

Census Tract Level State Maps of the Modified Retail Food Environment Index (mRFEI)

Background/Purpose

In April 2011, the CDC's Division of Nutrition, Physical Activity and Obesity released the [Children's Food Environment State Indicator Report, 2011](#). One indicator featured in the report is the modified retail food environment index (mRFEI). The mRFEI measures the number of healthy and less healthy food retailers within census tracts across each state as defined by typical food offerings in specific types of retail stores (e.g., supermarkets, convenience stores, or fast food restaurants).



Out of the total number of food retailers considered healthy or less healthy in a census tract, the mRFEI represents the percentage that are healthy. While the report includes median mRFEI values for each state, there is substantial variability in the retail

food environment within states. The maps included in the current release provide a useful starting place to identify specific geographic areas of states that could benefit from further examination of the retail food environment. The maps can identify census tracts that either lack access to healthy food retailers such as supermarkets or contain very high densities of fast food restaurants and convenience stores relative to the number of healthy food retailers.

How is the mRFEI calculated?

The mRFEI is calculated for each census tract using the following formula:

$$mRFEI = 100 \times \frac{\# \text{ Healthy Food Retailers}}{\# \text{ Healthy Food Retailers} + \# \text{ Less Healthy Food Retailers}}$$

Healthy food retailers include supermarkets, larger grocery stores, supercenters, and produce stores within census tracts or ½ mile from the tract boundary. The following stores as defined by North American Industry Classification Codes (NAICS) were included: supermarkets and larger grocery stores (NAICS 445110; supermarkets further defined as stores with ≥ 50 annual payroll employees and larger grocery stores defined as stores with 10–49 employees); fruit and vegetable markets (NAICS 445230); warehouse clubs (NAICS 452910). Fruit and vegetable markets include establishments that sell produce and include markets and permanent stands.



Less healthy food retailers include fast food restaurants, small grocery stores, and convenience stores within census tracts or ½ mile from the tract boundary. Fast food stores were defined according to NAICS code 722211 (fast food restaurants). Convenience stores were defined according to NAICS code 445120 (convenience stores) or NAICS code 445110 (small groceries) where the number of employees was three or fewer.

How is the mRFEI different from other measures of the food environment such as food deserts and food swamps?

Food deserts are areas that lack access to affordable fruits, vegetables, whole grains, low-fat/non-fat milk or dairy alternatives, and other foods that make up the full range of a healthy diet.^{1,2} Food swamps have been defined as "areas in which large relative amounts of energy-dense snack foods, inundate healthy food options."³ The mRFEI combines the concepts of "food desert" and "food swamp" into a single measure. Scores of zero generally correspond with the concept of food deserts. Among mRFEI scores greater than zero, lower scores correspond with the concept of food swamps.

What defines a healthy food retailer or less healthy food retailer according to the mRFEI?

As defined above, healthy food retailers include supermarkets, larger grocery stores, supercenters, and produce stores. Less healthy food retailers include convenience stores, fast food restaurants, and small grocery stores with three or fewer employees. These classifications are based on typical food offerings in these types of retailers. The mRFEI was calculated on the basis of available data on every food retailer around the country. Therefore, it was not possible to assess the foods

actually offered in each store. Rather, stores were classified as healthy or less healthy based on typical food offerings in these types of retailers as defined by existing research.⁴⁻⁷ Examples of available healthy foods include fruits and vegetables, low-fat dairy items, meat products, and whole grain foods.⁴ Adequate access to healthy foods may still be achieved if smaller food stores and fast food restaurants provide quality and affordable healthy foods and beverages. Why aren't farmers' markets included?



Why aren't farmers' markets included?

At the time the mRFEI scores were calculated, national data on the location of farmers' markets was not available. States and localities are encouraged to include any data they have available on farmers' markets in their own jurisdictions when they assess the retail food environment.

What do the numbers mean?

The modified Retail Food Environment Index (mRFEI) is a way of measuring the number of healthy and less healthy food retailers in an area using a single number. Out of the total number of food retailers in that area considered either healthy or less healthy, the mRFEI represents the percentage that are healthy. Therefore, lower scores indicate that census tracts contain many convenience stores and/or fast food restaurants compared to the number of healthy food retailers. A zero score indicates that no healthy food retailers (supermarkets, large grocery stores, produce stores or supercenters) are located in the census tract.

When the mRFEI was calculated, the distribution of more than 1 million supermarkets, produce stores, supercenters, fast food restaurants, and convenience stores located throughout the country was examined. An mRFEI score of

10 means that only 10 out of every 100 of these stores were likely to offer healthy foods such as fruits and vegetables, low-fat dairy items, meat products, and whole grain foods. These include the supermarkets, produce stores, and supercenters. The other 90 stores were unlikely provide access to healthy foods. These include convenience stores, small grocery stores, and fast food restaurants.

What is a census tract?

Census tracts are relatively permanent subdivisions of a county and usually have between 2,500 and 8,000 people. Census tracts do not cross county boundaries. They are designed, when established, to be homogeneous with respect to population characteristics, economic status, and living conditions. Therefore, the spatial size of census tracts varies widely depending on population density. Census tract boundaries are established to be relatively stable over time to allow comparisons from one census to another. See the [U.S. Census Bureau web page about census tracts and block numbering areas](#) for more information.

What action steps can be taken based on the information provided in these maps?

State and local officials can next perform a more detailed survey of the areas that lack access to healthy food by using a variety of tools. For statewide initiatives, health or economic development officials can purchase retail data to map the precise actual locations of retail food providers throughout the state, or work with partners that have purchased data or conducted an assessment. For smaller areas, a local survey of the current food environment can be performed using basic online tools such as Google™ or Bing™ maps; however, these have the same data limitations as other secondary data sources (such as having a lag time between capturing newly opened and recently closed food retail businesses). Physically surveying these areas can confirm locations of different types of stores. There are also survey tools to assess the actual availability of healthier food options in small and large retail food stores and restaurants.



For more information on assessing healthier food retail, see CDC's Division of Physical Activity, Nutrition, and Obesity fact sheet [Healthier Food Retail: Beginning the Assessment Process in Your State or Community](#). This document provides an overview of steps state or local public health practitioners can take to initiate an assessment of the food retail environment in their area. [The Food Environment Atlas](#) and [Food Desert Locator](#) are additional online tools available from USDA that may be helpful in assessing the food environment in your area.

Once the food landscape is assessed, initiatives can be taken to locate supermarkets or grocery stores in underserved areas. There are also options to provide incentives and assistance for existing food stores, including corner convenience stores, to provide healthier food choices such as fresh, frozen, and canned fruits and vegetables, low-fat dairy and meat products, and whole grain foods.

Can I get the raw data on which the maps are based?

Unfortunately, most of the raw data on individual retail stores was purchased under a contractual agreement from private market research companies. These data are proprietary information from these companies and cannot be distributed by CDC. However, mRFEI scores according to census tract are available at

http://www.cdc.gov/obesity/downloads/2_16_mrfei_data_table.xls.



References

1. Beaulac J, Kristjansson E, Cummins S. A systematic review of food deserts, 1966–2007. *Prev Chronic Dis*. 2009 ;6(3):A105.
2. U.S. Department of Agriculture and U.S. Department of Health and Human Services. *Dietary Guidelines for Americans, 2010*. 7th Edition, Washington, DC: U.S. Government Printing Office; 2010.
3. Rose D, Bodor JN, Swalm CM, Rice JC, Farley TA, Hutchinson PL. Deserts in New Orleans? Illustrations of urban food access and implications for policy. Electronic conference proceedings from Understanding the Economic Concepts and Characteristics of Food Access, UM-National Poverty Center and USDA-Economics Research Service, January; 2009, Washington, DC. Available at <http://www.npc.umich.edu/news/events/food-access/index.php>.
4. Glanz K, Sallis JF, Saelens BE, Frank LD. Nutrition Environment Measures Survey in stores (NEMS-S): development and evaluation. *Am J Prev Med*. 2007;32(4):282–9.
5. Gebauer H, Laska MN. Convenience Stores surrounding urban schools: an assessment of healthy food availability, advertising, and product placement. *J Urban Health*. 2011;88(4):616-22.
6. Bustillos B, Sharkey JR, Anding J, McIntosh A. Availability of more healthful food alternatives in traditional, convenience, and nontraditional types of food stores in two rural Texas counties. *J Am Diet Assoc*. 2009;109(5):883–9.
7. Connell CL, Yadrick MK, Simpson P, Gossett J, McGee BB, Bogle ML. Food supply adequacy in the Lower Mississippi Delta. *J Nutr Educ Behav*. 2007;39(2):77–83.

Modified Retail Food Environment Index (By U.S. Census Tract)

- No retail food outlet within census tract
- No healthy food outlet within census tract
- 0.1 - 5
- 5.1 - 10
- 10.1 - 37.5
- 37.6 - 100

Lower scores indicate that census tracts contain many convenience stores and fast food restaurants compared to the number of healthy food retailers.

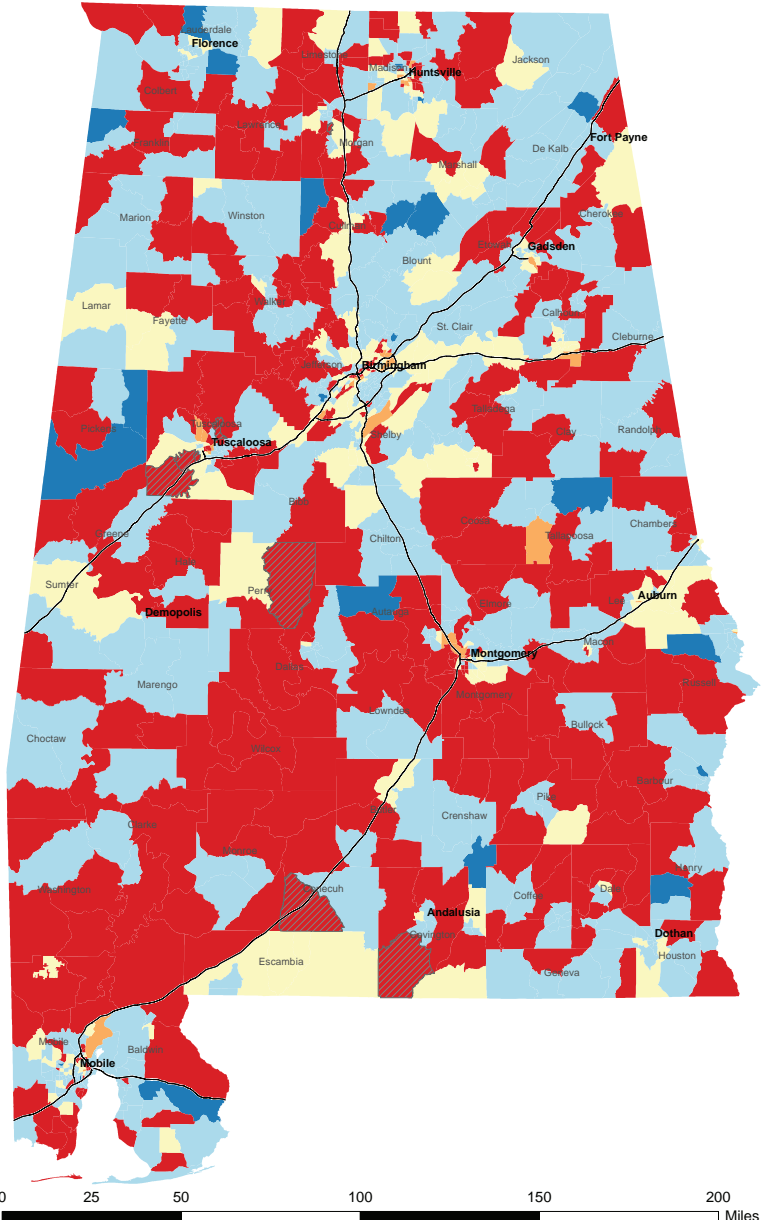
A zero score indicates no healthy food retailers (supermarkets, larger groceries, produce stores, or supercenters) within the census tract.

DATA SOURCES:
 Supermarkets, Small and Large Groceries, Produce Stores, Supercenters - IntUSA 2009
 Convenience stores - Homeland Security Infrastructure Program Database 2008
 Fast-food restaurants - NAVTEQ 2009

Date of map: September, 2011

Alabama

Modified Retail Food Environment Index According to Census Tract



National mRFEI Score = 10
 Alabama mRFEI Score = 10

The modified Retail Food Environment Index (mRFEI) measures the number of healthy and less-healthy food retailers within a census tract using this formula:

$$\frac{\text{\# Healthy Food Retailers}}{\text{\# Healthy Food Retailers} + \text{\# Less Healthy Food Retailers}} \times 100$$

For this indicator, healthy food retailers include supermarkets, larger grocery stores, supercenters, and produce stores. † Less healthy food retailers include convenience stores, fast food restaurants, and small grocery stores with 3 or fewer employees. ‡

† Data sources are listed in the legend.

Alaska

Modified Retail Food Environment Index According to Census Tract

Modified Retail Food Environment Index (By U.S. Census Tract)

- No retail food outlet within census tract
- No healthy food outlet within census tract
- 0.1 - 5
- 5.1 - 10
- 10.1 - 37.5
- 37.6 - 100

— Interstate Highways

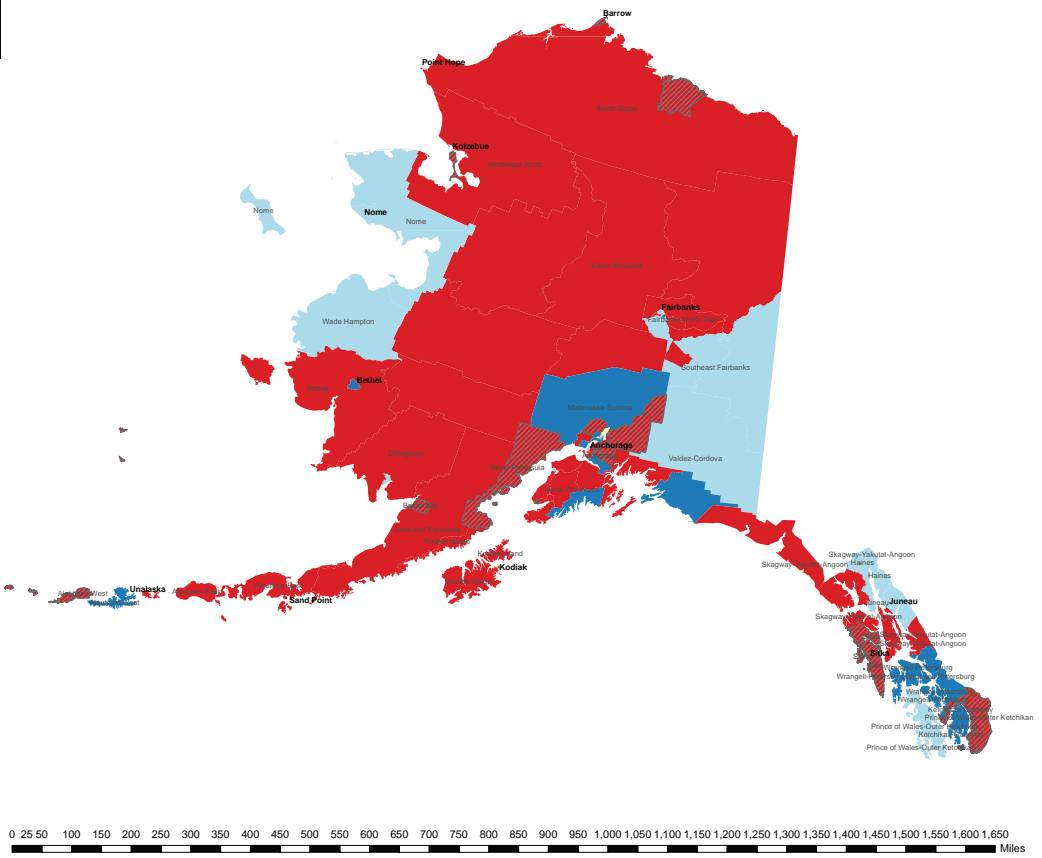
Date of map: September, 2011

Lower scores indicate that census tracts contain many convenience stores and fast food restaurants compared to the number of healthy food retailers.

A zero score indicates no healthy food retailers (supermarkets, larger groceries, produce stores, or supercenters) within the census tract.

DATA SOURCES:
 Supermarkets, Small and Large Groceries, Produce Stores, Supercenters - InfoUSA 2009
 Convenience stores - Homeland Security Infrastructure Program Database 2009
 Fast food restaurants - NAVTEQ 2009

National mRFEI Score = 10
 Alaska mRFEI Score = 6



The modified Retail Food Environment Index (mRFEI) measures the number of healthy and less-healthy food retailers within a census tract using this formula:

$$\frac{\# \text{ Healthy Food Retailers} - \# \text{ Less Healthy Food Retailers}}{\# \text{ Healthy Food Retailers} + \# \text{ Less Healthy Food Retailers}} \times 100$$

For this indicator, healthy food retailers include supermarkets, larger grocery stores, supercenters, and produce stores. Less healthy food retailers include convenience stores, fast food restaurants, and small grocery stores with 3 or fewer employees.[†]

[†] Data sources are listed in the legend.

Modified Retail Food Environment Index (By U.S. Census Tract)

- No retail food outlet within census tract
- No healthy food outlet within census tract
- 0.1 - 5
- 5.1 - 10
- 10.1 - 37.5
- 37.6 - 100
- Interstate Highways

Lower scores indicate that census tracts contain many convenience stores and fast food restaurants compared to the number of healthy food retailers.

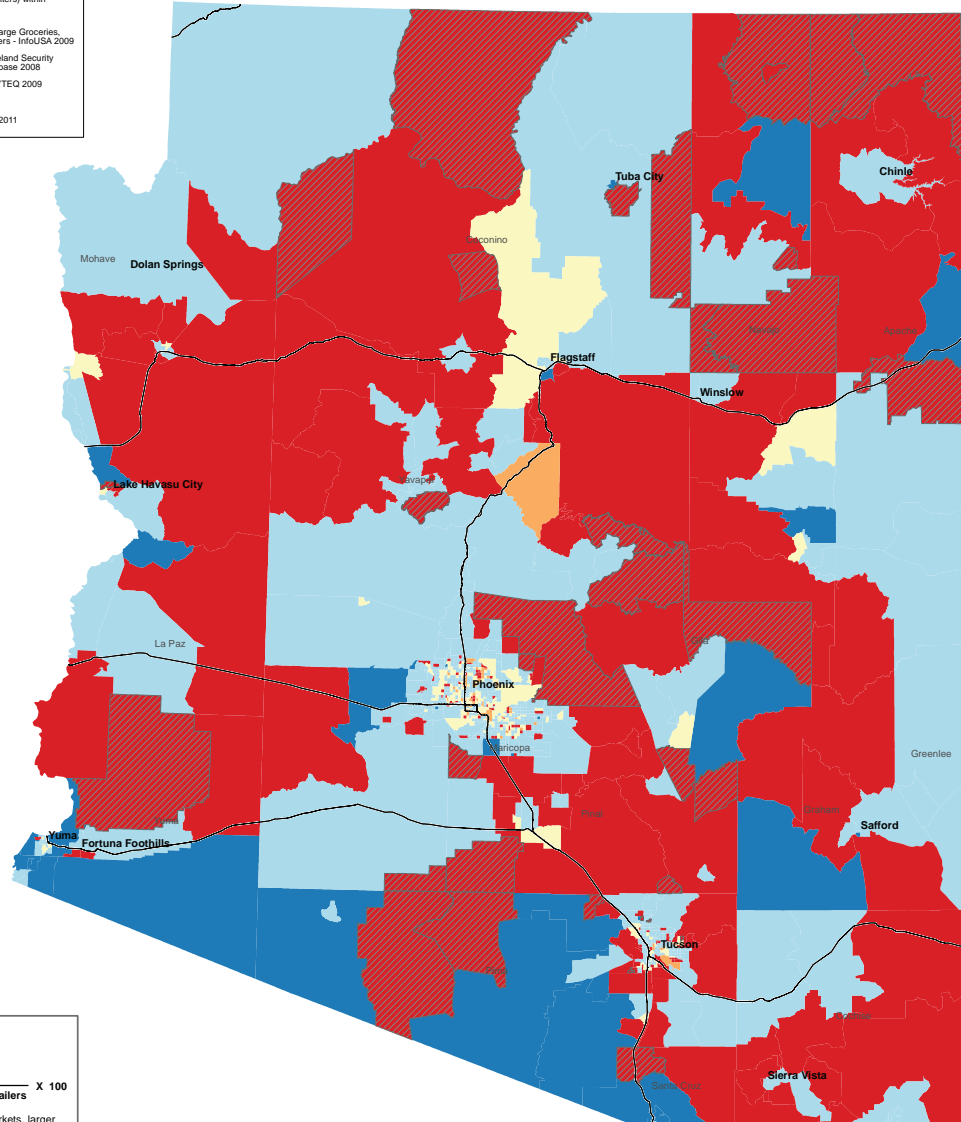
A zero score indicates no healthy food retailers (supermarkets, larger groceries, produce stores, or supercenters) within the census tract.

DATA SOURCES:
 Supermarkets, Small and Large Groceries, Produce Stores, Supercenters - InfoUSA 2009
 Convenience stores - Homeland Security Infrastructure Program Database 2008
 Fast-food restaurants - NAVTEQ 2009

Date of map: September, 2011

Arizona

Modified Retail Food Environment Index According to Census Tract



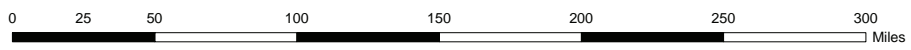
National mRFEI Score = 10
 Arizona mRFEI Score = 12

The modified Retail Food Environment Index (mRFEI) measures the number of healthy and less-healthy food retailers within a census tract using this formula:

$$\frac{\# \text{ Healthy Food Retailers}}{\# \text{ Healthy Food Retailers} + \# \text{ Less Healthy Food Retailers}} \times 100$$

For this indicator, healthy food retailers include supermarkets, larger grocery stores, supercenters, and produce stores.† Less healthy food retailers include convenience stores, fast food restaurants, and small grocery stores with 3 or fewer employees.†

† Data sources are listed in the legend.



Arkansas

Modified Retail Food Environment Index According to Census Tract

Modified Retail Food Environment Index (By U.S. Census Tract)

- No retail food outlet within census tract
- No healthy food outlet within census tract
- 0.1 - 5
- 5.1 - 10
- 10.1 - 37.5
- 37.6 - 100
- Interstate Highways

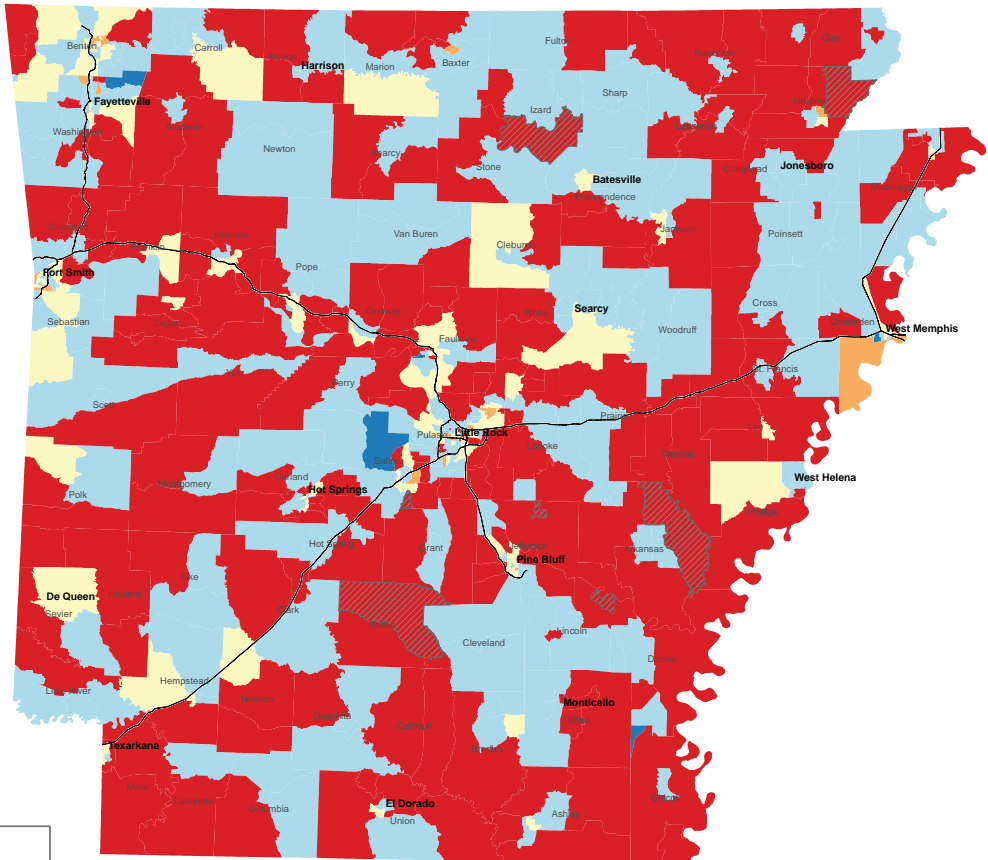
Lower scores indicate that census tracts contain many convenience stores and fast food restaurants compared to the number of healthy food retailers.

A zero score indicates no healthy food retailers (supermarkets, larger groceries, produce stores, or supercenters) within the census tract.

DATA SOURCES:
 Supermarkets, Small and Large Groceries, Produce Stores, Supercenters - InfoUSA 2009
 Convenience stores - Homeland Security Infrastructure Program Database 2008
 Fast-food restaurants - NAVTEQ 2009

Date of map: September, 2011

National mRFEI Score = 10
 Arkansas mRFEI Score = 9



The modified Retail Food Environment Index (mRFEI) measures the number of healthy and less-healthy food retailers within a census tract using this formula:

$$\frac{\# \text{ Healthy Food Retailers}}{\# \text{ Healthy Food Retailers} + \# \text{ Less Healthy Food Retailers}} \times 100$$

For this indicator, healthy food retailers include supermarkets, larger grocery stores, supercenters, and produce stores.† Less healthy food retailers include convenience stores, fast food restaurants, and small grocery stores with 3 or fewer employees.†

† Data sources are listed in the legend.



Modified Retail Food Environment Index (By U.S. Census Tract)

- No retail food outlet within census tract
- No healthy food outlet within census tract
- 0.1 - 5
- 5.1 - 10
- 10.1 - 37.5
- 37.6 - 100
- Interstate Highways

Lower scores indicate that census tracts contain many convenience stores and fast food restaurants compared to the number of healthy food retailers.

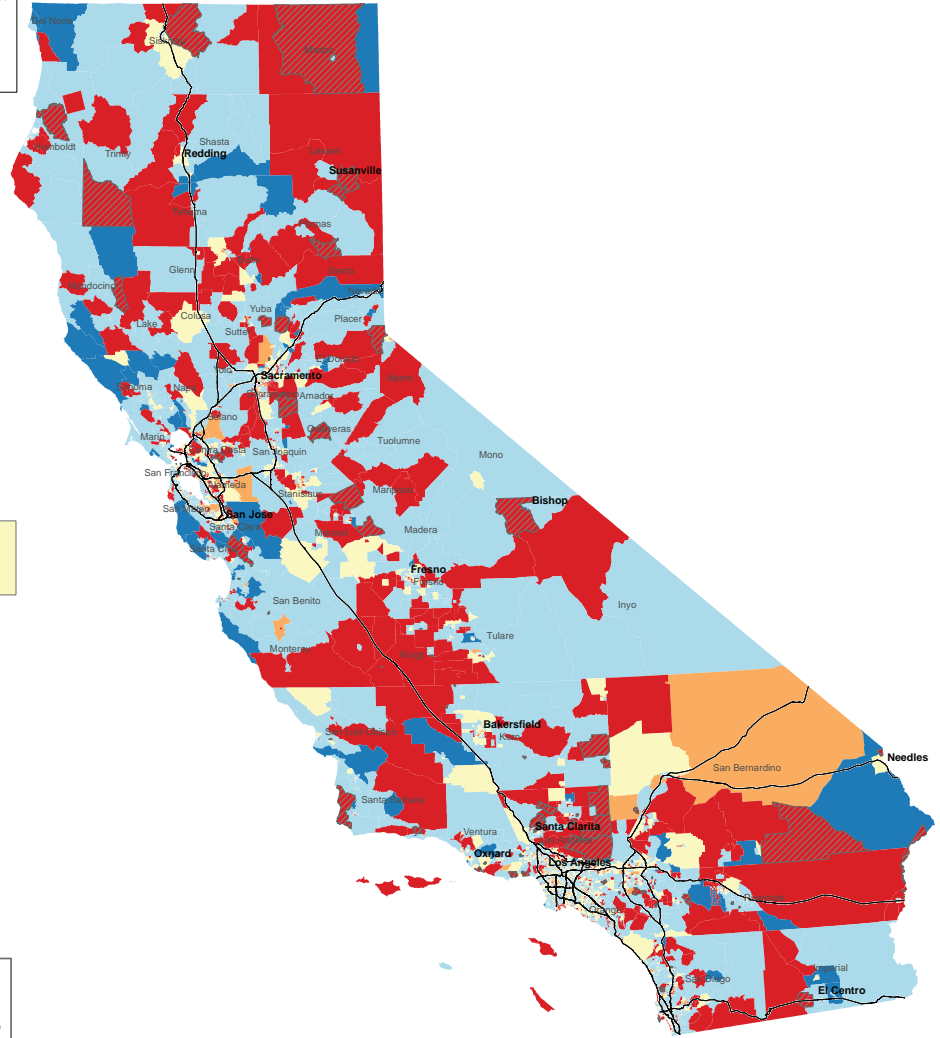
A zero score indicates no healthy food retailers (supermarkets, larger groceries, produce stores, or supercenters) within the census tract.

