

Webinar: New Estimates of Supermarket Access and New Mapping Features in ERS' Food Access Research Atlas Transcription

Wednesday, February 1 @ 1:00 p.m. EST

Good afternoon everyone and welcome to our webinar,

New Estimates of Supermarket Access and

New Mapping Features in ERS's Food

Access Research Atlas. My name is Nancy McNiff and

I will be your host today. This webinar is being

recorded and will be posted at a later date on

the ERS website. At any time during the webinar,

you may enter a question into the chat feature

in the bottom left hand corner of your screen

and our speaker will answer you at the end of

the presentation. Our speaker today is

Shelly Ver Ploeg. Shelly is an economist in

the Food Assistance Branch

at the Economic Research Service, U.S.

Department of Agriculture. Her research focuses

on obesity and food assistance program

participation, and on the consequences

of limited food store access.

In 2009, she led a congressionally mandated

study on access to affordable and nutritious

foods. I think we're

ready to start, so Shelly you can now

begin your presentation.

Thank you Nancy for the introduction.

The Economic Research Service recently completed an update of the Food Access Research Atlas and published a report that summarizes estimates of census tract measures of low income and low access areas.

The objectives of this webinar are to first summarize findings from the report entitled Low-Income and Low-Supermarket-Access Census Tracts, 2010 to 2015, written by a team of ERS researchers. This report give estimates of low income and low access tracts and of the people in them for 2015 and compares those estimates to our previous estimates from 2010. The second objective is to demonstrate features of the Food Access Research Atlas. The Food Access Research Atlas Update features the 2015 estimates and also provides a way to compare those estimates from 2010.

Food Store Access is important because limited access to retailers that sell healthy and affordable food may impede the ability of some Americans to achieve a healthy diet and food security. Determinants of access include distance to sources of healthy and affordable food, access to a vehicle or other form of transportation to travel to a store or limited resources to pay for transportation to a store. These factors could affect the choice of stores at which people shop for food, the time and monetary

costs to travel to shop and the frequency of shopping. Each of these factors in turn could reduce food security and diet quality.

To help understand how many people and communities may be affected by limited food store access, ERS, of the USDA, developed a mapping tool and data called the Food Access Research Atlas. The Atlas presents a spatial overview of food access indicators at the census tract level, provides maps and data on food access indicators for populations that can be viewed, downloaded and printed. And the Food Access Research Atlas has been used by federal, state and local governments, community planners and researchers to understand food store access in communities and to understand the consequences of poor access.

Here's an example of a map from the Food Access Research Atlas that zooms into the Memphis, Tennessee area.

I will later demonstrate how to make maps like these but first I will go through some definitions so that I can explain what is on these maps and what our estimates show.

Food Store Access is measured at the census tract level.

Census tracts are subdivisions of counties and are roughly considered neighborhoods. Based on 2010 Decennial Census information,

there are over 72,000 populated census tracts in the United States. We use these same 2010 Decennial Census tract boundaries throughout.

There are two components to ERS's Census Tract Store Access Measure, a low income component and a low access component. A subset of all census tracts is low income and another subset is low access. We are interested in the intersection of these two sets of tracts to make low income and low access census tracts.

The low income component is defined using poverty rates and median family income within a census tract. Census tracts with poverty rates greater or equal to 20 percent or tracts with median family income that is at or below 80 percent, 80 percent of the state or metropolitan area's median income level are considered low income. This definition is consistent with the definition used by the U.S. Department of Treasury's New Markets Tax Credit Program. We estimate four definitions of low access but for this webinar, I'll focus only on two of them. The first is based solely on how far people in the census tract are from the nearest supermarket, supercenter or large grocery store which I'll simply refer to as supermarkets for brevity sake.

A tract is low access if there is a significant number or share of people more than one mile from

a supermarket, if it's an urban area, or more than 10 miles from a supermarket if it's a rural area. We call this measure the Low Access 1 and 10 Mile Measure.

Many households that are far from stores have vehicles that can be used to overcome the burden of being far from a supermarket. If access to a vehicle is not considered then estimates based only on proximity may overstate how many people lack access to a food store. The second measure upon which we focus considers vehicle access.

This measure has two conceptual pieces.

First, some households do not have access to a vehicle and are far from a store and thus may face barriers to getting to a supermarket.

