LAB 7 REPORT:

Question 1: Set your environments for the raster: Answer the following questions.
What is the cell size? : The cell size is 30 meters (30 x 30)
What is the processing extent? **CDL_2015**.

Question 2: What processing step was used to generate the count of cells from the "RAW" data from the website? (Watch the demo)
Answer 2: The processing step used to generate the count of cells from the RAW data is the **"Build a Raster Attribute Table"** in Data Processing

Question 3: How did the table change after this step?
Answer 3: After this step the table was able to provide a value and cell count for this raster file

Question 4: Not including the background cells (value=0), how many cells does CDL_2015?
Answer 4: Excluding the background cells, CDL_2015 has 169,413,410 cells

Question 5: How many different named classes are in CDL_2015?
Answer 5: There are 72 different named classes in the CDL_2015

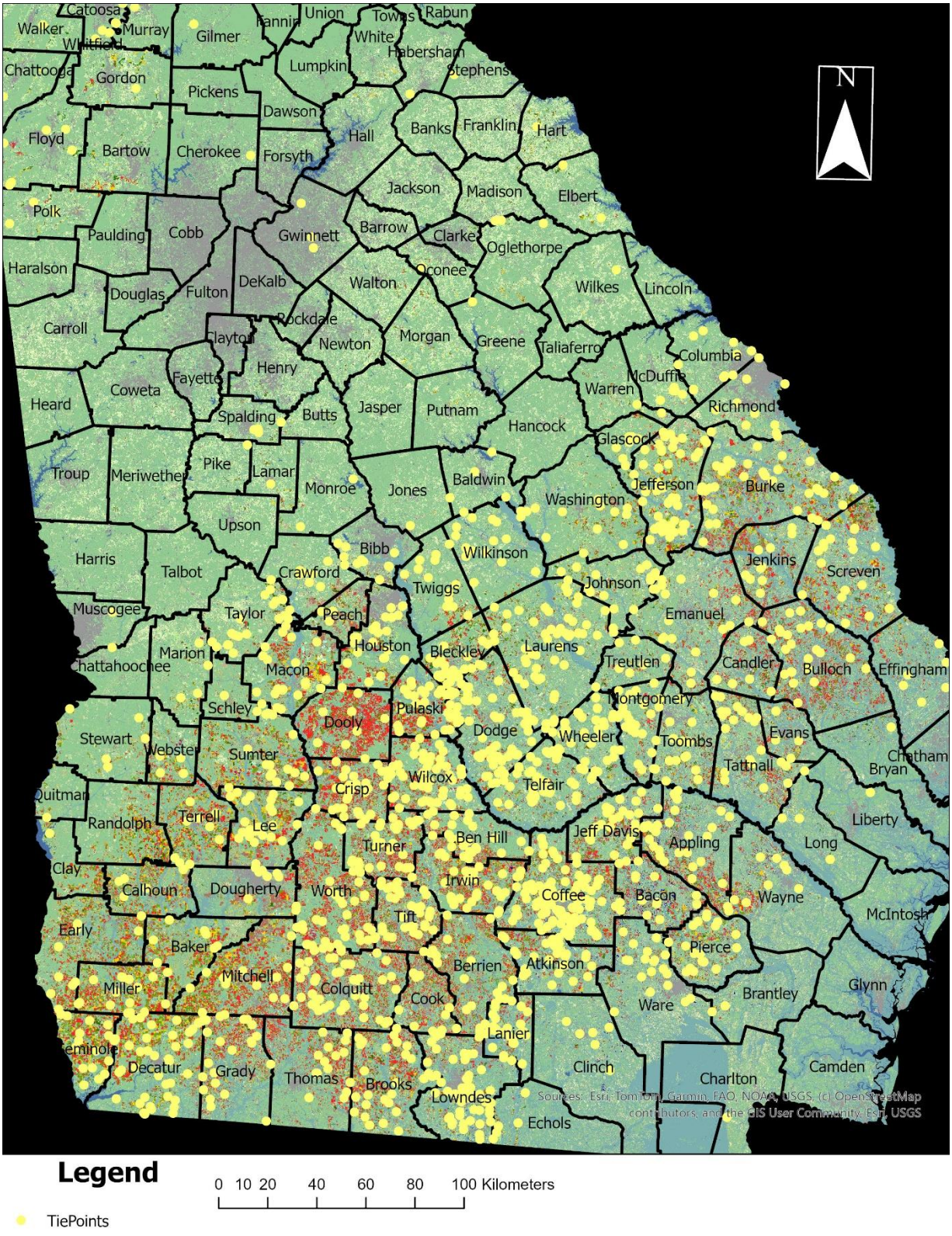
Question 6 (Table): Fill in the table to list most and least COMMON **TYPES OF FOODS** in CDL_2015?

