

Section 1 - Employment and Establishments in the Region's Food and Beverage Manufacturing Industries

Food manufacturing enterprises (NAICS 311)⁵ comprise a central part of the AFB industry cluster. With over 30,000 establishments and 1.47 million employees, food manufacturing is one of the nation's largest manufacturing sub-sectors in terms of employment, output and gross domestic product. Food manufacturing establishments depend upon agricultural products, but the industry does not directly produce livestock or crops. Instead, firms in the industry process fruits, vegetables, animals, nuts and other goods into value-added products. Products are typically distributed to consumers through wholesalers and retailers, but the industry also includes direct-selling establishments primarily found in retail baking and candy products.

Beverage manufacturing establishments (NAICS 3121) are also an important part of the cluster, albeit at a smaller level than food manufacturing. Nationally, beverage manufacturing accounts for 6,500 establishments and 185,000 employees. The industry converts inputs into both non-alcoholic and alcoholic beverages. Ice manufacturing is also included as a component of non-alcoholic beverage manufacturing, as it uses the same production process as purification for bottled water.

The food and beverage manufacturing industries are segmented into groups distinguished by the specific raw materials used to process products. Specific categories include:⁶

- *“Animal Food Manufacturing (NAICS 3111)”* – Establishments primarily engaged in manufacturing food and feed for animals from ingredients such as grains, oilseed mill products, and meat products;
- *Grain and Oilseed Milling (NAICS 3112)* – Establishments involved in flour milling; malt manufacturing; starch and vegetable fats and oils manufacturing; and breakfast cereal manufacturing;
- *Sugar and Confectionery Product Manufacturing (NAICS 3113)* – Establishments that process agricultural products such as sugarcane, beet, and cacao to produce a new product (sugar or chocolate), or those that begin with sugar and chocolate and process these further;
- *Fruit and Vegetable Preserving and Specialty Food Manufacturing (NAICS 3114)* - Includes establishments that freeze food and those that use preservation processes, such as pickling, canning, and dehydrating.

The industry is split into two sub-categories:

1. Frozen foods including frozen fruit; frozen juices; frozen vegetables; and frozen specialty foods such as pizza, dinners, entrees, and side dishes;
2. Fruit and vegetable canning, pickling, and drying which includes canned, pickled, and dried fruits, vegetables, and specialty foods. The category also includes products such as canned juices; canned baby foods; canned soups; canned dry beans; canned tomato-based sauces (catsup, salsa, etc.); pickles, relishes, jams and jellies; dried soup mixes and bullions; and sauerkraut.

⁵ NAICS is the North American Industrial Classification System. As noted by the U.S. Census Bureau, “NAICS is the standard used by Federal statistical agencies in classifying business establishments for the purpose of collecting, analyzing, and publishing statistical data related to the U.S. business economy.” For more information see: <http://www.census.gov/eos/www/naics/>

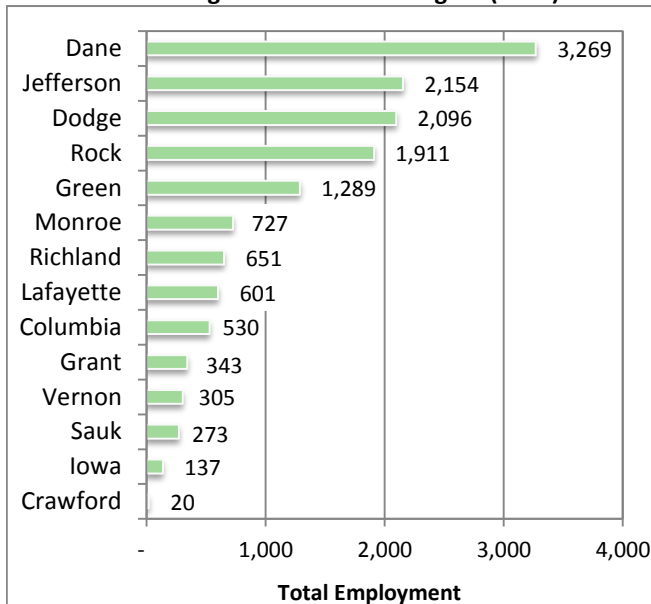
⁶ Industry descriptions are based on NAICS definitions from the U.S. Census Bureau at: <http://www.census.gov/eos/www/naics/index.html>

- *Dairy Product Manufacturing (NAICS 3115)* - Establishments that manufacture dairy products from raw milk, processed milk, and dairy substitutes such as: fluid milk, butter, cheese, ice cream and dry/condensed/evaporated products;
- *Animal Slaughtering and Processing (NAICS 3116)* - Establishments engaged in slaughtering animals; preparing processed meats and meat byproducts; and rendering or refining animal fat, bones, and meat scraps. The category also includes establishments primarily involved in the cutting and packing of fresh and processed meats (bacon, sausage, lunch meat, hams, etc.) from purchased carcasses;
- *Seafood Product Preparation and Packaging (NAICS 3117)* - Includes establishments primarily engaged in one or more of the following: canning seafood; smoking, salting, and drying seafood; cleaning fresh fish; shucking and packing fresh shellfish; processing marine fats and oils; and freezing seafood;
- *Bakeries and Tortilla Manufacturing (NAICS 3118)* – Produce products including bread and bakery products (by both retail and commercial bakeries); frozen cakes, pies and other pastries; cookies, crackers, pasta, dough and flour mixes; and tortillas;
- *Other Food Manufacturing (NAICS 3119)* – Establishments manufacturing a variety of products including snack foods; coffee and tea; flavoring syrup and concentrates; seasonings and dressings; spices and extracts; perishable prepared foods; and all other miscellaneous food products;
- *Beverage Manufacturing (NAICS 3121)* - Beverage manufacturing encompasses three categories of establishments: 1) those that manufacture nonalcoholic beverages (including ice); 2) those that produce alcoholic beverages through a fermentation process; and 3) firms that distil alcoholic beverages.”

Employment

Food manufacturing accounts for over 11,600 jobs in the Madison Region and 2,600 jobs in the Driftless Region (Figure 1.1). When combined, these two regions comprise approximately 23 percent of all food manufacturing employment in the State of Wisconsin. While the highest employment levels are found in the most populous counties of Dane, Dodge, Jefferson and Rock, the food manufacturing industry employs over 100 workers in all counties but Crawford. *Due to confidentiality concerns from reporting agencies, employment data for beverage manufacturing in the region is largely suppressed.* However, Dane, Jefferson and Green Counties each report over 100 employees in the beverage manufacturing industry.

Figure 1.1 – Food Manufacturing Employment by County in the Madison Region and Driftless Region (2013)



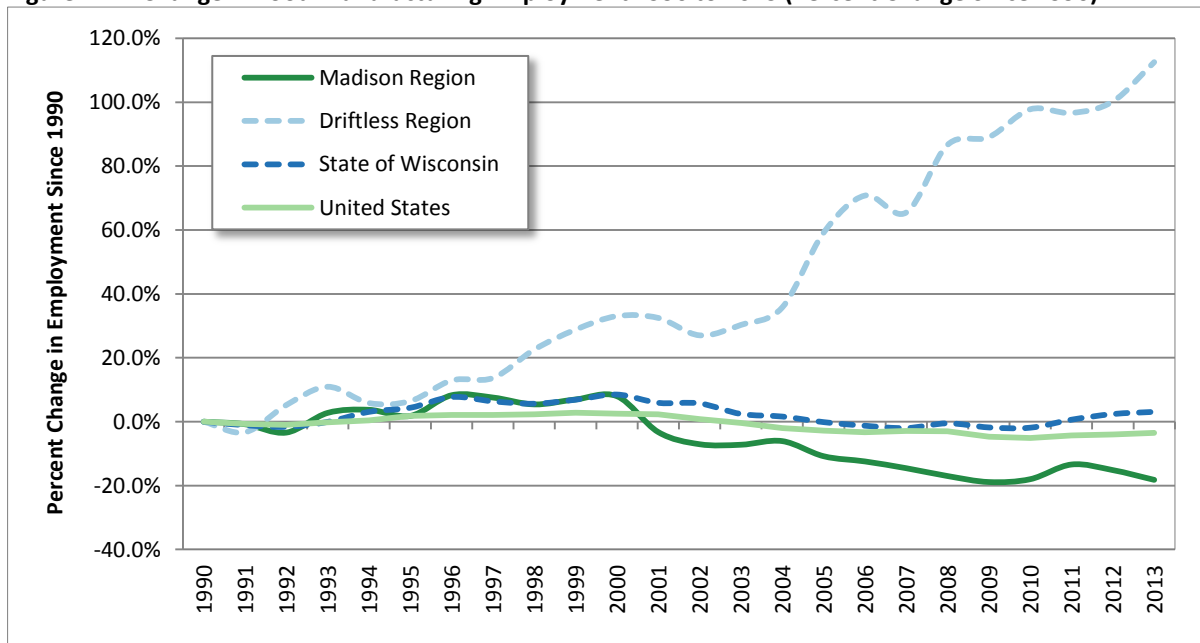
Source: U.S. Census Bureau LEHD, U.S. Bureau of Labor Statistics and Author's Calculations. Some figures are estimated.

Nationally, employment changes in food manufacturing tend to be less volatile than those found in many other manufacturing sub-sectors. Since 1990, year-over-year total U.S. employment in food manufacturing has varied by no more than +/- 1.7 percent (Figure 1.2). The industry's relative stability is also reflected in its limited employment growth. Specifically, total U.S. employment in food manufacturing peaked in 1999 at 1.56 million jobs and since has steadily declined to 1.47 million in 2013.

Food manufacturing in the State of Wisconsin shows a somewhat similar employment trend as that of the United States. On a percentage basis, food manufacturing employment in the state grew faster than the national average in the 1990s, but also experienced employment declines in the 2000s. More recently, food manufacturing jobs have rebounded somewhat in Wisconsin, with employment growing by 5.0 percent (3,000 jobs) between 2010 and 2013. While U.S. employment also increased by 1.7 percent over this three-year period, national employment in food manufacturing continues to remain below job levels in 1990.

Food manufacturing employment trends in the Madison Region and the Driftless Region have diverged from state and national trends. Since 1990, employment in the Madison Region has dropped by -18.2 percent, with the largest declines occurring after 1999. *In contrast, employment in the Driftless Region has increased by 112.5 percent.* While the percentage change in the Driftless Region is somewhat intensified by its relatively small employment baseline in 1990, the increase is significant nonetheless.

Figure 1.2 – Change in Food Manufacturing Employment 1990 to 2013 (Percent Change Since 1990)



Source: U.S. Census Bureau LEHD, Bureau of Labor Statistics, and Author's Calculations

The relative employment stability of the food manufacturing sector might suggest that the industry is somewhat recession-proof or immune to large changes. However, the food manufacturing industry is highly competitive and is swayed by macroeconomic conditions. While domestic population growth and international export potential can increase overall demand for food products, factors such as changing disposable income levels, consumer confidence, and unemployment rates can influence overall spending. Food categories such as snack foods, premium prepared meals, branded foods, fresh vegetables, canned foods

and frozen products are particularly susceptible to changes in the economy, both positive and negative. Furthermore, consumer preferences can change quickly, leading to increased spending for some products and reduced demand for others. Accordingly, innovation and capitalization on market trends are two factors of success in the industry.

The food manufacturing employment declines in the Madison Region should be a reminder of the competitiveness of the industry. Unfortunately, data confidentiality and suppression issues do not allow for a detailed analysis of employment trends in sub-categories of food manufacturing. However, sufficient data exist to suggest that the Madison Region’s drop in food manufacturing employment is largely explained by job losses in dairy manufacturing and animal processing. Some of these declines are the result of nine mass layoff and plant closing events in the region’s dairy processing industry, affecting more than 600 employees between 2000 and 2010. Furthermore, the job declines in animal processing are largely attributed to gradual employment reductions at Oscar Mayer in Madison, which is by far the largest animal processing facility in the region. *Consequently, the employment changes are not necessarily indicative of overall declining regional competitiveness in food manufacturing, but rather structural changes within individual firms and categories.*

Location Quotients

Location quotients provide another means of analyzing food manufacturing employment in the region. A location quotient (LQ) is calculated by comparing food manufacturing’s share of local employment to the industry’s share of overall national employment:

$$\begin{array}{rcl} \text{Location Quotient (LQ)} & & \frac{\text{Food manufacturing employment in the region}}{\text{Total employment in the region (all industries)}} \\ \text{for food manufacturing} = & \frac{}{} & \frac{\text{Food manufacturing national employment}}{\text{Total national employment (all industries)}} \end{array}$$

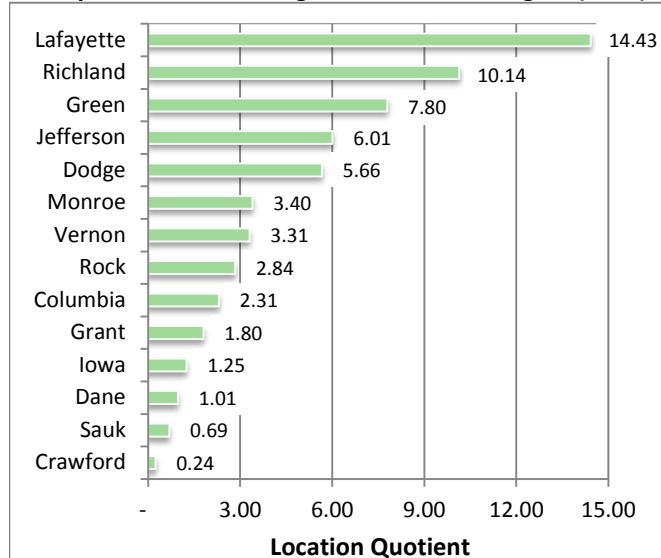
The critical value for a location quotient is 1.0. An LQ of 1.0 means an area has the *same* proportion of local employment in an industry as the nation. An LQ *greater* than 1.0 denotes that an area’s share of employment in a given industry is more than its national share. Conversely, an LQ *less* than 1.0 indicates an area’s employment in an industry is below the national percentage. Due to accuracy issues with employment data, location quotients between 0.75 and 1.25 are generally considered not to be significantly different from 1.0.⁷

Location quotients greater than 1.25 are important as they imply that an area has a specialization in a given industry. More specifically, an LQ greater than 1.25 suggests that an industry is producing more goods or services than can be consumed locally. These goods and services are in turn exported out of the region, connecting the area to external economies and bringing outside dollars into local communities (i.e. they have an export-orientation). In contrast, an LQ less than 0.75 suggests that local industries are not meeting demand (demand is greater than supply) and the good or service must be imported into the region.

