**Unit 5: New York City Case Study ArcGIS Online Activity**

1. Go to this link (copy and paste): <https://www.arcgis.com/home/webmap/viewer.html?webmap=f4ff7e932c9c4199a2194e2ae1f0b680&amp;extent=-74.6606,40.33,-73.2393,41.1158>
2. Sign into your AGO account

Here you will see layers for New York City. A table with the description of the data layers and associated variables is located below. These layers provide an exploration of issues around the topic of food insecurity, such as demographics (e.g., race, age, sex, income), health (obesity), and locations of farmers markets, food coops, and community gardens.

1. Explore the data sets.
   1. Look at the tables for each data set. You can click on a column heading to arrange in descending or ascending values.
   2. Change the color of the style for income and the US Census data. For instance, select the column for percent blacks in the census tracts within New York City. 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 30% white population.
2. After you get familiar with the data sets, see if you see any patterns within one data set, such as 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 patterns in median income. Zoom into the southern Bronx nearby Hunts Point. Overall, what is the median income for the census tracts in this part of New York City? Next, look at the income of census tracts in Manhattan. How do they compare to the Bronx? What about other places in NYC? How do they compare?
   2. After looking at patterns of income, let’s look at possible relationships between obesity and income. Examine again southern Bronx and Manhattan. There are definite differences in income. How about obesity? Is there a possible correlation (not necessarily cause and effect) between income and obesity? Do you think there might be similar correlations in other parts of the city?
   3. Next, examine where farmers markets are located. From a visual examination, are they evenly spaced around the city? If not, are they clustered in certain places? Where? Can you suggest what might be some reasons why?
3. Conduct spatial analysis. Some possibilities include, creating a buffer around the farmers markets and see what are the demographics or income of people living close by. Is there any pattern where food co-ops are located? How about the community gardens? Do you see any relationship between obesity and 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 the same results? If not, what could be the reasons for the different results?
5. For your presentation, you can do a screen capture of the map you create in AGO and bring this into PowerPoint.
6. Discuss how the spatial analysis and the maps provide information on food insecurity in New York City.
7. What additional data sets would you like in the ArcGIS Online activity? If you would like to search for additional data sets, 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 data set you would like. When you have finished selecting your new data sets, click on Done Adding Layers at the bottom.

**NYC Food Security Data Key**

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| --- | --- | --- | --- | --- |
| **File name** | **Objects** | **Variable name** | **Description** | **Source** |
| NYC Community Survey  Alias: % Obesity by health district | Polygon - health districts | Obesity | Percent obesity | NYC Department of Health and Mental Hygiene  http://www.nyc.gov/html/doh/html/data/chs-data.shtml |
| NYCIncome  Alias: NYC income, 2014 | Polygon - census tract | Data\_Value | Median income by | US Census Bureau  American Fact Finder |
| NYC\_2010Census  Alias: Demographics, 2010 | Polygon - census tract | TOT\_POP | Total population | US Census Bureau  American Fact Finder |
|  |  | 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 |  |
|  |  | MEDIAN\_AGE\_M | Median age of males |  |
|  |  | MEDIAN\_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 |  |
| NYC\_farmers\_market  Alias: NYC farmers markets | point | Locations and other information |  | Oasis NYC |
| NYC\_food\_coops  Alias: NYC food co-ops | point | name |  | Oasis NYC |
| GrowNYC\_Community\_Gardens\_2015  Alias: GrowNYC community gardens, 2015 | polygon | gardenname |  | GrowNYC |
| DCP\_nyc\_freshzoning  Alias: Fresh zoning, DCP |  |  |  | Department of City Planning  http://www.nyc.gov/html/dcp/html/zone/zh\_ztools\_fresh.shtml |