Growing Green
An Analysis of the South Carolina Upstate’s Community Supported Agriculture Movement
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EES201 – Introduction to Geographic Information Systems – Spring 2012, Furman University, Greenville, SC

I. Introduction
Community Supported Agriculture (CSA) programs allow interested citizens to become shareholders of local agriculture systems by purchasing shares of produce and meat during a farm’s growing season. CSA, a movement that came to the United States in 1984, is believed to have spread to over 6,500 farms and over 270,000 households across the country (Adam 2008, USDA). The CSA movement is especially popular amongst distinct populations: generally, the farmers and shareholders are young and have received at least a Bachelor’s degree. For this case study, a local farm, Greenbrier Farms, Easley, SC provided their shareholders’ addresses for demographic research based on their locations in the greater Greenville area. Greenbrier’s CSA has 93 participants for the 2012 spring and summer growing season. Using Census tract data and geocoding, we are able to analyze the demographic breakdown of who is participating in CSAs and also provide the farm with additional information regarding further opportunities to better target marketing efforts in the Greenville community.

II. Literature Review
The first CSAs were established in Europe during the 1960s, when community members first approached farmers about developing a direct relationship between producers and consumers (Adam 2006). A 2008 study found that educated consumers were willing to pay over twice as much for produce that was grown locally. Since 2000, the local farmers’ market movement has increased by 53%, illustrating the growing demand for locally grown food (Adam 2006). CSA, a movement that came to the Greenville area, intensifies, the density of shareholders increases. Light yellow is indicative of Also shown are several organic-supporting stores that are optimal places for Greenbrier to advertise to extend their client base. Also noted are CSA pick-up points (green cross).

Preliminary Findings
The dominant location of Greenbrier’s shareholder base is in the Greenville downtown vicinity.

CSA shareholders were mapped using kernel density—a tool that calculates a unit per density area given an input of polygons. As the color intensifies, the densities of shareholders increases. Light yellow is indicative of Also shown are several organic-supporting stores that are optimal places for Greenbrier to advertise to extend their client base. Also noted are CSA pick-up points (green cross).

The largest contingent of shareholders is also likely to frequent local stores, especially The Community Tap, The Tomato Vine, and Everyday Organic.

The Mauldin, Woodruff, and Simpsonville communities, show signs of expansion based on their strong match to the CSA shareholder “profile” discussed below. These areas are the best candidates for growth.

Figure 1. CSA shareholder density in Greenville, SC. The map illustrates shareholder addresses based on the density of the area they are found in. Blue triangles represent marketing opportunities for Greenbrier to expand their shareholder base.

Figure 2. Kernel density projection of Greenbrier Farm CSA for 2012. Shareholder participation density was overlaid on 2010 Household Income data. Darker green shading indicates a greater percentage of census tract population earning $125,000 annually or greater.

CSA Shareholder Profile:
Given the findings of figures 2 and 3, a profile for the average CSA shareholder can be determined. The above choropleth maps suggest that education plays a more significant role in joining a CSA than does income level—this assumption is based on the greater percentage of CSA participants in census tracts with greater number of Bachelor’s degrees or higher degrees per capita. The largest density of shareholders include individuals who are better educated and generally have a higher income than those around them. Figure 2 shows that income level is not as strongly correlated to CSA participation. This is likely a result of the $125,000 income threshold used for this project.

V. Discussion and Conclusion
Greenbrier Farms has a strong grasp on their target interest group. Through their participation in the Greenville Farmer’s Market, they have maximized their CSA shares in the downtown Greenville area and have shown an income and education show that with focused marketing, specifically at Earth Fare Grocery Store, there is potential for expansion into the Mauldin, Woodruff, and Simpsonville communities. The largest contingent of shareholders is also likely to frequent local stores, especially The Community Tap, The Tomato Vine, and Everyday Organic.

Another study of interest could be mapping the distances people are willing to travel for food in order to determine just how far Greenbrier’s range for shareholder convenience. This could be done using buffers or the near tool in ArcMap.

VI. Future Research
• To get a better feel for the typical CSA shareholder, a survey would be an ideal method to gain more insight. Specifically, a survey can gain a better scope of household income, household size, age, and adult education levels in the home could be important indicators for Greenbrier to home in on marketing.

VII. Acknowledgements and References
Special thanks to Chad and Amy Bishop of Greenbrier Farms for graciously allowing me to use the Greenbrier CSA shareholder data. Thanks to Mr. Mike Winstead for the supervision and support of this project.


V. I. Future Research

Figure 2 Data Sources: 1) kernel density data created by the author using 2012 CSA shareholder addresses from Greenbrier Farm Inc; 2) Greenville, Pickens, Anderson, and Laurens County shapefiles from U.S. Census Bureau 3) map inset developed using data from Economic Research Service (ERS) Data & Maps Online (2012)

Figure 3 Data Sources: 1) neighborhood boundaries created by the author using 2010 Census Tract data from U.S. Census Bureau 2) Median Income data from U.S. Census Bureau American Community Survey (ACS) 2006-2010 3) map inset created using data from ERS Data & Maps Online (2012)

All maps created with ESRI ArcMap 10.2 (2012)