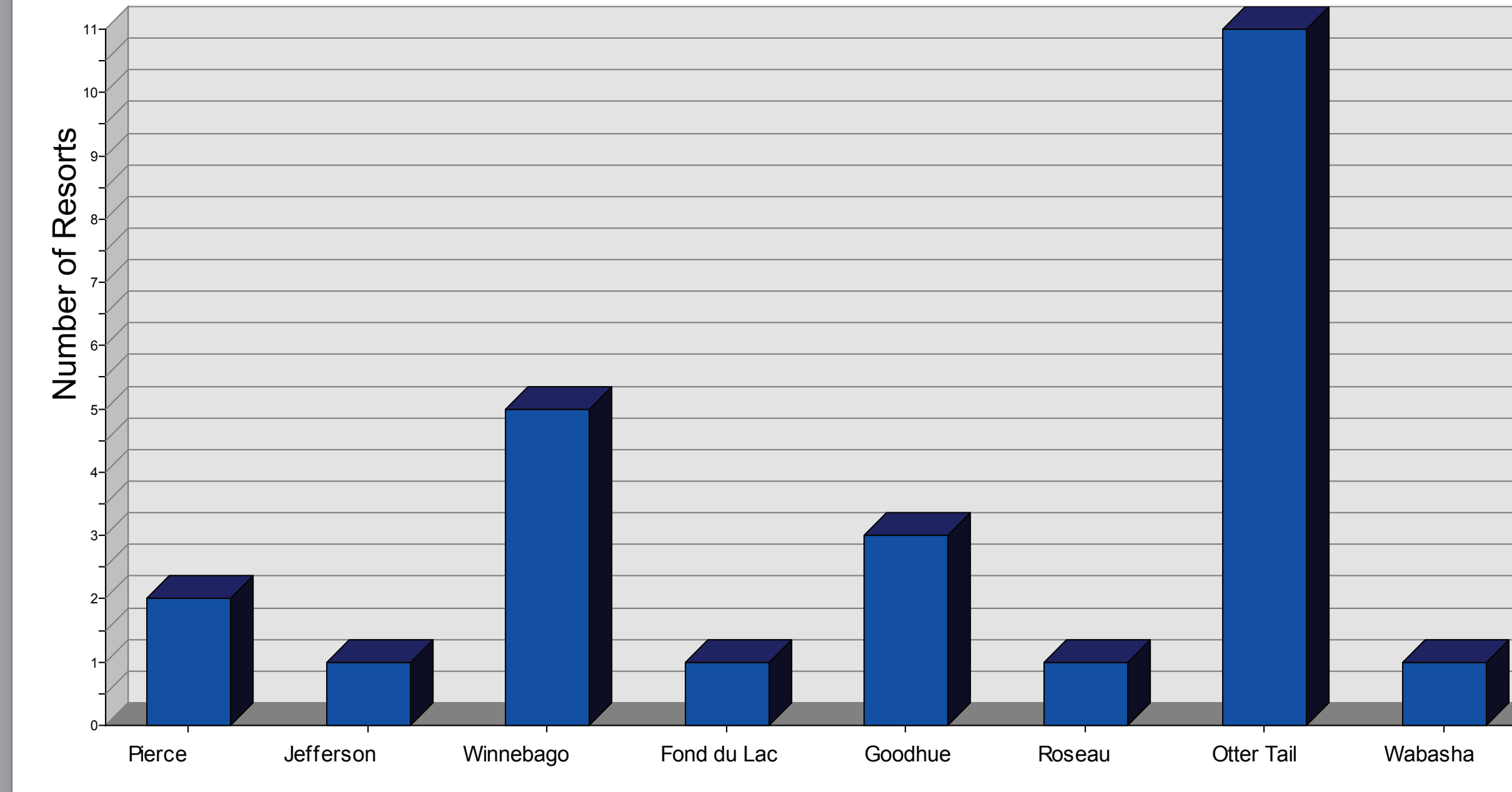


Figure 1: The Northwoods as a region, is based upon fishing and hunting license data, resort density, and lake size. The region on this map was delineated by overlaying each of the maps produced with the differing data sets. The region was established where the criteria were most common for each data set implemented. Several counties that show up in some maps that are outside the region, but they are anomalies and couldn't be included in the region. Counties with high populations tend to skew the data in this way.