Second, some people who are so far from a store that even with a car it may be a burden in terms of time and transportation costs to get to a store.

We call this measure the Low Access Vehicle and 20 Mile Measure. Census tracts with at least 100 households because household vehicle, vehicle access is measured at the household level without a vehicle who live more than a half mile from a store are considered low access and census tracts with a significant number or share of people more than 20 miles from a store are considered low access census tracts. This definition is applied equally to urban and rural census tracts.

There are in fact some rural census tracts with so many households without a car that they meet

this part of the definition. The component that considers far access to be more than 20 miles, in reality only applies to rural census tracts since no urban census tracts have a significant number or share of residents that are more than 20 miles from a supermarket.

This table shows a source, year and geographic level of the data used in our estimates.

We combined two 2015 directories of food retail stores. One directory is from TDLinx, a proprietary source and the other is from the Store Tracking and Redemption System or STAR System which is a directory of all stores authorized to accept Supplemental Nutrition Assistance Program or SNAP benefits. For both of these directories we only consider stores in the grocery channel as proxies of sources of healthy and affordable food. These channels generally include large grocery stores, supermarkets and supercenters.

These store should contain all major grocery departments. Our population data for most characteristics come from the 2010 Decennial Census. The exception are income and vehicle access data which come from the 2010 to 2014 American Community Survey.

To discuss the results I'll go through each of the low income and low access components separately.

I'll start with a low income component. The share of tracts that are low income increased between 2010 and 2015. In 2015, 42.4 percent of all tracts were low income compared with 40.3 percent in 2010. This is a 5.4 percent increase. Recall that our data on income cover the 2010 to 2014 period which covers a large part of the post-recession period when incomes had fallen or stagnated.

Next I will focus on changes in low access measures. The first is the Low Access 1 and 10 Mile Measure. For this measure we found that the number of low access census tracts in the U.S. decreased from 39.4 percent of tracts in 2010 to 38 percent of tracts in 2015. This reflects an increase in the number of supermarkets in the U.S. and increases in proximity of the population to supermarkets.

We find the opposite result for the low access measure that considers the number of housing units without a vehicle that are more than a half mile from the nearest supermarket and the number and share of people who are more than 20 miles from a supermarket. For this measure the percentage of low access tracts increased from 2010, between 2010 and 2015 by a slight amount,

from 22.3 percent of all tracts in 2010 to 22.9 percent in 2015. This increase is due to an increase in the number of housing units that do not have a vehicle and are more than a half mile from the nearest supermarket. Overall the share of housing units without vehicles increased over our study period from 8.8 percent in 2006 to 2010 to 9.2 percent in 2010 to 2014. Again this increase is likely due to greater economic hardship in the post-recession era.

Now that we've gone through each of the low income and low access components, we will see how much overlap there is between both using our 2015 data. We know that the low income share of tracts increased and that for the 1 and 10 Mile definition the low access share decreased. For the Low Access Vehicle and 20 Mile Measure, the low access share increased.

This table contains a number and percentage of low income census tracts, low access census tracts using the two definitions I previously described. The shaded column shows the 1 and 10 Mile definition and the bottom row shows the number of tracts that are both low income and low access. Here.

We see a small increase of 0.3 percentage points in the share of tracts that are low income and low



access from 12.4 percent of all tracts, 12.7 percent of all tracts. This shows that the increase in low income tracts outnumber the decrease in low access tracts. Turning now to the measure that considers vehicle access and distance for people more than 20 miles which is the two right columns, there was an increase in both the low income tracts and the low access tracts. The result was a 0.6 percentage point increase in the share tracts that are low income and low access from 14.4 percent to 15 percent.

The next question we addressed was how many people in households live in low access and low income census tracts. Using the 1 and 10 Mile definition first we estimate that 39.4 million people or 12.8 percent of the population live in a low income and low access census tract and that all of those people who live in those tracts are far from a supermarket meaning that they are either closer than one mile to a store or closer to 10 miles if it's a rural area.

If we only count those people that are more than a mile or more than 10 miles then 19.1 million people or 6.2 percent of the population are themselves low access and live in a low income and low access census tract.

