**Unit 5: Nebraska ArcGIS Online Activity**

1. Go to this link (copy and paste): <https://www.arcgis.com/home/webmap/viewer.html?webmap=7ebf5d4aa0f442e8b850b6f4bd8dc3d2&amp;extent=-105.6465,38.2569,-94.2756,44.4743>
2. Sign into your AGO account

Here you will see layers for the state of Nebraska. A table with the description of the data layers and associated variables is located after the AGO instructions below. These layers provide an exploration of issues around the topic of food insecurity, such as demographics (e.g., race, age, sex, and income), health (obesity), and the U.S. Department of Agriculture (USDA) food access data.

1. Explore the datasets.
   1. Look at the tables for each dataset. You can click on a column heading to arrange in descending or ascending values. The description for each column is in the table below.
   2. Change the color of the style for income and the U.S. Census data. For instance, select the column for percent children in the census tracts within Nebraska. Display in a graduated color using natural breaks with 4 classes.
   3. Change the transparency of the top layer so that you can see what is below to identify possible relationships between layers.
   4. Move the order of the data layers in the table of contents to the left. Also, you can turn layers on or off the check mark next to the layer name.
   5. Use the filter function to find those census tracts that have over 10% Hispanic population.
   6. Use the filter function to find those census tracts that have percentages of obesity greater than 25%.
2. After you get familiar with the data sets, see if you see any patterns within one data set, such as access to grocery stores, median income or percent obesity. Also see if you see any patterns between the data layers. To get you started, here is an example.
   1. Examine the layer for Food Desert with the variable for PERCENT\_LO. This shows the percentage of people with low access to a supermarket or large grocery store. Do you see any patterns? Are the people with low access throughout the state or concentrated in certain counties? Although not all counties have PERCENT\_LO data, you can still try to find patterns even though more limited.
   2. Turn the Food Desert layer off and look at the Median Income layer. Do you see any spatial patterns here?
   3. Now look at counties where a large percentage of people of low access to grocery stores and where the median income is low. Overall, is there a correlation between the two data sets? It may not be perfect, but does there tend to be low access in counties where the median income is low?
3. Do you see any patterns between the data layers? For instance, do you see any relationship between obesity and demographics? Where are the food deserts located? Are there any relationships between the food deserts and the demographics? You can explore these and many other questions.
4. After conducting your analyses and creating maps, compare your results with your readings, if your questions are discussed in the readings. Do you get similar results? If not, what could be the reasons for the different results?
5. For your presentation, you can do screen captures of the maps you create in AGO and bring this into PowerPoint.
6. Discuss how the spatial analysis and the maps provide information on food insecurity in Nebraska.
7. What additional datasets would you like in the ArcGIS Online activity? If you would like to search for additional datasets, go to the dropdown arrow by Add and select Search for Layers. In the new window that appears, type in key words to use in your search in Find and chose My Organization for In. Examine the list of possibilities that appears in the Results Found. Click on Add by the dataset you would like. When you have finished selecting your new datasets, click on Done Adding Layers at the bottom.

**Nebraska Food Security Data Key**

All data layers are polygons.

1. NE\_Obesity, Alias name: Obesity by county, 2012

Source: <http://stateofobesity.org/states/ne/>

2. NE\_Income, Alias name: Median Income, 2010

Source: US Census Bureau American Fact Finder

3. NE\_2010Census, Alias name: Demographics, 2010

Source: US Census Bureau American Fact Finder

4. USDAFoodAccess; Alias name: Food Desert Statistics, USDA

Source: USDA, http://www.ers.usda.gov/data-products/food-access-research-atlas/go-to-the-atlas.aspx

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| **File name** | **Variable name** | **Description** |
| NE\_Obesity  Alias name: Obesity by county, 2012 | Percent | Percent obese by county |
|  | Name | County name |
| NE\_Income  Alias name: Median Income, 2010 | Data\_Value | Median income by |
| NE\_2010Census  Alias name: Demographics, 2010 | TOT\_POP | Total population |
|  | CHILD\_PER | Percent children under 9 years old |
|  | PER\_9-65 | Percent population between and including ages 9-65 |
|  | PER\_SENIOR | Percent population over age 65 |
|  | PER\_MALE | Percent population male |
|  | PER\_FEMALE | Percent population female |
|  | MEDIAN\_AGE | Median age of population |
|  | MED\_AGE\_M | Median age of males |
|  | MED\_AGE\_F | Median age of females |
|  | PER\_HISP | Percent population Hispanic |
|  | PER\_WHITE | Percent population white |
|  | PER\_BLACK | Percent population black |
|  | PER\_ASIAN | Percent population Asian |
|  | PER\_OTHER | Percent population other |
|  | AREA\_SQKM | Area of census tract in square kilometers |
|  | POPDEN\_SQK | Population density per square kilometer |
| USDAFoodAccess  Alias name: Food Desert Statistics, USDA | URBAN | Census Urbanized Area Tract |
|  | TOTALPOP | Number of people |
|  | PERCENT\_LO | Percentage of people with low access to a supermarket or large grocery store |
|  | LOWA\_POP | Number of people with low access to a supermarket or large grocery store |
|  | PERCENT\_1 | Percentage of total population that is low-income and has low access to a supermarket or large grocery store |
|  | LOWI | Number of low-income people with low access to a supermarket or large grocery store |
|  | PERCENT\_HU | of housing units without a vehicle with low access to a supermarket or large grocery store |
|  | HUNV | Number of housing units without a vehicle with low access to a supermarket or large grocery store |
|  | PERCENT\_KI | Percentage of children age 0-17 with low access to a supermarket or large grocery store |
|  | KIDS | Number of children age 0-17 with low access to a supermarket or large grocery store |
|  | PERCENT\_SE | Percentage of people age 65+ with low access to a supermarket or large grocery store |
|  | SENIORS | Number of people age 65+ with low access to a supermarket or large grocery store |