Northwoods Counties with Resorts on 35sq km Lakes

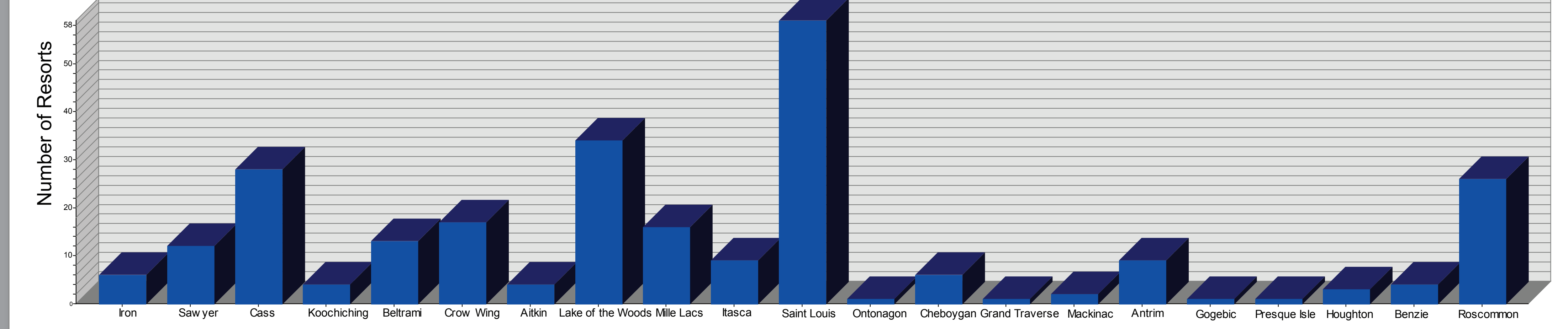