DATA SOURCES:
 Supermarkets, Small and Large Groceries, Produce Stores, Supercenters - InfoUSA 2009
 Convenience stores - Homeland Security Infrastructure Program Database 2009
 Fast-food restaurants - NAVTEQ 2009

Date of map: September, 2011

California

Modified Retail Food Environment Index According to Census Tract



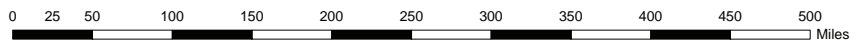
National mRFEI Score = 10
 California mRFEI Score = 11

The modified Retail Food Environment Index (mRFEI) measures the number of healthy and less-healthy food retailers within a census tract using this formula:

$$\frac{\# \text{ Healthy Food Retailers}}{\# \text{ Healthy Food Retailers} + \# \text{ Less Healthy Food Retailers}} \times 100$$

For this indicator, healthy food retailers include supermarkets, larger grocery stores, supercenters, and produce stores.† Less healthy food retailers include convenience stores, fast food restaurants, and small grocery stores with 3 or fewer employees.†

† Data sources are listed in the legend.



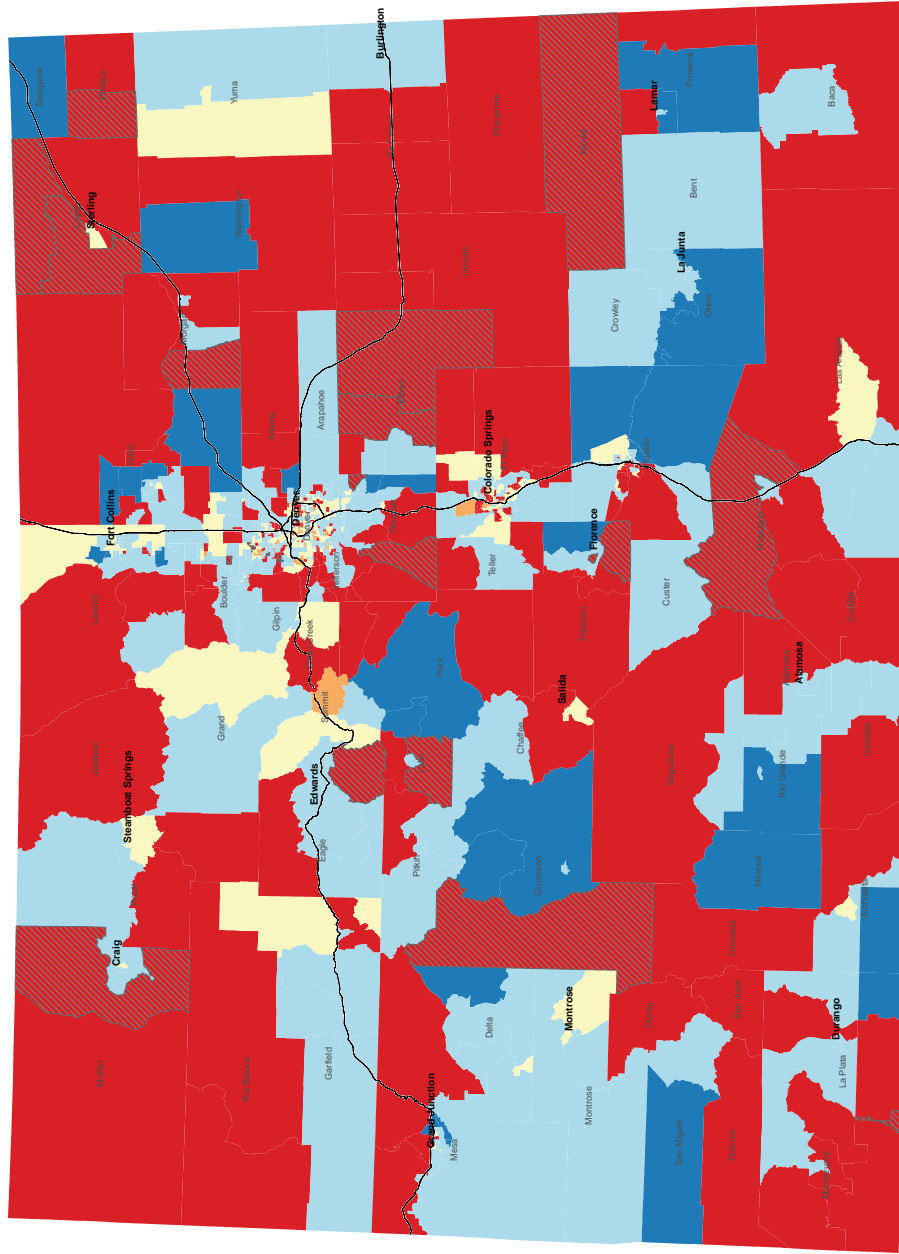
Colorado

Modified Retail Food Environment Index According to Census Tract

Lower scores indicate that census tracts contain many convenience stores and fast food outlets, and fewer healthy food retailers. Areas score inversely to the number of healthy food retailers.

Legend:

- No retail food outlet
- No healthy food outlet
- within census tract
- 0.1 - 5
- 5.1 - 10
- 10.1 - 37.5
- 37.6 - 100
- Interstate Highways



National mRFEI Score = 10
Colorado mRFEI Score = 11



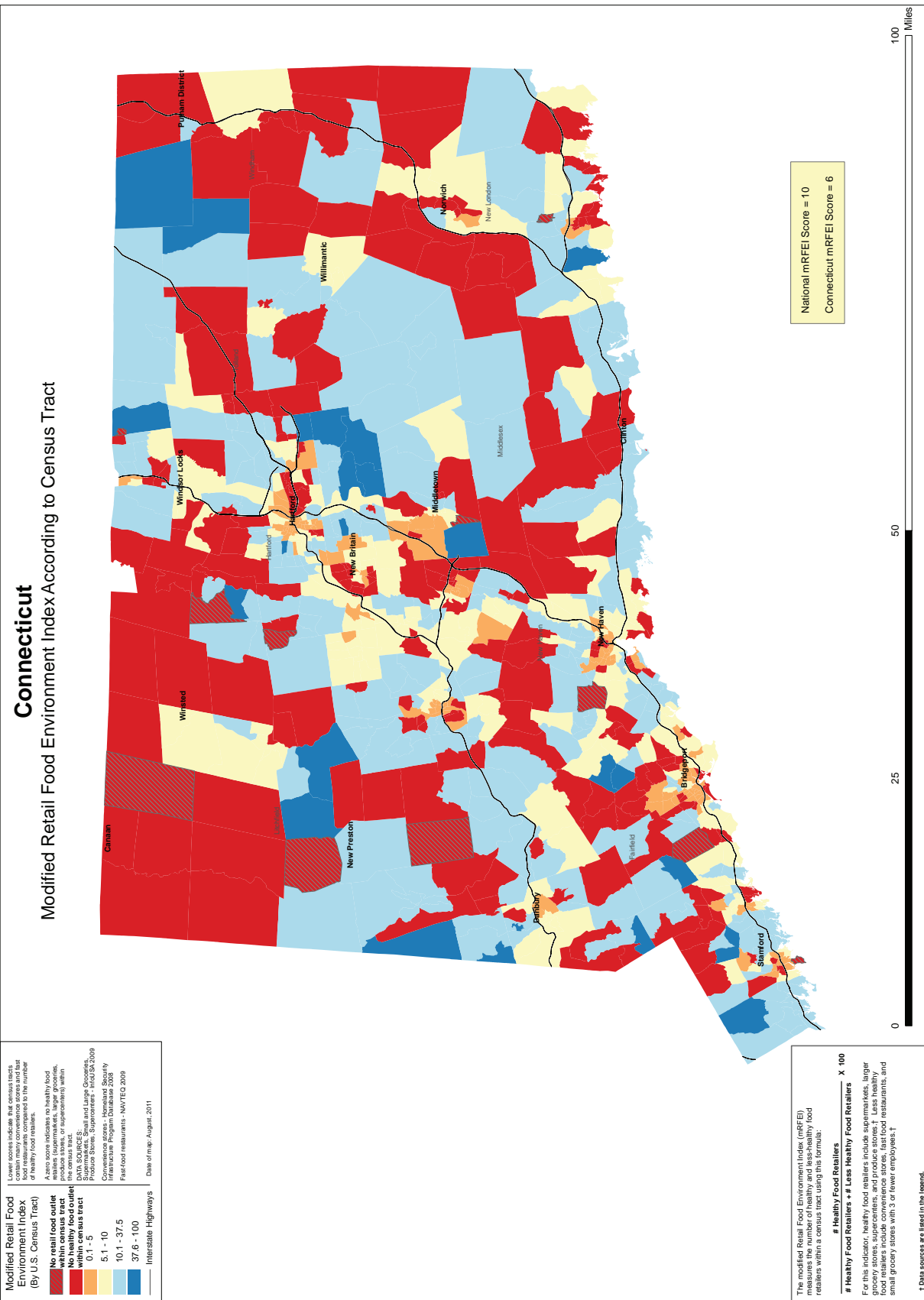
The modified Retail Food Environment Index (mRFEI) measures the number of healthy and less-healthy food retailers within a census tract, using this formula:

Healthy Food Retailers \times 100

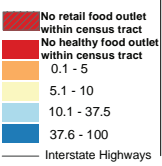
Healthy Food Retailers = # Less Healthy Food Retailers

For this indicator, healthy food retailers include supermarkets, larger grocery stores, supercenters, and produce stores.† Less healthy food retailers include convenience stores, fast food restaurants, and small grocery stores with 3 or fewer employees.†

† Data sources are listed in the legend.



Modified Retail Food Environment Index (By U.S. Census Tract)



Lower scores indicate that census tracts contain many convenience stores and fast food restaurants compared to the number of healthy food retailers.

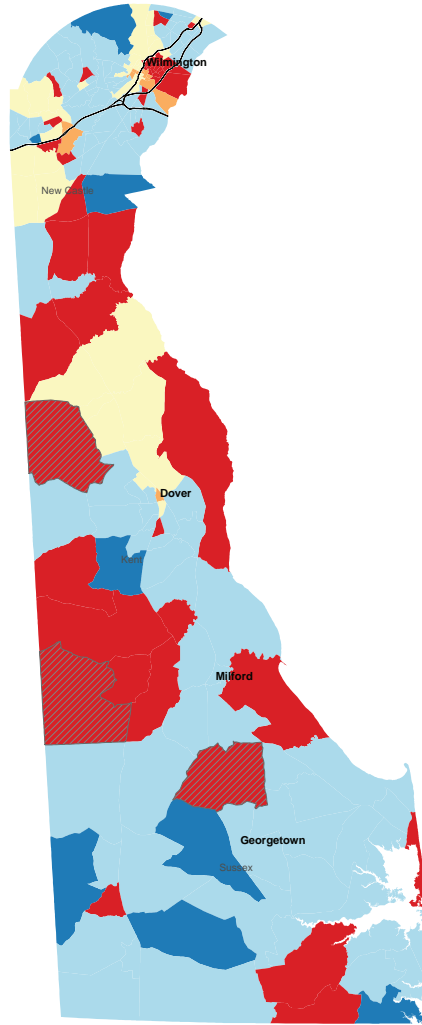
A zero score indicates no healthy food retailers (supermarkets, larger groceries, produce stores, or supercenters) within the census tract.

DATA SOURCES:
 Supermarkets, Small and Large Groceries, Produce Stores, Supercenters - InfoUSA, 2009
 Convenience stores - Homeland Security Infrastructure Program Database 2008
 Fast-food restaurants - NAVTEQ 2009

Date of map: September, 2011

Delaware

Modified Retail Food Environment Index According to Census Tract



National mRFEI Score = 10

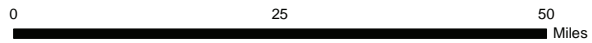
Delaware mRFEI Score = 12

The modified Retail Food Environment Index (mRFEI) measures the number of healthy and less-healthy food retailers within a census tract using this formula:

$$\frac{\# \text{ Healthy Food Retailers}}{\# \text{ Healthy Food Retailers} + \# \text{ Less Healthy Food Retailers}} \times 100$$

For this indicator, healthy food retailers include supermarkets, larger grocery stores, supercenters, and produce stores. † Less healthy food retailers include convenience stores, fast food restaurants, and small grocery stores with 3 or fewer employees. ‡

† Data sources are listed in the legend.



Modified Retail Food Environment Index (By U.S. Census Tract)

- No retail food outlet within census tract
- No healthy food outlet within census tract
- 0.1 - 5
- 5.1 - 10
- 10.1 - 37.5
- 37.6 - 100
- Interstate Highways

Lower scores indicate that census tracts contain many convenience stores and fast food restaurants compared to the number of healthy food retailers.

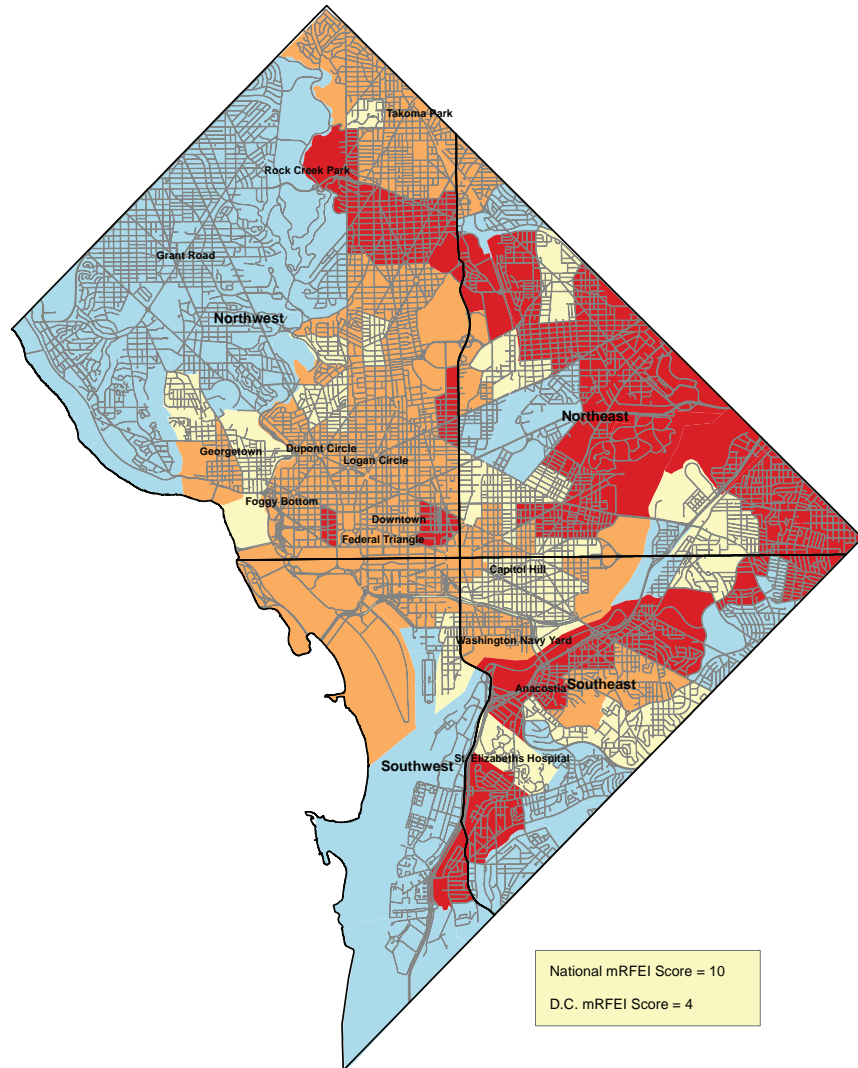
A zero score indicates no healthy food retailers (supermarkets, larger groceries, produce stores, or supercenters) within the census tract.

DATA SOURCES:
 Supermarkets, Small and Large Groceries, Produce Stores, Supercenters - InfoUSA 2009
 Convenience stores - Homeland Security Infrastructure Program Database 2008
 Fast-food restaurants - NAVTEQ 2009

Date of map: September, 2011

District of Columbia

Modified Retail Food Environment Index According to Census Tract



National mRFEI Score = 10
 D.C. mRFEI Score = 4

The modified Retail Food Environment Index (mRFEI) measures the number of healthy and less-healthy food retailers within a census tract using this formula:

$$\frac{\# \text{ Healthy Food Retailers}}{\# \text{ Healthy Food Retailers} + \# \text{ Less Healthy Food Retailers}} \times 100$$

For this indicator, healthy food retailers include supermarkets, larger grocery stores, supercenters, and produce stores. † Less healthy food retailers include convenience stores, fast food restaurants, and small grocery stores with 3 or fewer employees. †

† Data sources are listed in the legend.

Modified Retail Food Environment Index (BY U.S. Census Tract)

Lower scores indicate that census tracts contain many convenience stores and fast food outlets, but few to the number of healthy food retailers.

A zero score indicates no healthy food retailers (supermarkets, larger grocery stores, etc.) are present within the census tract.

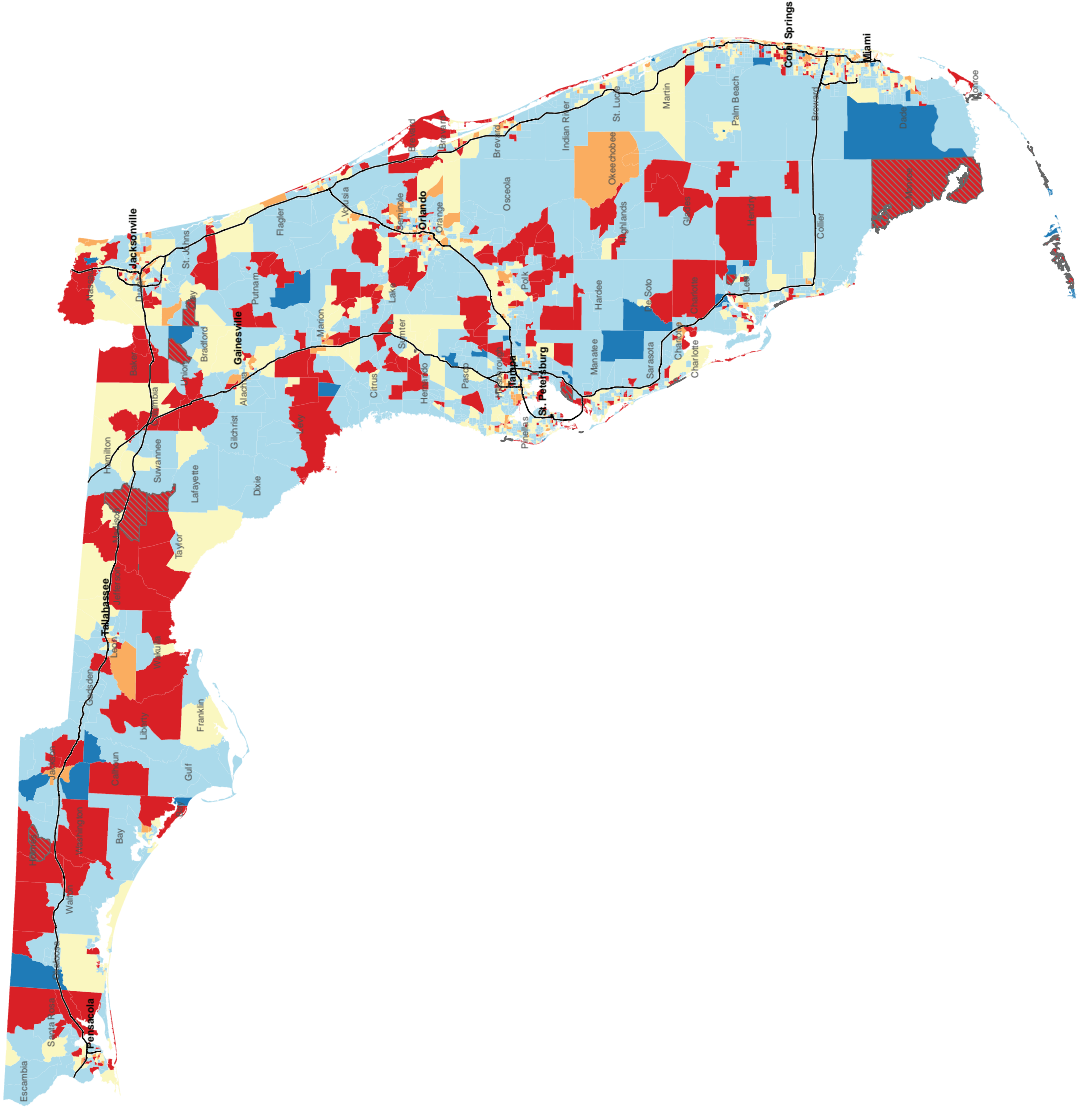
DATA SOURCES: Census 2000, Census 2000, Retail Store, Supercenter & Supermarket Program Database 2008, Fast-food restaurants - NUTCO 2009

Date of map: September, 2011

- No retail food outlet within census tract
- 0.1 - 5
- 5.1 - 10
- 10.1 - 37.5
- 37.6 - 100
- Interstate Highways

Florida

Modified Retail Food Environment Index According to Census Tract



National mRFEI Score = 10
Florida mRFEI Score = 10

The modified Retail Food Environment Index (mRFEI) measures the number of healthy and less-healthy food retailers within a census tract using this formula:

Healthy Food Retailers X 100

For this index, healthy food retailers include supermarkets, larger grocery stores, supercenters, and produce stores.† Less healthy food retailers include convenience stores, fast food restaurants, and small grocery stores with 3 or fewer employees.†

† Data sources are listed in the legend.

Georgia

Modified Retail Food Environment Index According to Census Tract

Modified Retail Food Environment Index (By U.S. Census Tract)

- No retail food outlet within census tract
- No healthy food outlet within census tract
- 0.1 - 5
- 5.1 - 10
- 10.1 - 37.5
- 37.6 - 100

Lower scores indicate that census tracts contain many convenience stores and fast food restaurants compared to the number of healthy food retailers.

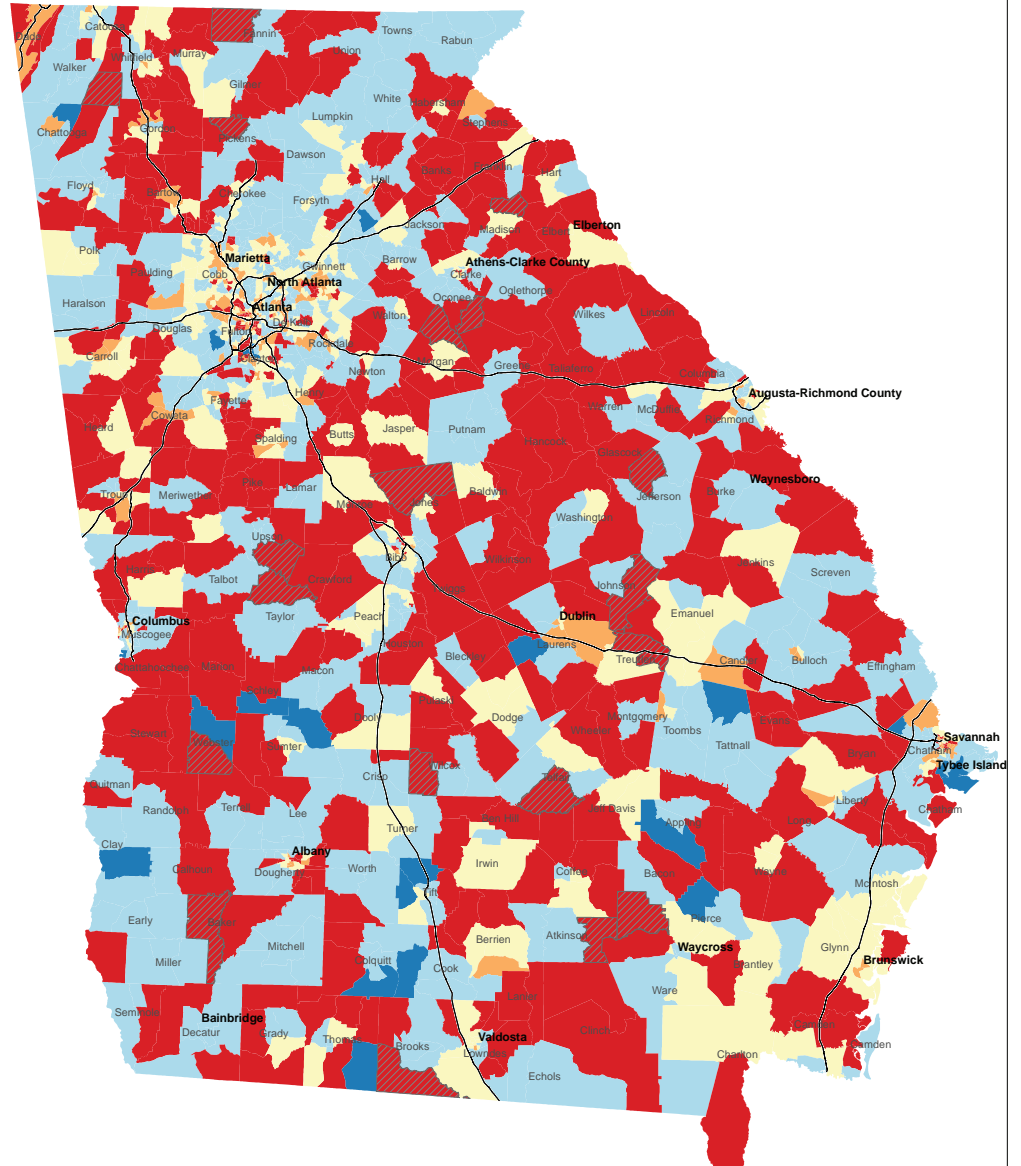
A zero score indicates no healthy food retailers (supermarkets, larger groceries, produce stores, or supercenters) within the census tract.

DATA SOURCES:
Supermarkets, Small and Large Groceries, Produce Stores, Supercenters - InfoUSA 2009

Convenience stores - Homeland Security Infrastructure Program Database 2008
Fast-food restaurants - NAVTEQ 2009

Date of map: September, 2011

National mRFEI Score = 10
Georgia mRFEI Score = 8



The modified Retail Food Environment Index (mRFEI) measures the number of healthy and less-healthy food retailers within a census tract using this formula:

$$\frac{\# \text{ Healthy Food Retailers}}{\# \text{ Healthy Food Retailers} + \# \text{ Less Healthy Food Retailers}} \times 100$$

For this indicator, healthy food retailers include supermarkets, larger grocery stores, supercenters, and produce stores. † Less healthy food retailers include convenience stores, fast food restaurants, and small grocery stores with 3 or fewer employees. ‡

† Data sources are listed in the legend.



Hawaii

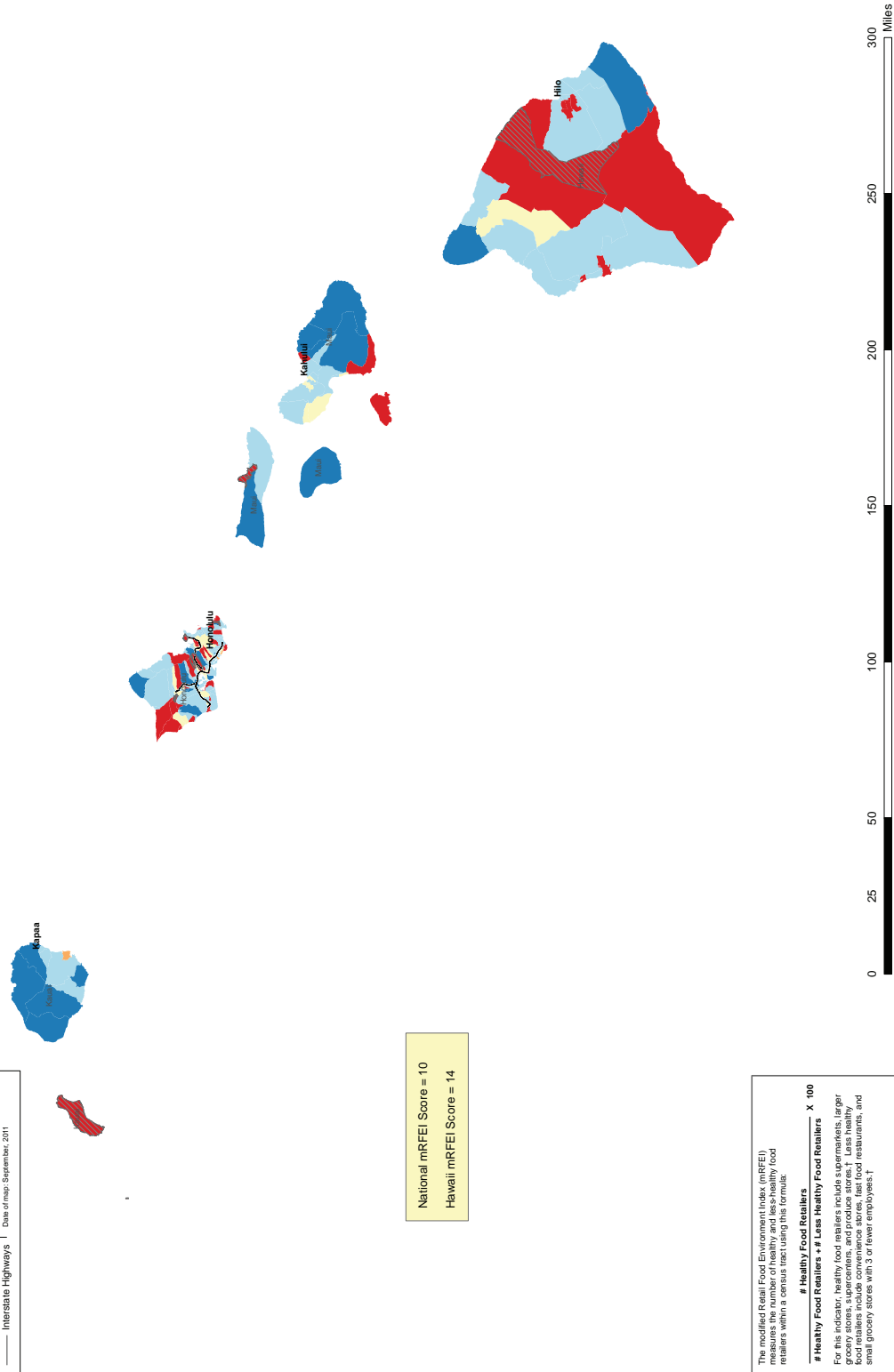
Modified Retail Food Environment Index According to Census Tract

Lower scores indicate that census tracts have fewer healthy food retailers compared to the number of healthy food retailers.