Now focusing on the low income and low access vehicle, vehicle access and 20 Mile Measure, this one is more complicated because vehicle availability is measured at the household level but proximity is measured for people, I'll go through them separately. We estimate that 18.2 million households or 15.6 percent of all households live in low income census tracts with a high number of vehicle, households without vehicle more than a half mile from a store or in census tracts where a large number or share of people are more than 20 miles from the nearest store.

This translates into 47.4 million people.

But if we count only those who are low access within these tracts, we see the effect of accounting for vehicle access. Here I'm looking at the two right hand side columns. Only 2.1 million households or 1.8 percent of all households live in these low income and low access census tracts and are more than a half mile from a supermarket without a vehicle. If you consider the 20 mile part of that definition only 335,000 people roughly or 0.1 percent of the population lives in these tracts and themselves are more than 20 miles from a supermarket.

These estimates show that the vast majority of households and people either live within half a mile of a supermarket or if they are farther from a supermarket have a vehicle. However please note that these are only households and people in low

income census tracts. There are households in moderate and high income census tracts who may be more than 20 miles from a supermarket or maybe without a vehicle and more than a half mile from the supermarket.

In the report, we also present counts of the number of supermarkets in low income and in moderate and high income census tracts. We found that the number of stores increased between 2010 and 2015.

This increase occurred in both low income and moderate and higher income census tracts.

This increase at least partially explains a decrease in the number of low access census tracts as measured by our proximity measures.

While the number of tracts that are low access is defined solely by our proximity to a supermarket decreased between 2010 and 2015, the increase in the number of low income tracts is greater and that resulted in a net increase in the number of low income and low access census tracts.

There was also an increase in the number of housing units without vehicles and correspondingly an increase in the number of census tracts in which a large number of housing units do not have vehicles and are more than a half mile from a store.

These revised estimates have been added to the

Food Access Research Atlas, a mapping tool that provides a spatial overview of these and additional food access indicators for the whole U.S.

I will now go through this mapping tool and some of the new features that have been added.

The website is provided here.

I'm not going to go to the website but we'll use a few screenshots and maps that I created to show the features of the Food Access Research Atlas.

This is what you will see when you land on the Food Access Research Atlas page. You can see that there's an Overview page which we're on. There's a page, a tab for where you can go to the Atlas. There's a page for how you can find out more about the Atlas, the Documentation page documents all our methods and data sources in great detail.

And then there's a feature to download the data that is part of the map, the mapping tool. If you want to get to the map quickly you can do the "Enter This Map button".

Once you get to the map, you'll see a map of the full U.S. On the upper right are our four measures of low income and low access areas. The green one is the one that uses the 1 and 10 Mile definition and the yellow one is the one that uses the Vehicle Access definition. There's a button here on

the far right that says "2010" that you can hit and a panel using, that shows a 2010 estimate mapping features will pull out. If you just want to look at low access tracts without considering whether they're low income or vice versa, low income tracts without considering if they're low access, you can peel down this component layers part of the mapping tool to see that. This map, we have data for Alaska and Hawaii but the map is scaled that you can't see them. But if you push these buttons you'll get Alaska and Hawaii. This one's Alaska and this one will show Hawaii. You can zoom in and out with this button feature. And then there are other features up here that you might want to familiarize yourself with. I'm going to use the one that says "Find a Place" which is the one most people will want to use and type in a place that you want to examine in more detail. I'm going to go to Memphis, Tennessee.

So this map shows two food access, two low income and low access measures in the Memphis, Tennessee area. You can see I've got 1 and 10 Mile definition clicked on with a check mark and the Vehicle Access definition clicked on with the yellow, with a yellow box. So what you see are in yellow, these are census tracts that meet the definition of low income and low access using the Vehicle Access and 20 Mile definition.

These tracts that are in a more kelly green color are tracts that meet the definition of low income and low access using the 1 and 10 Mile definition.

And this more lime green color, this tract and this tract, are ones that meet both definitions.

Another feature of the mapping tool is that you can click on any census tract to get more details about that census tract. Here I clicked on one of the census tracts on the south side of Memphis and this information bubble popped up. In the bubble, you can see the details about each of the measures. In this case it's the 1 and 10 Mile measure and these are both checked that it is a low income tract and it's a low income census tract.

