BACKGROUND & ABSTRACT

According to the United States Department of Agriculture, the number of U.S. farmers’ markets accounts for less than two percent of total U.S. produce sales (Kremen, 2004). In this project, GIS was used to evaluate the spatial relationships between farmers and consumers in Upstate South Carolina, with a particular focus on the accessibility of local food sources to Furman University. The resulting maps and graphs will help local farmers identify the most efficient means of supplying their products to consumers. An accompanying interactive map created in Google Earth™ will help consumers locate local food sources in Upstate South Carolina.

DATA: SOURCES & CONTENT

1. Local Food Data
   - Local Food Guide
   - Carolina Guide to Local & Organic Food & More
   - Agricultural websites
   - Content: farms that sell their products locally, as well as farmers’ markets, grocery stores, and cooperatives that sell local foods

2. Furman Data
   - Content: university address

3. South Carolina County Data
   - Source: ESRI’s 2003 Data and Map Series
   - Content: county boundaries

4. South Carolina Roads Data
   - Source: ESRI’s 2003 Data and Map Series
   - Content: road locations

5. South Carolina Blockgroup Data
   - Source: ESRI’s 2003 Data and Maps Series
   - Content: blockgroup boundaries and demographics

Note: County, Roads, and Blockgroup data were clipped to the following counties: Anderson, Cherokee, Greenville, Laurens, Oconee, Pickens, Spartanburg, and Union.

METHODOLOGY

The linear distance from Furman to local food sources and the drive time from Furman to local food sources do not always correlate. For example, six food sources that fall within 10 miles of Furman require fewer than 20 minutes of driving time while three sources that fall within 10 miles of Furman require 20-40 minutes of driving time. In addition, the greatest number of food sources fall 10-30 miles from Furman, but the most common driving time is 40-60 minutes. This discrepancy may be due to the fact that many local food sources are located in rural areas to which there are no fast, direct routes from Furman’s campus.

DISCUSSION

The concentration of food sources in low population (LP) areas combined with the on-site sales of many of these sources indicates that the local food movement could benefit from greater use of farmers’ markets, grocery stores, co-ops, and other methods of centralized food sales. By bringing their products to highly populated areas, farmers could benefit from higher sales, while consumers could benefit from greater convenience. For example, given the long drive times that are required to reach many rural farms, Furman students would be more likely to purchase local foods at nearby stores or markets, particularly since each farm might produce only one or two of the foods that the consumer wishes to purchase. In addition, by bringing their products to highly populated areas, farmers could reduce the number of trips that occur between farms and consumers, thereby reducing the greenhouse gas emissions from food transportation. Finally, the reluctance of farmers to acquire organic certification indicates a need to reevaluate the certification process and to perhaps develop a better method of informing consumers about the natural practices of many Upstate farmers.

REFERENCES & ACKNOWLEDGEMENTS


Agriculture Websites


Acknowledgments:

Dr. Suresh Muthukrishnan
Furman University GIS Lab