A zero score indicates no healthy food outlets (grocery, convenience stores, fast food restaurants, Supercenters, Small and Large Groceries, Protein Shops, Supercenters - Includa 2009, Convenience Stores - Database 2009, Organic Produce - Database 2009, Fast food restaurants - NAVTEQ 2009).

Date of map: September, 2011

- Modified Retail Food Environment Index (By U.S. Census Tract)
- No retail food outlet within census tract
- No healthy food outlet within census tract
- 0.1 - 5
- 5.1 - 10
- 10.1 - 37.5
- 37.6 - 100
- Interstate Highways



National mRFEI Score = 10
Hawaii mRFEI Score = 14

The modified Retail Food Environment Index (mRFEI) measures the number of healthy and less-healthy food retailers within a census tract using this formula:

$$\frac{\# \text{ Healthy Food Retailers}}{\# \text{ Healthy Food Retailers} + \# \text{ Less Healthy Food Retailers}} \times 100$$

For this indicator, healthy food retailers include supermarkets, larger grocery stores, and convenience stores. Less-healthy food retailers include convenience stores, fast food restaurants, and small grocery stores with 3 or fewer employees.[†]

[†] Data sources are listed in the legend.

Modified Retail Food Environment Index (By U.S. Census Tract)

- No retail food outlet within census tract
- No healthy food outlet within census tract
- 0.1 - 5
- 5.1 - 10
- 10.1 - 37.5
- 37.6 - 100

Lower scores indicate that census tracts contain many convenience stores and fast food restaurants compared to the number of healthy food retailers.

A zero score indicates no healthy food retailers (supermarkets, larger groceries, produce stores, or supercenters) within the census tract.

DATA SOURCES:
 Supermarkets, Small and Large Groceries, Produce Stores, Supercenters - InfoUSA 2009
 Convenience stores - Homeland Security Infrastructure Program Database 2008
 Fast-food restaurants - NAVTEQ 2009

Date of map: September, 2011

National mRFEI Score = 10
 Idaho mRFEI Score = 13

The modified Retail Food Environment Index (mRFEI) measures the number of healthy and less-healthy food retailers within a census tract using this formula:

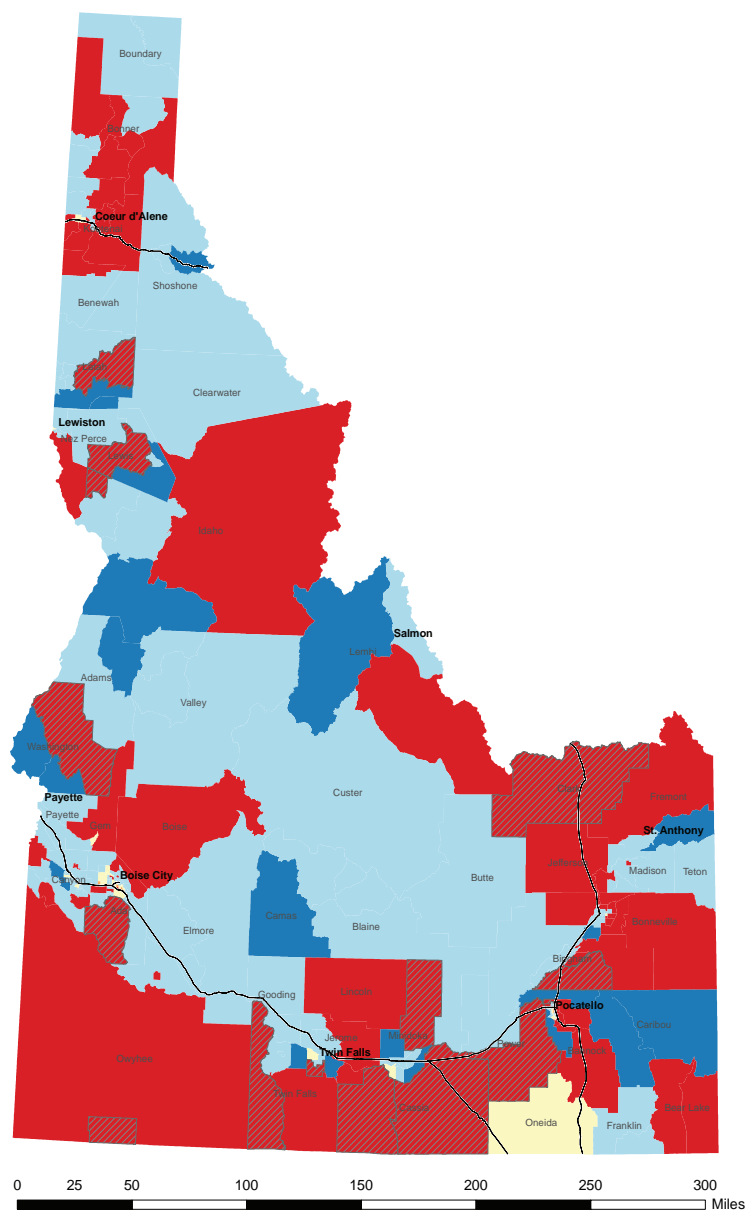
$$\frac{\# \text{ Healthy Food Retailers}}{\# \text{ Healthy Food Retailers} + \# \text{ Less Healthy Food Retailers}} \times 100$$

For this indicator, healthy food retailers include supermarkets, larger grocery stores, supercenters, and produce stores. † Less healthy food retailers include convenience stores, fast food restaurants, and small grocery stores with 3 or fewer employees. †

† Data sources are listed in the legend.

Idaho

Modified Retail Food Environment Index According to Census Tract



Modified Retail Food Environment Index (By U.S. Census Tract)

- No retail food outlet within census tract
- No healthy food outlet within census tract
- 0.1 - 5
- 5.1 - 10
- 10.1 - 37.5
- 37.6 - 100

Lower scores indicate that census tracts contain many convenience stores and fast food restaurants compared to the number of healthy food retailers.

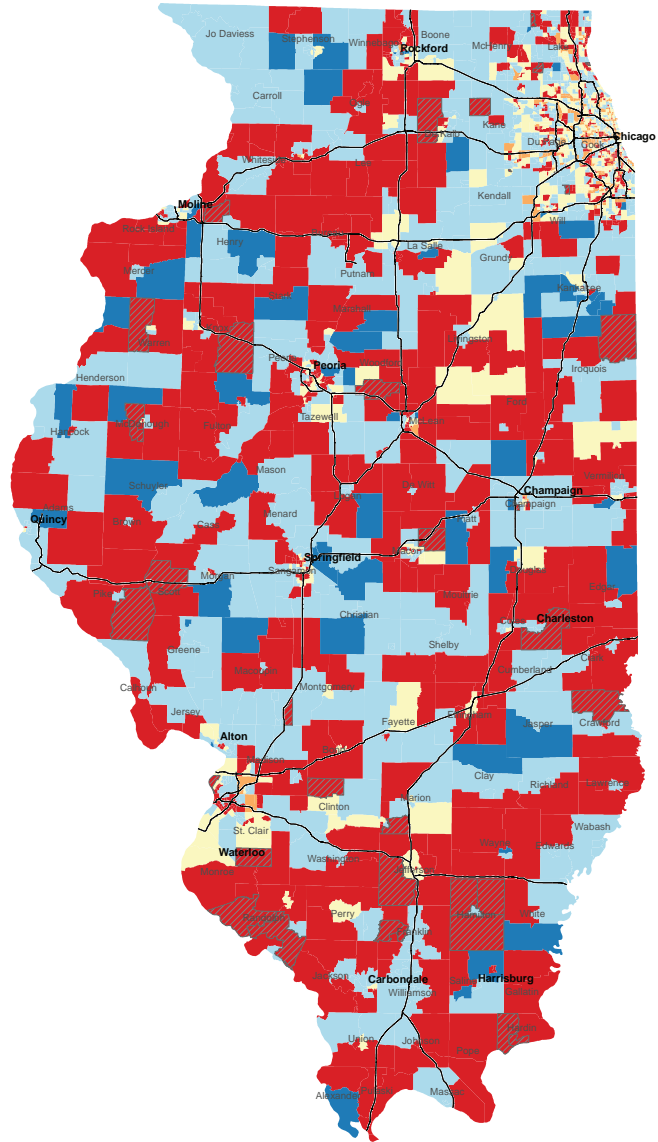
A zero score indicates no healthy food retailers (supermarkets, larger groceries, produce stores, or supercenters) within the census tract.

DATA SOURCES:
 Supermarkets, Small and Large Groceries, Produce Stores, Supercenters - InfUSA 2009
 Convenience stores - Homeland Security Infrastructure Program Database 2008
 Fast-food restaurants - NAVTEQ 2009

Date of map: September, 2011

Illinois

Modified Retail Food Environment Index According to Census Tract



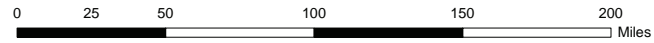
National mRFEI Score = 10
 Illinois mRFEI Score = 8

The modified Retail Food Environment Index (mRFEI) measures the number of healthy and less-healthy food retailers within a census tract using this formula:

$$\frac{\# \text{ Healthy Food Retailers}}{\# \text{ Healthy Food Retailers} + \# \text{ Less Healthy Food Retailers}} \times 100$$

For this indicator, healthy food retailers include supermarkets, larger grocery stores, supercenters, and produce stores.† Less healthy food retailers include convenience stores, fast food restaurants, and small grocery stores with 3 or fewer employees.†

† Data sources are listed in the legend.



Modified Retail Food Environment Index (By U.S. Census Tract)

- No retail food outlet within census tract
- No healthy food outlet within census tract
- 0.1 - 5
- 5.1 - 10
- 10.1 - 37.5
- 37.6 - 100

Lower scores indicate that census tracts contain many convenience stores and fast food restaurants compared to the number of healthy food retailers.

A zero score indicates no healthy food retailers (supermarkets, larger groceries, produce stores, or supercenters) within the census tract.

DATA SOURCES:
 Supermarkets, Small and Large Groceries, Produce Stores, Supercenters - InfoUSA 2009
 Convenience stores - Homeland Security Infrastructure Program Database 2008
 Fast-food restaurants - NAVTEQ 2009

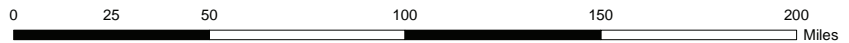
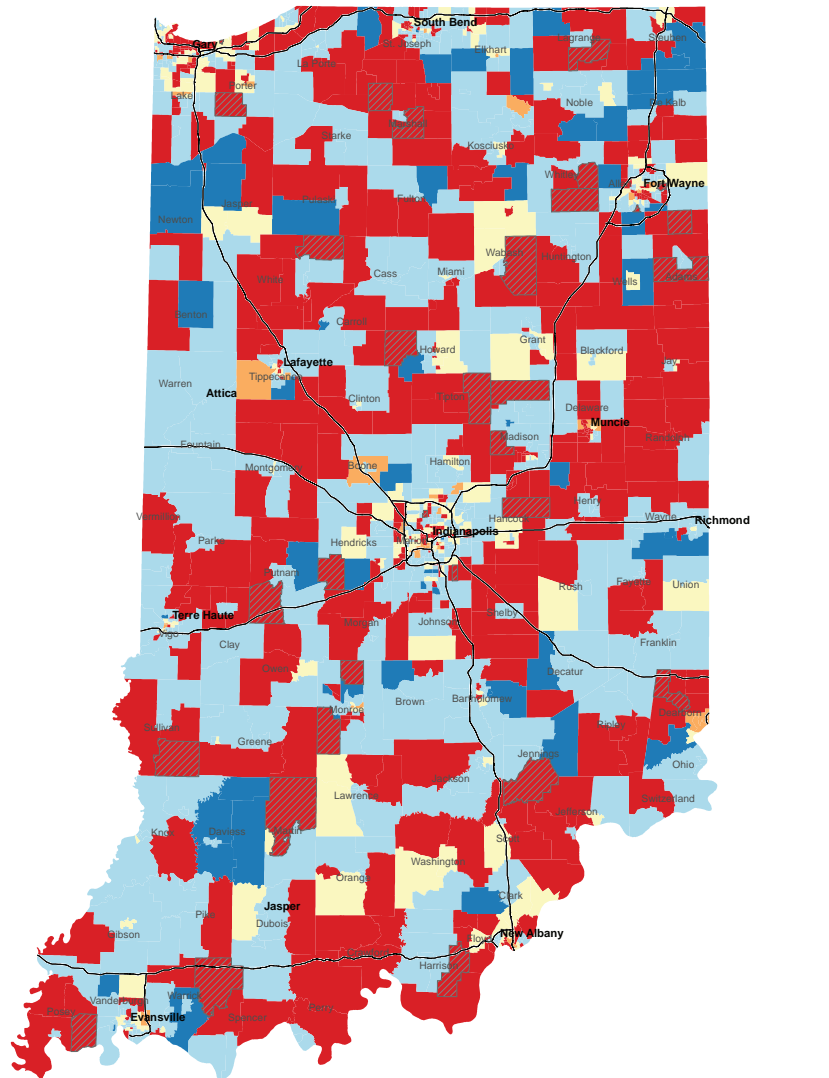
Date of map: August, 2011

Interstate Highways

National mRFEI Score = 10
 Indiana mRFEI Score = 10

Indiana

Modified Retail Food Environment Index According to Census Tract



The modified Retail Food Environment Index (mRFEI) measures the number of healthy and less-healthy food retailers within a census tract using this formula:

$$\frac{\# \text{ Healthy Food Retailers}}{\# \text{ Healthy Food Retailers} + \# \text{ Less Healthy Food Retailers}} \times 100$$

For this indicator, healthy food retailers include supermarkets, larger grocery stores, supercenters, and produce stores.† Less healthy food retailers include convenience stores, fast food restaurants, and small grocery stores with 3 or fewer employees.‡

† Data sources are listed in the legend.

Iowa

Modified Retail Food Environment Index According to Census Tract

Low scores indicate that census tracts have a low density of healthy food retailers compared to the number of unhealthy food retailers.

A zero score indicates no healthy food retailers within a census tract.

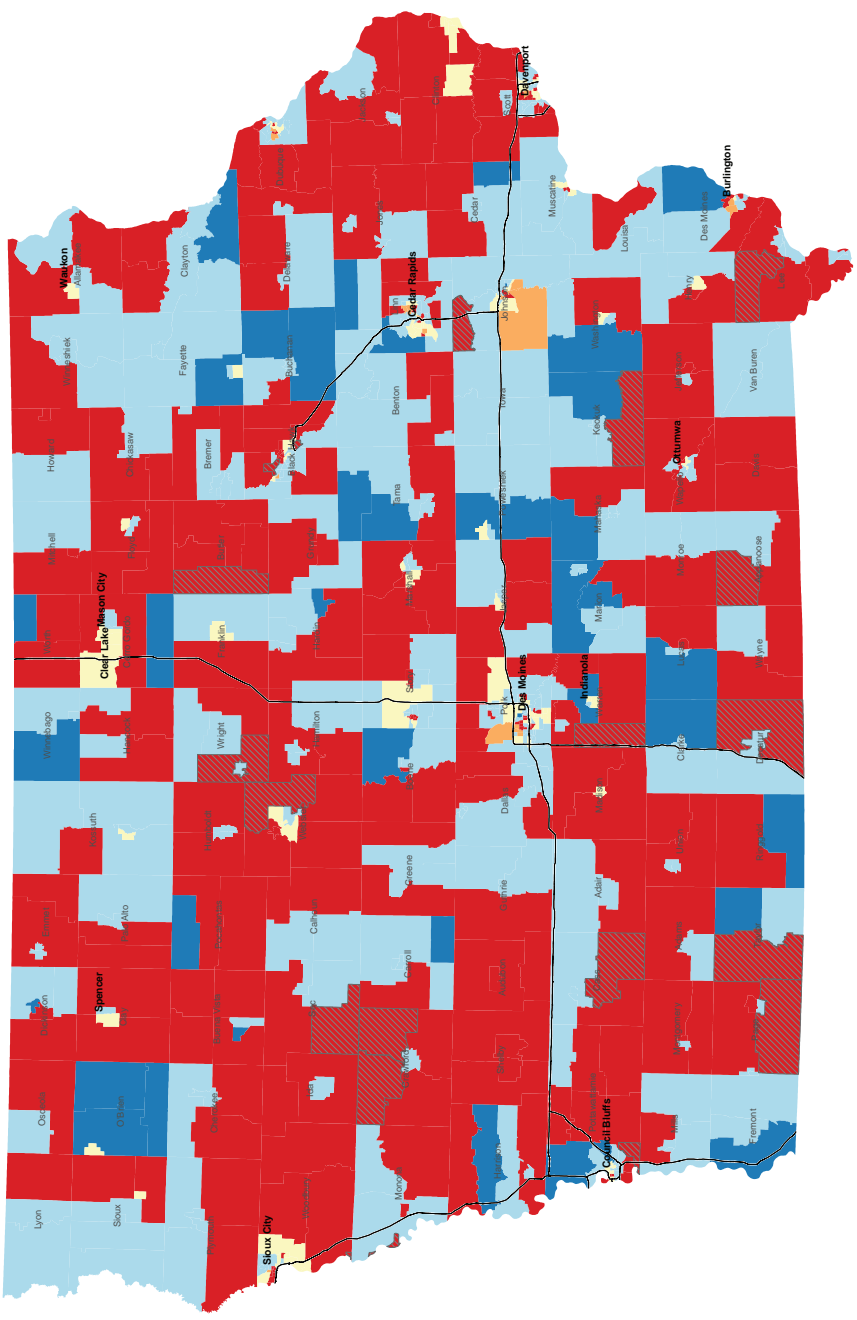
Higher scores indicate a higher density of healthy food retailers within a census tract.

Score by tract:

- 0.1 - 5: Produce Stores, Supercenters - InfoUSA, 2009
- 5.1 - 10: Convenience stores - Nominale Society
- 10.1 - 37.5: Supermarkets - Small and Large Groceries, 2009
- 37.6 - 100: Fast-food restaurants - NAVTEQ 2009

Interstate Highways

Date of map: September, 2011



National mRFEI Score = 10
Iowa mRFEI Score = 10

The modified Retail Food Environment Index (mRFEI) measures the number of healthy and less-healthy food retailers within a census tract using this formula:

Healthy Food Retailers × 100

For this indicator, healthy food retailers include supermarkets, larger food retailers, and convenience stores, fast food restaurants, and small grocery stores with 3 or fewer employees.†

† Data sources are listed in the legend.

Kansas

Modified Retail Food Environment Index According to Census Tract

Modified Retail Food Environment Index (by U.S. Census Tract)

Lower scores indicate healthier food environments with fewer fast-food restaurants compared to the number of healthy food retailers.

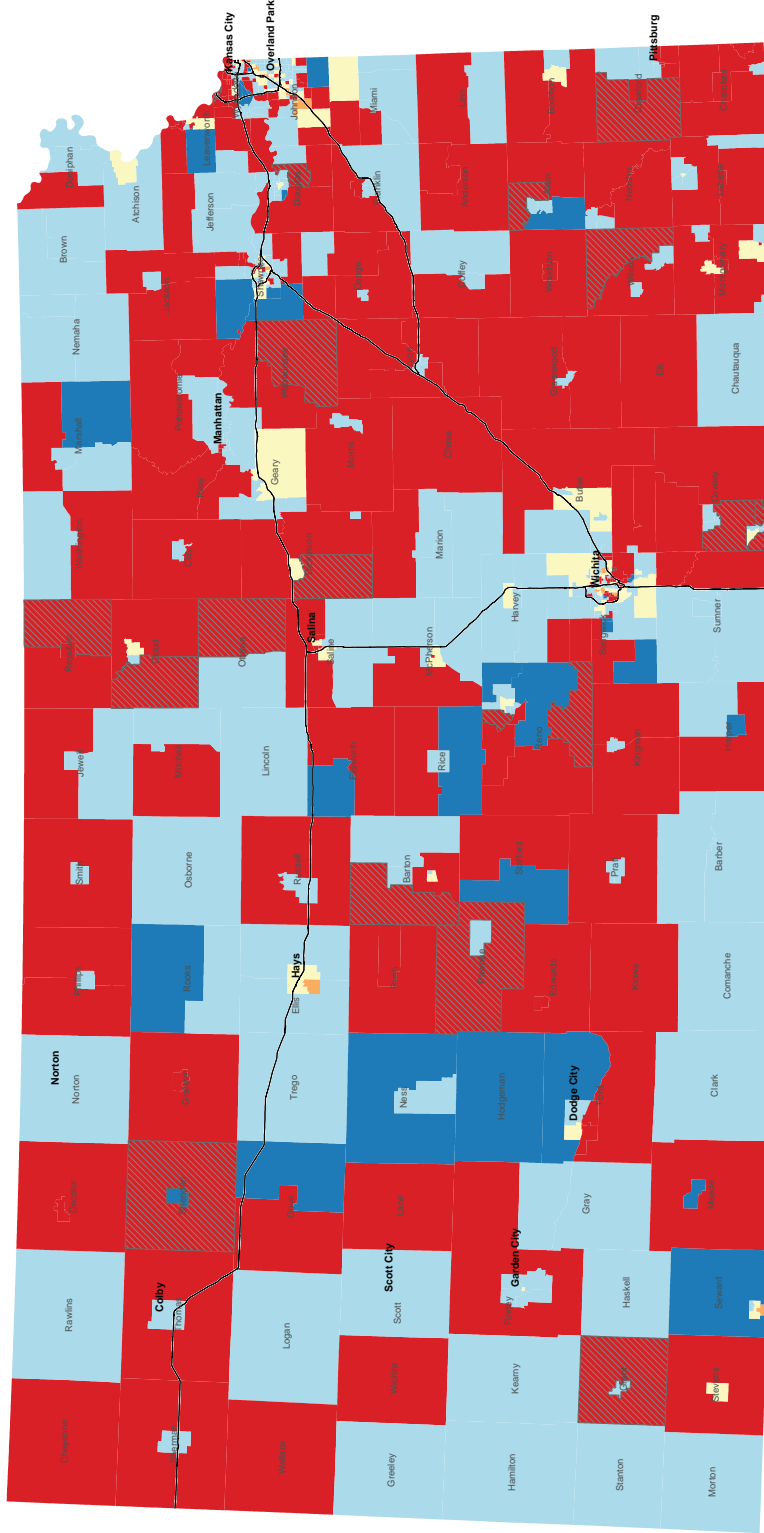
A zero score indicates no healthy food retailers, no fast-food restaurants, no produce stores, or supercenters within the census tract.

Legend:

- No retail food outlet within census tract
- No healthy food outlet within census tract
- 0.1 - 5
- 5.1 - 10
- 10.1 - 37.5
- 37.6 - 100

Interstate Highways

Date of map: September, 2011



National mRFEI Score = 10
 Kansas mRFEI Score = 10



The modified Retail Food Environment Index (mRFEI) measures the number of healthy and less-healthy food retailers within a census tract using this formula:

$$\frac{\# \text{ Healthy Food Retailers} + \# \text{ Less Healthy Food Retailers}}{100}$$

For this indicator, healthy food retailers include supermarkets, larger grocery stores, and farmers markets. Less-healthy food retailers include convenience stores, fast food restaurants, and small grocery stores with 3 or fewer employees.†

† Data sources are listed in the legend.

Kentucky

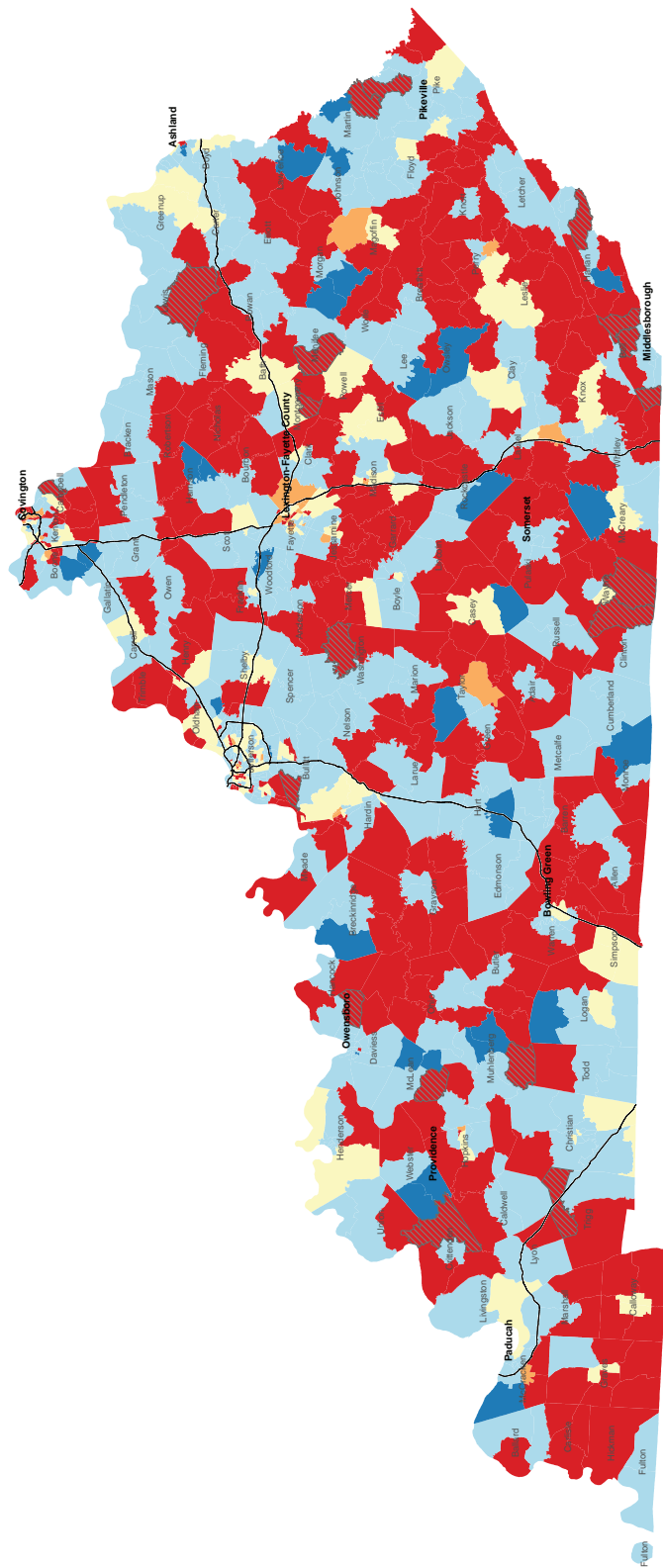
Modified Retail Food Environment Index According to Census Tract

Lower scores indicate that census tracts contain many convenience stores and fast food restaurants, and fewer supermarkets and full-service grocery stores. A zero score indicates no healthy food retailers (supermarkets, larger grocers, produce stores, supermarkets) within the census tract.

DATA SOURCES:
 Convenience stores - National Security Infrastructure Program Database 2008
 Fast-food restaurants - NUTREG 2009

Date of map: August, 2011

- No retail food outlet (By U.S. Census Tract)
 - No healthy food outlet
 - 0.1 - 5
 - 5.1 - 10
 - 10.1 - 37.5
 - 37.6 - 100
- Interstate Highways



National mRFEI Score = 10
 Kentucky mRFEI Score = 10



The modified Retail Food Environment Index (mRFEI) measures the number of healthy and less-healthy food retailers within a census tract using the formula:

Healthy Food Retailers \times 100
Less Healthy Food Retailers

For this indicator, healthy food retailers include supermarkets, larger grocery stores, supercenters, and produce stores.† Less healthy food retailers include convenience stores, fast food restaurants, and small grocery stores with 3 or fewer employees.†

† Data sources are listed in the legend.

Louisiana

Modified Retail Food Environment Index According to Census Tract

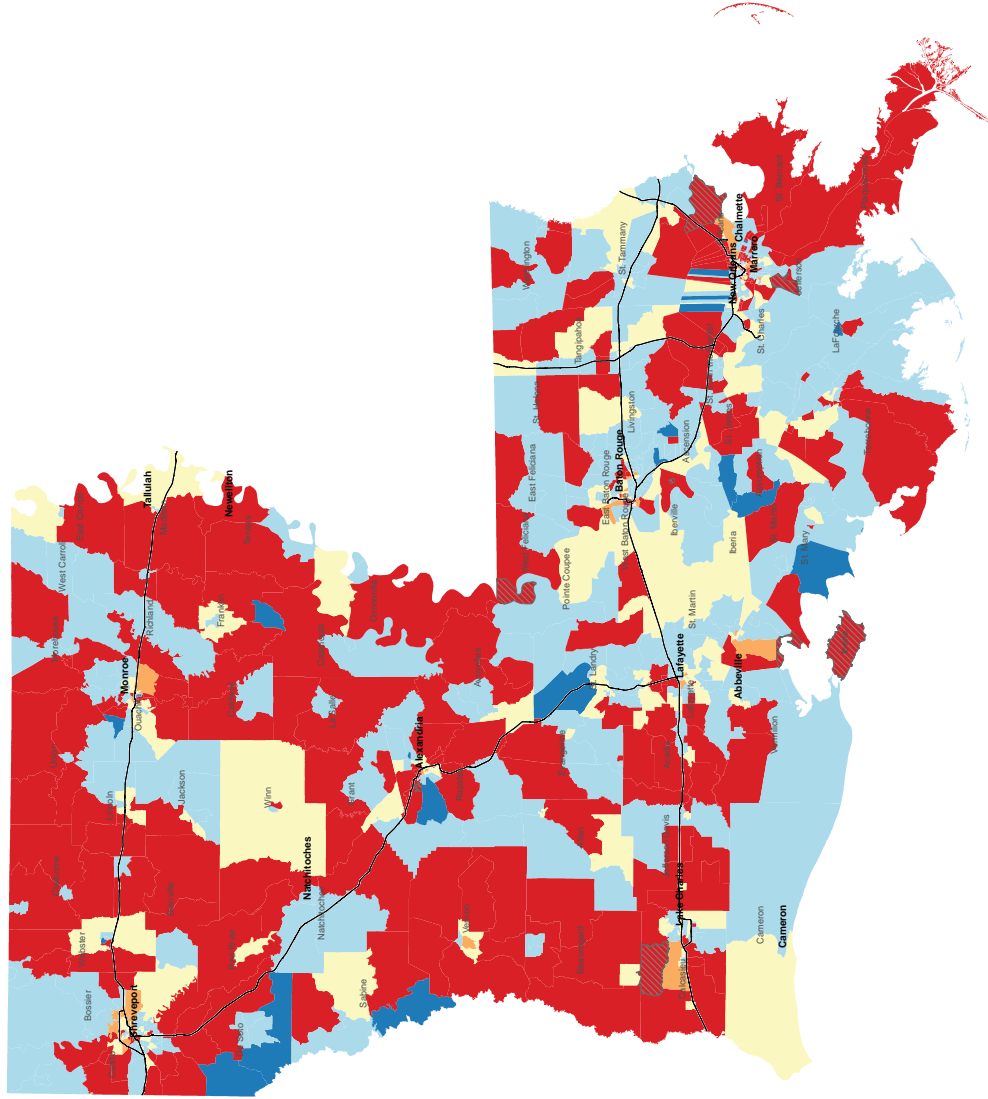
Lower scores indicate that census tracts have fewer healthy food outlets compared to the number of healthy food retailers.