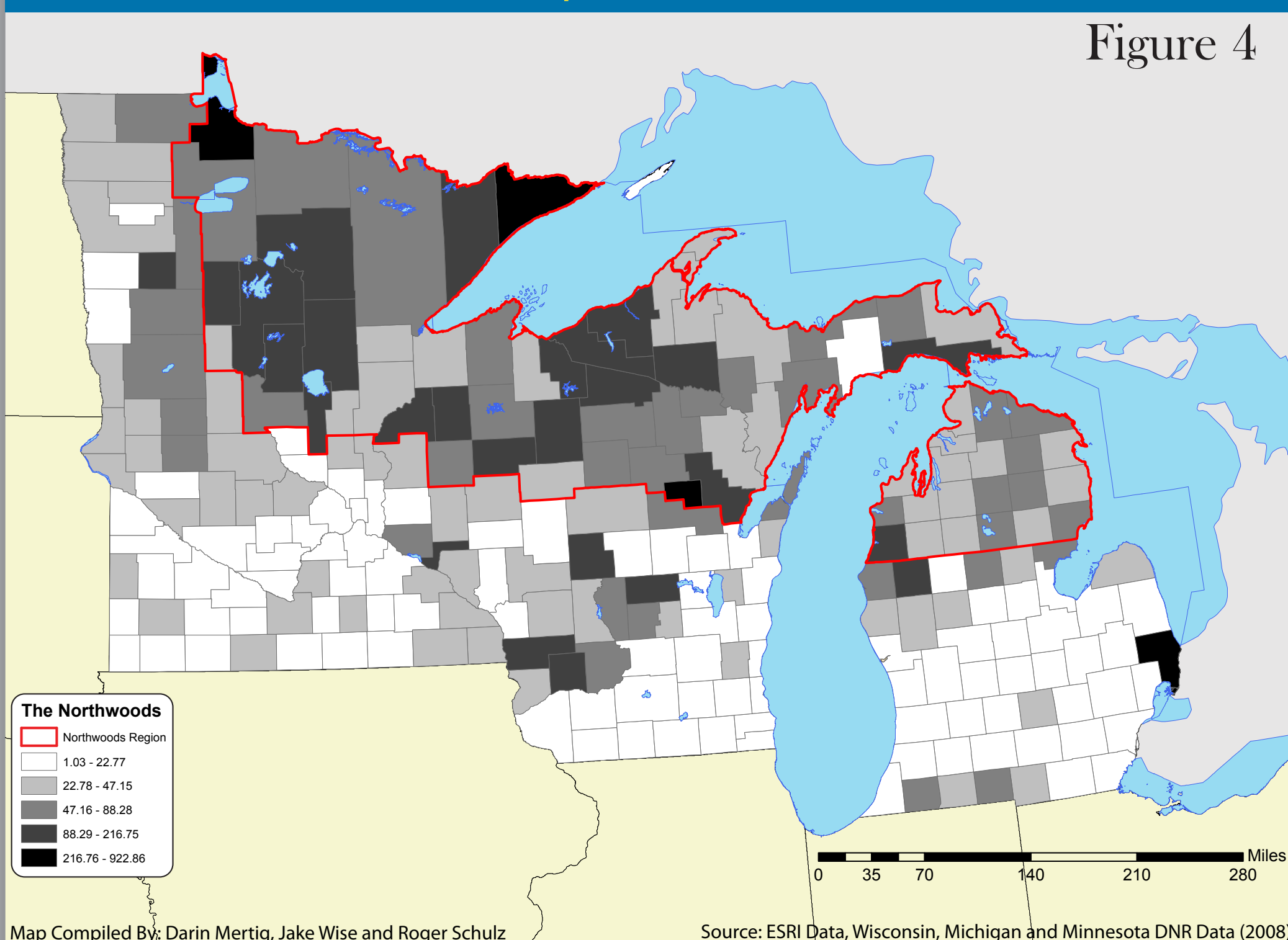
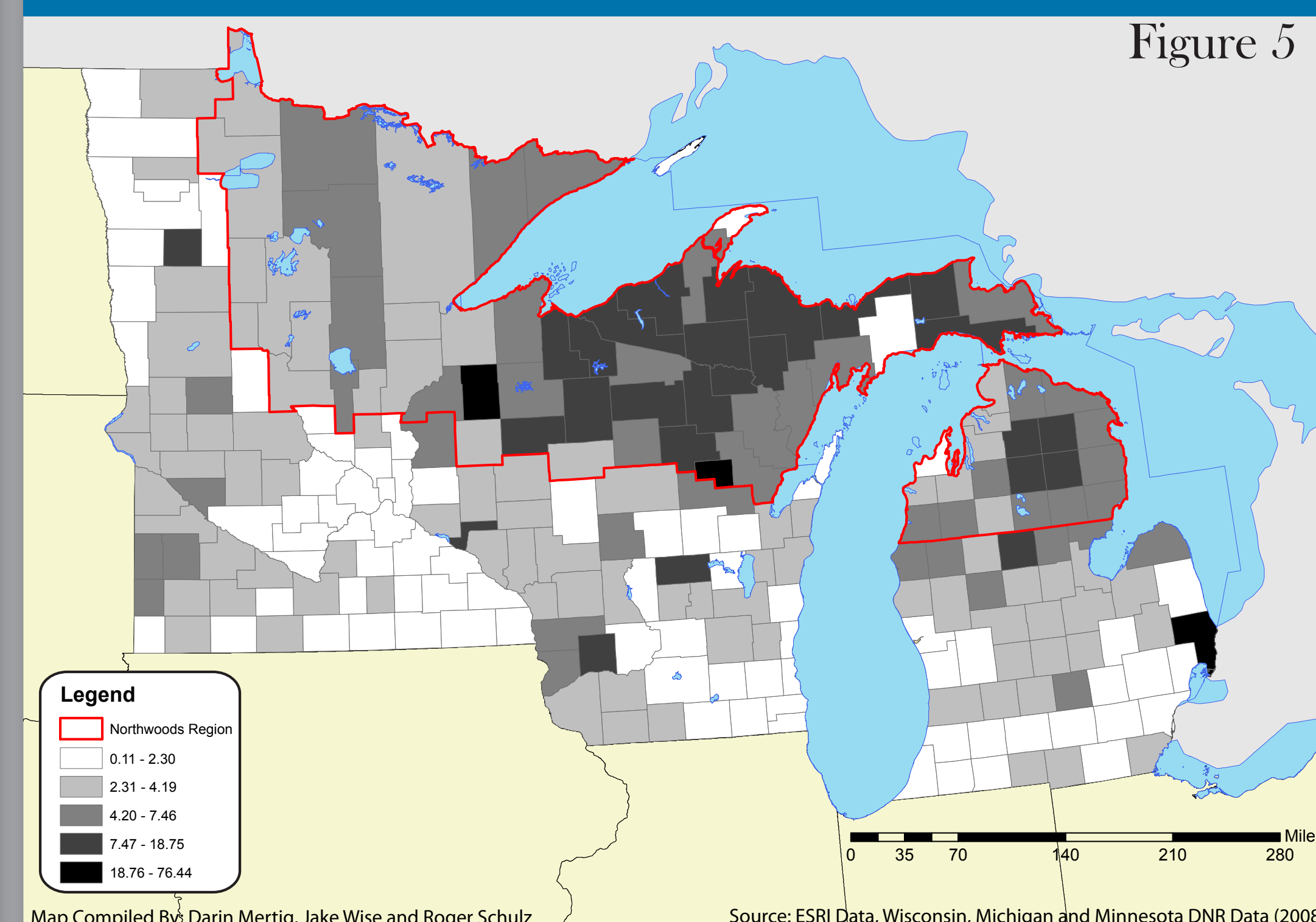