THREE **MOST COMMON** FOODS	AREA in KM^2	THREE **LEAST COMMON** FOODS	AREA in KM^2
1) Peanuts	2797.16	1)Pears	0.044
2)Corn	1392.79	2)Cantaloupes	0.069
3)Pecans	1007.50	3)Barley	0.102

Question 7: How many classes are in crop15maj? There are 72 different named classes in crop15maj
Was this the same or different than your answer in step 1? Why?
There is the same as the number in the CDL_2015 file

Question 8: Did the THREE LEAST COMMON foods change in type and/or in area? If so, how? Provide food types and areas for at least 3 types of foods (or more if the answer requires it). Ensure you also provide change in area for at least 3 types of food. Ensure these are the rarest foods in your crop15maj and CDL_2015 datasets. Note, this is a question that requires you to dive in and really be thorough.
Answer 8: For Pears which is the least common food the area changes from 0.044 KM^2 to 0.036 KM^2. For Cantaloupes the area changes from 0.069 KM^2 to 0.047 KM^2. While the third least common food changes from Barley to Strawberry which changes it's area from 0.1827 KM^2 to 0.051 KM^2

Map 1: Create a nice map of your study area with the crop data in the background. Clearly mark the locations (with points) where there is the highest variety (9) of crops being grown. Add cb_2018_us_county_500k.shp so that you can see county outlines.



Question 9a: What is the total AREA that changed between 2008 and 2015 (Change08_15)? (don't report number of cells here, for full points, use KM squared)
Answer 9a: Between the 2008 and 2015, the total area changed was 57981.45 KM^2

Question 9b: What is the total AREA that changed between 2015 and 2023 (Change15_23)? (don't report number of cells here, for full points, use KM squared)
Answer 9b: The total area that changed between 2015 and 2023 is 67383.77 KM^2

Question 10: What were the topmost common changes (not stationarity) from 2015 to 2023 and how much area for each changed? (ex. Fake example Grass to Water (200 SQ KM).)

Most common change: Deciduous Forest to Mixed Forest area: 4,607 Square Kilometers

Second most common change: Shrubland to Evergreen Forest area: 4,584 Square Kilometers

Third most common change: Evergreen Forest to Woody Wetlands area: 3,817 Square Kilometers