A zero score indicates no healthy food outlets (fast-food restaurants, bakeries, produce stores, or supermarkets) within the census tract.

Score ranges:
 0 - No healthy food outlet
 0.1 - 5
 5.1 - 10
 10.1 - 37.5
 37.6 - 100

Interstate Highways

Date of map: August, 2011



National mRFEI Score = 10
 Louisiana mRFEI Score = 9

The modified Retail Food Environment Index (mRFEI) measures the number of healthy and less-healthy food retailers within a census tract using this formula:

Healthy Food Retailers
 # Healthy Food Retailers + # Less Healthy Food Retailers $\times 100$

For this indicator, healthy food outlets include supermarkets, larger grocery stores, supermarkets, and produce stores.[†] Less healthy food retailers include convenience stores, fast food restaurants, and small grocery stores with 3 or fewer employees.[†]

[†] Data sources are listed in the legend.

Maine

Modified Retail Food Environment Index According to Census Tract

Lower scores indicate that census tracts contain many convenience stores and fast food restaurants compared to the number of healthy food retailers.

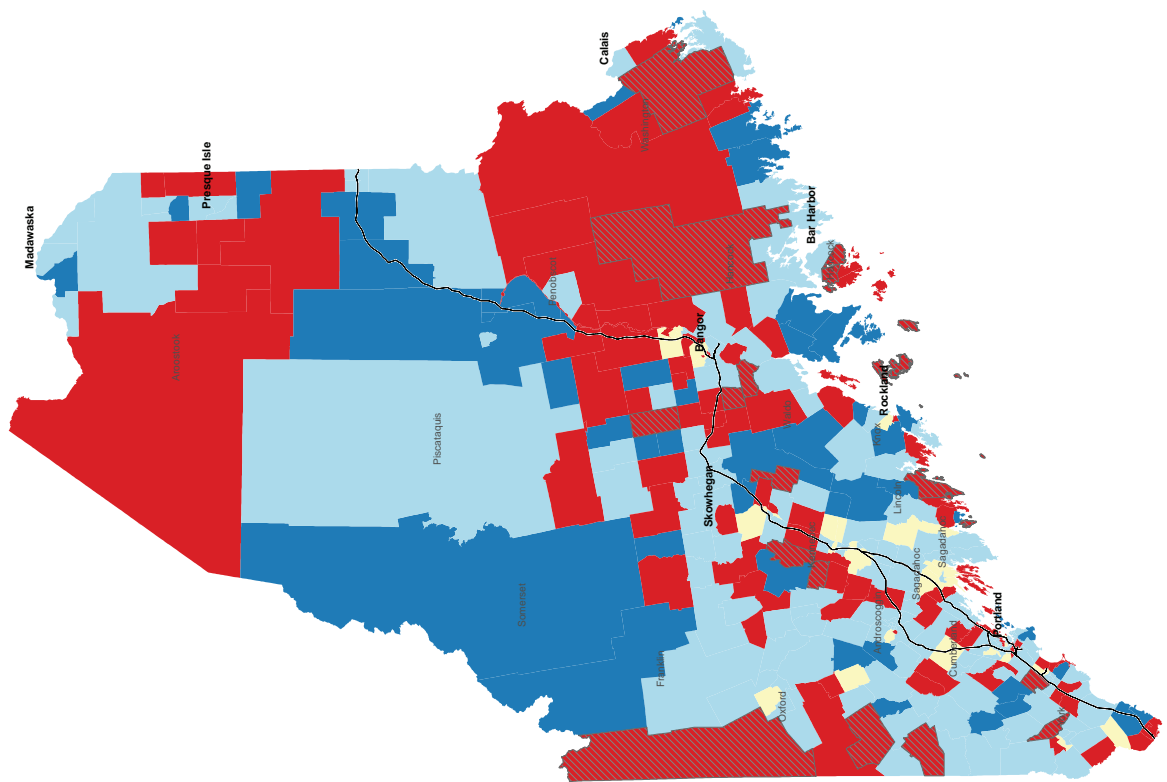
A zero score indicates no healthy food retailers, fast food restaurants, convenience stores, or supermarkets within the census tract.

DATA SOURCES: Small and Large Groceries, Produce Stores, Supercenters - INFOUSA 2009
Convenience stores - Homeland Security Infrastructure Program Database 2008
Fast-food restaurants - NAVTEQ 2009

Date of map: September, 2011

- Modified Retail Food Environment Index (By U.S. Census Tract)
- No retail food outlet within census tract
- No healthy food outlet within census tract
- 0.1 - 5
- 5.1 - 10
- 10.1 - 37.5
- 37.6 - 100
- Interstate Highways

National mRFEI Score = 10
Maine mRFEI Score = 15



The modified Retail Food Environment Index (mRFEI) measures the number of healthy and less-healthy food retailers within a census tract using this formula:

$$\frac{\# \text{ Healthy Food Retailers}}{\# \text{ Healthy Food Retailers} + \# \text{ Less Healthy Food Retailers}} \times 100$$

For this indicator, healthy food retailers include supermarkets, larger grocery stores, supercenters, and produce stores.† Less healthy food retailers include convenience stores, fast food restaurants, and small grocery stores with 3 or fewer employees.†

† Data sources are listed in the legend.

Maryland

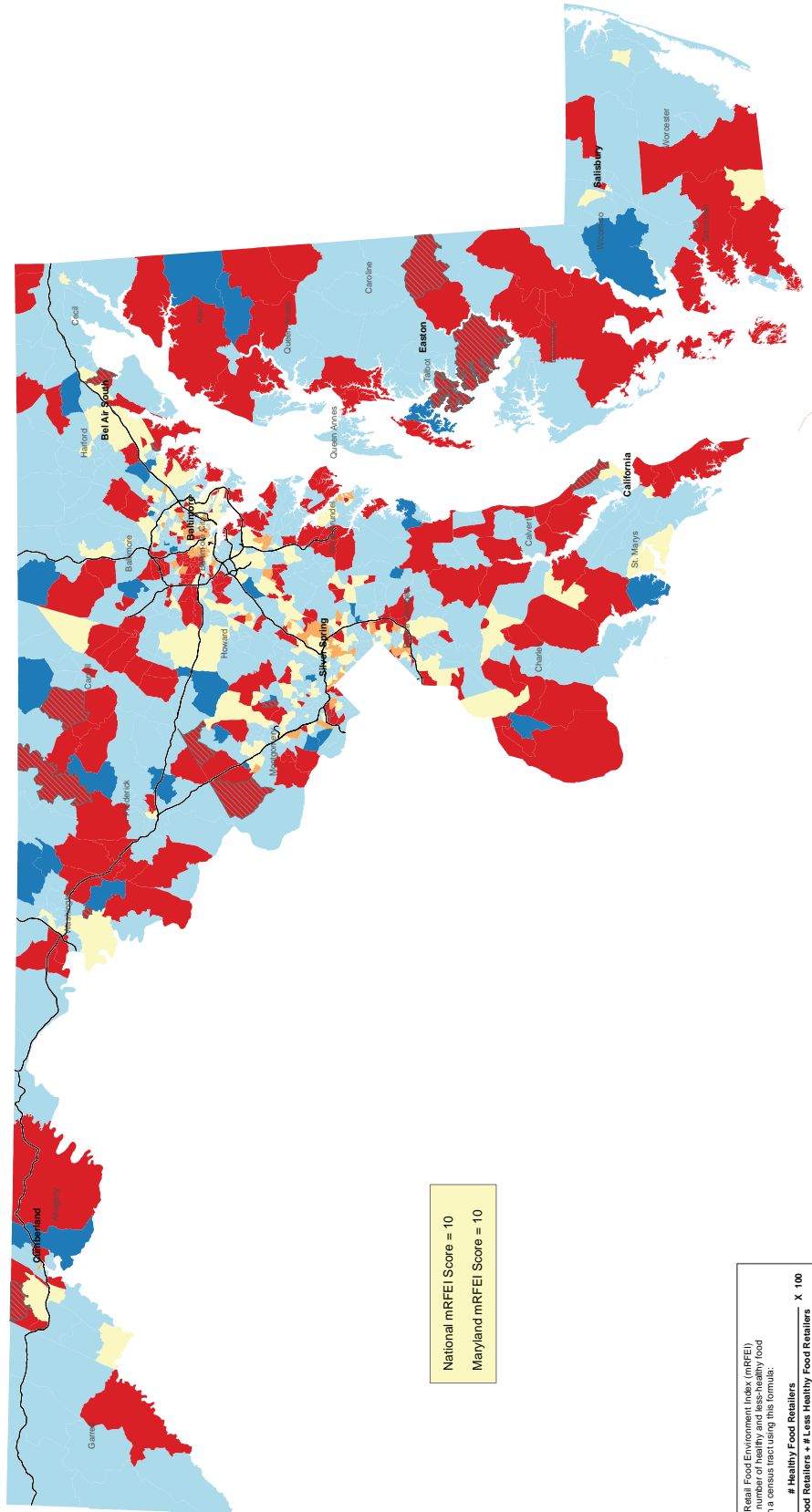
Modified Retail Food Environment Index According to Census Tract

Lower scores indicate that census tracts contain many convenience stores and fast food outlets, and fewer healthy food retailers.

A hex score indicates the number of healthy food retailers (supermarkets, burler groceries, produce stores, or supermarkets) within a census tract.

DATA SOURCES: Census of Retail Food Stores, Supercenters[†] (ACS, 2009); Convenience stores - Nonalcohol Security Infrastructure Program Database 2008; Fast-food restaurants - NAVTEQ 2009

Date of map: September, 2011



National mRFEI Score = 10
Maryland mRFEI Score = 10

The modified Retail Food Environment Index (mRFEI) is a score that indicates the number of healthy food retailers within a census tract using this formula:

Healthy Food Retailers X 100

For this indicator, healthy food retailers include supermarkets, larger grocery stores, supercenters, and produce stores.[†] Less healthy food retailers include convenience stores, fast food restaurants, and small grocery stores with 3 or fewer employees.[†]

[†] Data sources are listed in the legend.

Massachusetts

Modified Retail Food Environment Index According to Census Tract

Lower scores indicate that census tracts have fewer healthy food outlets and more fast-food restaurants compared to the number of healthy food outlets.

A zero score indicates no healthy food outlets (grocery stores, produce stores, or supermarkets) within the census tract.

No retail food outlet within census tract (Red)

No healthy food outlet within census tract (Dark Red)

0.1 - 5 (Orange)

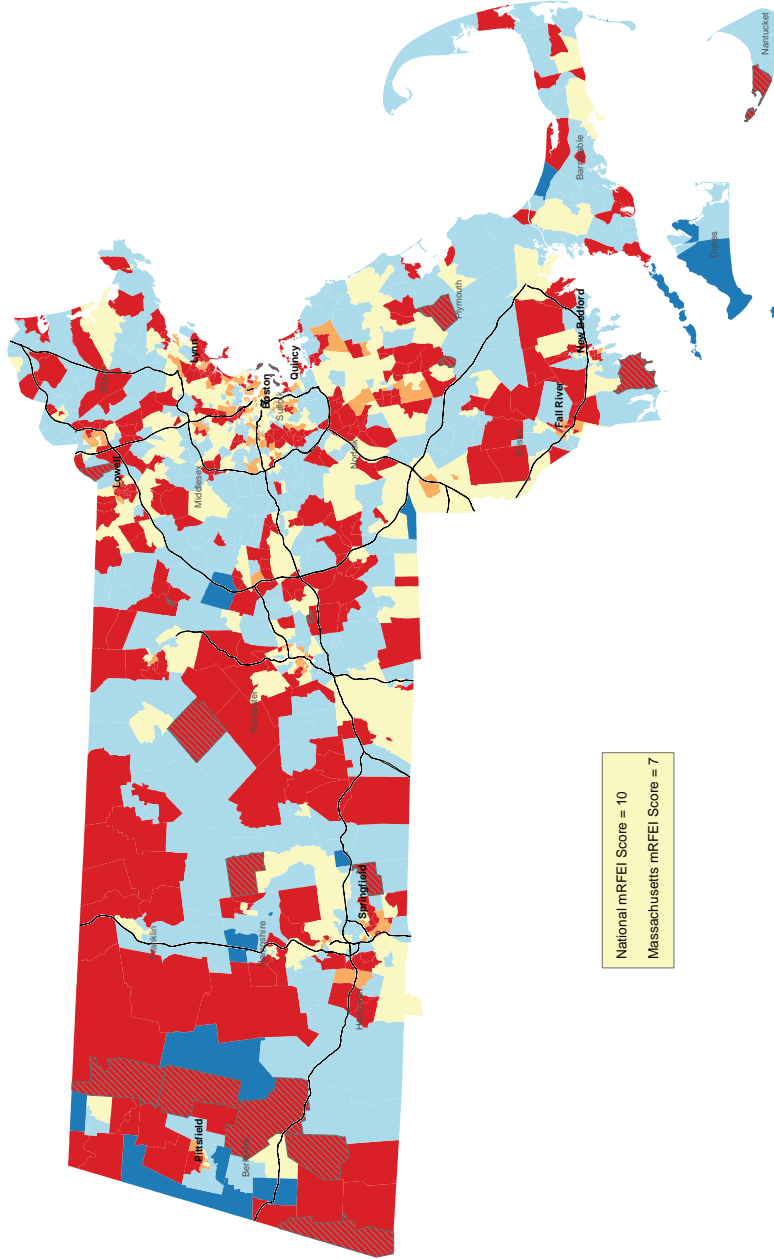
5.1 - 10 (Yellow)

10.1 - 37.5 (Light Blue)

37.6 - 100 (Dark Blue)

— Interstate Highways

Date of map: August, 2011



National mRFEI Score = 10
Massachusetts mRFEI Score = 7

The modified Retail Food Environment Index (mRFEI) measures the number of healthy and less-healthy food retailers within a census tract using this formula:

$$\frac{\# \text{ Healthy Food Retailers}}{\# \text{ Healthy Food Retailers} + \# \text{ Less Healthy Food Retailers}} \times 100$$

For this indicator, healthy food retailers include supermarkets, larger grocery stores, supercenters, and "more or less" Less healthy food retailers. Supercenters and supercenters are defined as restaurants and small grocery stores with 3 or fewer employees.[†]

[†] Data sources are listed in the legend.

Michigan

Modified Retail Food Environment Index According to Census Tract

Modified Retail Food Environment Index (By U.S. Census Tract)

Lower scores indicate that census tracts contain many convenience stores and fast food restaurants and few healthy food retailers.

A zero score indicates no healthy food retailers, convenience stores, or supermarkets within the census tract.

DATA SOURCES: Small and Large Groceries, Produce Stores, Supercenters - INFOUSA 2009; Convenience stores - Homeland Security Infrastructure Program Database 2008; Fast-food restaurants - NAVTEG 2009

Date of map: September, 2011

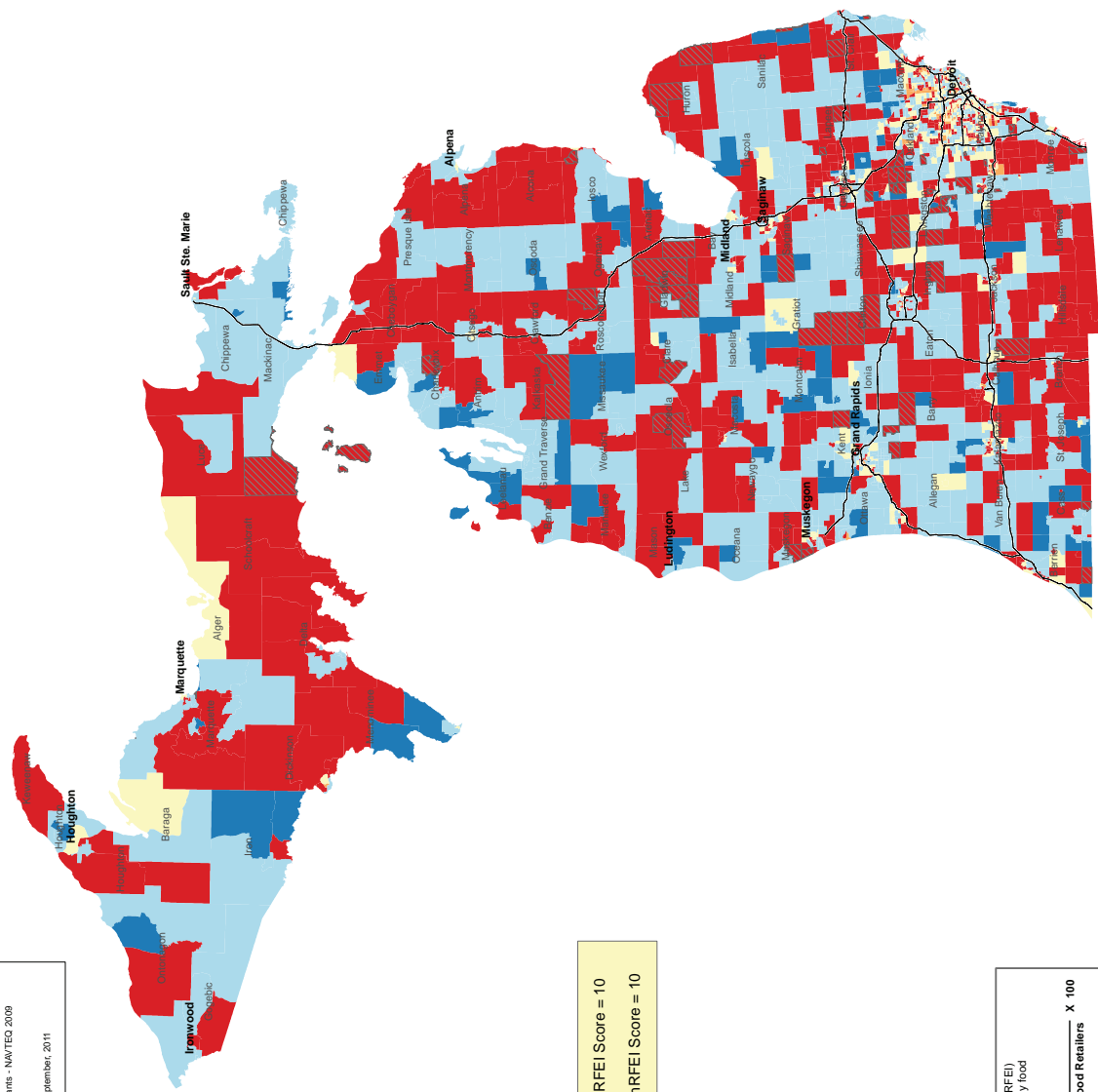
Interstate Highways

0.1 - 5
No retail food outlet within census tract

5.1 - 10
No healthy food outlet within census tract

10.1 - 37.5
Healthy Food Retailers

37.6 - 100
Healthy Food Retailers



National mRFEI Score = 10
Michigan mRFEI Score = 10

The modified Retail Food Environment Index (mRFEI) measures the number of healthy and less-healthy food retailers within a census tract using this formula:

Healthy Food Retailers X 100

For this indicator, healthy food retailers include supermarkets, larger grocery stores, supercenters, and produce stores. † Less healthy food retailers include convenience stores, fast food restaurants, and small grocery stores with 3 or fewer employees. †

† Data sources are listed in the legend.

Modified Retail Food Environment Index (By U.S. Census Tract)

- No retail food outlet within census tract
- No healthy food outlet
- 0.1 - 5
- 5.1 - 10
- 10.1 - 37.5
- 37.6 - 100

Lower scores indicate that census tracts contain many convenience stores and fast food restaurants compared to the number of healthy food retailers.

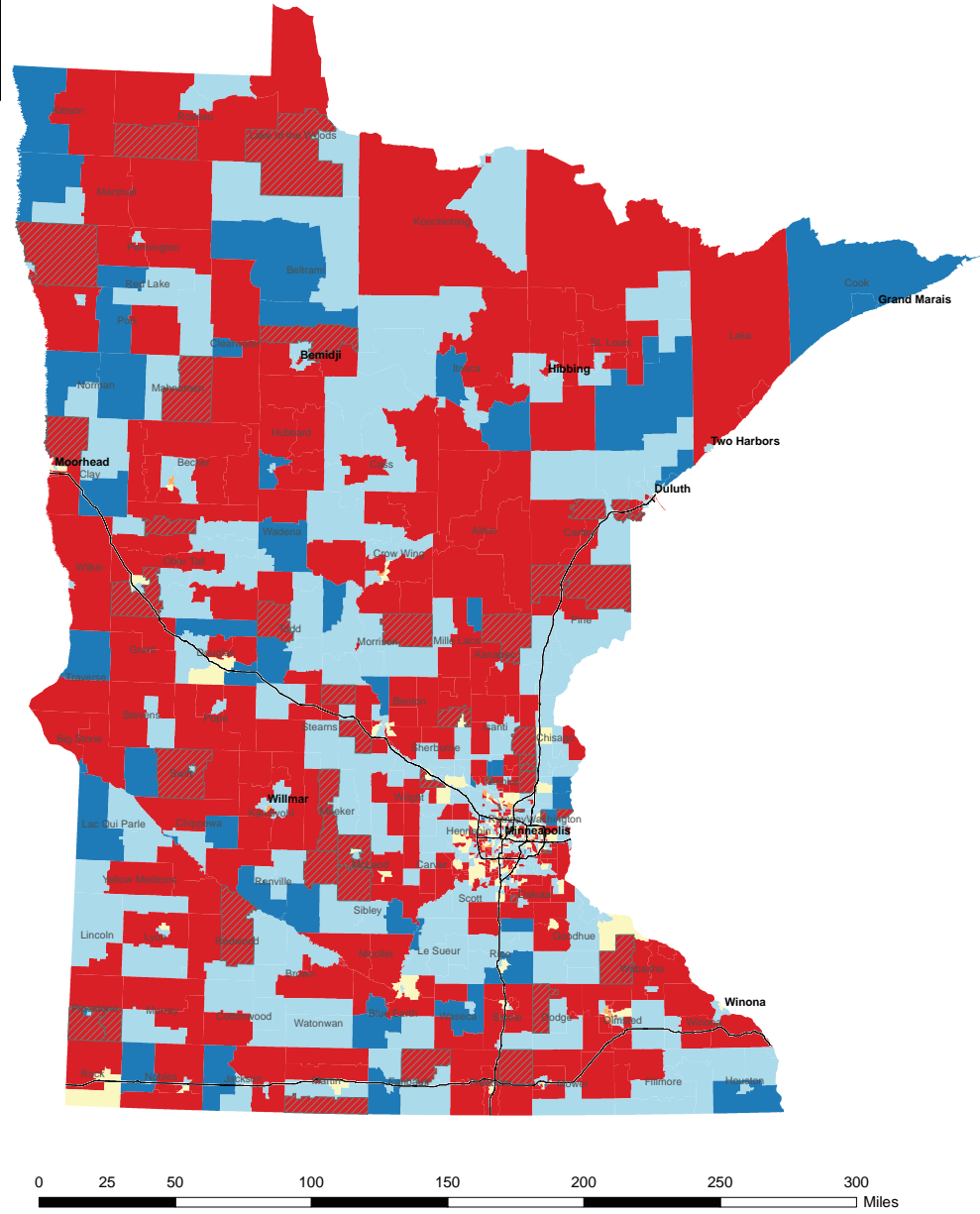
A zero score indicates no healthy food retailers (supermarkets, larger groceries, produce stores, or supercenters) within the census tract.

DATA SOURCES:
 Supermarkets, Small and Large Groceries, Produce Stores, Supercenters - InfoUSA 2009
 Convenience stores - Homeland Security Infrastructure Program Database 2008
 Fast-food restaurants - NAVTEQ 2009

Date of map: September, 2011

Minnesota

Modified Retail Food Environment Index According to Census Tract



National mRFEI Score = 10
 Minnesota mRFEI Score = 10

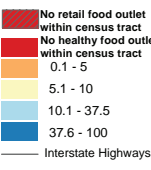
The modified Retail Food Environment Index (mRFEI) measures the number of healthy and less-healthy food retailers within a census tract using this formula:

$$\frac{\# \text{ Healthy Food Retailers}}{\# \text{ Healthy Food Retailers} + \# \text{ Less Healthy Food Retailers}} \times 100$$

For this indicator, healthy food retailers include supermarkets, larger grocery stores, supercenters, and produce stores.† Less healthy food retailers include convenience stores, fast food restaurants, and small grocery stores with 3 or fewer employees.†

† Data sources are listed in the legend.

Modified Retail Food Environment Index (By U.S. Census Tract)



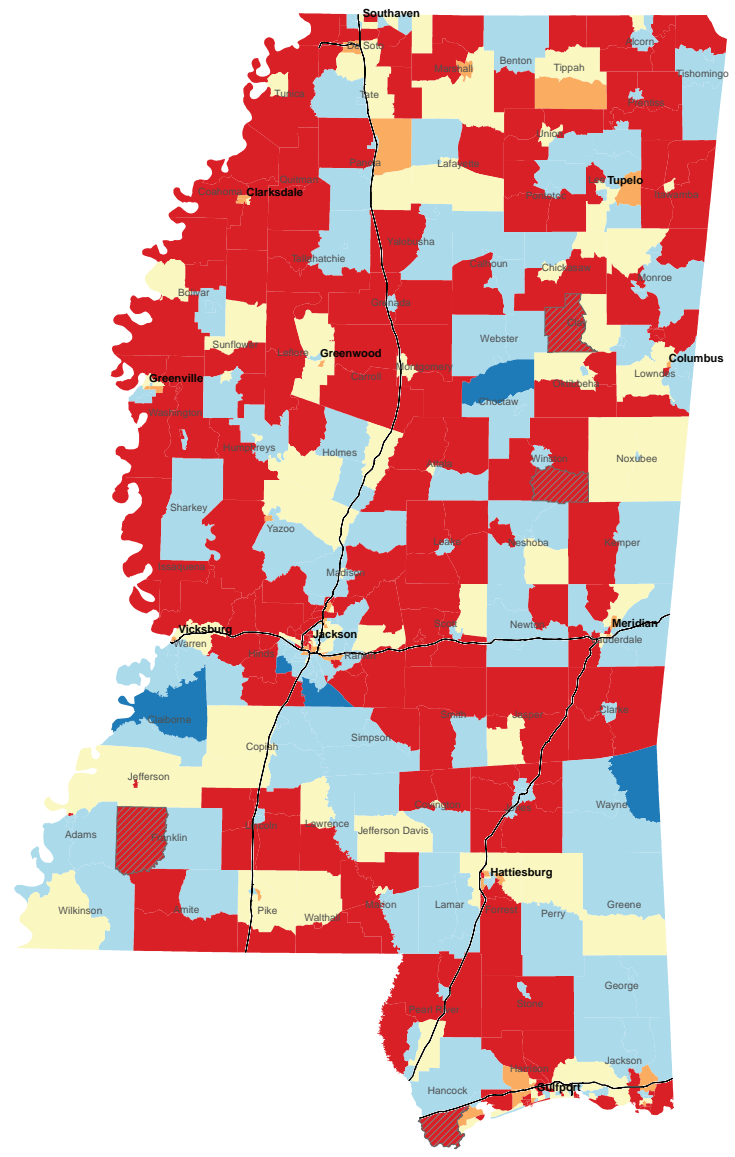
Lower scores indicate that census tracts contain many convenience stores and fast food restaurants compared to the number of healthy food retailers.

A zero score indicates no healthy food retailers (supermarkets, larger groceries, produce stores, or supercenters) within the census tract.

DATA SOURCES:
 Supermarkets, Small and Large Groceries, Produce Stores, Supercenters - InfoUSA 2009
 Convenience stores - Homeland Security Infrastructure Program Database 2008
 Fast-food restaurants - NAVTEQ 2009

Date of map: September, 2011

Mississippi
 Modified Retail Food Environment Index According to Census Tract



National mRFEI Score = 10
 Mississippi mRFEI Score = 8

The modified Retail Food Environment Index (mRFEI) measures the number of healthy and less-healthy food retailers within a census tract using this formula:

$$\frac{\# \text{ Healthy Food Retailers} - \# \text{ Less Healthy Food Retailers}}{\# \text{ Healthy Food Retailers} + \# \text{ Less Healthy Food Retailers}} \times 100$$

For this indicator, healthy food retailers include supermarkets, larger grocery stores, supercenters, and produce stores. † Less healthy food retailers include convenience stores, fast food restaurants, and small grocery stores with 3 or fewer employees. ‡

† Data sources are listed in the legend.