⁷ Differences in local demand preferences compared to national conditions, or the efficiency of a local industry, have the potential to skew the results of a location quotient analysis.

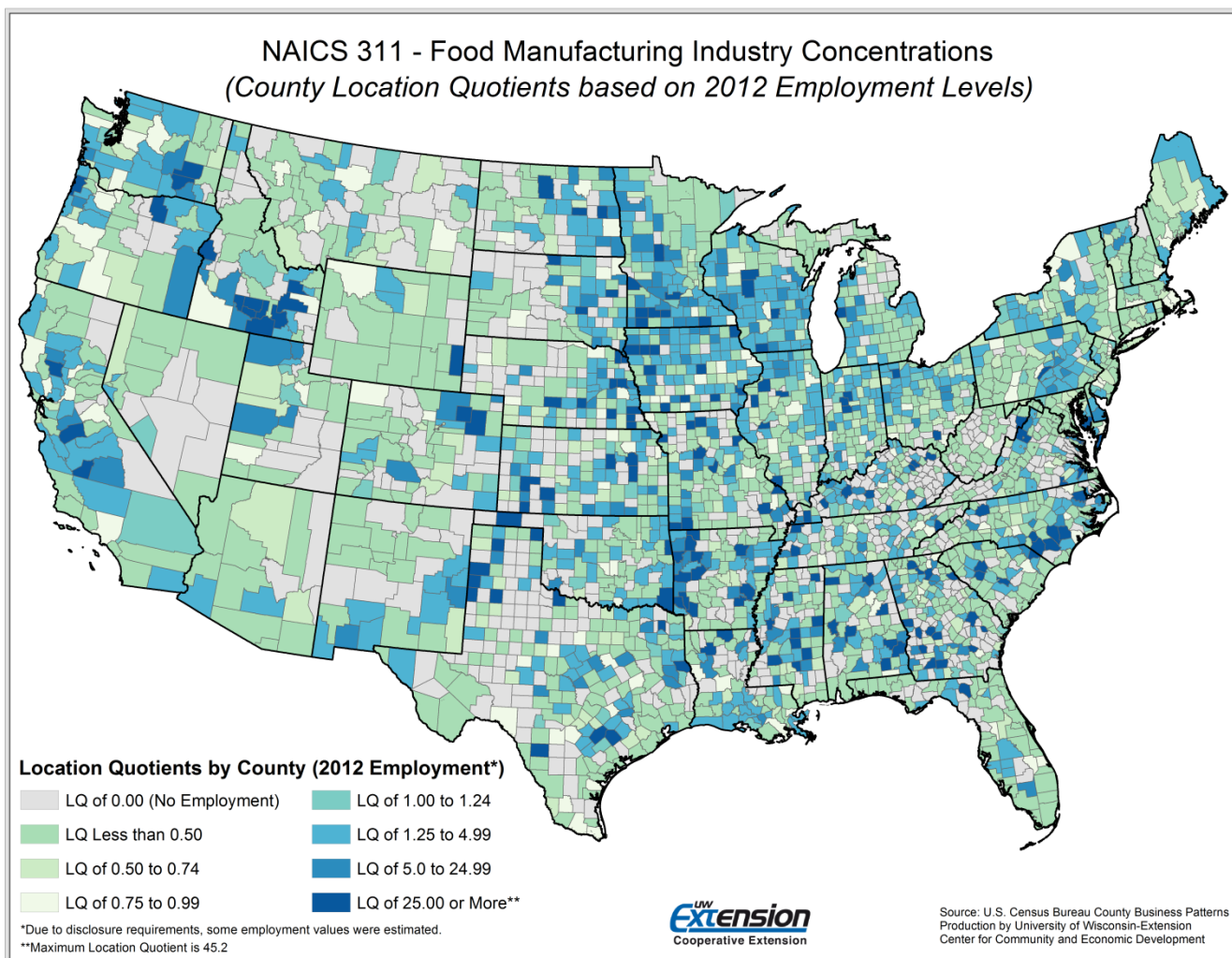
With the exceptions of Sauk and Crawford, every county in the study area has a food manufacturing location quotient either at or above 1.0 (Figure 1.3). In most instances county location quotients are significantly greater than 1.0, with Dodge, Jefferson, Richland and Lafayette counties having LQs above 5.0. These high location quotients all suggest that food manufacturing injects outside dollars into the regional economy and is a source of specialization. These figures reiterate the importance of food manufacturing as an export industry across the rural-urban continuum found in the study area. The high location quotients in study area counties also show the geographic specialization of the region relative to other areas in the United States (Figure 1.4).

Figure 1.3 – Food Manufacturing Location Quotients by County in the Madison Region and Driftless Region (2013)



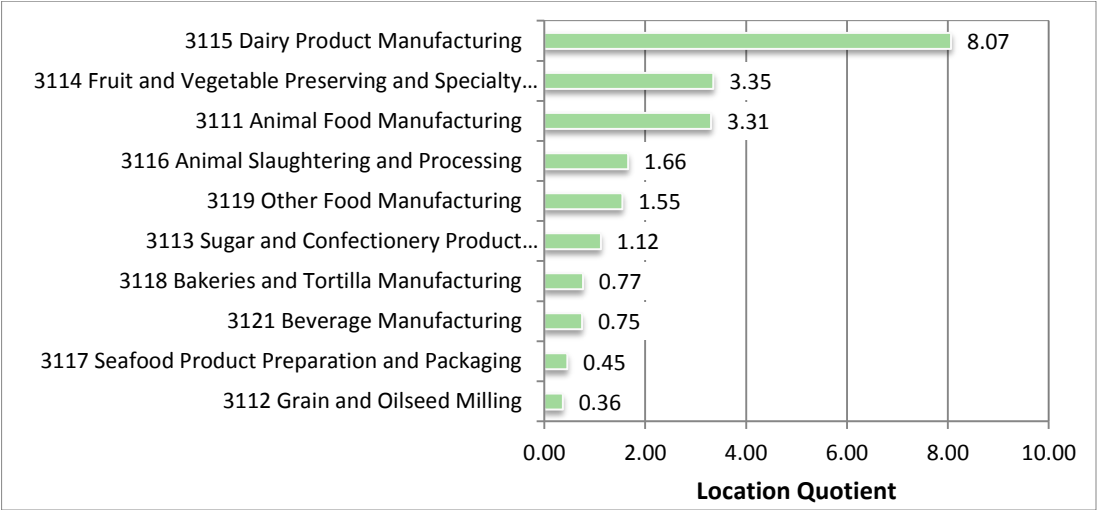
Source: U.S. Census Bureau LEHD, U.S. Bureau of Labor Statistics and Author's Calculations. Some figures are estimated.

Figure 1.4 – Food Manufacturing Location Quotients by County



Location quotients for several sub-categories of food manufacturing are also significant within the fourteen-county study area (Figure 1.5). Large regional LQs are found in dairy product manufacturing (LQ = 8.07); fruit and vegetable preserving and specialty food manufacturing (3.35); animal food manufacturing (3.31); animal slaughtering and processing (1.66); and other food manufacturing (1.55). While these categories of food manufacturing are broad in scope, their relative concentrations may provide one opportunity to differentiate the region from other food-related clusters and concentrations suggested by the map in Figure 1.4. Geographic concentrations of specific food and beverage manufacturing categories are examined later in this abstract.

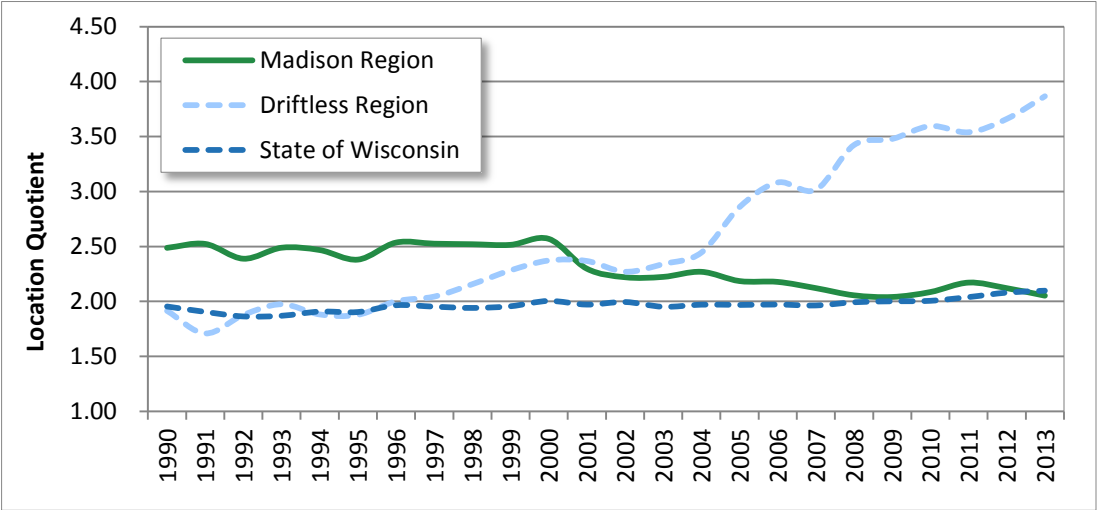
Figure 1.5 – Fourteen County Study Area Location Quotients in Food Manufacturing Sub-Categories



Source: IMPLAN (2011 figures)

Trends in food manufacturing location quotients provide one final perspective on industry change (Figure 1.6). Between 1996 and 2013, the Driftless Region’s food manufacturing location quotient increased from 1.97 to 3.87. The increasing LQ reflects the regional employment gains previously noted in Figure 1.2. In contrast, the Madison Region’s food manufacturing LQ decreased from 2.54 to 2.05, which is indicative of the region’s waning employment. Again, this trend may not necessarily reflect the region’s overall competitiveness in the industry, but rather structural changes within specific firms in the region.

Figure 1.6 – Change in Food Manufacturing Location Quotient 1990 to 2013



Source: U.S. Census Bureau LEHD, U.S. Bureau of Labor Statistics and Author’s Calculations. Some figures are estimated.

Establishments

The fourteen county study area is home to 341 food manufacturing establishments. The Madison Region accounts for 280 of these establishments (Table 1.1), while the Driftless Region is responsible for the remaining 61 locations (Table 1.2). These establishments vary dramatically in their size, products produced, and ownership structure. With 108 establishments, firms categorized under bakeries and tortilla manufacturing (NAICS 3118) account for the largest share (31.2 percent) of food manufacturing locations in the study area. While this percentage may seem high, it is actually lower than the national average, where bakeries and tortilla manufacturing facilities account for 41.3 percent of all food manufacturing establishments. These facilities include numerous neighborhood retail bakeries in addition to a few larger facilities that produce products on a more significant commercial scale (such as Bimbo Bakeries USA).

Dairy product manufacturing (NAICS 3115) establishments are highly concentrated and potentially represent the largest source of differentiation for the region's AFB cluster. With a combined 69 establishments, the Madison Region and Driftless Region have one of the largest regional concentrations of dairy product manufacturing in the entire nation (See map in Appendix A). These firms span standalone, branch and headquarter facilities and include locally-owned producers (such as Carr Valley, Hooks, and Crave Brothers); establishments networked through cooperatives (including Foremost Farms and AMPI); and locations attached to large corporations (e.g. Saputo Inc. and Kraft Foods Global). While the industry has ten locations with 100 to 499 employees, it is largely comprised of establishments with 10 to 99 employees and 1 to 9 employees.

In terms of total establishments, animal slaughtering and processing (NAICS 3116) is the study area's third largest food manufacturing category. Similar to dairy product manufacturing, the industry includes numerous small processors located throughout the region. However, the region's animal processing industry also contains a number of corporate branch facilities with larger employment levels such as those attached to Johnsonville, Hormel and Tyson. This category also includes Oscar Mayer, which is the single largest employer in the region's food manufacturing industry.