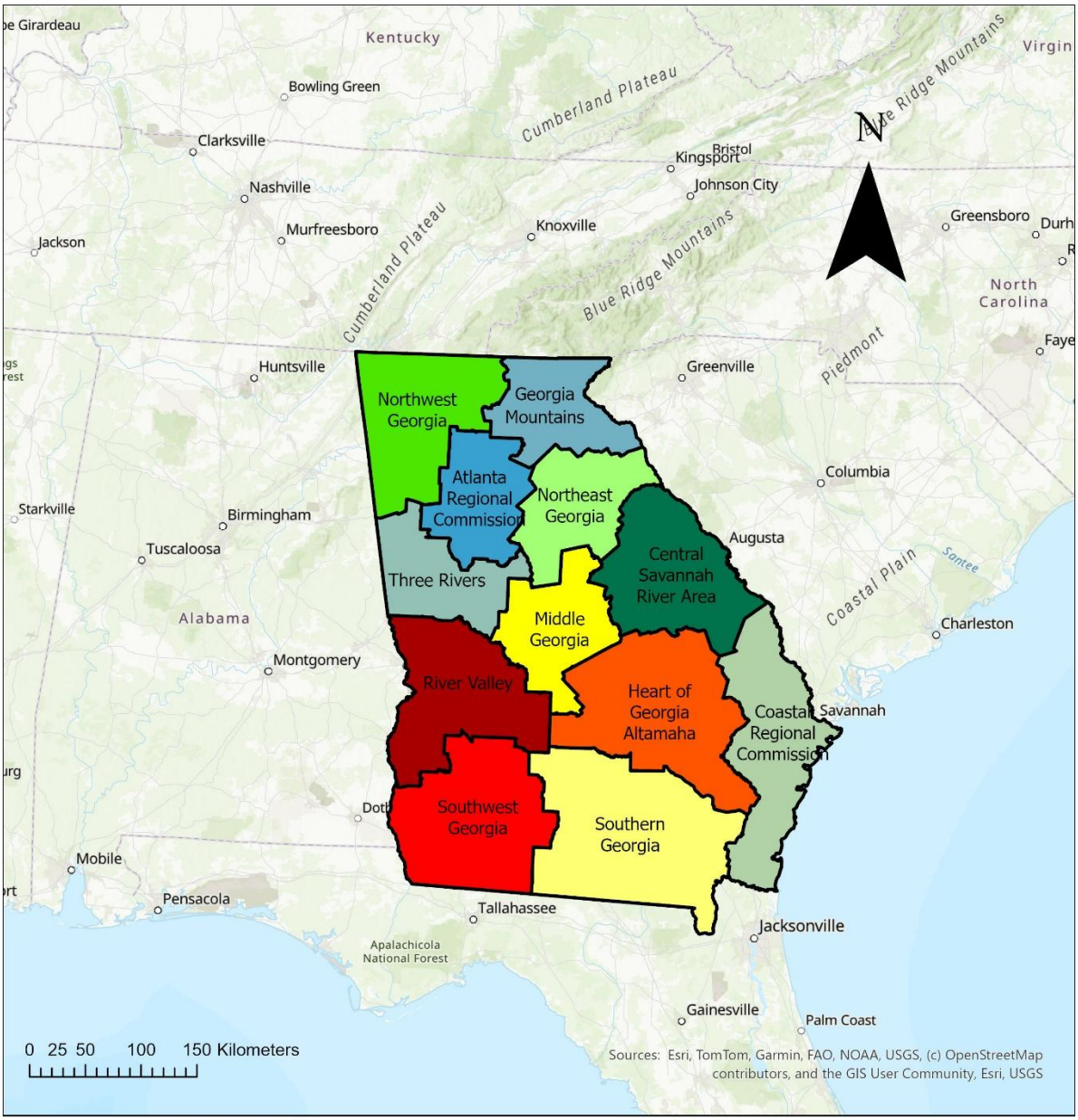
Fourth most common change: Deciduous Forest area: 3,743 Square Kilometers

Fifth most common change: Woody Wetlands area: 3,706 Square Kilometers

Question 11 (Table): For each region, WHAT PERCENTAGE of the cells in each result CHANGED from 2015 to 2023? Don't type them in by hand, please export a table. Round your percents, e.g. 25.2%

Region	Area Change(%)
Middle Georgia	48.65%
Southern Georgia	47.11%
Coastal Regional Commission	35.63%
Atlanta Regional Commission	29.97%
Central Savannah River Area	46.45%
Three Rivers	35.18%
Heart of Georgia Altamaha	52.05%
Georgia Mountains	35.09%
Northwest Georgia	39.03%
Northeast Georgia	36.64%
River Valley	52.83%
Southwest Georgia	52.59%

Map 2: Make a map where each county is colored by how much change occurred in **PERCENT**. More change should be a more 'alarming' color. For full points, **include a label for each region**. Include a legend, scale bar and caption describing what you see. It is optional to include county outlines (i.e., counties before the dissolve). If you include county outlines, make them thinner than each region's boundaries.



Legend

GeorgiaEcon

ZonalSt_cb_21

Value

- 29.97%
- 35.09%
- 35.18%
- 35.63%
- 36.64%
- 39.03%
- 46.45%
- 47.11%
- 48.65%
- 52.05%
- 52.59%
- 52.83%

This map highlights regional variation in cropland change over time. The Atlanta Regional Commission saw the lowest change (29.97%), while River Valley experienced the highest (52.83%). Most regions fall between 35% and 50%, indicating widespread but varied landscape turnover. The data reflect significant shifts in land use across nearly all regions.