Missouri

Modified Retail Food Environment Index According to Census Tract

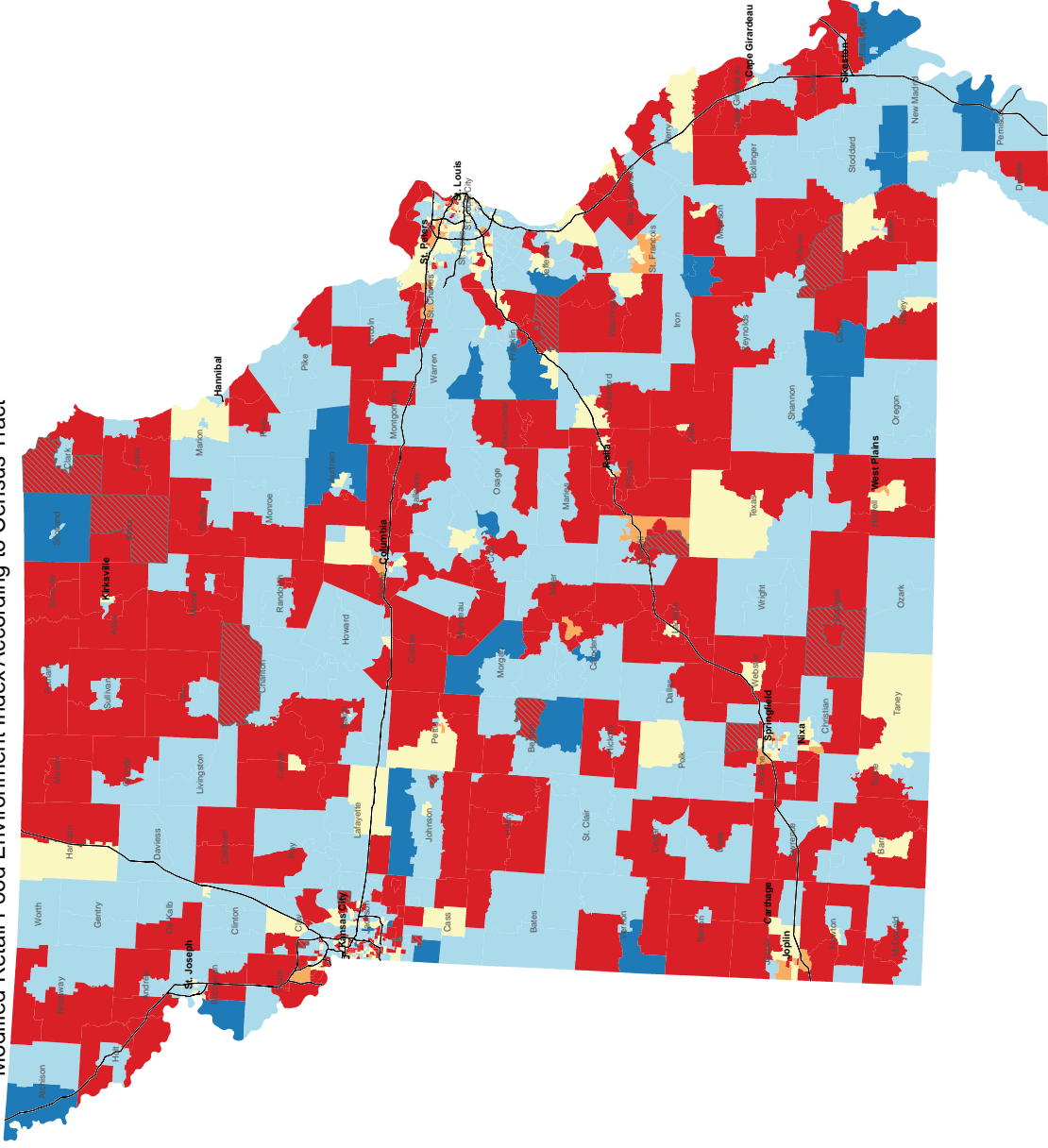
Lower scores indicate that census tracts contain many convenience stores and fast food outlets, and are less conducive to the number of healthy food outlets.

A score of 0 indicates no healthy food retailers (supermarkets, larger grocery stores, produce stores, or supermarkets) within the census tract.

DATA SOURCES:
 Supermarket stores - USDA and USDA, 2009
 Convenience stores - Homeland Security Infrastructure Program Database 2009
 Fast-food restaurants - NAVTEQ 2009

Date of map: September, 2011

- Modified Retail Food Environment Index (By U.S. Census Tract)
- No retail food outlet within census tract
- 0 - 5
- 5.1 - 10
- 10.1 - 37.5
- 37.6 - 100
- Interstate Highways



National mRFEI Score = 10
 Missouri mRFEI Score = 10

The modified Retail Food Environment Index (mRFEI) measures the number of healthy and less-healthy food retailers within a census tract using the formula:

Healthy Food Retailers X 100
Healthy Food Retailers + # Less Healthy Food Retailers

For this indicator, healthy food outlets include supermarkets, larger grocery stores, supermarkets and produce stores.† Less healthy food retailers include convenience stores, fast food restaurants, and small grocery stores with 3 or fewer employees. †

† Data sources are listed in the legend.

Montana

Modified Retail Food Environment Index According to Census Tract

Modified Retail Food Environment Index (By U.S. Census Tract)

Lower scores indicate that census tracts contain many convenience stores and fast food restaurants compared to the number of healthy food retailers.

A zero score indicates no healthy food retailers within the census tract.

A zero score indicates no healthy food retailers, produce stores, or supermarkets within the census tract.

No healthy food outlet within census tract

1 - No healthy food outlet within census tract

2 - 1-5

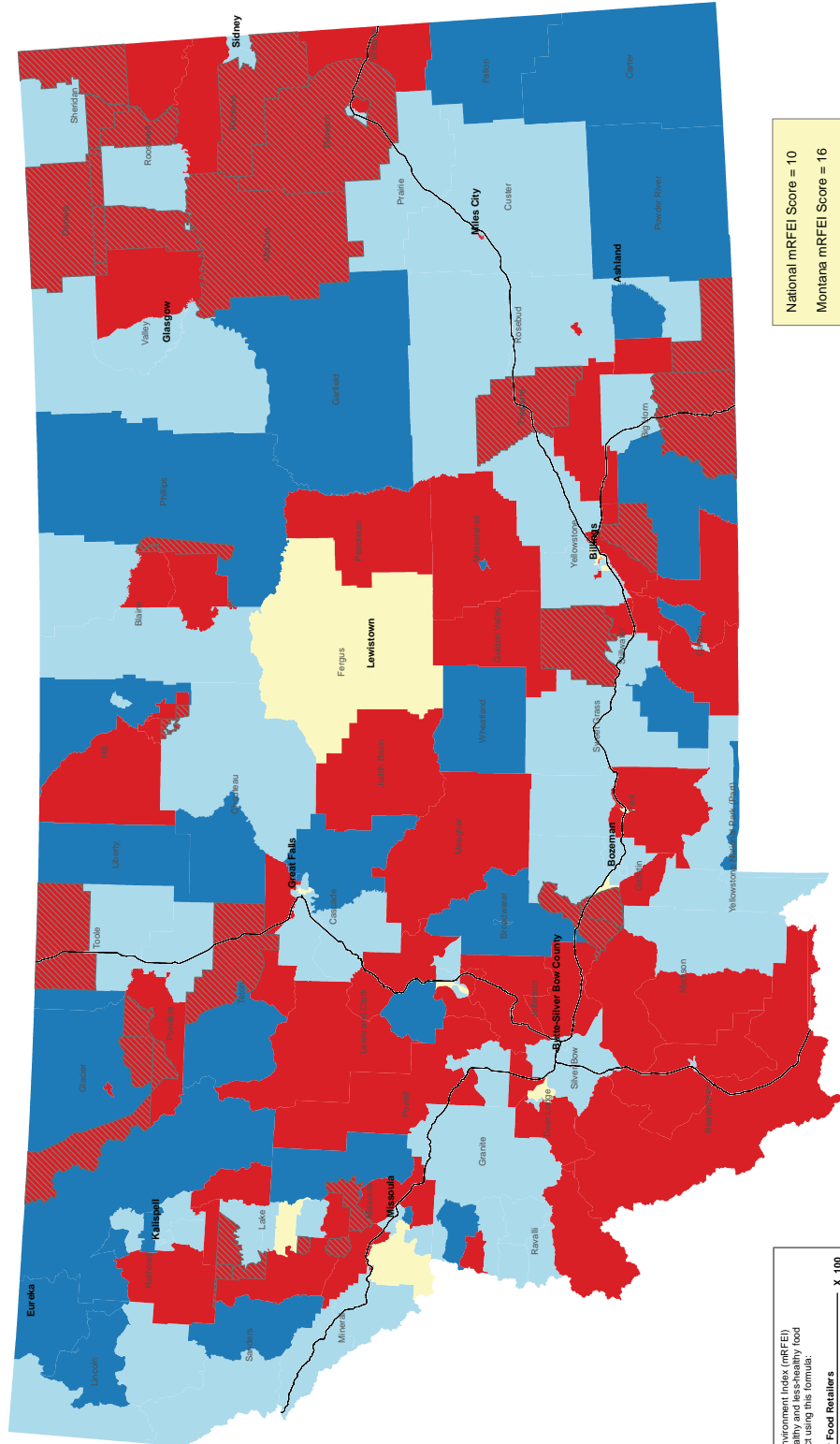
3 - 5.1 - 10

4 - 10.1 - 37.5

5 - 37.6 - 100

Interstate Highways

Date of map: September, 2011



National mRFEI Score = 10
 Montana mRFEI Score = 16

The modified Retail Food Environment Index (mRFEI) measures the number of healthy and less-healthy food retailers within a census tract using this formula:

Healthy Food Retailers x 100

Healthy Food Retailers + # Less Healthy Food Retailers

For this indicator, healthy food retailers include supermarkets, larger grocery stores, supermarkets, and produce stores.† Less healthy food retailers include convenience stores, fast food restaurants, and small grocery stores with 3 or fewer employees.†

† Data sources are listed in the legend.

Nebraska

Modified Retail Food Environment Index According to Census Tract

Modified Retail Food Environment Index (BY U.S. Census Tract)

Lower scores indicate that census tracts contain more convenience stores and fast food restaurants compared to the number of healthy food retailers.

A zero score indicates no healthy food retailers (convenience stores, fast food, produce stores, or supermarkets) within the census tract.

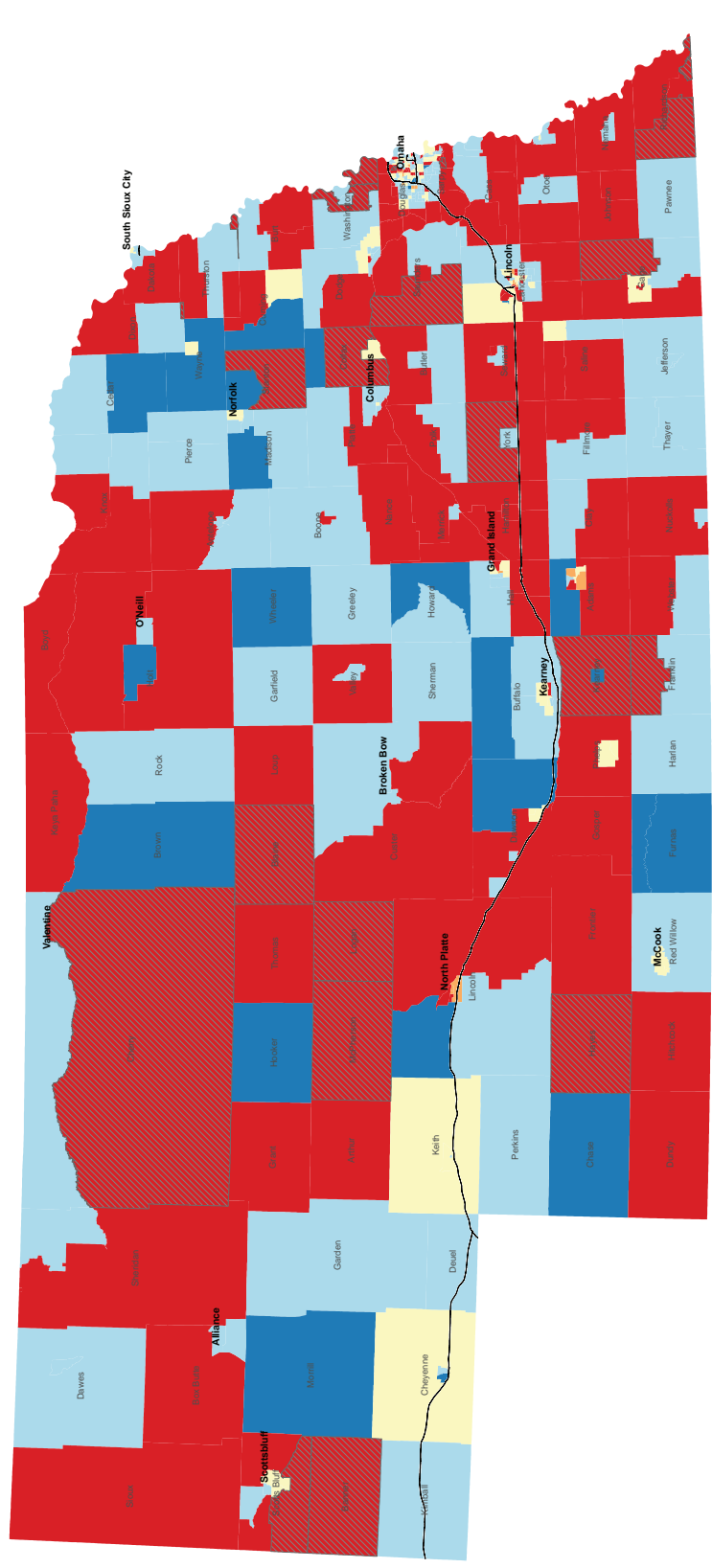
No retail food outlet within census tract

No healthy food outlet within census tract

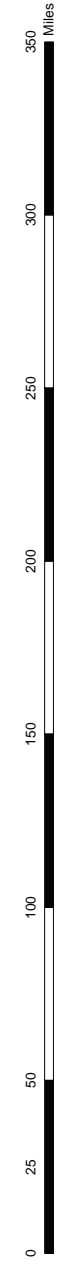
0.1 - 5
5.1 - 10
10.1 - 37.5
37.6 - 100

Interstate Highways

Date of map: September, 2011



National mRFEI Score = 10
Nebraska mRFEI Score = 10



The modified Retail Food Environment Index (mRFEI) measures the number of healthy and less-healthy food retailers within a census including this formula:

$$\frac{\# \text{ Healthy Food Retailers} + \# \text{ Less Healthy Food Retailers}}{\# \text{ Healthy Food Retailers}} \times 100$$

For this indicator, healthy food retailers include supermarkets, larger grocery stores, supermarkets, and produce stores. Less healthy food retailers include convenience stores, fast food restaurants, and small grocery stores with 3 or fewer employees.†

† Data sources are listed in the legend.

Modified Retail Food Environment Index (By U.S. Census Tract)

- No retail food outlet within census tract
- No healthy food outlet within census tract
- 0.1 - 5
- 5.1 - 10
- 10.1 - 37.5
- 37.6 - 100

Lower scores indicate that census tracts contain many convenience stores and fast food restaurants compared to the number of healthy food retailers.

A zero score indicates no healthy food retailers (supermarkets, larger groceries, produce stores, or supercenters) within the census tract.

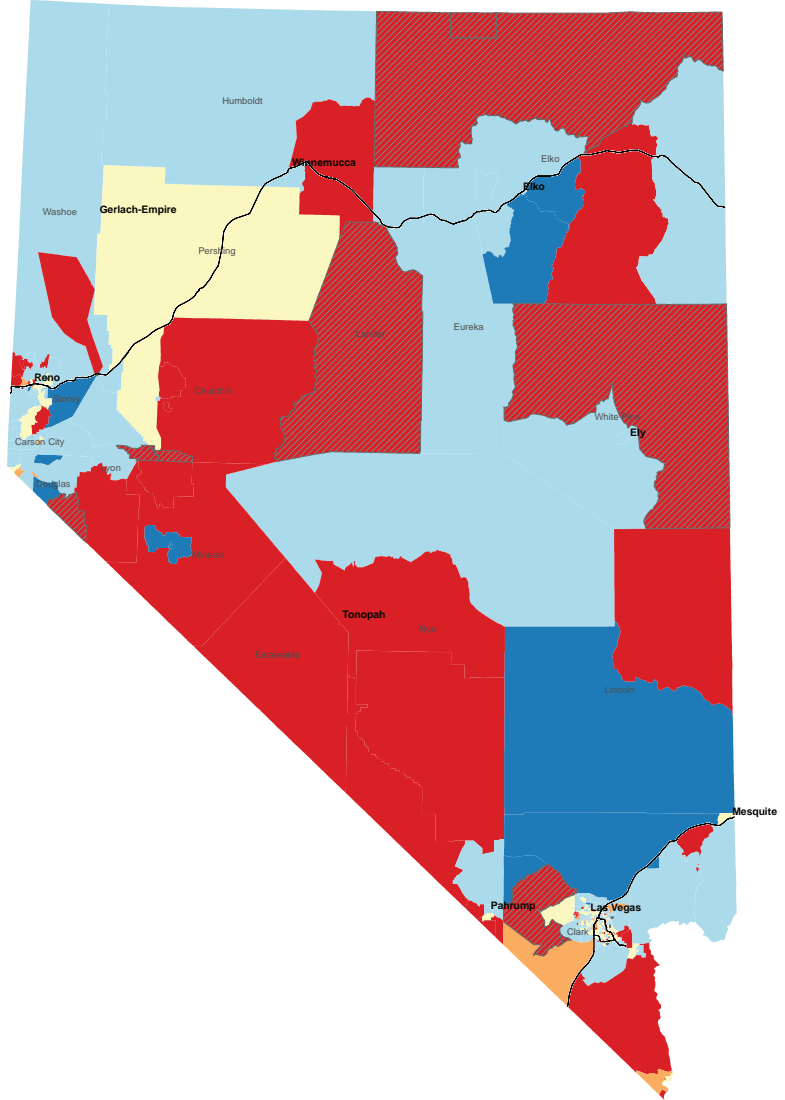
DATA SOURCES:
 Supermarkets, Small and Large Groceries, Produce Stores, Supercenters - InfoUSA 2009
 Convenience stores - Homeland Security Infrastructure Program Database 2008
 Fast-food restaurants - NAVTEQ 2009

Date of map: September, 2011

— Interstate Highways

Nevada

Modified Retail Food Environment Index According to Census Tract



National mRFEI Score = 10
 Nevada mRFEI Score = 11

The modified Retail Food Environment Index (mRFEI) measures the number of healthy and less-healthy food retailers within a census tract using this formula:

$$\frac{\# \text{ Healthy Food Retailers}}{\# \text{ Healthy Food Retailers} + \# \text{ Less Healthy Food Retailers}} \times 100$$

For this indicator, healthy food retailers include supermarkets, larger grocery stores, supercenters, and produce stores.† Less healthy food retailers include convenience stores, fast food restaurants, and small grocery stores with 3 or fewer employees.†

† Data sources are listed in the legend.

Modified Retail Food Environment Index (By U.S. Census Tract)

- No retail food outlet within census tract
- No healthy food outlet within census tract
- 0.1 - 5
- 5.1 - 10
- 10.1 - 37.5
- 37.6 - 100

— Interstate Highways

Lower scores indicate that census tracts contain many convenience stores and fast food restaurants compared to the number of healthy food retailers.

A zero score indicates no healthy food retailers (supermarkets, larger groceries, produce stores, or supercenters) within the census tract.

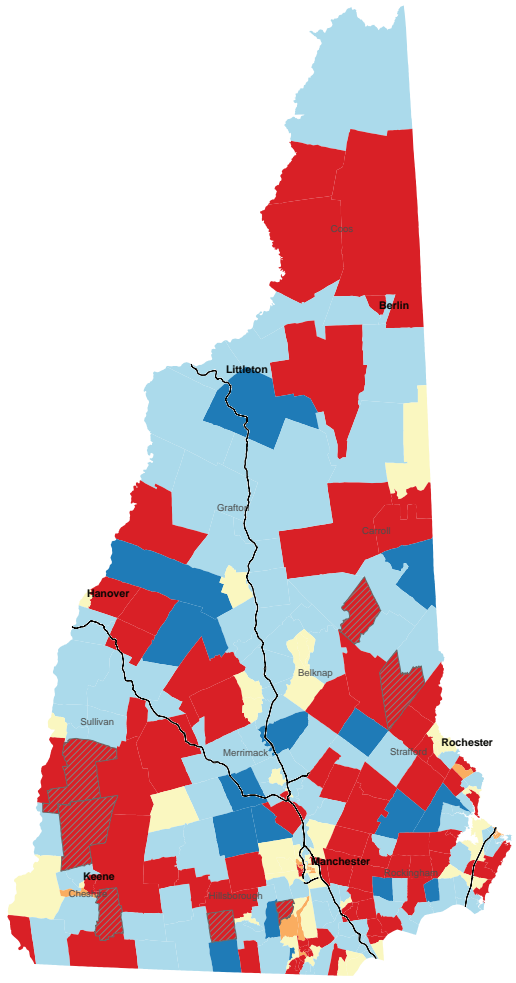
DATA SOURCES:
 Supermarkets, Small and Large Groceries, Produce Stores, Supercenters - InfoUSA 2009
 Convenience stores - Homeland Security Infrastructure Program Database 2006
 Fast-food restaurants - NAVTEQ 2009

Date of map: August, 2011

New Hampshire

Modified Retail Food Environment Index According to Census Tract

National mRFEI Score = 10
 New Hampshire mRFEI Score = 9



The modified Retail Food Environment Index (mRFEI) measures the number of healthy and less-healthy food retailers within a census tract using this formula:

$$\frac{\# \text{ Healthy Food Retailers}}{\# \text{ Healthy Food Retailers} + \# \text{ Less Healthy Food Retailers}} \times 100$$

For this indicator, healthy food retailers include supermarkets, larger grocery stores, supercenters, and produce stores.† Less healthy food retailers include convenience stores, fast food restaurants, and small grocery stores with 3 or fewer employees.‡

† Data sources are listed in the legend.



Modified Retail Food Environment Index (By U.S. Census Tract)

- No retail food outlet within census tract
- No healthy food outlet within census tract
- 0.1 - 5
- 5.1 - 10
- 10.1 - 37.5
- 37.6 - 100
- Interstate Highways

Lower scores indicate that census tracts contain many convenience stores and fast food restaurants compared to the number of healthy food retailers.

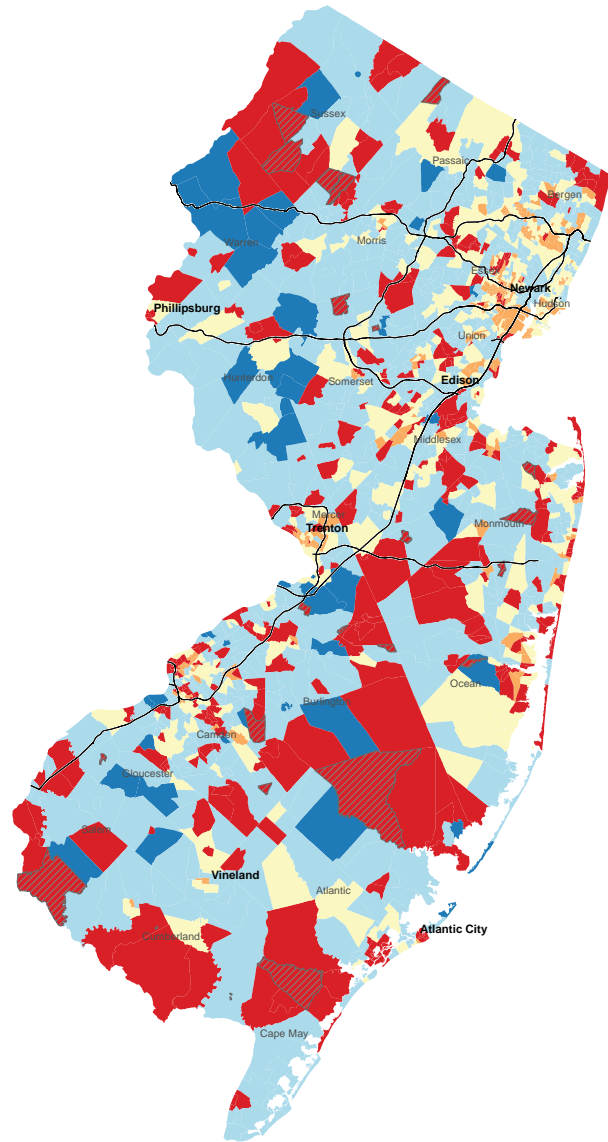
A zero score indicates no healthy food retailers (supermarkets, larger groceries, produce stores, or supercenters) within the census tract.

DATA SOURCES:
 Supermarkets, Small and Large Groceries, Produce Stores, Supercenters - InfoUSA 2009
 Convenience stores - Homeland Security Infrastructure Program Database 2009
 Fast-food restaurants - NAVTEQ 2009

Date of map: September, 2011

New Jersey

Modified Retail Food Environment Index According to Census Tract



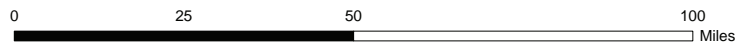
National mRFEI Score = 10
 New Jersey mRFEI Score = 8

The modified Retail Food Environment Index (mRFEI) measures the number of healthy and less-healthy food retailers within a census tract using this formula:

$$\frac{\# \text{ Healthy Food Retailers}}{\# \text{ Healthy Food Retailers} + \# \text{ Less Healthy Food Retailers}} \times 100$$

For this indicator, healthy food retailers include supermarkets, larger grocery stores, supercenters, and produce stores.† Less healthy food retailers include convenience stores, fast food restaurants, and small grocery stores with 3 or fewer employees.‡

† Data sources are listed in the legend.



Modified Retail Food Environment Index (By U.S. Census Tract)

- No retail food outlet within census tract
- No healthy food outlet within census tract
- 0.1 - 5
- 5.1 - 10
- 10.1 - 37.5
- 37.6 - 100

Lower scores indicate that census tracts contain many convenience stores and fast food restaurants compared to the number of healthy food retailers.

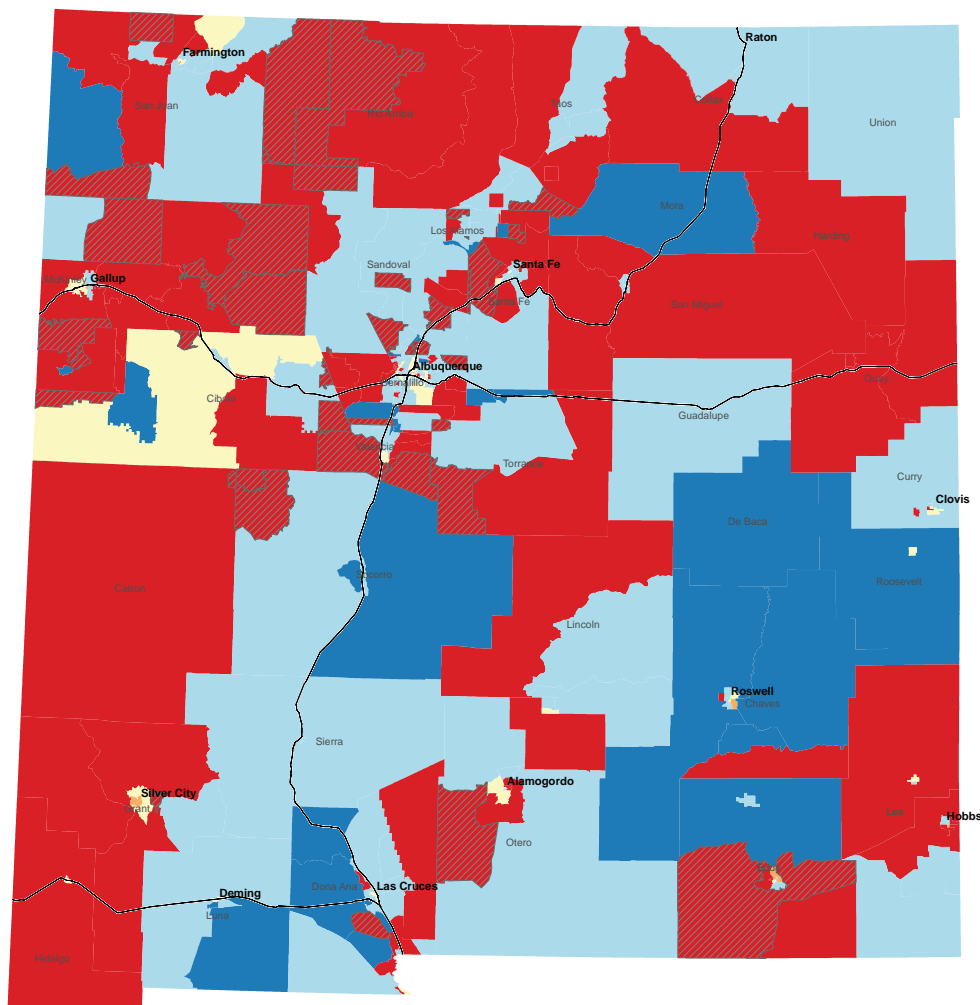
A zero score indicates no healthy food retailers (supermarkets, larger groceries, produce stores, or supercenters) within the census tract.