Fruit and vegetable preserving and specialty foods (NAICS 3114) include 24 establishments across diverse categories of production. Establishments in fruit and vegetable preserving and specialty foods include small-to-midsize, locally-owned facilities (such as Quince and Apple, Emil's Pizza, and J.G. Van Holten and Sons). The category also accounts for large canning and frozen food processing facilities owned by firms such as Seneca Foods Corporation and McCain Foods USA Inc. Other food manufacturing (NAICS 3119) includes 34 facilities producing a breadth of syrups, snack foods, seasonings, flavor extracts, spices and refrigerated salads.

Twenty-five beverage manufacturing establishments are found in the region. These facilities include producers of bottled water, soft drinks, beer, wine and distilled beverages. Importantly, a number of notable beverage firms are not included in these statistics. For instance, Potosi Brewery and Ale Asylum are classified elsewhere in the NAICS classification scheme. Similar omissions are also found among the region's brewpubs, which are classified under eating and drinking places. The exclusion of these firms (and likely others) are important as they show the limitation of any data set used to examine the regional economy. Consequently, MadREP has been provided with several lists of firms to help identify gaps in the data. Furthermore, there are likely establishments that produce a diversity of food and beverage products, but are only classified in a single category of manufacturing in Table 1.1 and Table 1.2.

Table 1.1 – Food and Beverage Manufacturing Establishments in the Madison Region

| NAICS | Description | Total Establishments | Establishments by Number of Employees | | | |
|-------------|--|-------------------------|---------------------------------------|------------|---------------|----------------|
| | | | 1 to 9 | 10 to 99 | 100 to 499 | 500 or More |
| 311 | Food Manufacturing - Total | 280 | 147 | 108 | 24 | 1 |
| 3111 | Animal Food Manufacturing | 25 | 9 | 15 | 1 | 0 |
| 3112 | Grain and Oilseed Milling | 10 | 5 | 5 | 0 | 0 |
| 3113 | Sugar and Confectionery Product Manufacturing | 20 | 11 | 7 | 2 | 0 |
| 3114 | Fruit and Vegetable Preserving & Specialty Foods | 24 | 9 | 12 | 3 | 0 |
| 3115 | Dairy Product Manufacturing | 49 | 12 | 30 | 7 | 0 |
| 3116 | Animal Slaughtering and Processing | 33 | 15 | 11 | 6 | 1 |
| 3117 | Seafood Product Preparation and Packaging | 1 | 1 | 0 | 0 | 0 |
| 3118 | Bakeries and Tortilla Manufacturing | 90 | 68 | 19 | 3 | 0 |
| 3119 | Other Food Manufacturing | 28 | 17 | 9 | 2 | 0 |
| 3121 | Beverage Manufacturing Total | 28 | 18 | 8 | 2 | 0 |
| 31211 | Soft Drink and Ice Manufacturing | 6 | 3 | 1 | 2 | 0 |
| 31212 | Breweries | 9 | 3 | 6 | 0 | 0 |
| 31213 | Wineries | 12 | 11 | 1 | 0 | 0 |
| 31214 | Distilleries | 1 | 1 | 0 | 0 | 0 |

Source: National Establishment Time Series Data – 2013 Summary

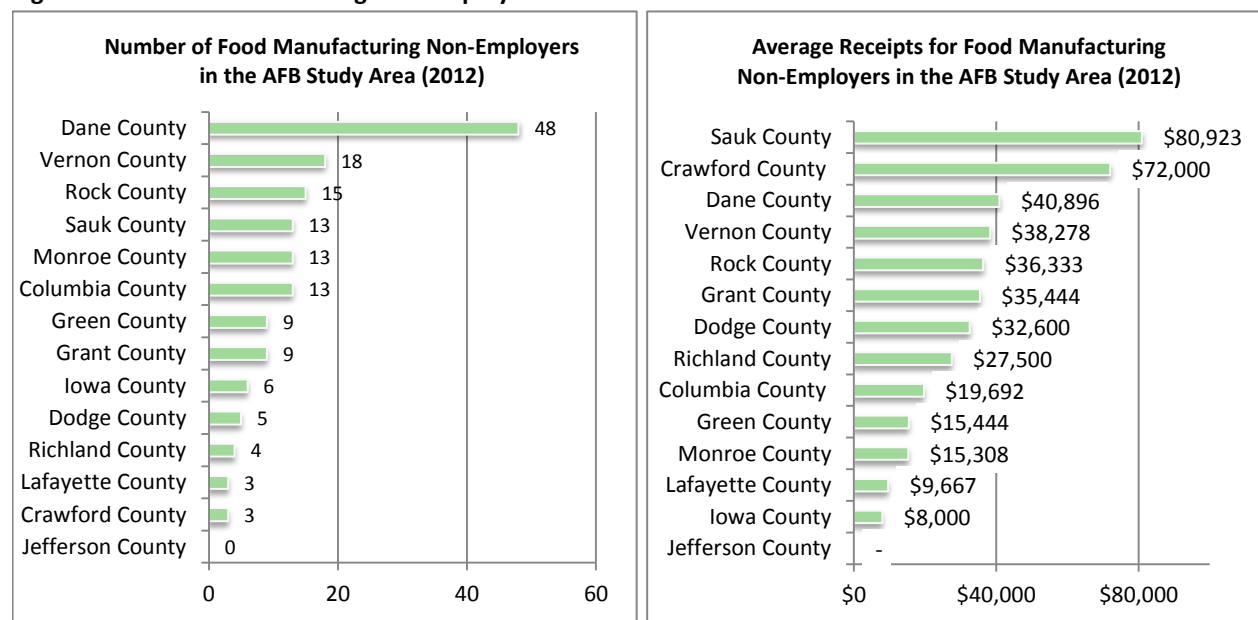
Table 1.2 – Food and Beverage Manufacturing Establishments in the Driftless Region

| NAICS | Description | Total Establishments | Establishments by Number of Employees | | | |
|-------------|--|-------------------------|---------------------------------------|-----------|---------------|----------------|
| | | | 1 to 9 | 10 to 99 | 100 to 499 | 500 or More |
| 311 | Food Manufacturing - Total | 61 | 42 | 15 | 4 | 0 |
| 3111 | Animal Food Manufacturing | 6 | 4 | 2 | 0 | 0 |
| 3112 | Grain and Oilseed Milling | 2 | 2 | 0 | 0 | 0 |
| 3113 | Sugar and Confectionery Product Manufacturing | 0 | 0 | 0 | 0 | 0 |
| 3114 | Fruit and Vegetable Preserving & Specialty Foods | 0 | 0 | 0 | 0 | 0 |
| 3115 | Dairy Product Manufacturing | 20 | 8 | 9 | 3 | 0 |
| 3116 | Animal Slaughtering and Processing | 10 | 7 | 3 | 0 | 0 |
| 3117 | Seafood Product Preparation and Packaging | 0 | 0 | 0 | 0 | 0 |
| 3118 | Bakeries and Tortilla Manufacturing | 18 | 17 | 1 | 0 | 0 |
| 3119 | Other Food Manufacturing | 5 | 4 | 0 | 1 | 0 |
| 3121 | Beverage Manufacturing Total | 7 | 6 | 1 | 0 | 0 |
| 31211 | Soft Drink and Ice Manufacturing | 2 | 1 | 1 | 0 | 0 |
| 31212 | Breweries | 0 | 0 | 0 | 0 | 0 |
| 31213 | Wineries | 5 | 5 | 0 | 0 | 0 |
| 31214 | Distilleries | 0 | 0 | 0 | 0 | 0 |

Source: National Establishment Time Series Data – 2013 Summary

The establishment counts in Table 1.1 and Table 1.2 may not include some firms in the Madison Region and the Driftless Region classified as *non-employers*. Non-employer figures originate from tax return information collected by the Internal Revenue Service and provide some perspective on the so-called “1099” economy. Non-employers are sole-proprietors who may have small enterprises located at home or elsewhere. These businesses may or may not be the sole source of income for their operators. However, these non-employers may be a potential source of nascent entrepreneurs looking to grow their business. In 2012, more than 150 food manufacturing non-employers were found in the study area (Figure 1.7).⁸ While these individuals may be difficult to identify, they may provide one opportunity for growing the region’s AFB cluster.

Figure 1.7 - Food Manufacturing Non-Employers



Source: U.S. Census Bureau Non-Employer Statistics and Author’s Calculations

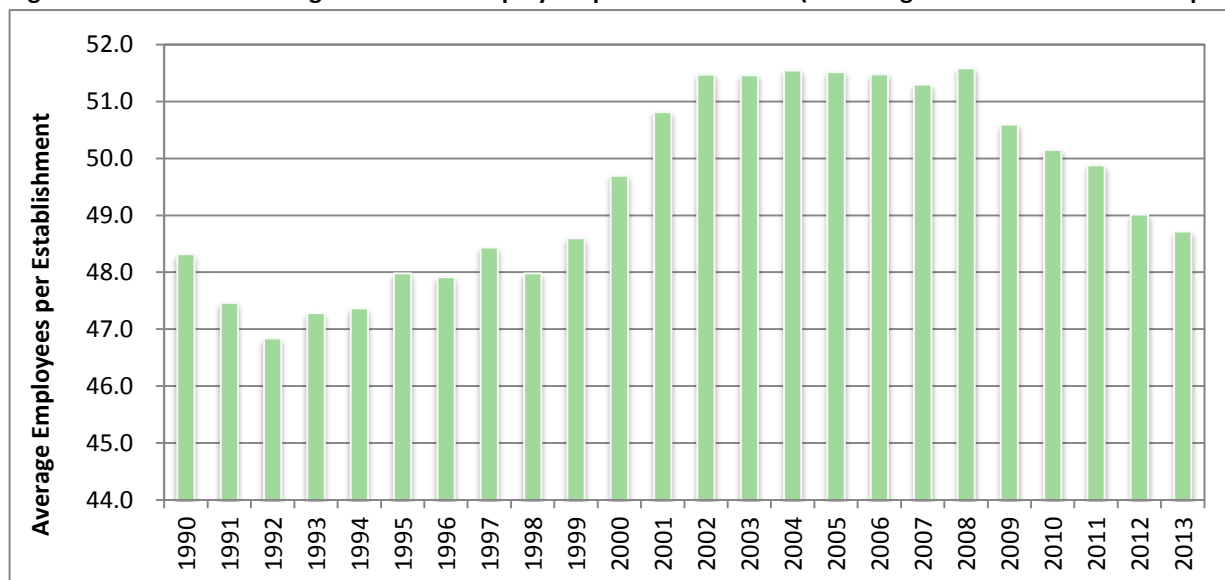
The establishment distributions in Table 1.1 and Table 1.2 show that the majority of food and beverage manufacturing establishments in the study area are small employers. Smaller establishments also dominate the industry on a national basis. Not including retail bakeries, 86 percent of national food processing establishments have fewer than 100 employees. However, facilities with 100 or more employees are responsible for almost 77 percent of employment in the sector.⁹

Despite the prominence of small establishments, consolidation is occurring across the food manufacturing industry. Some of this consolidation is being driven by merger and acquisition activities as large companies look to increase market shares. New technologies are also allowing plant sizes to increase sharply and benefit from economies of scale that lower per unit costs and minimize labor needs. These trends are particularly apparent in the dairy and meatpacking industries (Ollinger et al 2005). Consolidation activity and economies of scale are also somewhat reflected in the recent decline in the national average number of employees per food manufacturing establishment (Figure 1.8).

⁸ Data suppression does not allow for an analysis of beverage manufacturing non-employers.

⁹ Source: Bureau of Labor Statistics and Author’s Calculations.

Figure 1.8 – National Average Number of Employees per Establishment (Food Mfg. Establishments with Employees)



Source: Bureau of Labor Statistics and Author's Calculations

Regardless of industry consolidation trends, the diversity of establishments in the region creates both opportunities and challenges. In particular, the variety of products manufactured in the region presents several opportunities for economic growth. *However, this diversity also suggests that the cluster cannot be supported using a one-size-fits all approach.* Producers of various products likely will have some common needs, but also may face unique challenges. Consequently, the AFB cluster will require the support of many affiliated stakeholders and organizations.

As firms change in size, their needs and requirements for support also vary. Identifying firms by *stage* provides broad insights on resources that might be provided by a community. For instance, economic development strategies targeting larger establishments will likely tilt toward business retention and workforce development activities. In contrast, smaller firms may require support in the form of access to capital and technical assistance.

One particular type of firm often overlooked by economic and business development activities are Stage 2 firms, or so-called second-stage companies. Stage 2 companies are distinct from other firms as they have survived the start-up process, but also reached a position where the complexity of running the company has exceeded the capacity of one owner or CEO. Consequently, more formal operational structures and strategy may be needed to continue growth and evolve into the next stage of business. However, the time, expertise and revenue are often unavailable within the firm to support these changes (Edward Lowe Foundation 2013). Due to their unique position, these firms often fall between economic development efforts that look to generate start-ups and those that work with the retention and attraction of larger firms.