So if you see a tract where it may not make sense to you, you can click on these details and see what our estimates show. You can also, you look at, click on this tab, the "2015 Tract" which includes all the data that we have for that census tract which includes other indicators of access such as access by age, by race and ethnicity and by SNAP participation status. You can do the same thing to get summary information about the 20, for 2010 for this census tract. And then finally you can click on this button and download a Excel spreadsheet that has all the data for this census tract if you want more details on that census tract.

I will now show you a new feature of the food, Food Access Research Atlas which is to map and compare low income and low access census tracts using the 2010 and 2015 data. To do this I opened the 2010 panel in this panel on the upper right by clicking on the "Yellow 2010 Box". And here I'm only focusing on the low income and low access vehicle and 20 mile marker to make it easier to see changes. Essentially all of these census tracts that are in pink cross-hashed markings, shadings were census tracts that were low income and low access using the Vehicle Access Measure based on our 2010 estimates.

For this map what I did was click on the "2015 Box" for the same definition and it showed again these two combinations of definitions for 2010 and 2015.

Again you see the pink cross-hashed ones which were low income and low access areas in 2010.

The yellow ones are low income and low access tracts in 2015. And then the ones that are cross-hashed with yellow underneath, these here, were tracts where the status of the low income and low access status did not change and were and both were low income and low access in both years.

The last feature of the web page I would like to

show you is a Data Download page.

You can click on the tab on the left that says "Data Download" and this is what you will see. The current version of all data on the map plus additional indicators of Food Store Access by population subgroup can be downloaded in an Excel spreadsheet right here. This data is for the whole United States and is organized by state, county and census tract. The download also contains a Read Me Page to help users understand a file and a page with variable or column names listed. Previous versions of the data can also be downloaded from our archives along with previous versions of the documentation.

To summarize, according to our estimates there was a small increase in the number of low income and low access census tracts between 2010 and 2015.

While the number of tracts that are low access is defined solely by proximity to a supermarket decreased between 2010 and 2015, the increase in the number of low income tracts was greater.

Second, the number of low access tracts defined by access to a vehicle and by the number and share of people more than 20 miles from a supermarket increased between 2010 and 2015. These updated estimates are, and other indicators of supermarket access are available to view and download on the Food



Access Research Atlas.

Again I've put the website for the Food Access Research Atlas up here and I'd also like to acknowledge my co-authors and mapping tool collaborators, Alana Rhone, Carolyn Rogers, Chris Dicken, David Nulph, David Marquardt, John Buckler, Ryan Williams, and Vince Breneman. Again my name is Shelly Ver Ploeg and I have included my contact information. If you have any questions that you don't think about in the question and answer session but think about later feel free to contact me at this phone number and email address. Thank you for your time.

Okay, Shelly thank you very much.

Now we're going to have some questions and answers.

We have some good questions already in the queue.

The first question is how was rurality defined for the census tracts? Do you know how that's defined?

Yeah that's a good question.

We use the census definition of rurality.

So rural areas are generally those that are less than 2,500 people. And the way we defined it for a census tract is we looked at the area where the population weighted centroid of the census tract was to see if it was in a rural area or an

urban area and then classified the whole census tract that way.

And how do you define a supermarket?

So supermarkets I broadly call them supermarkets but they really include supercenters like a Super Wal-Mart or Super Target, supermarkets like your what you would generally think of supermarkets and large grocery stores. And again these come from two different sources in the TDLinx source, this is the grocery and mass merchandiser channel with supercenters. And for the STARS stores it's large grocery stores, supermarkets and supercenters as they define them. Generally they are stores with all major grocery departments and annual sales of at least two million.

And another kind of question about how you define things. How did you decide or how did you choose the mileage criteria for defining the low access, was it based on some sort of literature or some other source?

That's also a good question.

We did a literature review in 2009 so some of it is based on the literature.

What we also did was we plotted for all of our estimates of distance of a supermarket for everybody

in the nation. We plotted that distribution out and we did it separately for rural and urban areas and in rural areas 10 miles was a marker that had been used before in previous literature and was on the far, the more distant end of the distribution. The same is true for urban areas and 1 mile markers.

We got some feedback on that from some places that said, well 10 miles is too short or too long.

We had other feedback that said one mile is too short or too long. So we added the definition or the distance markers of a half mile for some people in urban areas and also of 20 miles for rural areas.