DATA SOURCES:
 Supermarkets, Small and Large Groceries, Produce Stores, Supercenters - InfoUSA 2009
 Convenience stores - Homeland Security Infrastructure Program Database 2008
 Fast-food restaurants - NAVTEQ 2009

Date of map: September, 2011

New Mexico

Modified Retail Food Environment Index According to Census Tract



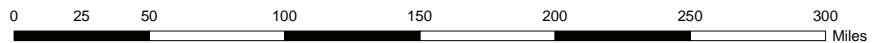
The modified Retail Food Environment Index (mRFEI) measures the number of healthy and less-healthy food retailers within a census tract using this formula:

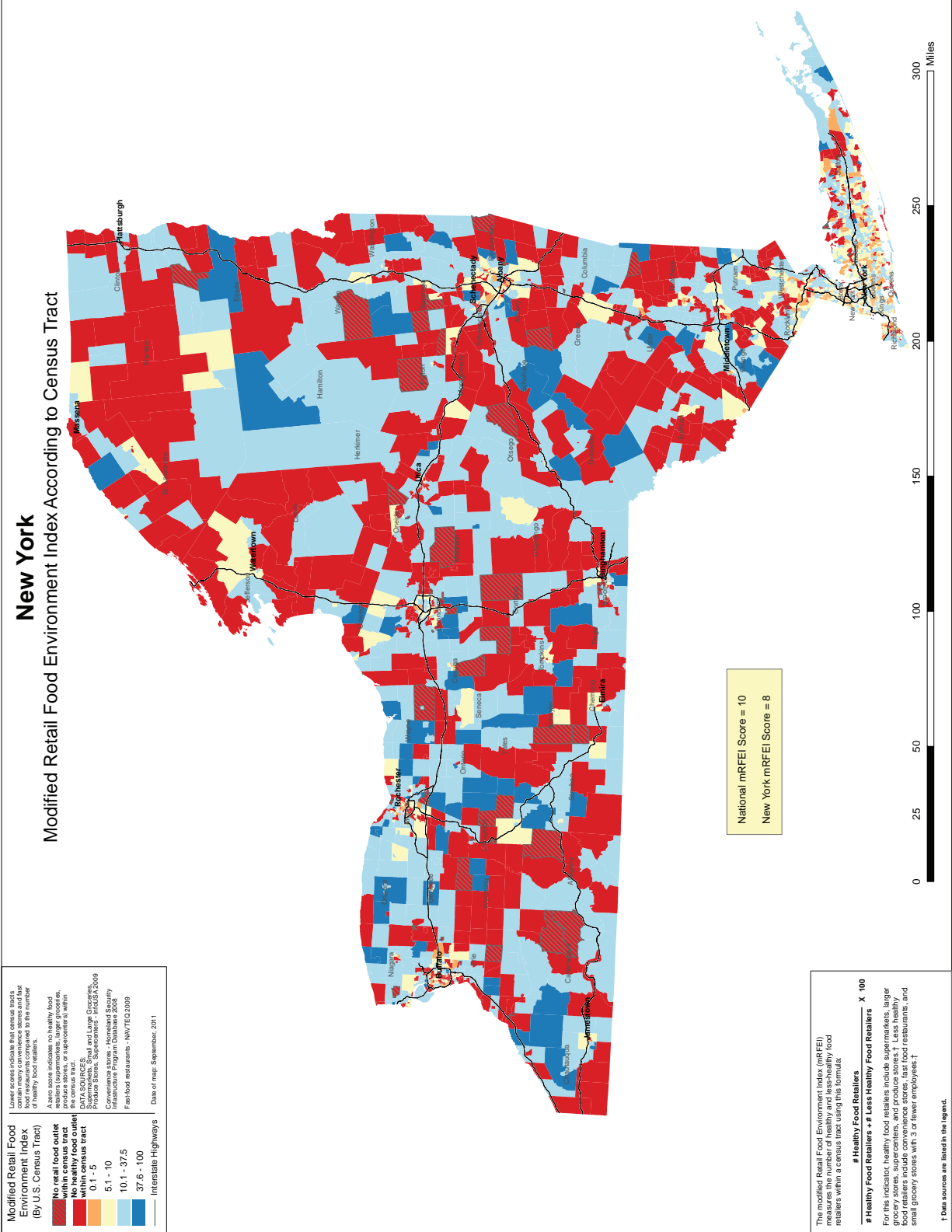
$$\frac{\# \text{ Healthy Food Retailers}}{\# \text{ Healthy Food Retailers} + \# \text{ Less Healthy Food Retailers}} \times 100$$

For this indicator, healthy food retailers include supermarkets, larger grocery stores, supercenters, and produce stores.† Less healthy food retailers include convenience stores, fast food restaurants, and small grocery stores with 3 or fewer employees.†

† Data sources are listed in the legend.

National mRFEI Score = 10
 New Mexico mRFEI Score = 12





North Carolina

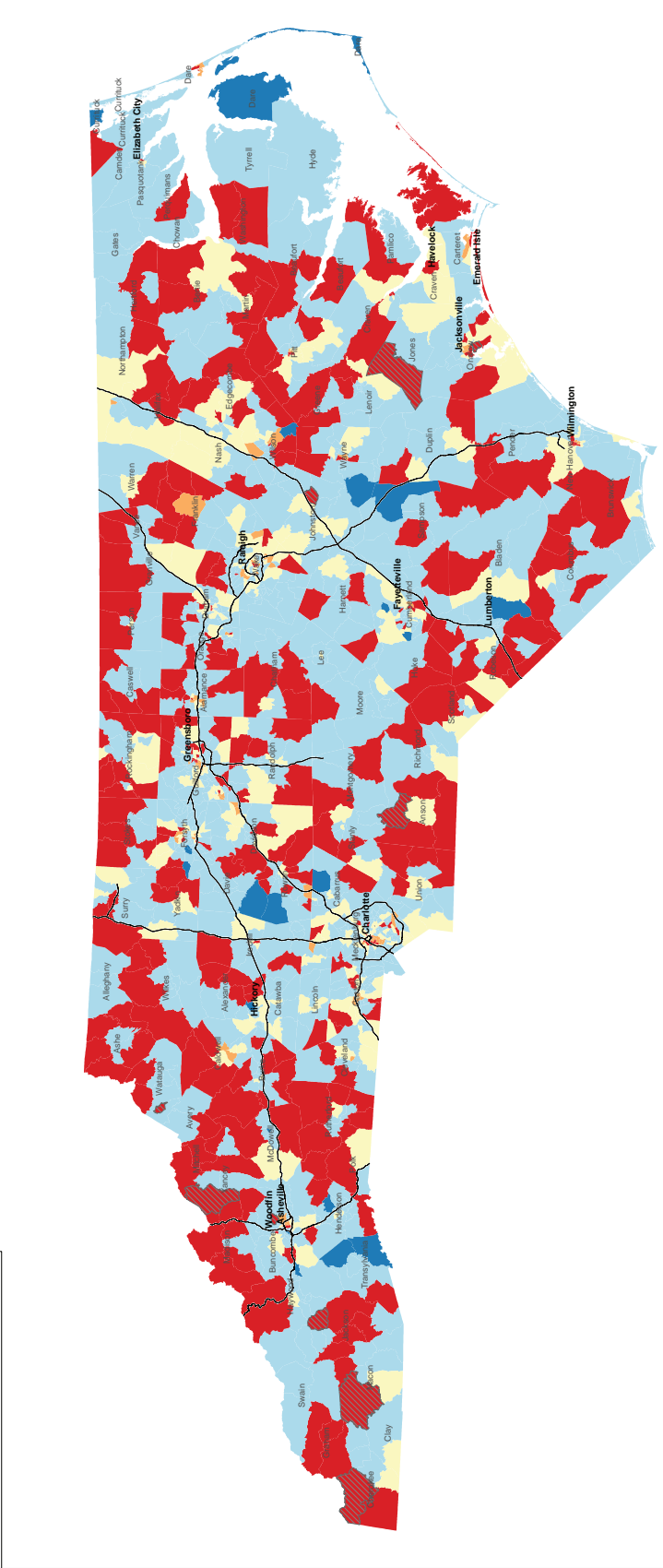
Modified Retail Food Environment Index According to Census Tract

Lower scores indicate that census tracts contain many convenience stores and fast food outlets, but few healthy food outlets.

A zero score indicates no healthy food retailers (supermarkets, larger grocers, produce stores, independent health food stores, and farmers markets) within the census tract.

DATA SOURCES:
 Convenience stores - National Specialty Retailer Database - NRI/USDA/2009
 Supermarkets - NRI/USDA/2009
 Four food retailers - NRI/USDA/2009

Date of map: September, 2011



Healthy Food Retailers = # Healthy Food Retailers X '00

For this indicator, healthy food retailers include supermarkets, larger grocers, produce stores, independent health food stores, and farmers markets. Healthy food retailers include convenience stores, fast food restaurants, and small grocery stores with 3 or fewer employees.[†]

[†] Data sources are listed in the legend.

National mRFEI Score = 10
 North Carolina mRFEI Score = 11



North Dakota

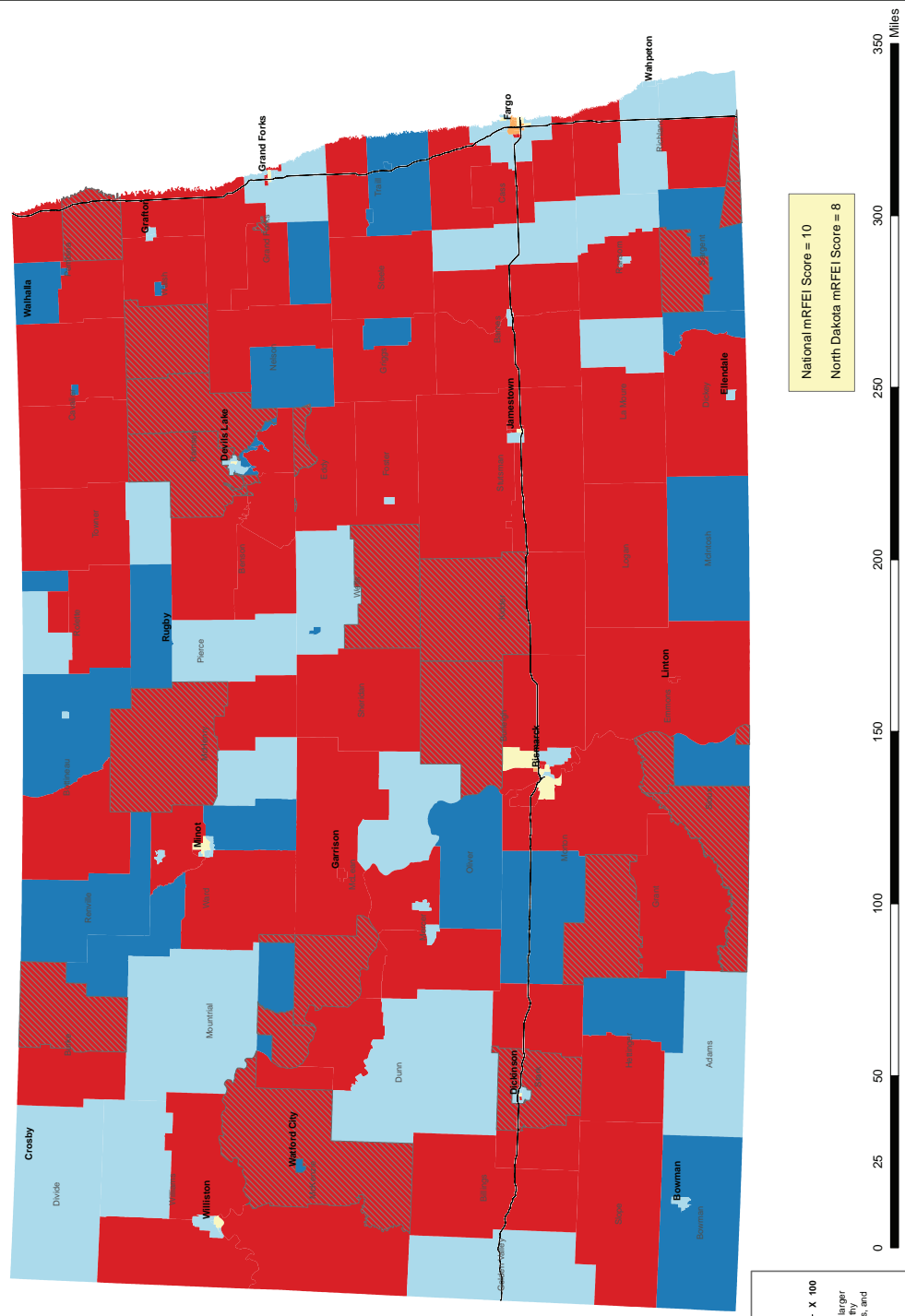
Modified Retail Food Environment Index According to Census Tract

Lower scores indicate that census tracts contain many convenience stores and fast food outlets, and fewer supermarkets and fast healthy food outlets.

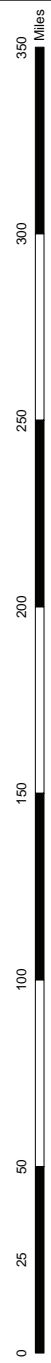
A zero score indicates no healthy food retailers (supermarkets, larger grocery, produce stores, and independent within the census tract).

DATA SOURCES:
 Census of Retail Trade - NAICS 542009
 Convenience stores - Homeland Security Information Program database 2008
 Fast food restaurants - NHTREC 2009

Date of map: September, 2011



National mRFEI Score = 10
 North Dakota mRFEI Score = 8



The modified Retail Food Environment Index (mRFEI) measures the amount of healthy and less healthy food retailers within a census tract using this formula:

$$\frac{\# \text{ Healthy Food Retailers} + \# \text{ Less Healthy Food Retailers}}{\# \text{ Census Tract}} \times 100$$

For this indicator, healthy food retailers include supermarkets, larger grocery stores, supermarkets, and produce stores.† Less healthy retailers include convenience stores, fast food restaurants, and small grocery stores with 3 or fewer employees.†

† Data sources are listed in the legend.

Ohio

Modified Retail Food Environment Index According to Census Tract

Lower scores indicate that census tracts contain many convenience stores and fast food restaurants, and fewer healthy food retailers (supermarkets, larger grocers, produce stores, or supercenters) within census tracts.

Legend:

- No retail food outlet within census tract
- 0.1 - 5
- 5.1 - 10
- 10.1 - 37.5
- 37.6 - 100

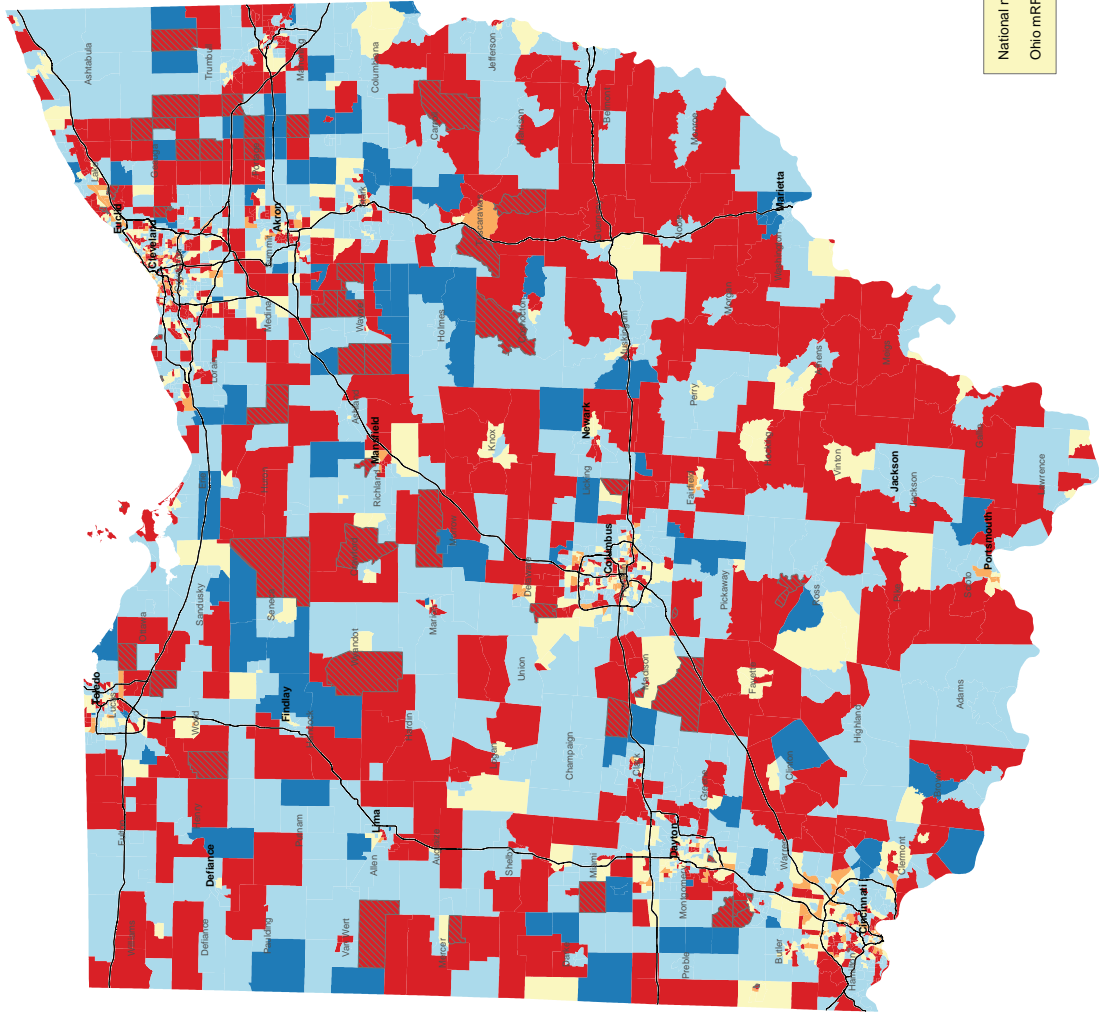
Interstate Highways

Lower scores indicate that census tracts contain many convenience stores and fast food restaurants, and fewer healthy food retailers (supermarkets, larger grocers, produce stores, or supercenters) within census tracts.

As this map indicates on healthy food retailers (supermarkets, larger grocers, produce stores, or supercenters) within census tracts.

DATA SOURCES:
 Retailers: Store and Large Enterprise Reporting System - ESRI (2008)
 Convenience stores - Homelid Safety Information Program Database 2008
 Fast-food restaurants - NAVTEC 2009

Date of map: August, 2011



National mRFEI Score = 10
 Ohio mRFEI Score = 9



The modified Retail Food Environment Index (mRFEI) is calculated as the number of healthy food retailers within a census tract using this formula:

Healthy Food Retailers X 100

For this indicator, healthy food retailers include supermarkets, larger grocery stores, supercenters, and produce stores.[†] Less healthy food retailers include convenience stores, fast food restaurants, and small grocery stores with 3 or fewer employees.[†]

[†] Data sources are listed in the legend.

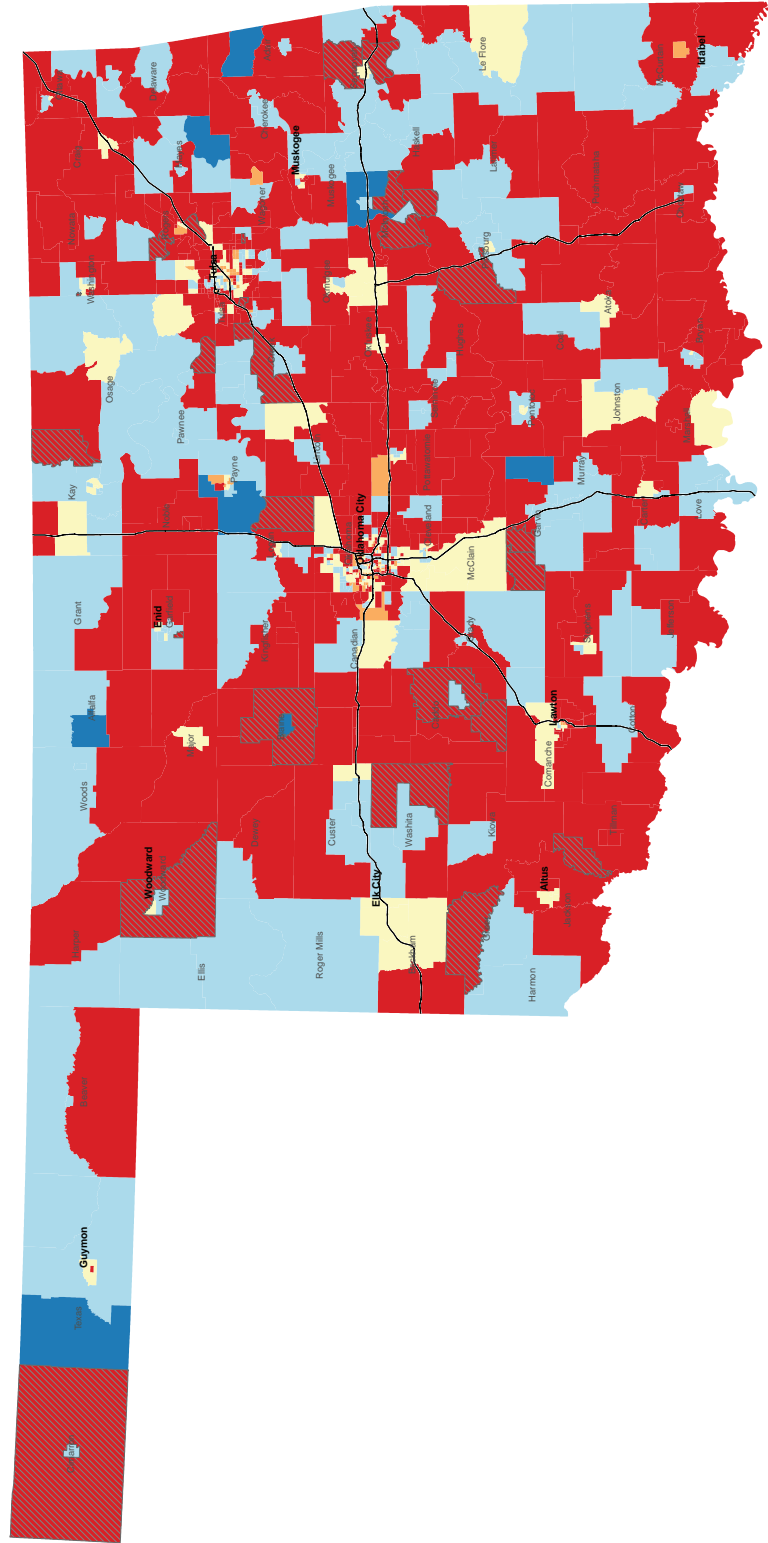
Oklahoma

Modified Retail Food Environment Index According to Census Tract

Lower scores indicate that census tracts contain many convenience stores and fast food restaurants compared to the number of healthy food retailers. Healthy food retailers (supermarkets, larger grocery stores, produce stores, or supermarkets) within census tracts.

DATA SOURCES:
 Supermarkets - Small and Large Grocers, 2008
 Convenience stores - Homeland Security Infrastructure Program Database 2008
 Fast-food restaurants - NAVTEQ 2009

Date of map: September, 2011



National mRFEI Score = 10
 Oklahoma mRFEI Score = 6

The modified Retail Food Environment Index (mRFEI) measures the number of healthy and less-healthy food retailers within a census tract using the formula:

Healthy Food Retailers X 100
Less Healthy Food Retailers

For this indicator, healthy food retailers include supermarkets, larger grocery stores, supermarkets, and produce stores.† Less healthy food retailers include convenience stores, fast food restaurants, and small grocery stores with 3 or fewer employees.†

† Data sources are listed in the legend.



Oregon

Modified Retail Food Environment Index According to Census Tract

Lowest scores indicate that census tracts have the fewest healthy food retailers compared to the number of healthy food retailers.

A zero score indicates no healthy food retailers (supermarkets, larger grocers, produce stores, supercenters, fast food restaurants, approximately, etc.) within census tract.

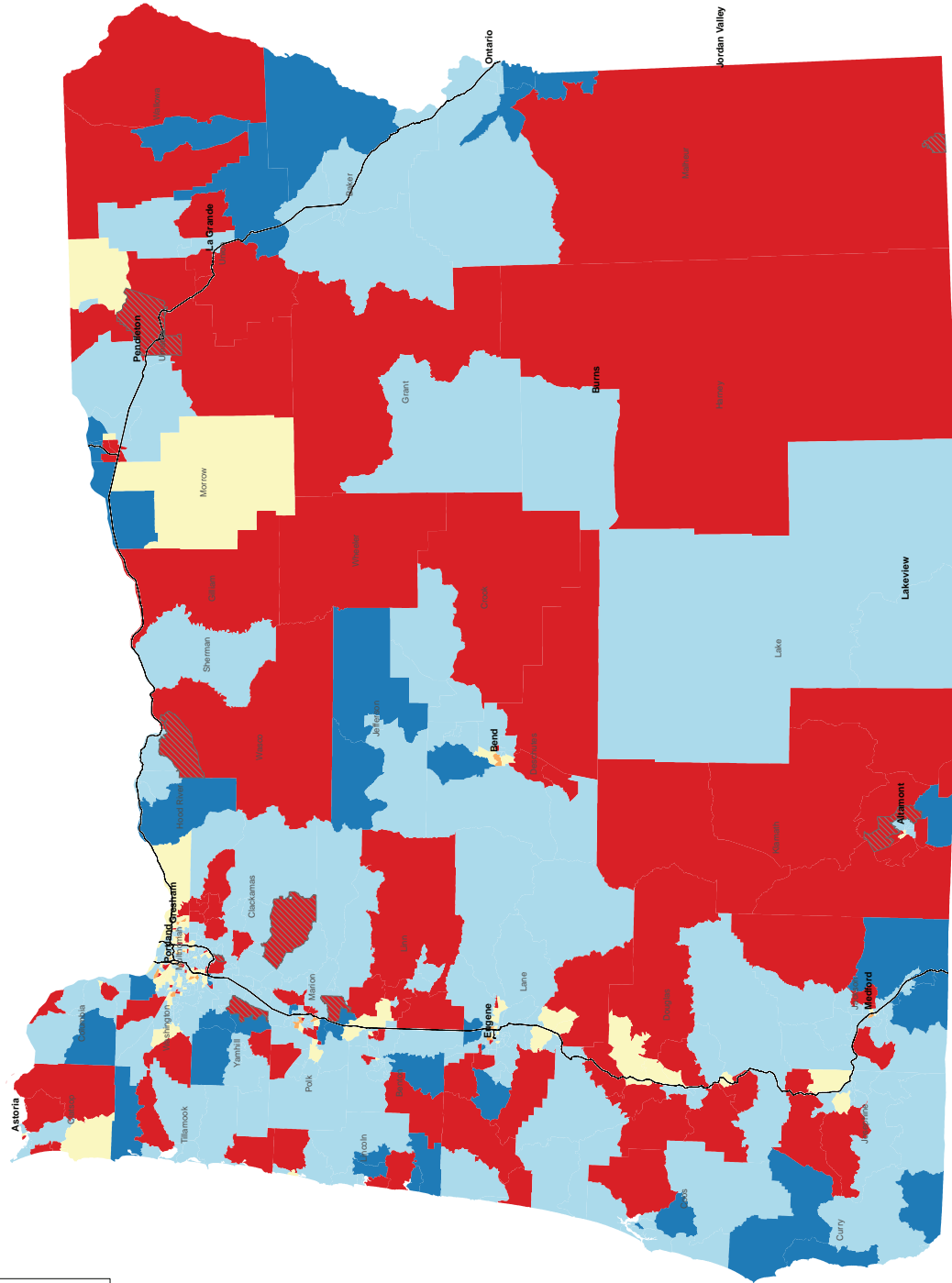
DATA SOURCES:
 Small and Large Grocers, Convenience stores - Homeland Security
 Produce Stores - USDA
 Fast food restaurants - NUTREC 2009

Date of map: September, 2011

Modified Retail Food Environment Index (By U.S. Census Tract)

- No retail food outlet within census tract
- 0.1 - 5
- 5.1 - 10
- 10.1 - 37.5
- 37.6 - 100

— Interstate Highways



National mRFEI Score = 10
 Oregon mRFEI Score = 13

Healthy Food Retailers X 100

For this indicator, healthy food retailers include supermarkets, larger grocery stores, supercenters, and produce stores. † Less healthy food retailers include convenience stores, fast food restaurants, and small grocery stores with 3 or fewer employees. †

† Data sources are listed in the legend.

Pennsylvania

Modified Retail Food Environment Index According to Census Tract

Lower scores indicate that census tracts have fewer healthy food retailers compared to the number of healthy food retailers.

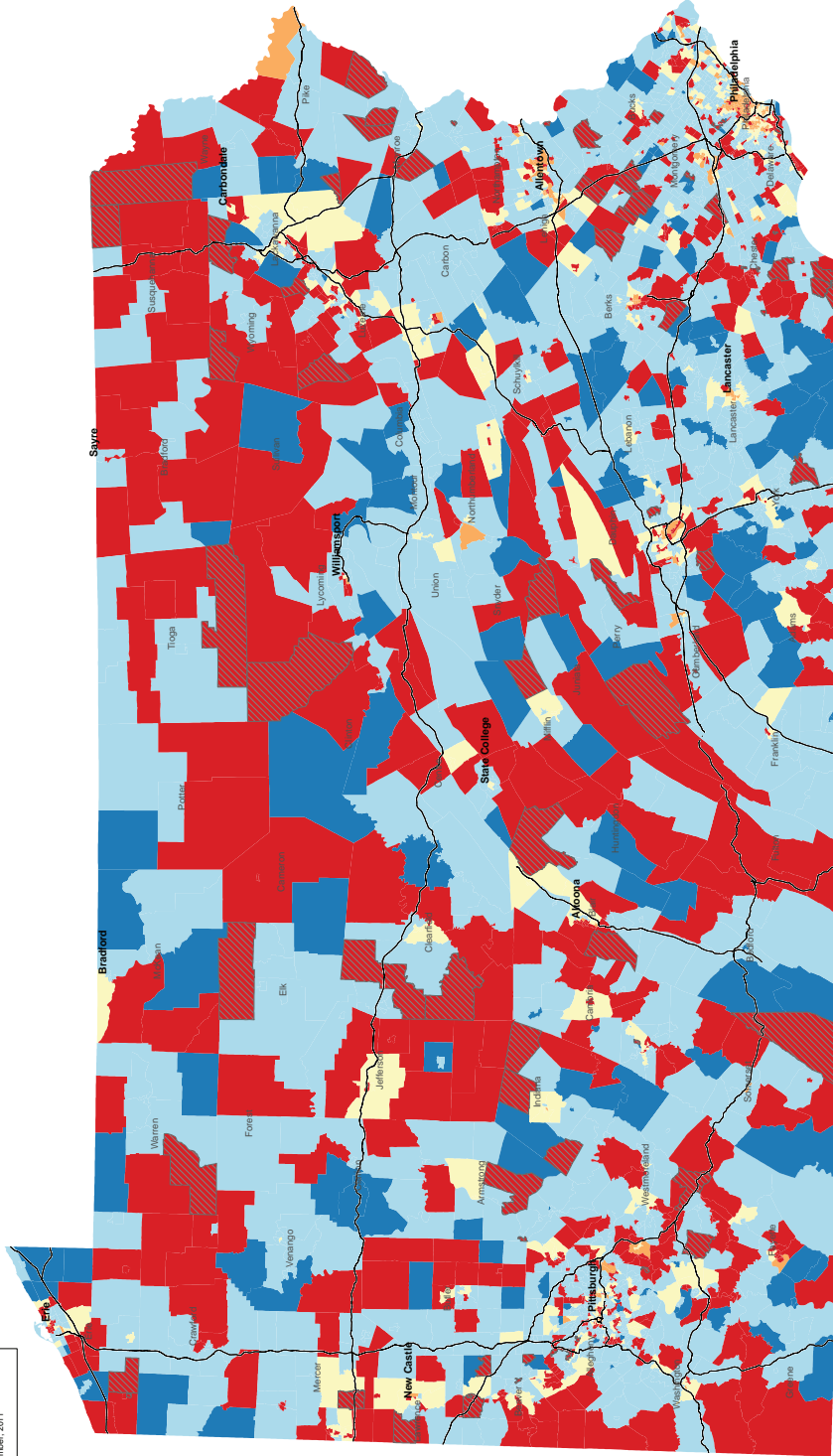
A zero score indicates no healthy food retailers, such as grocery stores, produce stores, or supermarkets within the census tract.