Importantly, research from the Edward Lowe Foundation suggests that second-stage companies provide an important source of employment growth. For instance, second-stage companies represented only 11.6 percent of U.S. establishments between 1995 and 2012, but generated nearly 34 percent of jobs and about 34.5 percent of sales over this period.¹⁰ *In contrast, employment within Stage 4 (large firms) has declined in*

¹⁰ Based on figures from the National Establishment Time Series database.

both the food manufacturing industry and across all combined industry sectors. Second-stage establishments typically have 10-99 employees and \$1 million to \$50 million in revenue. Accordingly, many of the study area's food and beverage manufacturing firms potentially fit into this definition. While not all of these firms may want to grow, dedicated programs to support enterprises in this growth stage could provide a unique opportunity for the region.

Figure 1.9 – Business Stages

1. **Self-Employed/Non-Employer (1 employee)** – “Includes small-scale business activity that can be conducted in homes as well as sole proprietorships”;
2. **Stage 1 (2-9 employees)** – “Includes partnerships, lifestyle businesses and startups. This stage is focused on defining a market, developing a product or service, obtaining capital and finding customers”;
3. **Stage 2 (10-99 employees)** – “At this phase, a company typically has a proven product, and survival is no longer a daily concern. Companies begin to develop infrastructure and standardize operational systems. Leaders delegate more and wear fewer hats”;
4. **Stage 3 (100-499 employees)** – “Expansion is a hallmark at this stage as a company broadens its geographic reach, adds new products and pursues new markets. Stage 3 companies introduce formal processes and procedures, and the founder is less involved in daily operations and more concerned with managing culture and change”;
5. **Stage 4 (500 or more employees)** – “By Stage 4, an organization dominates its industry and is focused on maintaining and defending its market position. Key objectives are controlling expenses, productivity, global penetration and managing market niches”.

Source: Edward Lowe Foundation/YourEconomy.org

Geographic Distribution

The 341 food manufacturing establishments found in the Madison Region and Driftless Region are also part of a larger intensity of food manufacturing that extends into Southeast Wisconsin and Northeast Illinois. When combined, this concentration of food manufacturing facilities is one the largest in the nation (Figure 1.10). Specifically, over 2,600 establishments (8.8 percent of the national total) are within 100 miles of the study area.¹¹ Over 16 percent of food manufacturing establishments are within 250 miles. While the number of establishments around the Madison Region may seem irrelevant, food manufacturing establishments commonly buy and sell products to one another, creating a large potential market for local firms. Buy-sell relationships among food and beverage manufacturers are considered in more detail in Section 3.

Overall, food and beverage manufacturing establishments are somewhat skewed toward non-metro areas. Specifically, non-metro counties account for just 15 percent of the nation's population, but 22 percent of all food and beverage manufacturing establishments. Nonetheless, metropolitan areas account for 78 percent of all food and beverage manufacturing enterprises, with the top 50 metro areas listed in Table 1.3 and Table 1.4. As population is a driver of food manufacturing demand, it is not surprising that eight of the top ten metro areas for food manufacturing establishments also rank among the nation's ten most populous metropolitan areas.

¹¹ A 100-mile radius is one common distance used to define short-haul trucking opportunities.

Figure 1.10 – Distribution of Food Manufacturing Establishments

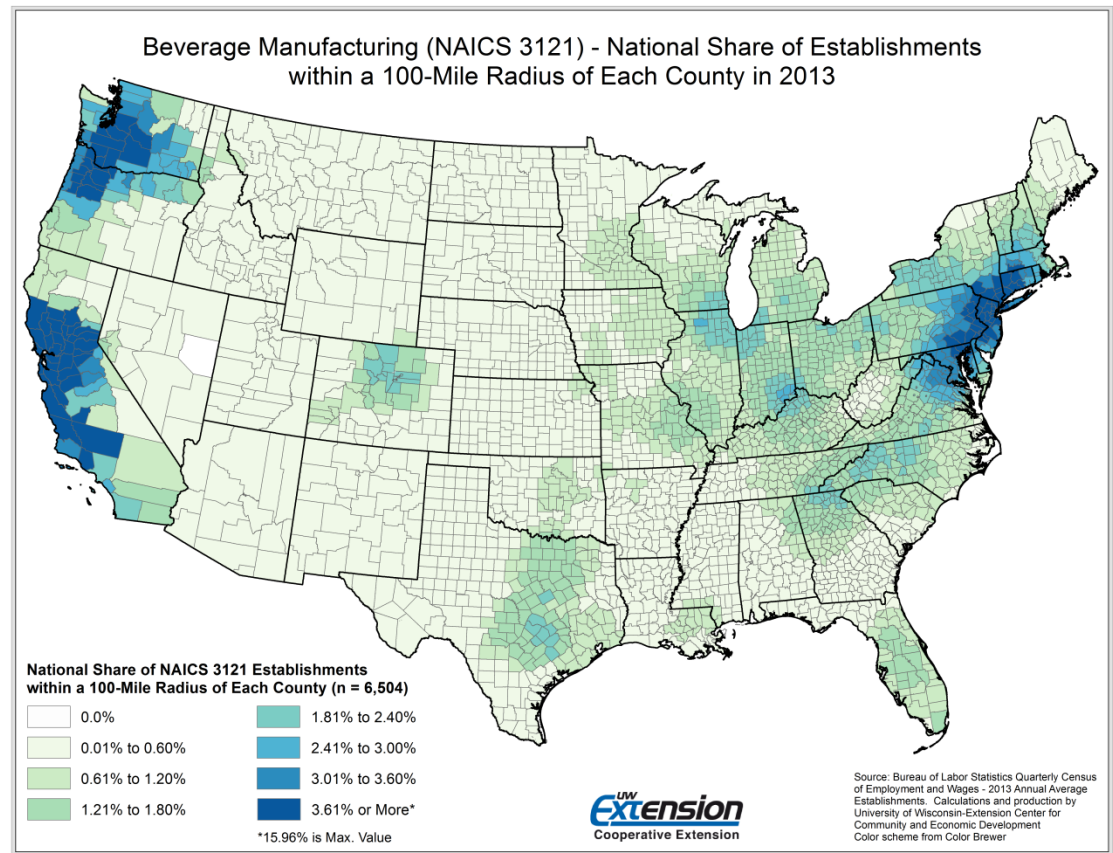
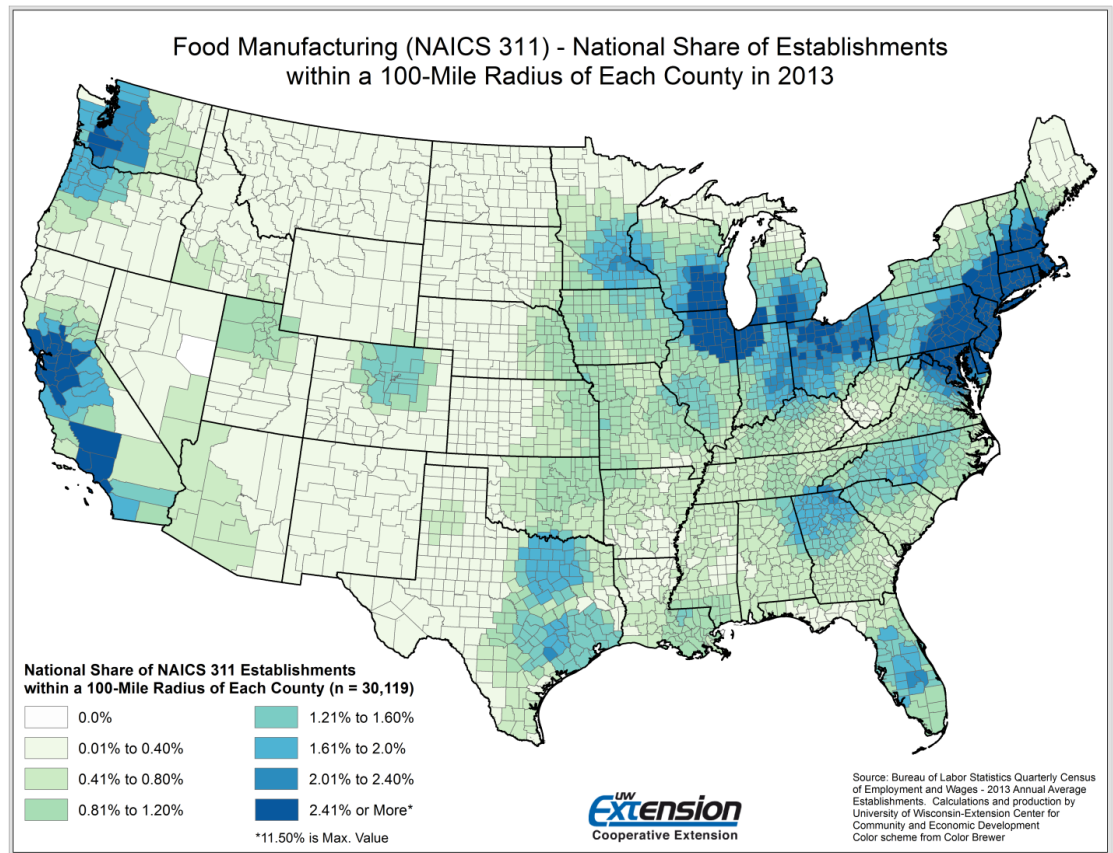


Table 1.3 – Regional MSA Rankings by Total Food Manufacturing Establishments (2013)

| Rank | Name | Establishments | Employment |
|------|--|----------------|--------------|
| 1. | New York-Newark-Jersey City, NY-NJ-PA MSA | 2,356 | S |
| 2. | Los Angeles-Long Beach-Anaheim, CA MSA | 1,311 | 45,272 |
| 3. | Chicago-Naperville-Elgin, IL-IN-WI MSA | 1,149 | S |
| 4. | Miami-Fort Lauderdale-West Palm Beach, FL MSA | 565 | 8,192 |
| 5. | Boston-Cambridge-Newton, MA-NH MSA | 523 | 19,989 |
| 6. | Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA | 496 | 20,097 |
| 7. | San Francisco-Oakland-Hayward, CA MSA | 495 | 15,281 |
| 8. | Seattle-Tacoma-Bellevue, WA MSA | 438 | 14,226 |
| 9. | Dallas-Fort Worth-Arlington, TX MSA | 436 | 18,269 |
| 10. | Houston-The Woodlands-Sugar Land, TX MSA | 348 | S |
| 11. | Portland-Vancouver-Hillsboro, OR-WA MSA | 331 | S |
| 12. | Minneapolis-St. Paul-Bloomington, MN-WI MSA | 326 | S |
| 13. | Atlanta-Sandy Springs-Roswell, GA MSA | 305 | 23,654 |
| 14. | Detroit-Warren-Dearborn, MI MSA | 294 | 6,456 |
| 15. | San Juan-Carolina-Caguas, PR MSA | 293 | 8,261 |
| 16. | Providence-Warwick, RI-MA MSA | 250 | 5,421 |
| 17. | St. Louis, MO-IL MSA | 243 | 8,562 |
| 18. | Denver-Aurora-Lakewood, CO MSA | 237 | 7,675 |
| 19. | Riverside-San Bernardino-Ontario, CA MSA | 226 | 7,431 |
| 20. | Washington-Arlington-Alexandria, DC-VA-MD-WV MSA | 223 | 4,464 |
| 21. | San Diego-Carlsbad, CA MSA | 193 | 5,238 |
| 22. | Baltimore-Columbia-Towson, MD MSA | 190 | 9,023 |
| 23. | Urban Honolulu, HI MSA | 186 | 4,778 |
| 24. | Cincinnati, OH-KY-IN MSA | 179 | 11,405 |
| 25. | Cleveland-Elyria, OH MSA | 178 | 5,638 |
| 26. | Kansas City, MO-KS MSA | 176 | 6,558 |
| 27. | Milwaukee-Waukesha-West Allis, WI MSA | 176 | 9,684 |
| 28. | San Antonio-New Braunfels, TX MSA | 166 | 7,320 |
| 29. | Phoenix-Mesa-Scottsdale, AZ MSA | 165 | 9,835 |
| 30. | Tampa-St. Petersburg-Clearwater, FL MSA | 164 | 3,467 |
| 31. | Pittsburgh, PA MSA | 158 | 5,006 |
| 32. | Charlotte-Concord-Gastonia, NC-SC MSA | 152 | 8,650 |
| 33. | Orlando-Kissimmee-Sanford, FL MSA | 144 | 4,750 |
| 34. | Austin-Round Rock, TX MSA | 140 | 2,207 |
| 35. | Columbus, OH MSA | 139 | 7,077 |
| 36. | Salt Lake City, UT MSA | 138 | 5,222 |
| 37. | New Orleans-Metairie, LA MSA | 137 | 4,251 |
| 38. | Fresno, CA MSA | 131 | 11,439 |
| 39. | Las Vegas-Henderson-Paradise, NV MSA | 129 | 2,955 |
| 40. | Madison, WI MSA | 126 | 5,192 |
| 41. | Modesto, CA MSA | 122 | 8,955 |
| 42. | San Jose-Sunnyvale-Santa Clara, CA MSA | 122 | 4,198 |
| 43. | Oklahoma City, OK MSA | 120 | 3,572 |
| 44. | Lancaster, PA MSA | 114 | 7,514 |
| 45. | Buffalo-Cheektowaga-Niagara Falls, NY MSA | 110 | 5,233 |
| 46. | Rochester, NY MSA | 110 | 5,089 |
| 47. | Hartford-West Hartford-East Hartford, CT MSA | 105 | 2,616 |
| 48. | Sacramento--Roseville--Arden-Arcade, CA MSA | 103 | 3,988 |
| 49. | Louisville-Jefferson County, KY-IN MSA | 97 | 6,620 |
| 50. | New Haven-Milford, CT MSA | 95 | 1,842 |