Okay, this is kind of a complicated question and I'm not sure you may have to, we may have to get back to this person on this question but I going to ask it anyway. So the question is specific to South Carolina but this person is saying that there's many counties with census tracts that are very rural and may not fit into your definition for population and distance and many of them don't have access to a large supermarket or store. And the question is how would they be classified?

Without having a precise census tract to look at I can't answer that

question specifically but one reason that we use the definition of a greater number, share or number of people from different distance markers is because in some rural areas there may not be 500 people or a great number of people that are far from a store but there might be many people or a high percentage of those people in a census tract that are far from a store. So that's where we use the definition of it's, if it's more than 500 people or more than 33 percent of the census tract population. So given that it might, it's a way of accounting for these rural areas that may not have a lot of people in them.

Okay another question is, is it possible to download the data for all the census tracts in a state without having to go tract by tract?

The way I would do that would be to download the full data set from the nation and then just copy and paste the state that you care about into a new Excel spreadsheet.

Okay, we have another question that's kind of how, how would you summarize it easily for the lay person what the results of the report and the new information is? Are food deserts getting worse or better? How would you easily sum, sum up what the results are?

Sure. For each of our four measures or for all of them there was an increase in the number of areas that were both low income and low access. So you could say that the number of census tracts that were food deserts increased but for the three proximity only measures, this increase was only due to an increase in the number and share of low income census tract. Actually access improved in terms of how close people are to supermarkets throughout the country. For the Vehicle Access Measure we saw an increase in low access because there were fewer households without a vehicle. Sorry there were more households without a vehicle that were more than a half mile from the store. And in addition there was an increase in the number of low income tracts.

Okay, so this, this is kind of a specific question about Indianapolis but in Indianapolis they had five inner-city supermarkets that closed in June of 2015. Do you know if those closures would be captured or should be captured in the data from the 2015 Supermarket list?

That's a good question. Our list actually is a list that's accurate as of June 2015. So whether those closures actually took place before our data were extracted is an open question.

It's probably right around that time.

My guess is that it would not be reflected because it takes a little bit of time for those stores, lists to be updated. So it may not be reflected but I would have to look at it for certain to know for sure.

Okay, maybe we can get back to that one person and I'll follow up on that. Do you know if food deserts tend to be more common in rural or urban areas? And if which, which is more common?

Let's see I believe I haven't looked at it using our current data. We have looked at it using previous versions of the data in which case it was slightly more common in urban areas than it was in rural areas. But that is one question that we can address in future work given the current, current data that we have.

And do we plan on updating this Atlas in the years to come over time?

Yeah currently we are planning to update it in another three years. One reason that we don't update it as frequently is that our income and population data don't change very frequently. We're already using 2010 data for some population

estimates and 2010 to 2014 data for income and vehicle access. And so changes are slow.

Another reason is that changes in store accounts are also fairly slow to change.

So if we think that an every three years basis will be enough to capture change given the amount of workload to do this.

And another question do you include farmers market in your directory of stores?

We don't actually include farmers markets and as most people who go to farmers markets know these are, can be fabulous sources of healthy food.

One reason we don't include them is because they often are only open on certain days or certain hours and may not be open full-time year around.

Okay, and one last question. What caused the changes in the low access areas that you observed in the report, do you know?

We think that without further exploration but just based on preliminary examination of the data, there is actually an increase in the number of supermarkets across the country and that increase applied to both low income areas and low access areas. And our estimates seem to reflect this in that there are fewer people that are

far from supermarkets.

Okay actually we have one more question.

Is it possible for researchers to obtain the TDLinx and STARS data sets or is that something that you have to pay to access or get some kind of permission?

So the TDLinx data is proprietary and we are not able to share that. The STARS data, you can find a list of SNAP authorized stores in the STARS data from the SNAP Retail Locator and that's, I don't have the website for that but if you Google, "SNAP Retail Locator", it will show the stores that are authorized to accept SNAP. Now that's all stores authorized to accept SNAP but you can see the name and the address of them to see which stores might be grocery stores or larger stores.

Okay that's all the questions we have.

Thank you very much Shelly for your presentation. And thank you all for joining us today. Again if you have further questions feel free to email or call Shelly. And thank you all again, and have a good afternoon.