A zero score also indicates no healthy food retailers, such as convenience stores, non-retail specialty grocery stores, produce stores, or supermarkets within the census tract.

0.1 - 5
5.1 - 10
10.1 - 37.5
37.6 - 100

Interstate Highways

Date of map: September, 2011



National mRFEI Score = 10
Pennsylvania mRFEI Score = 11



The modified Retail Food Environment Index (mRFEI) measures the number of healthy and less-healthy food retailers within a census tract using this formula:

$$\# \text{ Healthy Food Retailers} \times 100$$

For this indicator, healthy food retailers include supermarkets, larger grocery stores, supermarkets, and produce stores.† Less healthy food retailers include convenience stores, non-retail specialty grocery stores, and small grocery stores with 3 or fewer employees.†

† Data sources are listed in the legend.

Modified Retail Food Environment Index (By U.S. Census Tract)

- No retail food outlet within census tract
- No healthy food outlet within census tract
- 0.1 - 5
- 5.1 - 10
- 10.1 - 37.5
- 37.6 - 100

Lower scores indicate that census tracts contain many convenience stores and fast food restaurants compared to the number of healthy food retailers.

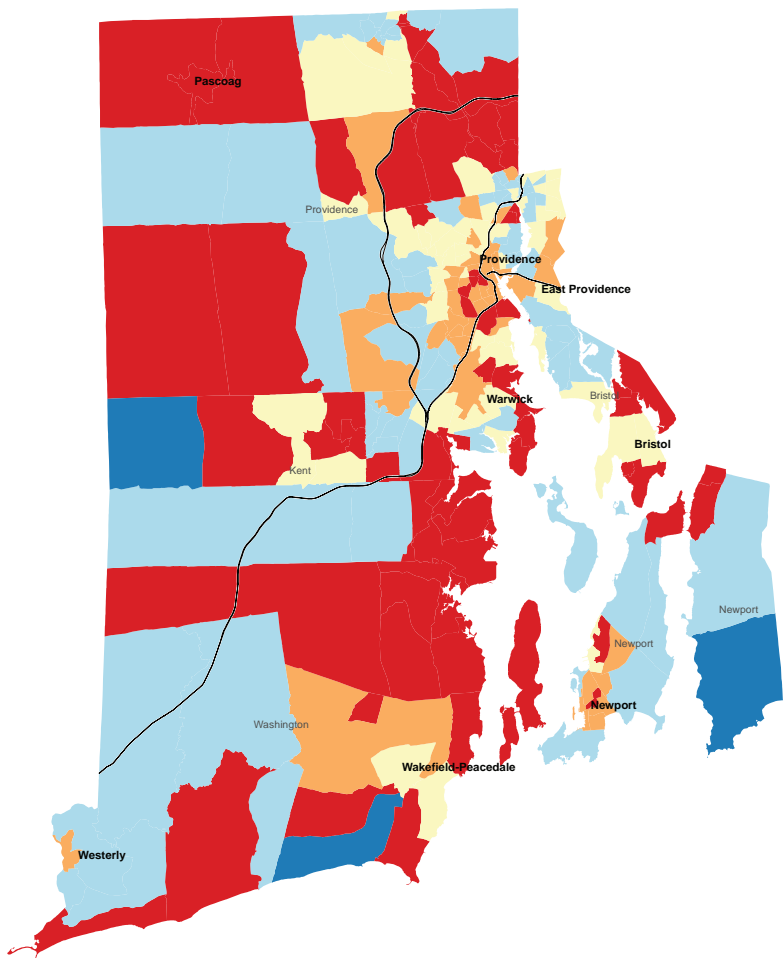
A zero score indicates no healthy food retailers (supermarkets, larger groceries, produce stores, or supercenters) within the census tract.

DATA SOURCES:
 Supermarkets, Small and Large Groceries, Produce Stores, Supercenters - InfoUSA 2009
 Convenience stores - Homeland Security Infrastructure Program Database 2008
 Fast-food restaurants - NAVTEQ 2009

Date of map: September, 2011

Rhode Island

Modified Retail Food Environment Index According to Census Tract



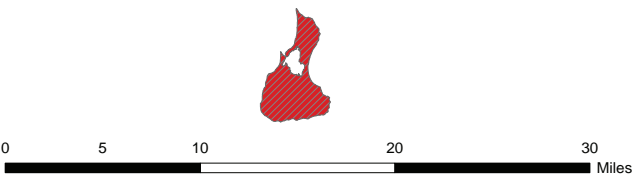
National mRFEI Score = 10
 Rhode Island mRFEI Score = 5

The modified Retail Food Environment Index (mRFEI) measures the number of healthy and less-healthy food retailers within a census tract using this formula:

$$\frac{\# \text{ Healthy Food Retailers}}{\# \text{ Healthy Food Retailers} + \# \text{ Less Healthy Food Retailers}} \times 100$$

For this indicator, healthy food retailers include supermarkets, larger grocery stores, supercenters, and produce stores.† Less healthy food retailers include convenience stores, fast food restaurants, and small grocery stores with 3 or fewer employees.†

† Data sources are listed in the legend.



Modified Retail Food Environment Index (By U.S. Census Tract)

- No retail food outlet within census tract
- No healthy food outlet within census tract
- 0.1 - 5
- 5.1 - 10
- 10.1 - 37.5
- 37.6 - 100

Lower scores indicate that census tracts contain many convenience stores and fast food restaurants compared to the number of healthy food retailers.

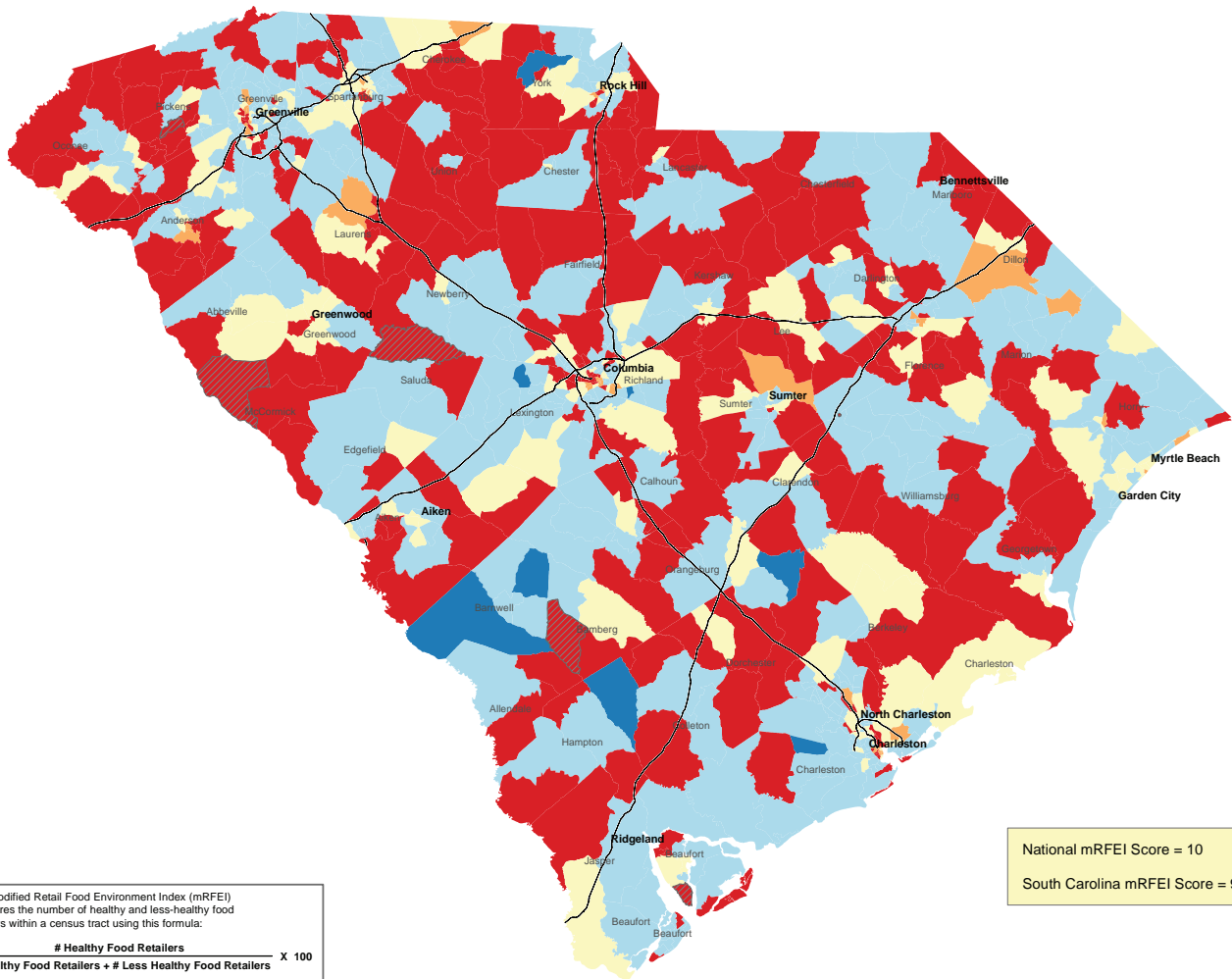
A zero score indicates no healthy food retailers (supermarkets, larger groceries, produce stores, or supercenters) within the census tract.

DATA SOURCES:
 Supermarkets, Small and Large Groceries, Produce Stores, Supercenters - InfoUSA 2009
 Convenience stores - Homeland Security Infrastructure Program Database 2008
 Fast-food restaurants - NAVTEQ 2009

Date of map: September, 2011

South Carolina

Modified Retail Food Environment Index According to Census Tract



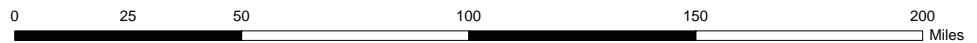
National mRFEI Score = 10
 South Carolina mRFEI Score = 9

The modified Retail Food Environment Index (mRFEI) measures the number of healthy and less-healthy food retailers within a census tract using this formula:

$$\frac{\# \text{ Healthy Food Retailers}}{\# \text{ Healthy Food Retailers} + \# \text{ Less Healthy Food Retailers}} \times 100$$

For this indicator, healthy food retailers include supermarkets, larger grocery stores, supercenters, and produce stores. † Less healthy food retailers include convenience stores, fast food restaurants, and small grocery stores with 3 or fewer employees. †

† Data sources are listed in the legend.



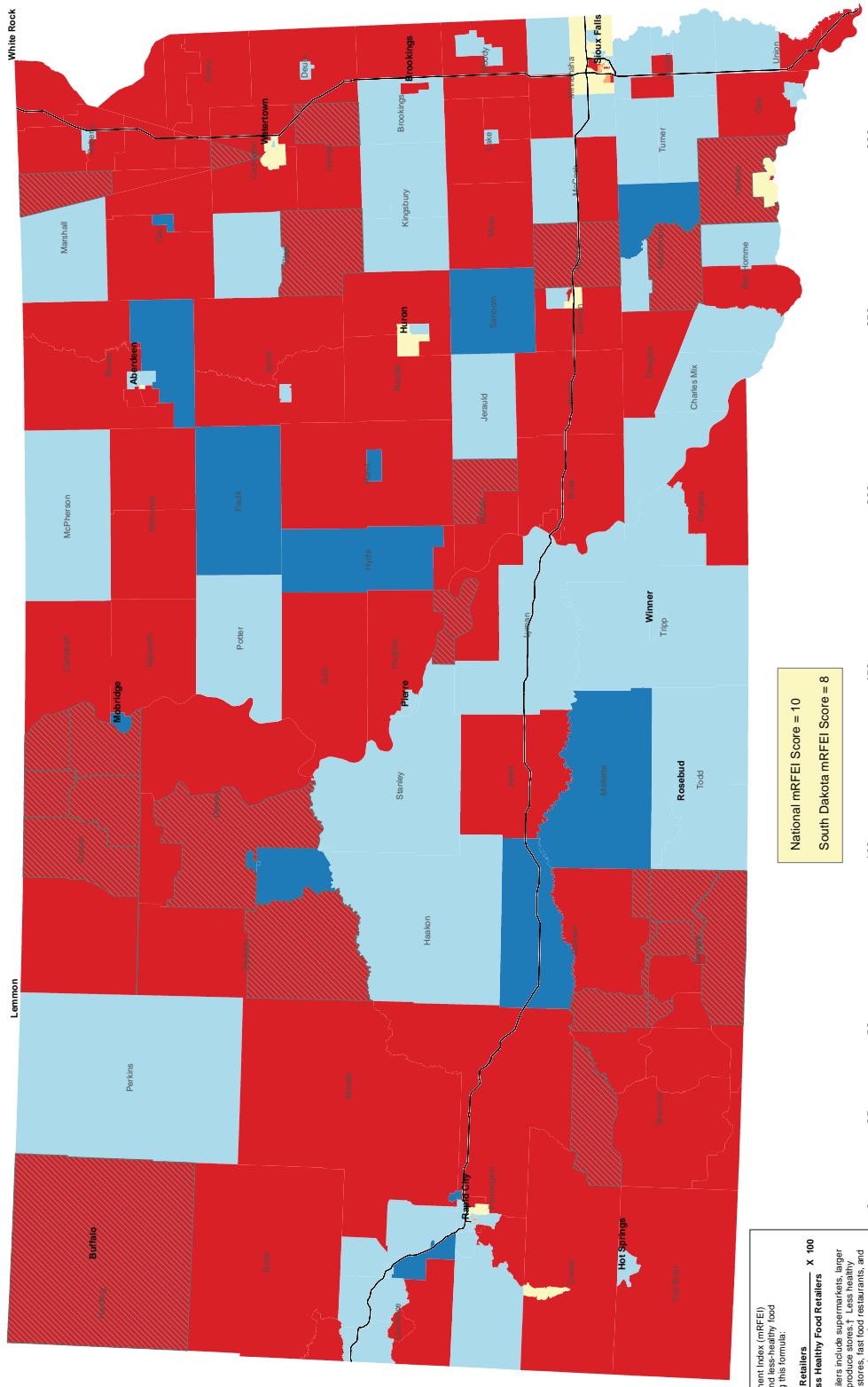
South Dakota Modified Retail Food Environment Index According to Census Tract

Modified Retail Food Environment Index (By U.S. Census Tract)

- No retail food outlet within census tract
- No healthy food outlet within census tract
- 1 - 5
- 5.1 - 10
- 10.1 - 37.5
- 37.6 - 100
- Interstate Highways

Score indicates no healthy food outlets, convenience stores, and fast food restaurants compared to the number of healthy food retailers. A zero score indicates no healthy food outlets, convenience stores, or fast food restaurants within the census tract. Supermarkets, Small and Large Groceries, Produce Stores, Supercenters - Fresh Produce, Convenience Stores - Grocery, and Fast-food restaurants - NATEO 2009

Date of map: September, 2011



National mRFEI Score = 10
South Dakota mRFEI Score = 8



Healthy Food Retailers x 100
Healthy Food Retailers ÷ # Less Healthy Food Retailers

For this indicator, healthy food retailers include supermarkets, larger grocery stores, supercenters, and produce stores.† Less healthy food retailers include convenience stores, fast food restaurants, and small grocery stores with 3 or fewer employees.†

† Data sources are listed in the legend.

Tennessee

Modified Retail Food Environment Index According to Census Tract

Modified Retail Food Environment Index (By U.S. Census Tract)

Lower scores indicate that census tracts contain many convenience stores and fast food restaurants and few healthy food retailers.

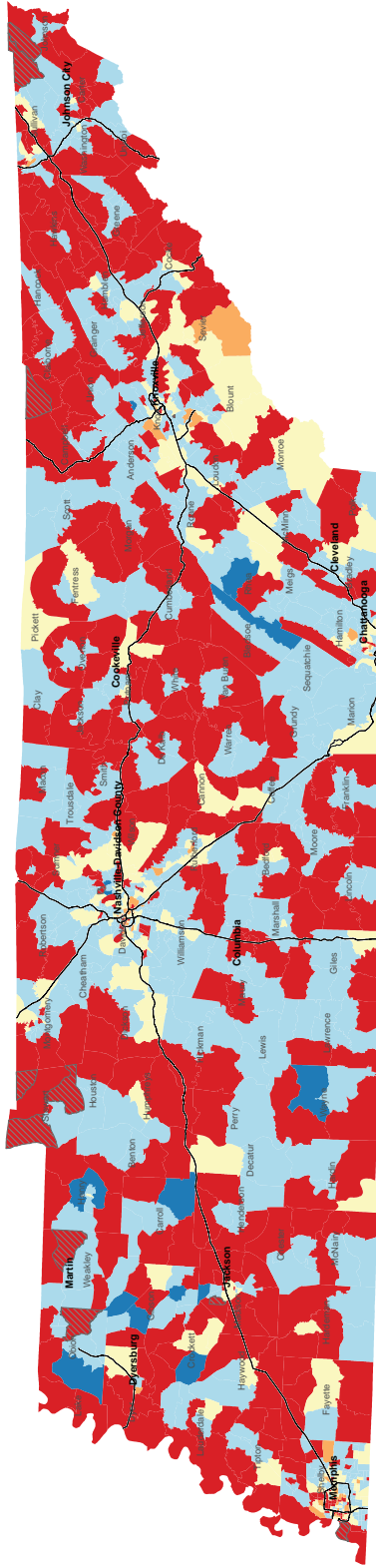
A zero score indicates no healthy food retailers (supermarkets, large grocery stores, farmers markets, etc.) are present within the census tract.

DATA SOURCES: All and 4-Layer Census Tracts, Supermarkets - NRI/USA 2009, Produce Stores, Supercenters - NRI/USA 2009, Convenience stores - Homeland Security Infrastructure Program Database 2008, Fast food restaurants - NMYFEC 2009

Date of map: August, 2011

Legend:

- No retail food outlet
- within census tract
- 0.1 - 5
- 5.1 - 10
- 10.1 - 37.5
- 37.6 - 100
- Interstate Highways



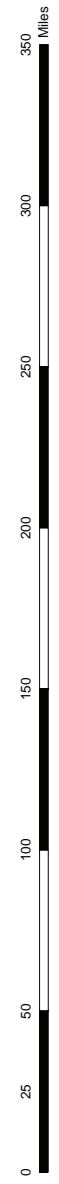
The modified Retail Food Environment Index (mRFEI) measures the number of healthy and less healthy food retailers within a census tract using the formula:

Healthy Food Retailers x 100

For this indicator, healthy food retailers include supermarkets, larger grocery stores, supercenters, and produce stores.† Less healthy food retailers include convenience stores, fast food restaurants, and small grocery stores with 3 or fewer employees.†

† Data sources are listed in the legend.

National mRFEI Score = 10
Tennessee mRFEI Score = 10



Texas

Modified Retail Food Environment Index According to Census Tract

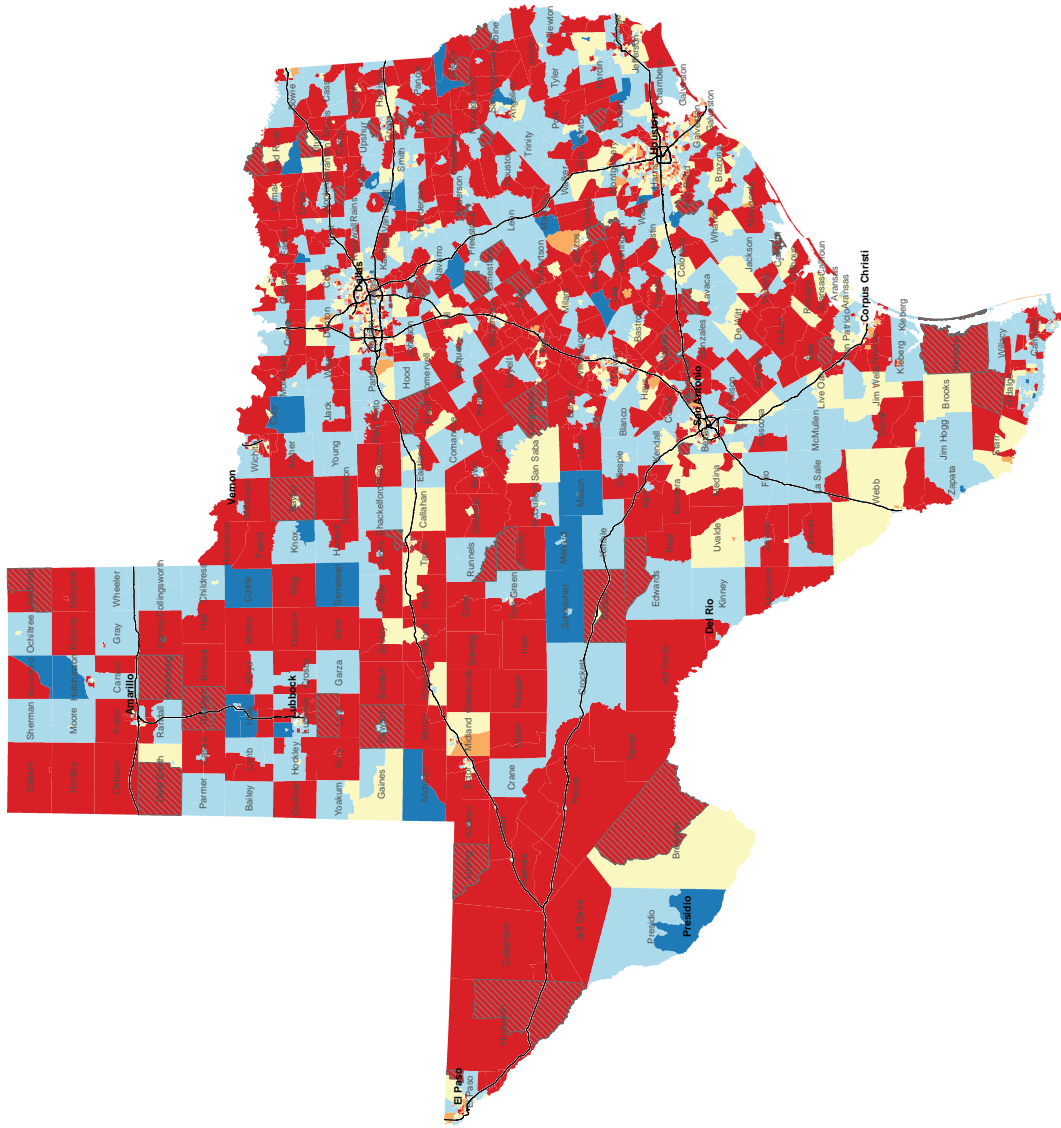
Modified Retail Food Environment Index (By U.S. Census Tract)

Legend:

- No healthy food outlet within census tract
- No healthy food outlet within census tract
- 0.1 - 5
- 5.1 - 10
- 10.1 - 37.5
- 37.6 - 100
- Interstate Highways

Notes:

- 1. Only census tracts with at least one healthy food outlet are shown. Census tracts with no healthy food outlets are shaded gray.
- 2. A ratio score indicates the number of healthy food outlets per 100 people. A score of 10.1 indicates that there are 10.1 healthy food outlets per 100 people.
- 3. A score of 37.6 indicates that there are 37.6 healthy food outlets per 100 people.
- 4. A score of 100 indicates that there are 100 healthy food outlets per 100 people.
- 5. A score of 0.1 indicates that there are 0.1 healthy food outlets per 100 people.
- 6. A score of 5.1 indicates that there are 5.1 healthy food outlets per 100 people.
- 7. A score of 10.1 indicates that there are 10.1 healthy food outlets per 100 people.
- 8. A score of 37.6 indicates that there are 37.6 healthy food outlets per 100 people.
- 9. A score of 100 indicates that there are 100 healthy food outlets per 100 people.



National mRFEI Score = 10
Texas mRFEI Score = 7

The modified Retail Food Environment Index (mRFEI) measures the number of healthy and less-healthy food outlets within a census tract using the formula:

$$\# \text{ Healthy Food Retailers} \times 100$$

For this indicator, healthy food retailers include supermarkets, larger grocery stores, supercenters, and produce stores.† Less healthy food retailers include convenience stores, fast food restaurants, and small grocery stores with 3 or fewer employees.†

† Data sources are listed in the legend.

Modified Retail Food Environment Index (By U.S. Census Tract)

- No retail food outlet within census tract
- No healthy food outlet within census tract
- 0.1 - 5
- 5.1 - 10
- 10.1 - 37.5
- 37.6 - 100

Lower scores indicate that census tracts contain many convenience stores and fast food restaurants compared to the number of healthy food retailers.

A zero score indicates no healthy food retailers (supermarkets, larger groceries, produce stores, or supercenters) within the census tract.

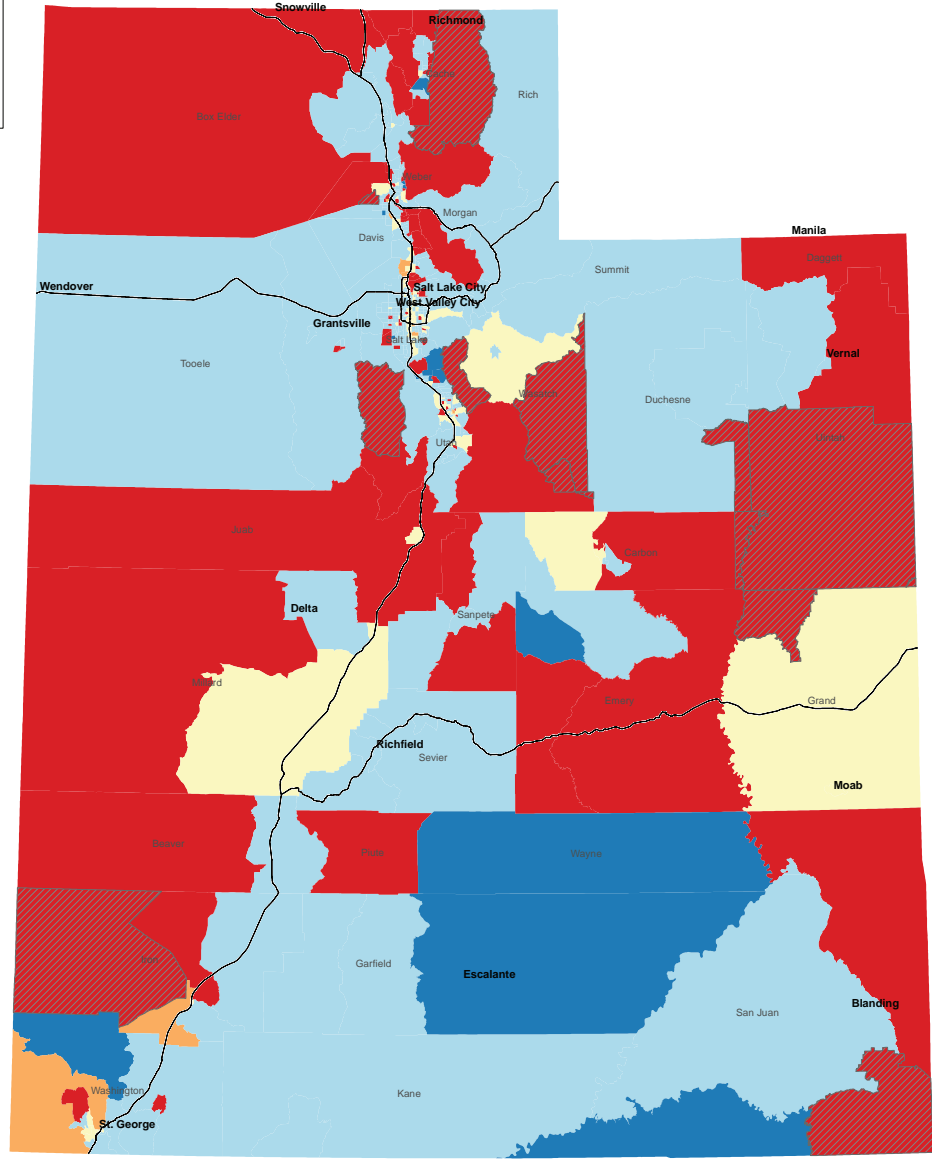
DATA SOURCES:
 Supermarkets, Small and Large Groceries, Produce Stores, Supercenters - IntUSDA 2009
 Convenience stores - Homeland Security Infrastructure Program Database 2008
 Fast-food restaurants - NAVTEQ 2009

Date of map: September, 2011

National mRFEI Score = 10
 Utah mRFEI Score = 13

Utah

Modified Retail Food Environment Index According to Census Tract



The modified Retail Food Environment Index (mRFEI) measures the number of healthy and less-healthy food retailers within a census tract using this formula:

$$\frac{\# \text{ Healthy Food Retailers}}{\# \text{ Healthy Food Retailers} + \# \text{ Less Healthy Food Retailers}} \times 100$$

For this indicator, healthy food retailers include supermarkets, larger grocery stores, supercenters, and produce stores. † Less healthy food retailers include convenience stores, fast food restaurants, and

Modified Retail Food Environment Index (By U.S. Census Tract)

- No retail food outlet within census tract
- No healthy food outlet within census tract
- 0.1 - 5
- 5.1 - 10
- 10.1 - 37.5
- 37.6 - 100

Lower scores indicate that census tracts contain many convenience stores and fast food restaurants compared to the number of healthy food retailers.