Source: Bureau of Labor Statistics. S = suppressed

Table 1.4 – Regional MSA Rankings by Total Beverage Manufacturing Establishments (2013)

| Rank | Name | Establishments | Employment |
|------|---|----------------|------------|
| 1. | Napa, CA MSA | 352 | 8,860 |
| 2. | Santa Rosa, CA MSA | 281 | 6,600 |
| 3. | New York-Newark-Jersey City, NY-NJ-PA MSA | 166 | S |
| 4. | Portland-Vancouver-Hillsboro, OR-WA MSA | 166 | S |
| 5. | Seattle-Tacoma-Bellevue, WA MSA | 121 | 2,180 |
| 6. | San Francisco-Oakland-Hayward, CA MSA | 119 | 2,513 |
| 7. | San Luis Obispo-Paso Robles-Arroyo Grande, CA MSA | 110 | 1,616 |
| 8. | Los Angeles-Long Beach-Anaheim, CA MSA | 104 | S |
| 9. | Chicago-Naperville-Elgin, IL-IN-WI MSA | 88 | S |
| 10. | Washington-Arlington-Alexandria, DC-VA-MD-WV MSA | 85 | S |
| 11. | Dallas-Fort Worth-Arlington, TX MSA | 83 | S |
| 12. | Santa Maria-Santa Barbara, CA MSA | 80 | 1,284 |
| 13. | Walla Walla, WA MSA | 70 | S |
| 14. | Kennewick-Richland, WA MSA | 64 | S |
| 15. | Sacramento--Roseville--Arden-Arcade, CA MSA | 63 | 1,934 |
| 16. | Riverside-San Bernardino-Ontario, CA MSA | 62 | 2,882 |
| 17. | Denver-Aurora-Lakewood, CO MSA | 60 | 3,617 |
| 18. | Stockton-Lodi, CA MSA | 54 | 1,600 |
| 19. | Atlanta-Sandy Springs-Roswell, GA MSA | 53 | S |
| 20. | Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA | 53 | S |
| 21. | Miami-Fort Lauderdale-West Palm Beach, FL MSA | 51 | 1,636 |
| 22. | Boston-Cambridge-Newton, MA-NH MSA | 47 | 1,997 |
| 23. | St. Louis, MO-IL MSA | 47 | S |
| 24. | Austin-Round Rock, TX MSA | 44 | 841 |
| 25. | Houston-The Woodlands-Sugar Land, TX MSA | 44 | S |
| 26. | Salinas, CA MSA | 43 | 901 |
| 27. | San Diego-Carlsbad, CA MSA | 43 | 1,870 |
| 28. | Minneapolis-St. Paul-Bloomington, MN-WI MSA | 39 | 1,814 |
| 29. | San Jose-Sunnyvale-Santa Clara, CA MSA | 39 | 953 |
| 30. | Detroit-Warren-Dearborn, MI MSA | 38 | 2,527 |
| 31. | Rochester, NY MSA | 38 | 1,452 |
| 32. | Salem, OR MSA | 37 | 527 |
| 33. | Tampa-St. Petersburg-Clearwater, FL MSA | 35 | 2,763 |
| 34. | Cincinnati, OH-KY-IN MSA | 33 | 2,515 |
| 35. | San Juan-Carolina-Caguas, PR MSA | 32 | S |
| 36. | Wenatchee, WA MSA | 32 | 283 |
| 37. | Charlotte-Concord-Gastonia, NC-SC MSA | 31 | S |
| 38. | Baltimore-Columbia-Towson, MD MSA | 30 | 973 |
| 39. | Charlottesville, VA MSA | 28 | 679 |
| 40. | Kansas City, MO-KS MSA | 28 | S |
| 41. | Medford, OR MSA | 27 | 226 |
| 42. | Boise City, ID MSA | 26 | 286 |
| 43. | Boulder, CO MSA | 26 | 488 |
| 44. | Fresno, CA MSA | 26 | 1,110 |
| 45. | Indianapolis-Carmel-Anderson, IN MSA | 26 | 1,803 |
| 46. | Louisville-Jefferson County, KY-IN MSA | 26 | S |
| 47. | Pittsburgh, PA MSA | 26 | S |
| 48. | Yakima, WA MSA | 26 | 209 |
| 49. | Columbus, OH MSA | 25 | 2,004 |
| 50. | Eugene, OR MSA | 25 | 476 |

Source: Bureau of Labor Statistics. S = suppressed

The Madison Metropolitan Statistical Area (MSA) is comprised of four counties in the study area: Dane, Columbia, Iowa and Green. While the MSA excludes a large share of the study area, the metropolitan area still ranks 40th among all metro areas in terms of food manufacturing establishments. The MSA would likely rank even higher in terms of total employment as the Madison metro area reports more employees than many MSAs ranked higher in Table 1.3. The MSA ranks somewhat lower among metro areas for beverage manufacturing (53rd). The Madison MSA ranking among beverage manufacturing regions is not surprising as many top metro areas are home to a large number of wineries, which are less prevalent in the Madison Region.

The geographic distributions of food and beverage manufacturing establishments provide some perspective on competition, as well as those regions with a large number of potential prospects for recruitment. However, individual categories of food and beverage manufacturing are concentrated throughout specific geographic regions not necessarily captured by the overall industry distribution. Animal food manufacturing is concentrated in Pennsylvania, the Midwest and in California's Central Valley. Not surprisingly, grain and oilseed milling is largely located in the grain producing regions of Iowa, Minnesota and Wisconsin, but also in Northern Indiana, Central Ohio, California, Missouri and Eastern Arkansas. Sugar and confectionary product manufacturing is highly concentrated in the Chicago Region, California metro areas, and along the East Coast from Connecticut to Eastern Pennsylvania.

The largest fruit and vegetable preserving/specialty food manufacturing regions include the Lake Michigan coast extending from Eastern Wisconsin to Northern Indiana; Northern California; the Pacific Northwest; and the New Jersey-New York-Pennsylvania tri-state area. As expected, dairy product manufacturing establishments are largely concentrated in Wisconsin, Central California, and the New York-New Jersey area. Animal slaughtering and processing is also found in these areas, as well as the Chicago metro area, Central Ohio, Northern Georgia and throughout the eastern portion of the Great Plains. Seafood products are found primarily in coastal regions, while bakeries and tortilla manufacturing establishments are concentrated somewhat proportionally around metropolitan areas of various populations throughout the nation. Establishments in the other food manufacturing category are also largely concentrated around urban areas.

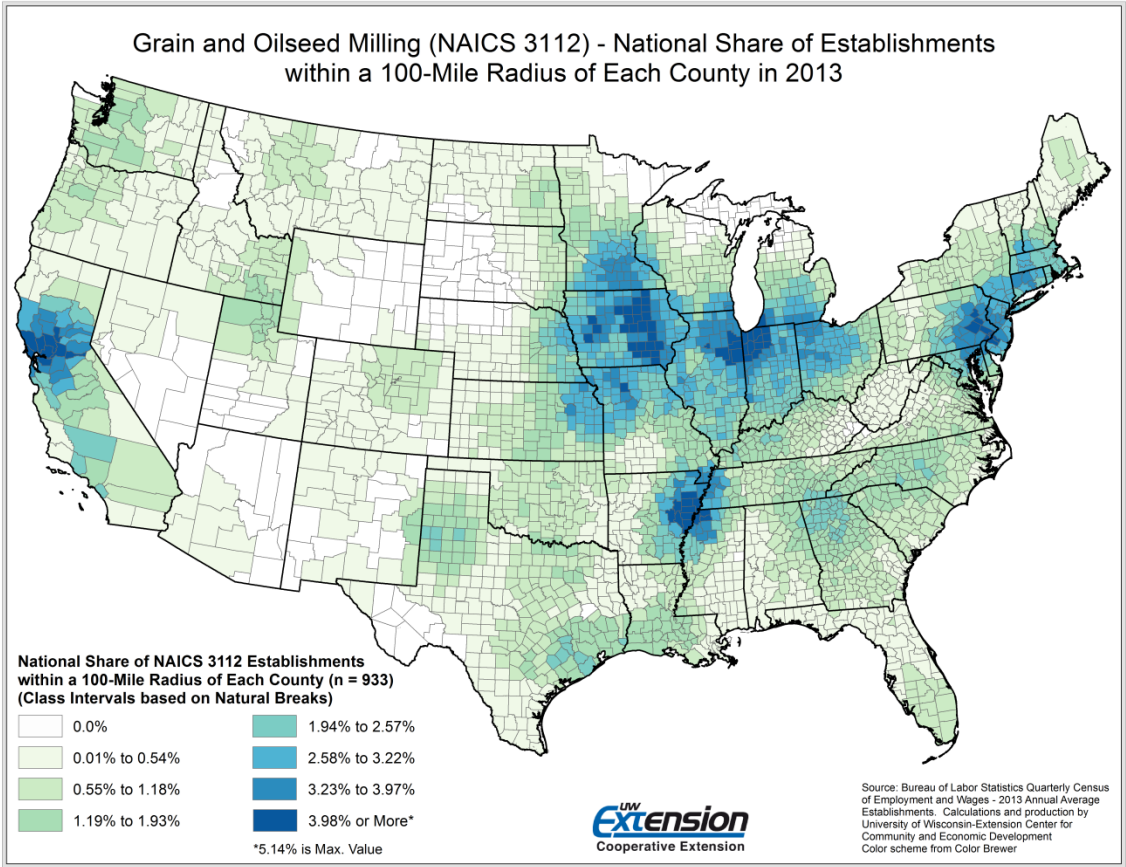
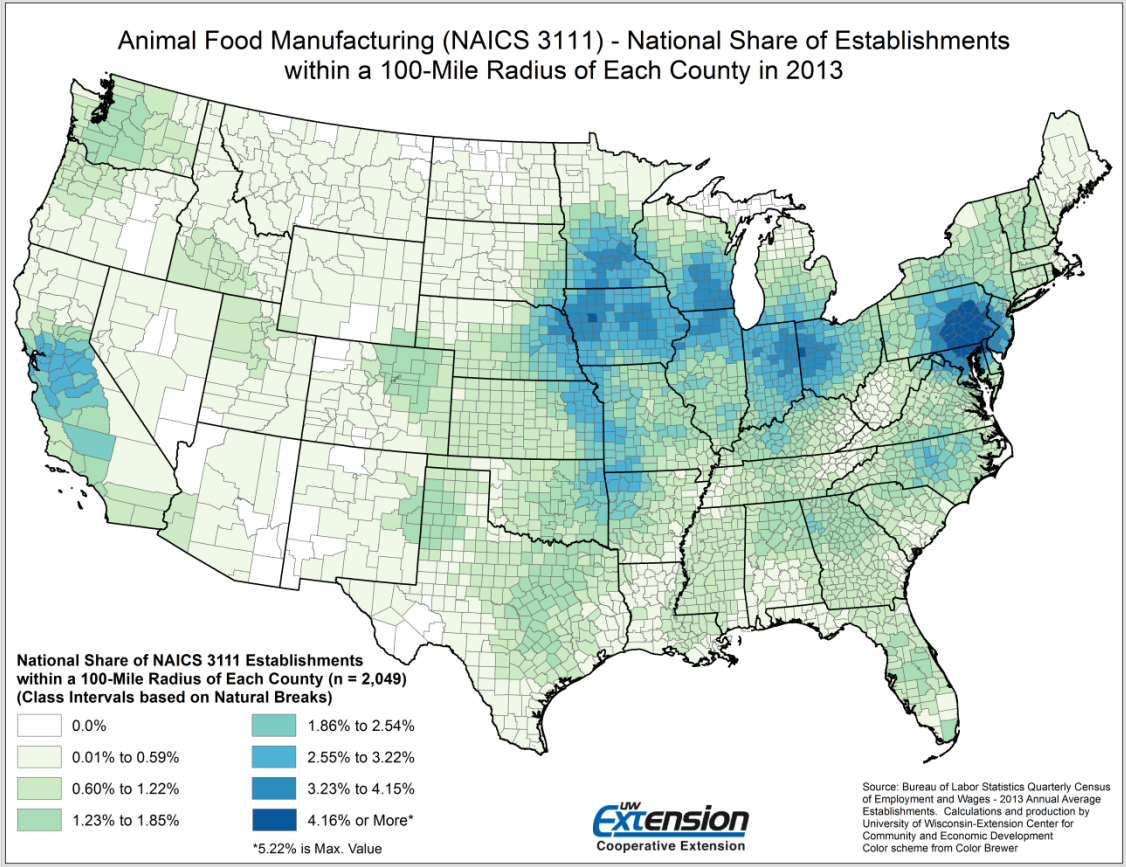
Maps showing the sub-categories of food and beverage manufacturing are included in Appendix A. Table 1.5 also lists notable metropolitan areas that contain various concentrations of food manufacturing sub-categories. The metropolitan areas listed in Table 1.5 are not necessarily ranked according to prominence. Instead, the MSAs listed are those that are significant in either their total industry employment or their number of establishments (or both).