Figure 2,3: Hundreds of thousands of lakes cover Michigan, Minnesota, and Wisconsin. To facilitate the research process, lakes greater than 35 square kilometers were queried out of the dataset, which is equivalent to 8500 acres. With the lakes that met the criteria selected, Google Earth™ was used to locate resorts and lodges located on the selected lakes. After finding the latitudes and longitudes for each resort, the data was entered into a Microsoft Excel™ spreadsheet, and exported into ArcGIS™. The majority of the resorts show up in the Northwoods region. This is because a majority of the lakes that met the defined criteria are also located in our Northwoods region. This map demonstrates that the Northwoods region is relatively defined by resorts on 35 square kilometer lakes.

Residential Fishing Licenses as a Percentage of Population

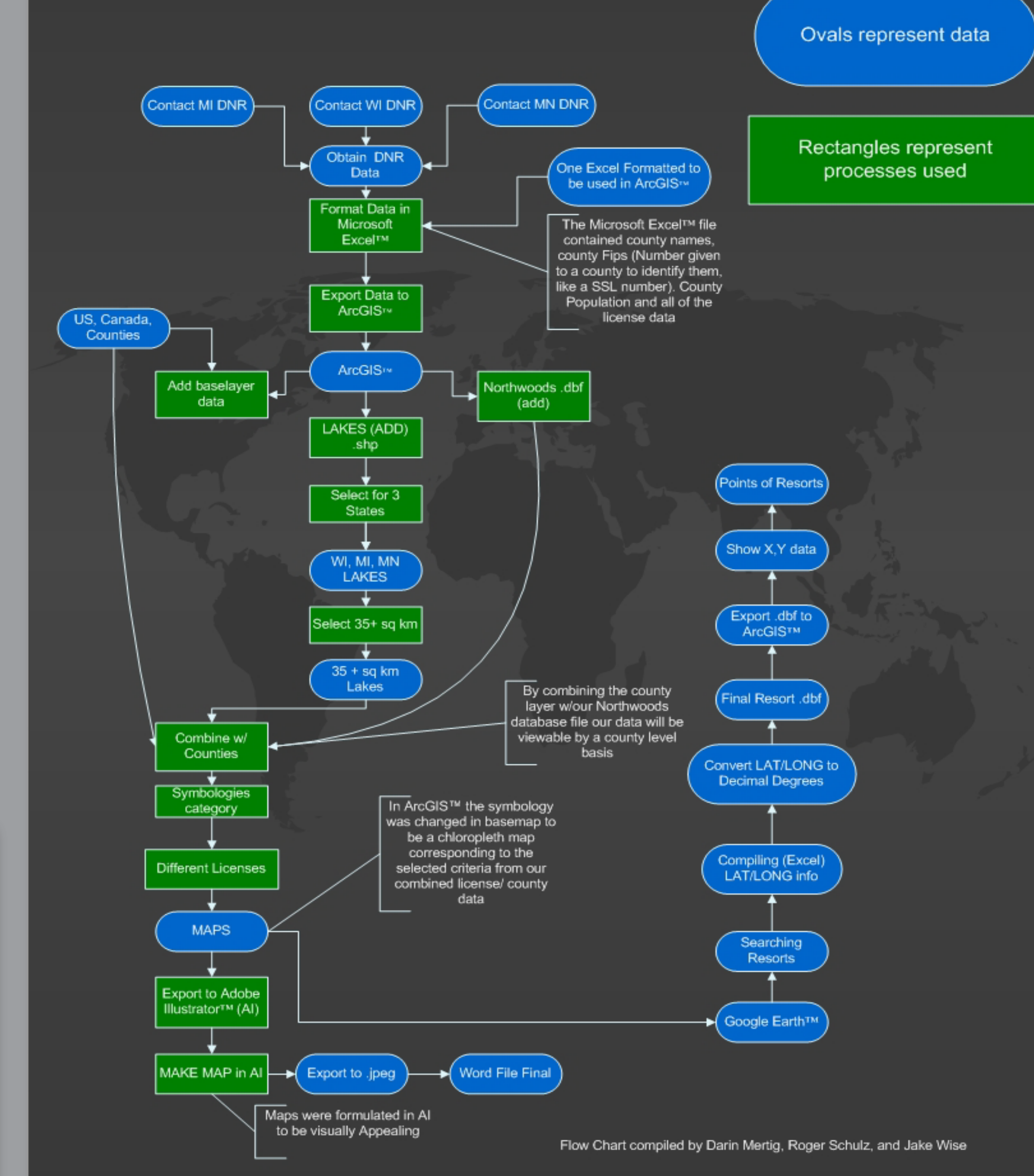


Residential Small Game Licenses as a Percent of Total Licenses Sold per County



In Figure 4 the number of fishing and hunting licenses per county was normalized against United States Census data to show usable numbers in the form of a percentage of licenses sold. A similar technique was used in Figure 5 for small game hunting licenses. The difference is that Figure 5 normalized against the total number of licenses sold. Once the normalization process was conducted, the percentage of people buying licenses in the Northwoods as a common trend became apparent. Saint Clair County MI down near Detroit stands out in both maps. This anomaly exists because it does not fit within the criteria due to its urban nature, and thus it was excluded. Both of these choropleth maps show a remarkable visual delineation of the Northwoods vernacular region.

Flow Chart



Conclusion

The Northwoods is a loosely defined region within the Midwest. There is no individual set of criteria which can be used to define it as a distinct place. Delineating the Northwoods as a region using fishing and hunting license data, resort density, and lake size, demonstrate that this research contributes towards defining the Northwoods as a unique region. The first way the Northwoods is defined is by lakes and resorts as shown in Figures 2 and 3. From looking at the maps there are lakes that fall outside of the defined region, but the Northwoods can be defined by lakes and resorts as an overall general visual trend. It was found that the lakes and resorts do coincide with the fishing license data. Hunting and fishing is definitely a part of the Northwoods, and the maps that best define the region are Figures 4 and 5. Both maps show the visual trend that was observed throughout the research and support the definition of a region. When all of the data was combined a vernacular region appeared, and this region is the Northwoods.