A zero score indicates no healthy food retailers (supermarkets, larger groceries, produce stores, or supercenters) within the census tract.

DATA SOURCES:
 Supermarkets, Small and Large Groceries, Produce Stores, Supercenters - InfoUSA 2009
 Convenience stores - Homeland Security Infrastructure Program Database 2008
 Fast-food restaurants - NAVTEQ 2009

Date of map: August, 2011

— Interstate Highways

National mRFEI Score = 10
 Vermont mRFEI Score = 13

The modified Retail Food Environment Index (mRFEI) measures the number of healthy and less-healthy food retailers within a census tract using this formula:

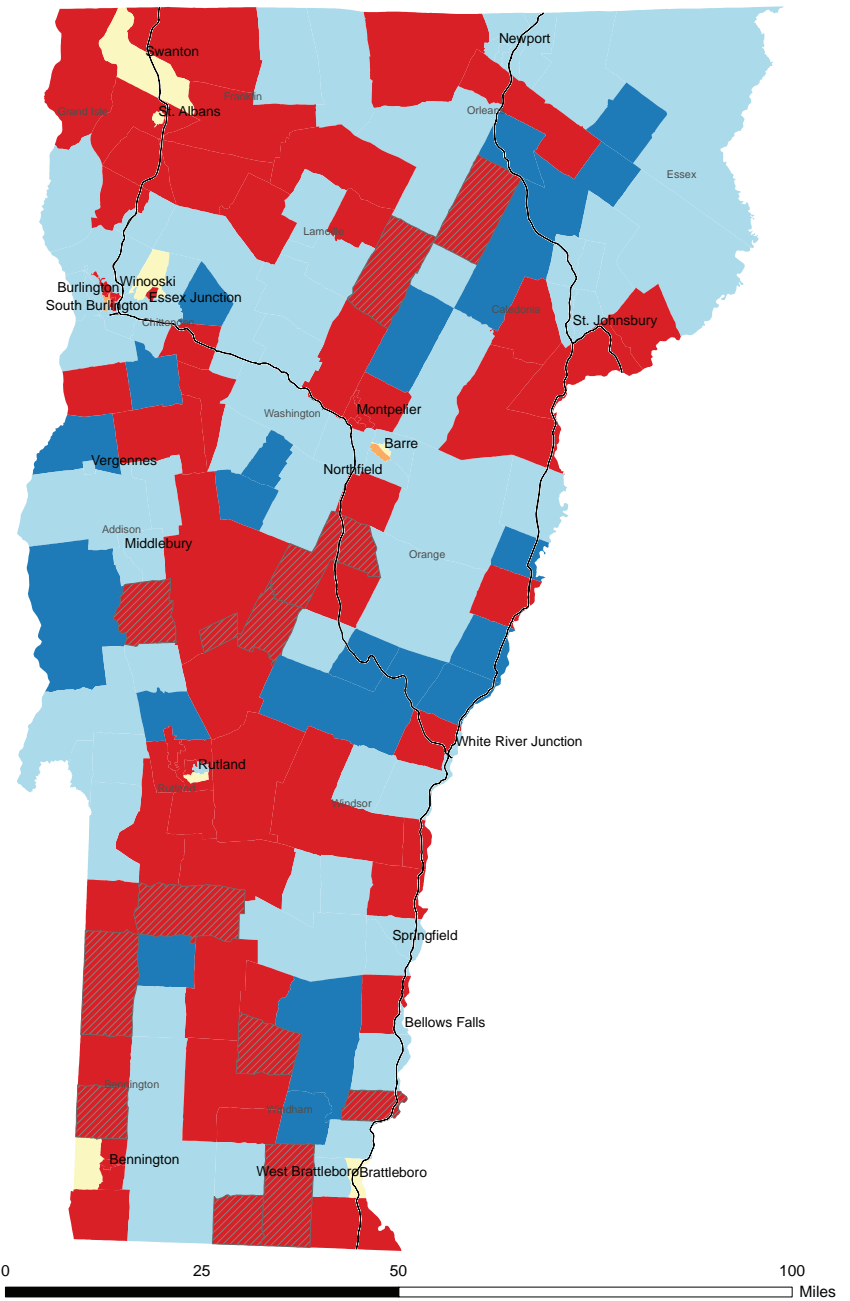
$$\frac{\# \text{ Healthy Food Retailers}}{\# \text{ Healthy Food Retailers} + \# \text{ Less Healthy Food Retailers}} \times 100$$

For this indicator, healthy food retailers include supermarkets, larger grocery stores, supercenters, and produce stores.† Less healthy food retailers include convenience stores, fast food restaurants, and small grocery stores with 3 or fewer employees.†

† Data sources are listed in the legend.

Vermont

Modified Retail Food Environment Index According to Census Tract



Virginia

Modified Retail Food Environment Index According to Census Tract

Modified Retail Food Environment Index (By U.S. Census Tract)

Lower scores indicate that census tracts contain many convenience stores and a lot of healthy food retailers. Higher scores indicate that census tracts contain many convenience stores and few healthy food retailers.

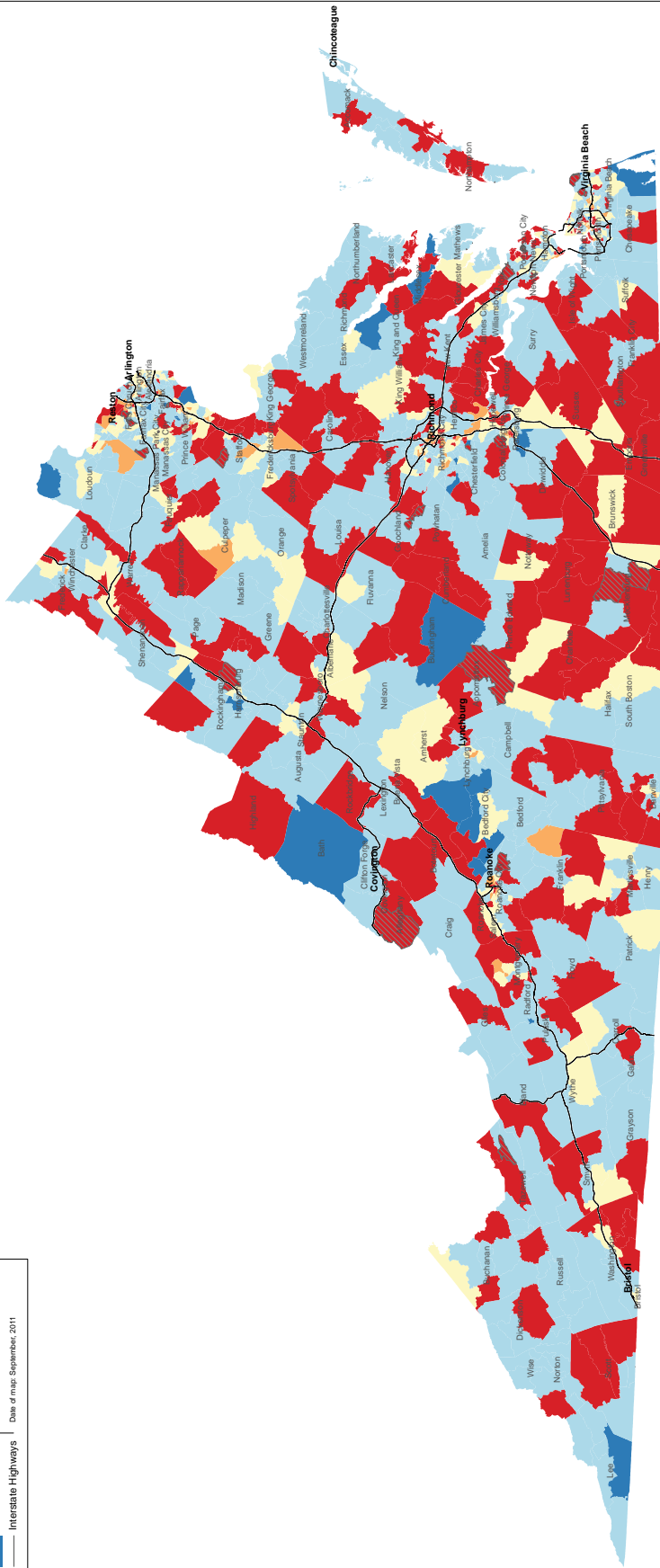
A zero score indicates no healthy food retailers (supermarkets, larger grocers, farmers markets, or supermarkets) within the census tract.

DATA SOURCES: USDA Food Access Research Atlas (FARAT) 2009
 Census Bureau - Census 2000
 Convenience stores - Homeland Security Infrastructure Program Database 2008
 Fast-food restaurants - NATEC 2009

Date of map: September, 2011

Legend:

- No retail food outlet
- 0.1 - 5
- 5.1 - 10
- 10.1 - 37.5
- 37.6 - 100
- Interstate Highways



National mRFEI Score = 10
 Virginia mRFEI Score = 11

The modified Retail Food Environment Index (mRFEI) is calculated as the number of healthy food retailers within a census tract using this formula:

Healthy Food Retailers X 100
Healthy Food Retailers + # Less Healthy Food Retailers

For this indicator, healthy food retailers include supermarkets, larger grocery stores, supercenters, and produce stores.† Less healthy food retailers include convenience stores, fast food restaurants, and small grocery stores with 3 or fewer employees.†

† Data sources are listed in the legend.



Washington

Modified Retail Food Environment Index According to Census Tract

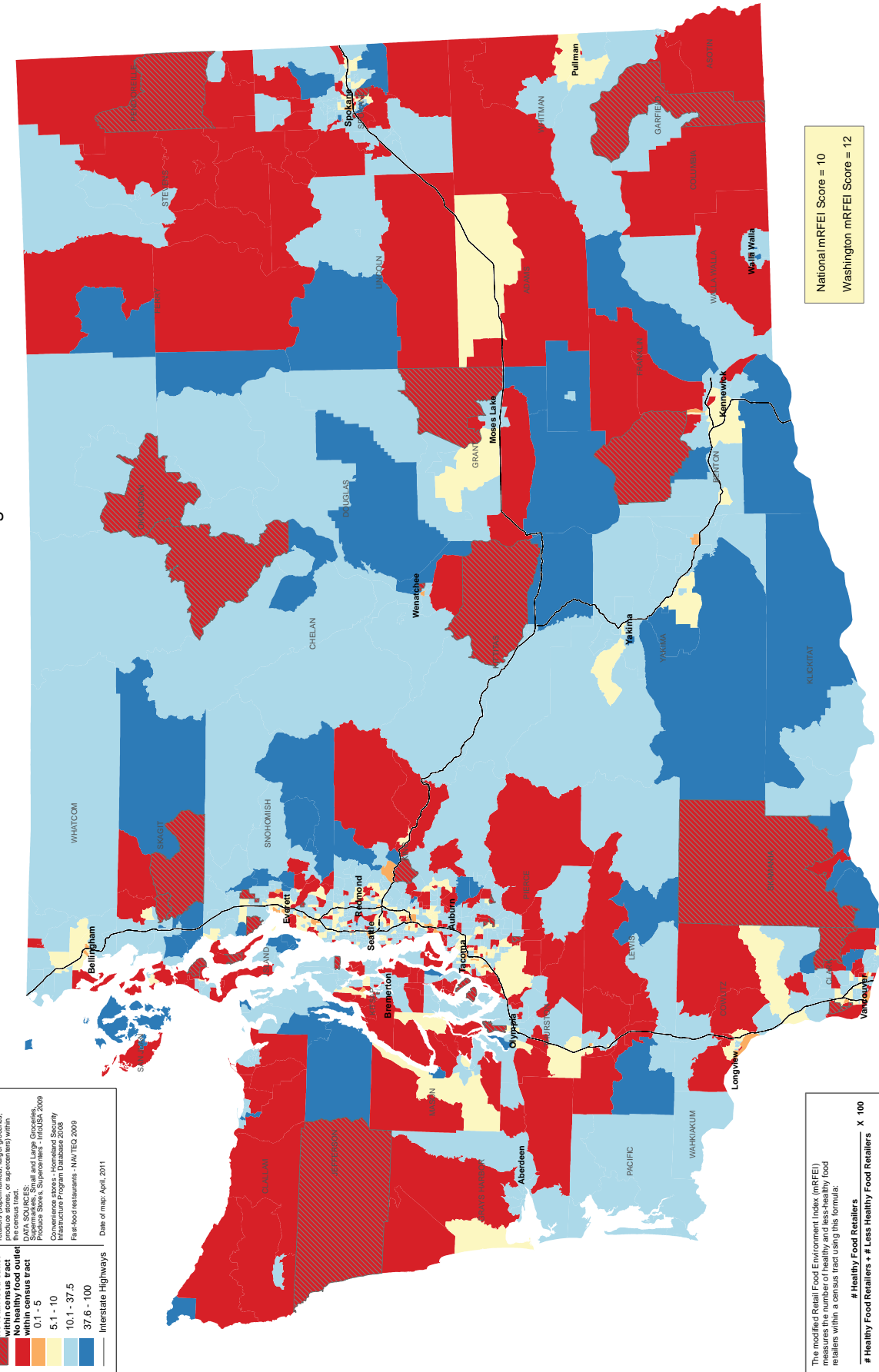
Lower scores indicate that census tracts have fewer healthy food retailers compared to the number of healthy food retailers.

A zero score indicates no healthy food retailers (supermarkets, larger groceries, produce stores, and convenience stores) within the census tract.

DATA SOURCES:
 Census of Retail Trade - NAFTIC 2009
 Produce Stores & Supercenters - InfoUSA, 2009
 Convenience stores - Homeland Security Infrastructure Program Database 2008
 Fast-food restaurants - NAVTEC 2009

Date of map: April, 2011

Interstate Highways



The modified Retail Food Environment Index (mRFEI) measures the number of healthy and less-healthy food retailers within a census tract using this formula:

$$\frac{\# \text{ Healthy Food Retailers} + \# \text{ Less Healthy Food Retailers}}{\# \text{ Healthy Food Retailers}} \times 100$$

For this indicator, healthy food retailers include supermarkets, larger grocery stores, and produce stores. Less healthy food retailers include convenience stores, fast food restaurants, and small grocery stores with 3 or fewer employees.[†]

[†] Data sources are listed in the legend.

National mRFEI Score = 10
 Washington mRFEI Score = 12



West Virginia

Modified Retail Food Environment Index According to Census Tract

Lower scores indicate that census tracts have fewer healthy food retailers and more fast food restaurants compared to the number of healthy food retailers.

A zero score indicates no healthy food retailers (supermarkets, large grocery stores, convenience stores, fast food restaurants, and food stores) within the census tract.

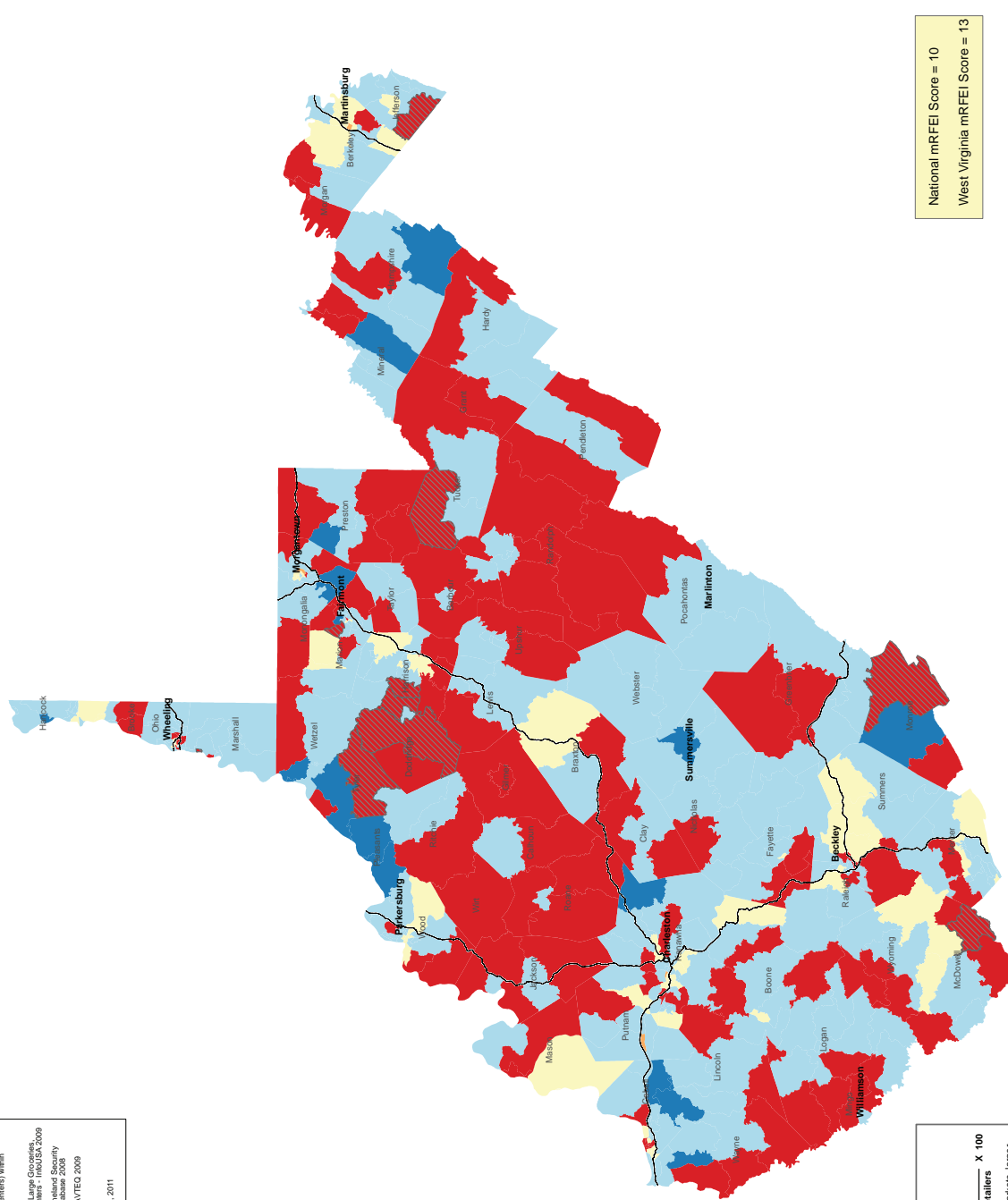
DATA SOURCE: Small and Large Groceries, Produce Stores, Supercenters - INUSA 2009
Convenience stores - Homeland Security Infrastructure Program Database 2006
Fast food restaurants - NAVTEQ 2009

Date of map: September, 2011

Modified Retail Food Environment Index (By U.S. Census Tract)

- No retail food outlet within census tract
- No healthy food outlet within census tract
- 0.1 - 5
- 5.1 - 10
- 10.1 - 37.5
- 37.6 - 100

Interstate Highways



National mRFEI Score = 10
West Virginia mRFEI Score = 13

The modified Retail Food Environment Index (mRFEI) measures the number of healthy and less-healthy food retailers within a census tract using this formula:

$$\frac{\# \text{ Healthy Food Retailers}}{\# \text{ Healthy Food Retailers} + \# \text{ Less Healthy Food Retailers}} \times 100$$

For this indicator, healthy food retailers include supermarkets, larger food retailers, and convenience stores; fast food restaurants, and small grocery stores with 3 or fewer employees.[†]

[†] Data sources are listed in the legend.

Wisconsin

Modified Retail Food Environment Index According to Census Tract

Modified Retail Food Environment Index (By U.S. Census Tract)

- No retail food outlet within census tract
- No healthy food outlet within census tract
- 0.1 - 5
- 5.1 - 10
- 10.1 - 37.5
- 37.6 - 100

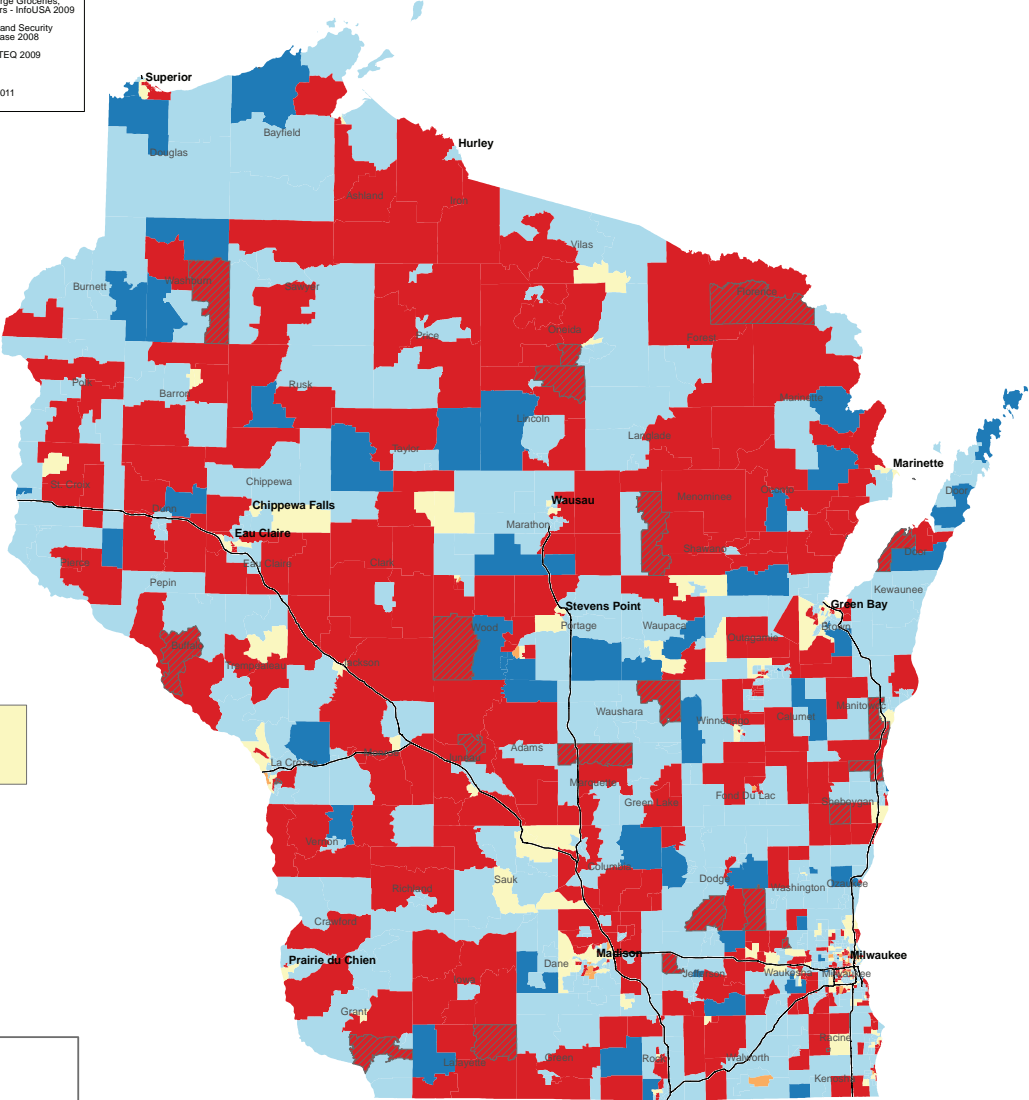
— Interstate Highways

Lower scores indicate that census tracts contain many convenience stores and fast food restaurants compared to the number of healthy food retailers.

A zero score indicates no healthy food retailers (supermarkets, larger groceries, produce stores, or supercenters) within the census tract.

DATA SOURCES:
 Supermarkets, Small and Large Groceries, Produce Stores, Supercenters - InfoUSA 2009
 Convenience stores - Homeland Security Infrastructure Program Database 2008
 Fast-food restaurants - NAVTEQ 2009

Date of map: September, 2011



National mRFEI Score = 10
 Wisconsin mRFEI Score = 11

The modified Retail Food Environment Index (mRFEI) measures the number of healthy and less-healthy food retailers within a census tract using this formula:

$$\frac{\# \text{ Healthy Food Retailers}}{\# \text{ Healthy Food Retailers} + \# \text{ Less Healthy Food Retailers}} \times 100$$

For this indicator, healthy food retailers include supermarkets, larger grocery stores, supercenters, and produce stores.† Less healthy food retailers include convenience stores, fast food restaurants, and small grocery stores with 3 or fewer employees.†



Wyoming

Modified Retail Food Environment Index According to Census Tract

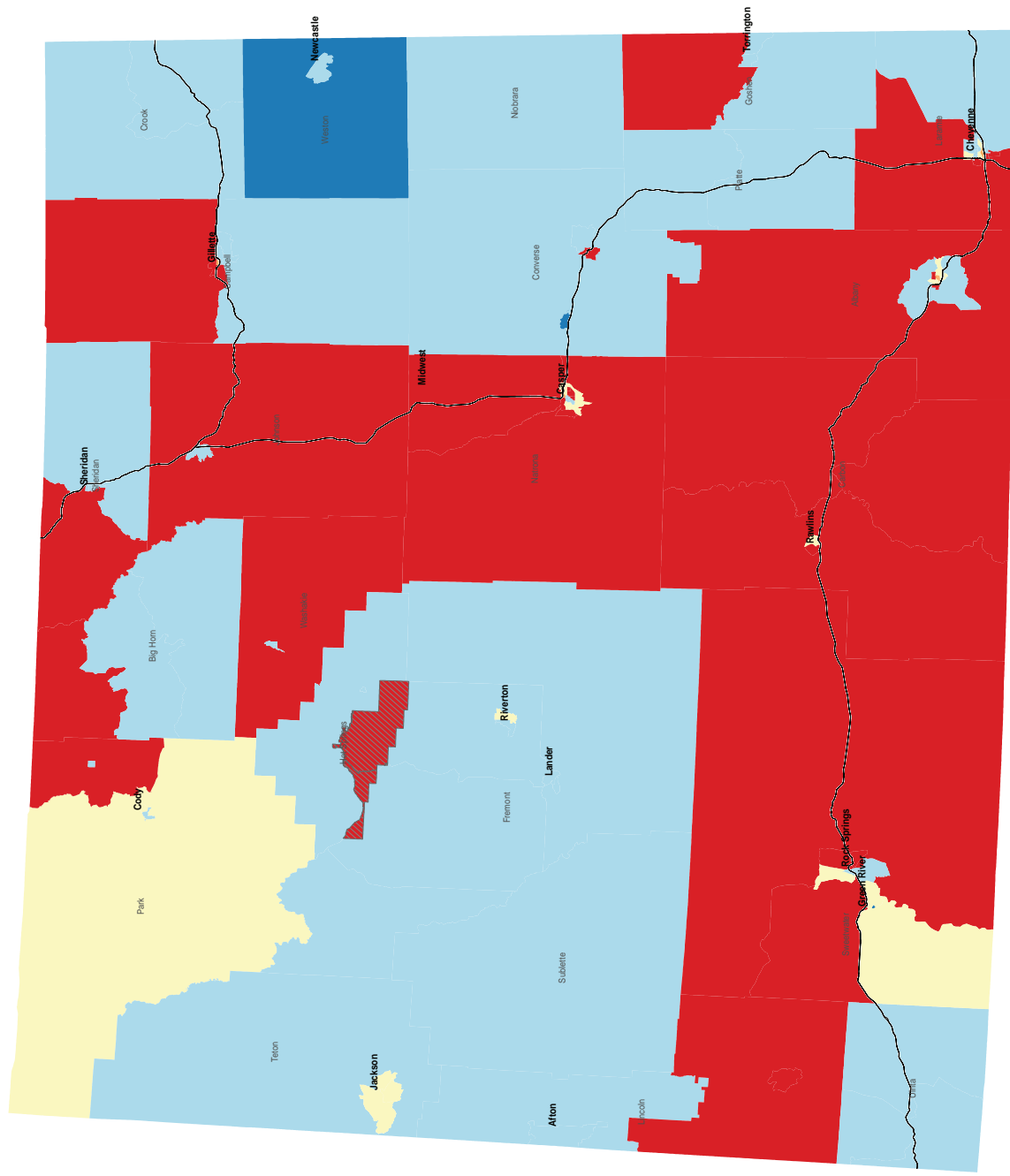
Lower scores indicate that census tracts have fewer healthy food retailers and fewer food restaurants compared to the number of healthy food retailers.

A zero score indicates no healthy food retailers (supermarkets, larger groceries, fast food restaurants, convenience stores, or supermarkets) within the census tract.

DATA SOURCES:
 Supermarkets, Small and Large Groceries: USDA, National Agricultural Statistics Service, Census of Agriculture, 2007
 Convenience stores - Hordick, Sherry, Infrastructure Program Database 2008
 Fast-food restaurants - NAVTEQ 2009

Date of map: September, 2011

- No retail food outlet
- 0 healthy food retailers within census tract
- 0.1 - 5
- 5.1 - 10
- 10.1 - 37.5
- 37.6 - 100
- Interstate Highways



National mRFEI Score = 10
 Wyoming mRFEI Score = 10

The modified Retail Food Environment Index (mRFEI) is a measure of the number of healthy food retailers within a census tract using this formula:

Healthy Food Retailers \times 100

For this indicator, healthy food retailers include supermarkets, larger food retailers include convenience stores, fast food restaurants, and small grocery stores with 3 or fewer employees.[†]

[†] Data sources are listed in the legend.