Table 1.5 – Metropolitan Statistical Areas with Notable Concentrations of Food and Beverage Manufacturing Industries

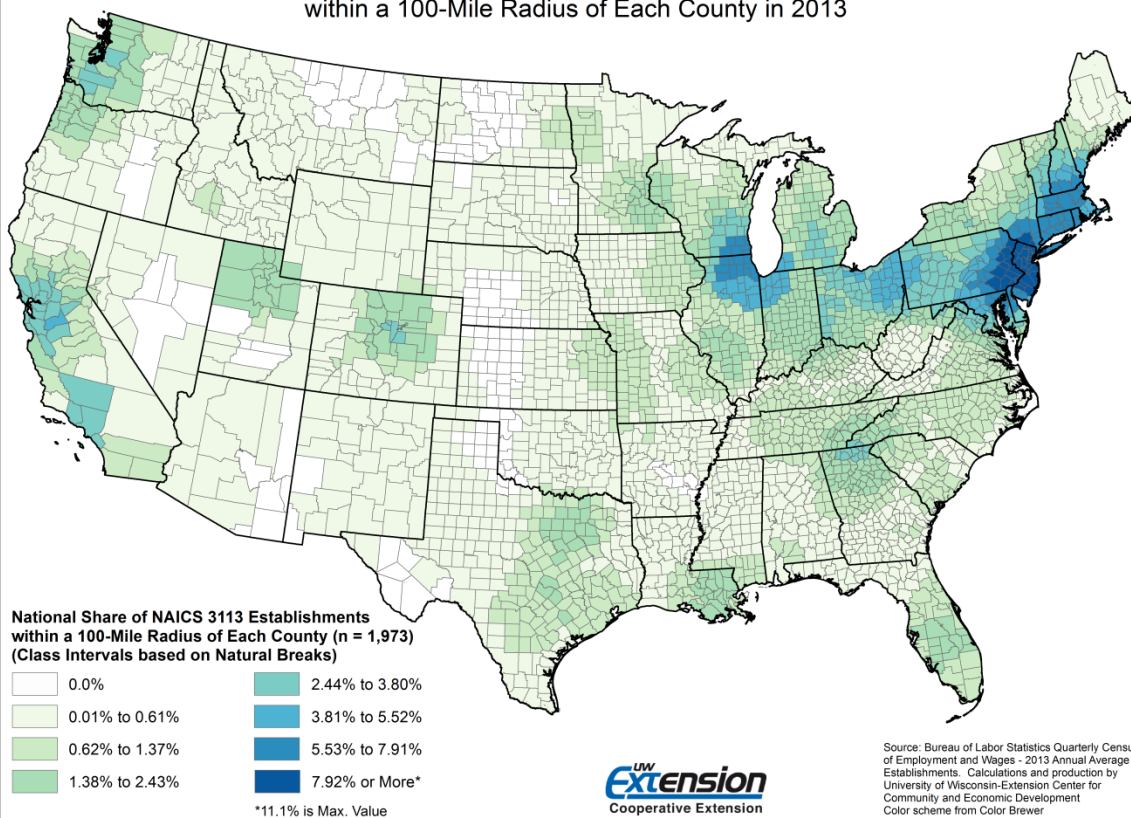
| | |
|--|--|
| NAICS 3111 Animal food manufacturing <ul style="list-style-type: none">• St. Louis, MO-IL MSA• Kansas City, MO-KS MSA• Los Angeles-Long Beach-Anaheim, CA MSA• Modesto, CA MSA• Minneapolis-St. Paul-Bloomington, MN-WI MSA• Chicago-Naperville-Elgin, IL-IN-WI MSA | NAICS 3112 Grain and oilseed milling <ul style="list-style-type: none">• Decatur, IL MSA• Chicago-Naperville-Elgin, IL-IN-WI MSA• Los Angeles-Long Beach-Anaheim, CA MSA• Kansas City, MO-KS MSA• New York-Newark-Jersey City, NY-NJ-PA MSA• Houston-The Woodlands-Sugar Land, TX MSA |
| NAICS 3113 Sugar and confectionery product manufacturing <ul style="list-style-type: none">• New York-Newark-Jersey City, NY-NJ-PA MSA• Chicago-Naperville-Elgin, IL-IN-WI MSA• Los Angeles-Long Beach-Anaheim, CA MSA• San Francisco-Oakland-Hayward, CA MSA• Boston-Cambridge-Newton, MA-NH MSA• Miami-Fort Lauderdale-West Palm Beach, FL MSA | NAICS 3114 Fruit and vegetable preserving and specialty food mfg. <ul style="list-style-type: none">• Chicago-Naperville-Elgin, IL-IN-WI MSA• Los Angeles-Long Beach-Anaheim, CA MSA• Appleton, WI MSA• Fresno, CA MSA• Kennewick-Richland, WA MSA• Dallas-Fort Worth-Arlington, TX MSA |
| NAICS 3115 Dairy product manufacturing <ul style="list-style-type: none">• Los Angeles-Long Beach-Anaheim, CA MSA• Green Bay, WI MSA• Chicago-Naperville-Elgin, IL-IN-WI MSA• Madison, WI MSA• Minneapolis-St. Paul-Bloomington, MN-WI MSA• New York-Newark-Jersey City, NY-NJ-PA MSA | NAICS 3116 Animal slaughtering and processing <ul style="list-style-type: none">• Chicago-Naperville-Elgin, IL-IN-WI MSA• Atlanta-Sandy Springs-Roswell, GA MSA• Gainesville, GA MSA• Omaha-Council Bluffs, NE-IA MSA• Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA• Fresno, CA MSA |
| NAICS 3117 Seafood product preparation and packaging <ul style="list-style-type: none">• Seattle-Tacoma-Bellevue, WA MSA• Boston-Cambridge-Newton, MA-NH MSA• Providence-Warwick, RI-MA MSA• Mobile, AL MSA• Bellingham, WA MSA• Portland-South Portland, ME MSA | NAICS 3118 Bakeries and tortilla manufacturing <ul style="list-style-type: none">• New York-Newark-Jersey City, NY-NJ-PA MSA• Los Angeles-Long Beach-Anaheim, CA MSA• Chicago-Naperville-Elgin, IL-IN-WI MSA• Boston-Cambridge-Newton, MA-NH MSA• San Francisco-Oakland-Hayward, CA MSA• Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA |
| NAICS 3119 Other food manufacturing <ul style="list-style-type: none">• New York-Newark-Jersey City, NY-NJ-PA MSA• Los Angeles-Long Beach-Anaheim, CA MSA• Chicago-Naperville-Elgin, IL-IN-WI MSA• Atlanta-Sandy Springs-Roswell, GA MSA• Bakersfield, CA MSA• Minneapolis-St. Paul-Bloomington, MN-WI MSA | NAICS 31211 Soft drink and ice manufacturing <ul style="list-style-type: none">• Los Angeles-Long Beach-Anaheim, CA MSA• Chicago-Naperville-Elgin, IL-IN-WI MSA• Tampa-St. Petersburg-Clearwater, FL MSA• Phoenix-Mesa-Scottsdale, AZ MSA• Dallas-Fort Worth-Arlington, TX MSA• Detroit-Warren-Dearborn, MI MSA |
| NAICS 31212 Breweries <ul style="list-style-type: none">• Denver-Aurora-Lakewood, CO MSA• Portland-Vancouver-Hillsboro, OR-WA MSA• New York-Newark-Jersey City, NY-NJ-PA MSA• San Diego-Carlsbad, CA MSA• Fort Collins, CO MSA• Seattle-Tacoma-Bellevue, WA MSA | NAICS 31213 Wineries <ul style="list-style-type: none">• Napa, CA MSA• Santa Rosa, CA MSA• San Luis Obispo-Paso Robles-Arroyo Grande, CA MSA• Santa Maria-Santa Barbara, CA MSA• Portland-Vancouver-Hillsboro, OR-WA MSA• San Francisco-Oakland-Hayward, CA MSA |
| NAICS 31214 Distilleries <ul style="list-style-type: none">• Louisville-Jefferson County, KY-IN MSA• Seattle-Tacoma-Bellevue, WA MSA• New York-Newark-Jersey City, NY-NJ-PA MSA• San Francisco-Oakland-Hayward, CA MSA• Chicago-Naperville-Elgin, IL-IN-WI MSA• Portland-Vancouver-Hillsboro, OR-WA MSA | |

Source: Bureau of Labor Statistics

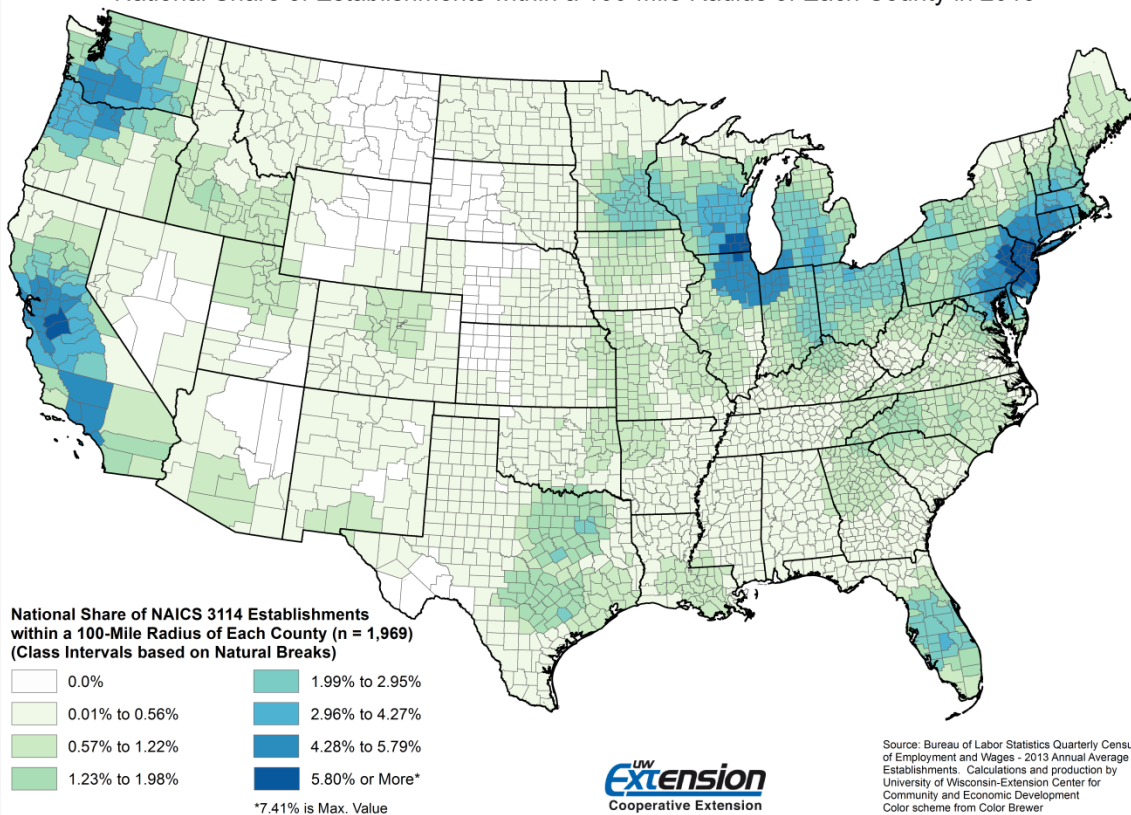
Appendix A – Additional Food and Beverage Manufacturing Distribution Maps



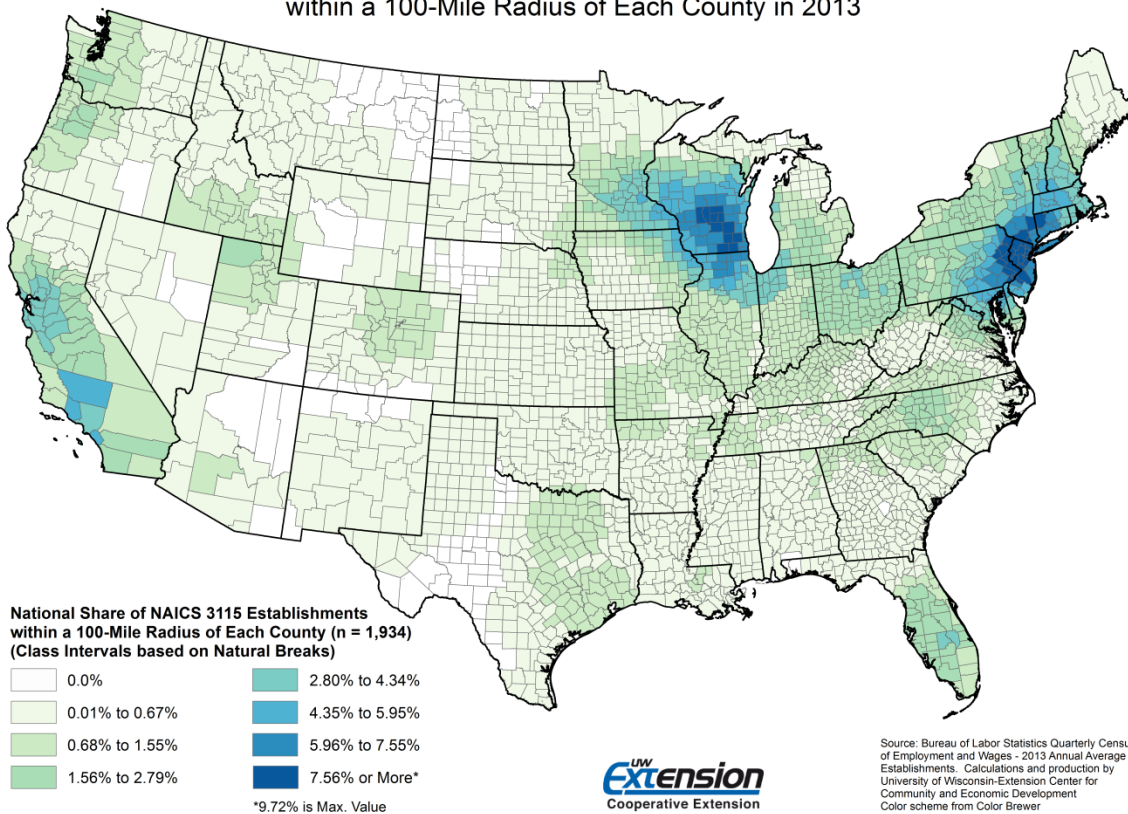
Sugar and Confectionery Product Manufacturing (NAICS 3113) - National Share of Establishments within a 100-Mile Radius of Each County in 2013



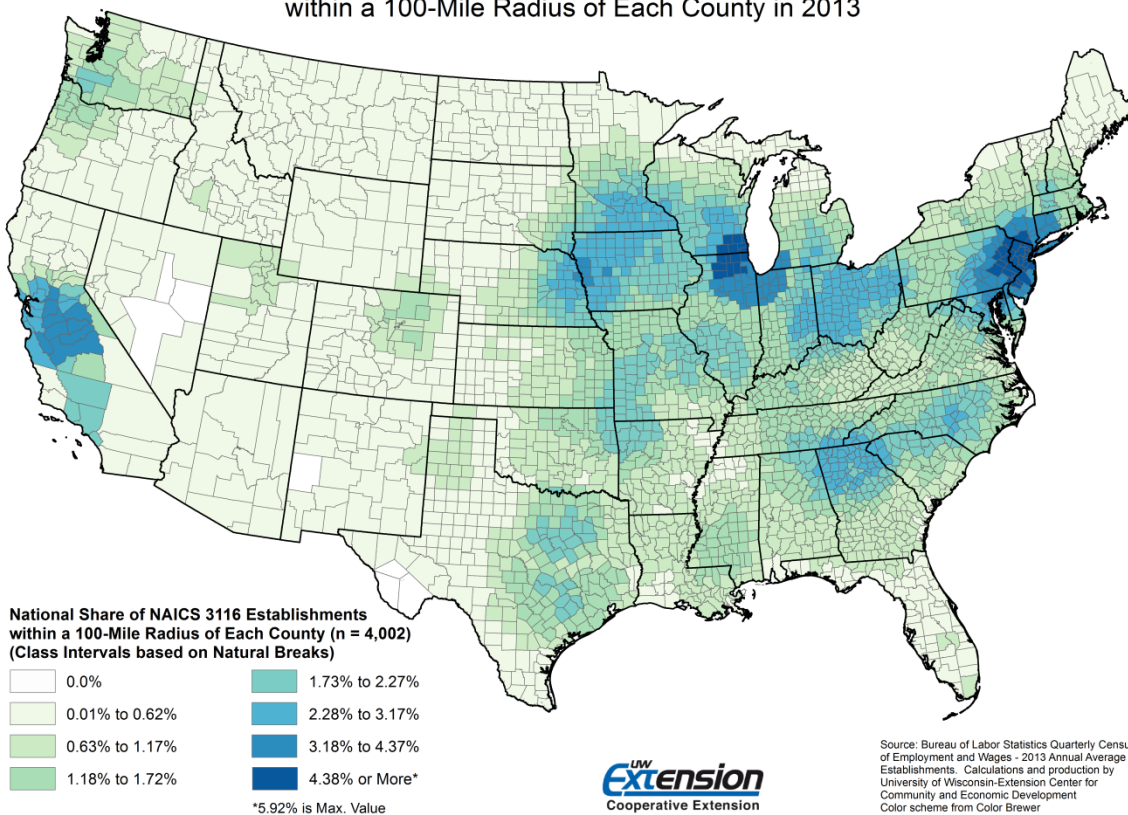
Fruit and Vegetable Preserving and Specialty Food Manufacturing (NAICS 3114) - National Share of Establishments within a 100-Mile Radius of Each County in 2013



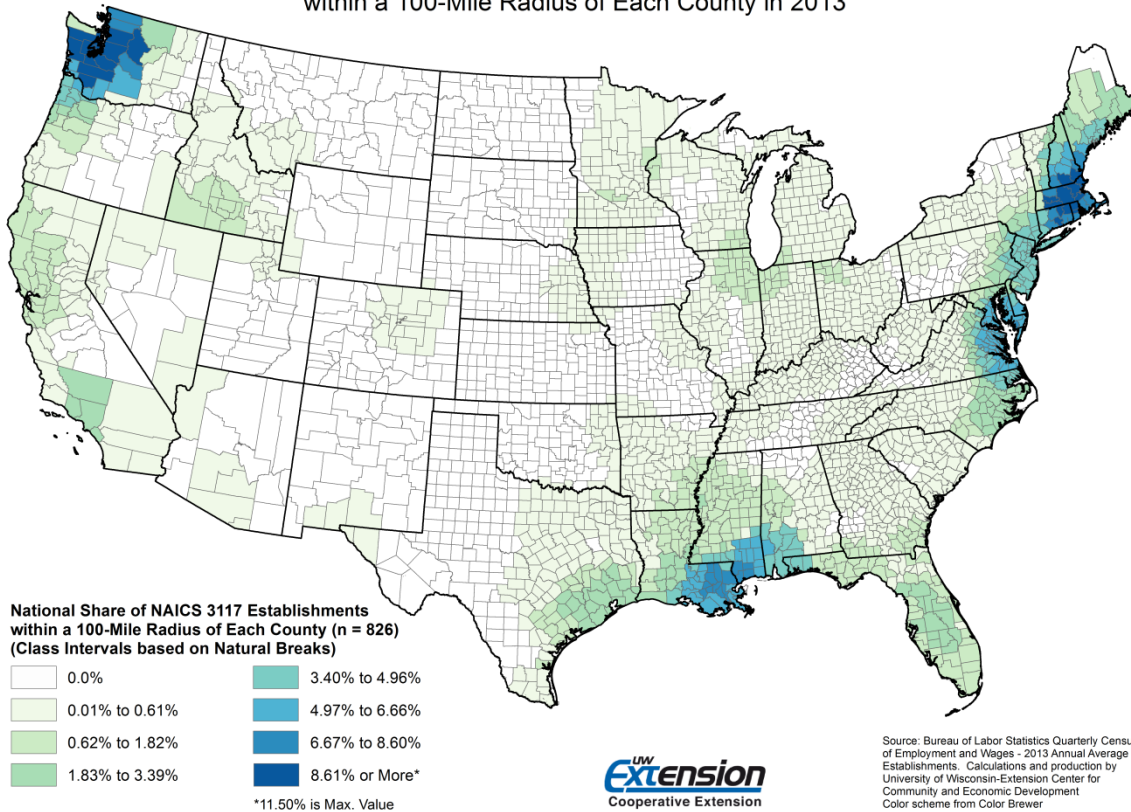
Dairy Product Manufacturing (NAICS 3115) - National Share of Establishments within a 100-Mile Radius of Each County in 2013



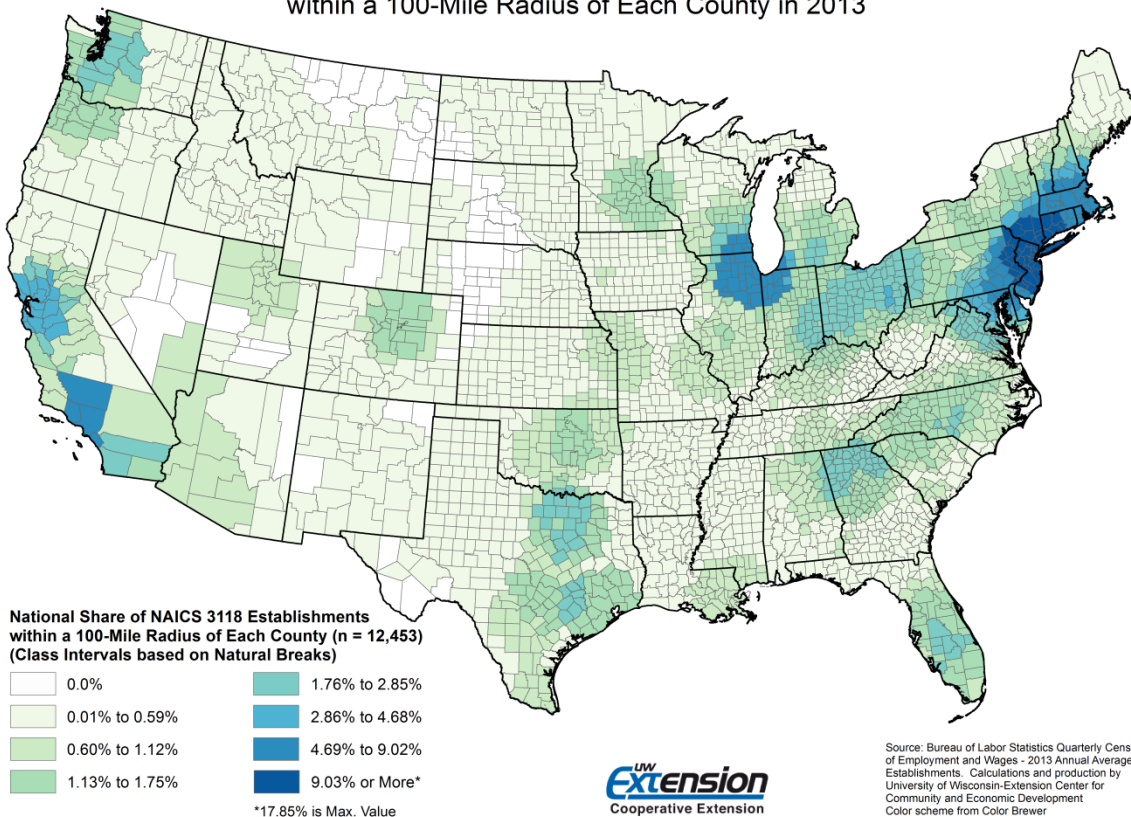
Animal Slaughtering and Processing (NAICS 3116) - National Share of Establishments within a 100-Mile Radius of Each County in 2013



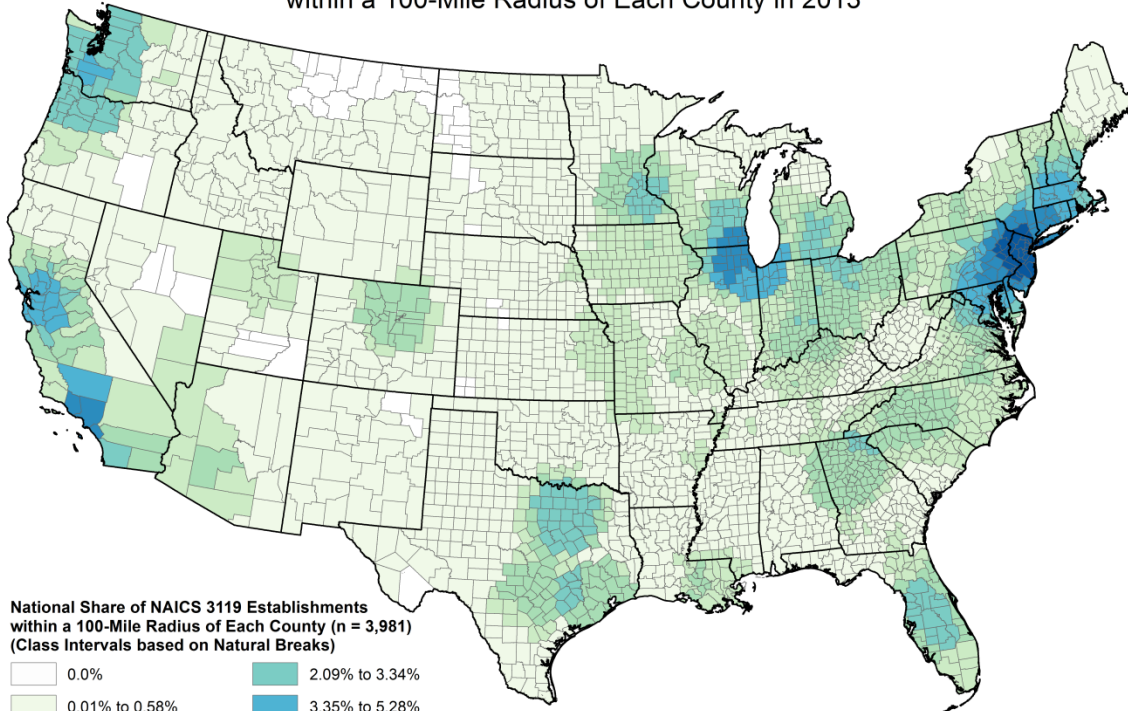
Seafood Product Preparation and Packaging (NAICS 3117) - National Share of Establishments
within a 100-Mile Radius of Each County in 2013



Bakeries and Tortilla Manufacturing (NAICS 3118) - National Share of Establishments
within a 100-Mile Radius of Each County in 2013



Other Food Manufacturing (NAICS 3119) - National Share of Establishments
within a 100-Mile Radius of Each County in 2013

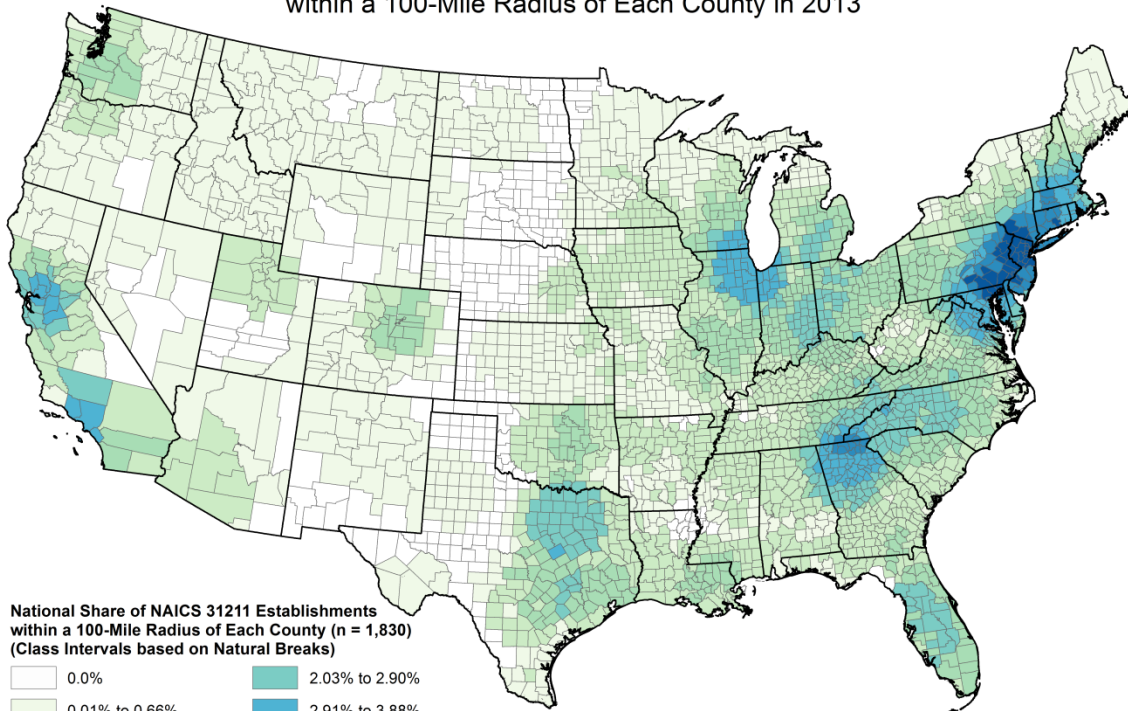


*10.22% is Max. Value

UW
Extension
Cooperative Extension

Source: Bureau of Labor Statistics Quarterly Census of Employment and Wages - 2013 Annual Average Establishments. Calculations and production by University of Wisconsin-Extension Center for Community and Economic Development
Color scheme from Color Brewer

Soft Drink and Ice Manufacturing (NAICS 31211) - National Share of Establishments
within a 100-Mile Radius of Each County in 2013

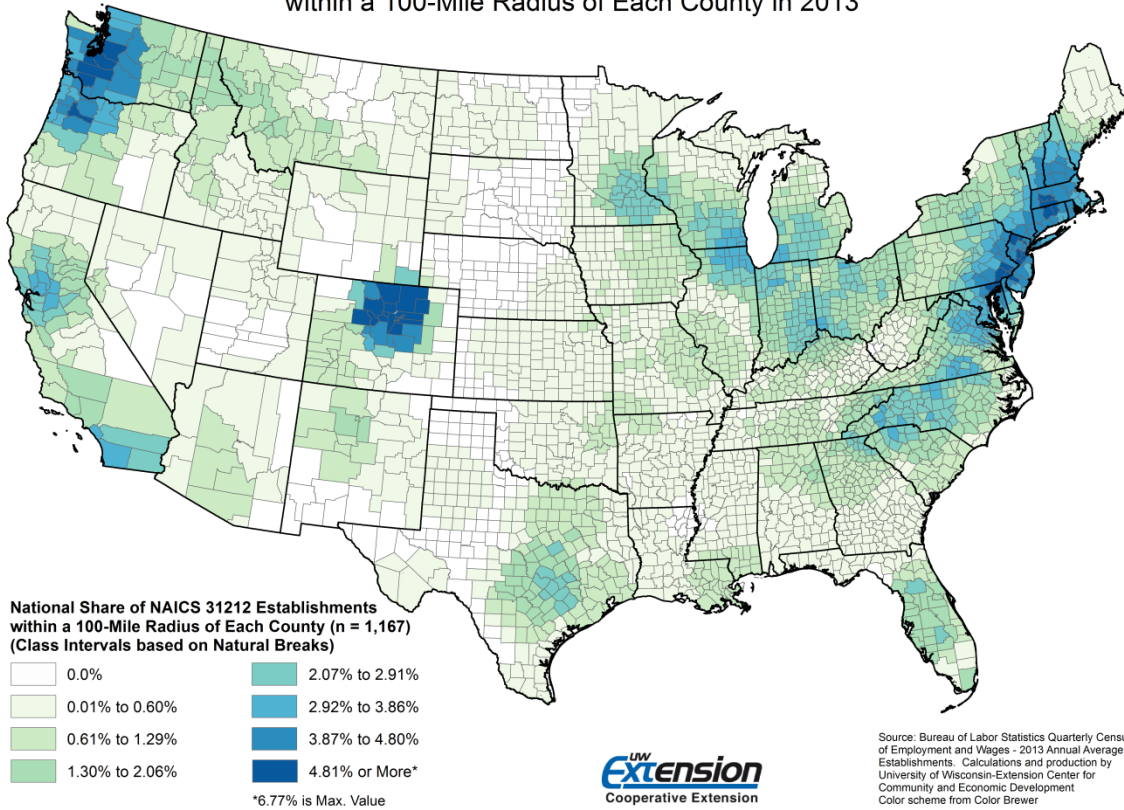


*6.34% is Max. Value

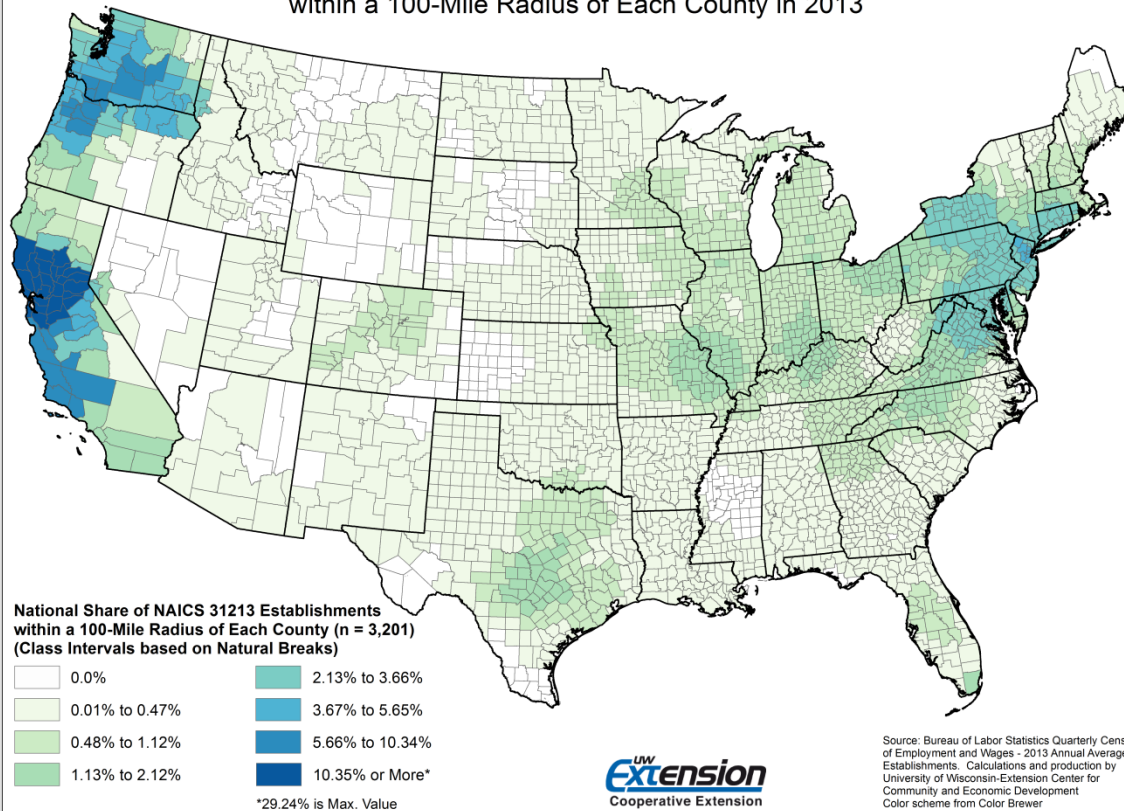
UW
Extension
Cooperative Extension

Source: Bureau of Labor Statistics Quarterly Census of Employment and Wages - 2013 Annual Average Establishments. Calculations and production by University of Wisconsin-Extension Center for Community and Economic Development
Color scheme from Color Brewer

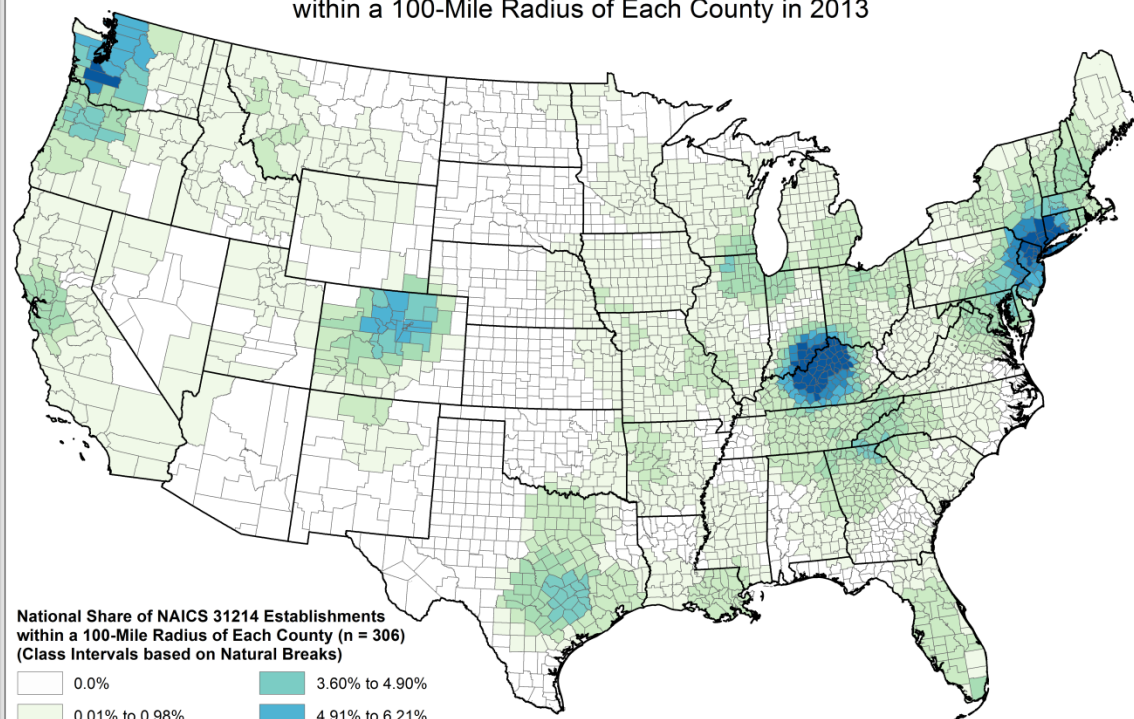
**Breweries (NAICS 31212) - National Share of Establishments
within a 100-Mile Radius of Each County in 2013**



**Wineries (NAICS 31213) - National Share of Establishments
within a 100-Mile Radius of Each County in 2013**



Distilleries (NAICS 31214) - National Share of Establishments within a 100-Mile Radius of Each County in 2013



*8.82% is Max. Value

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Extension
Cooperative Extension

Source: Bureau of Labor Statistics Quarterly Census
of Employment and Wages - 2013 Annual Average
Establishments. Calculations and production by
University of Wisconsin-Extension Center for
Community and Economic Development
Color scheme from Color Brewer

