

# Lab 6

## Raster Operations

### Answers

**QUESTION 1: What is the cell size? How many columns and rows are there? (Answer should be columns, rows)**

Cell Size: 100 \* 100

Columns: 6092

Rows: 8458

**QUESTION 2: How many cells does the raster have?**

38,217,443

**QUESTION 3: Which are the MAIN states represented in the raster?**

Arkansas, Louisiana, Mississippi

**QUESTION 4:**

a. How many different named classes are there in the data?

65

a. Each cell in the CLASS\_NAME column is given a value. Is this value nominal, ordinal, interval, or ratio data?

Nominal

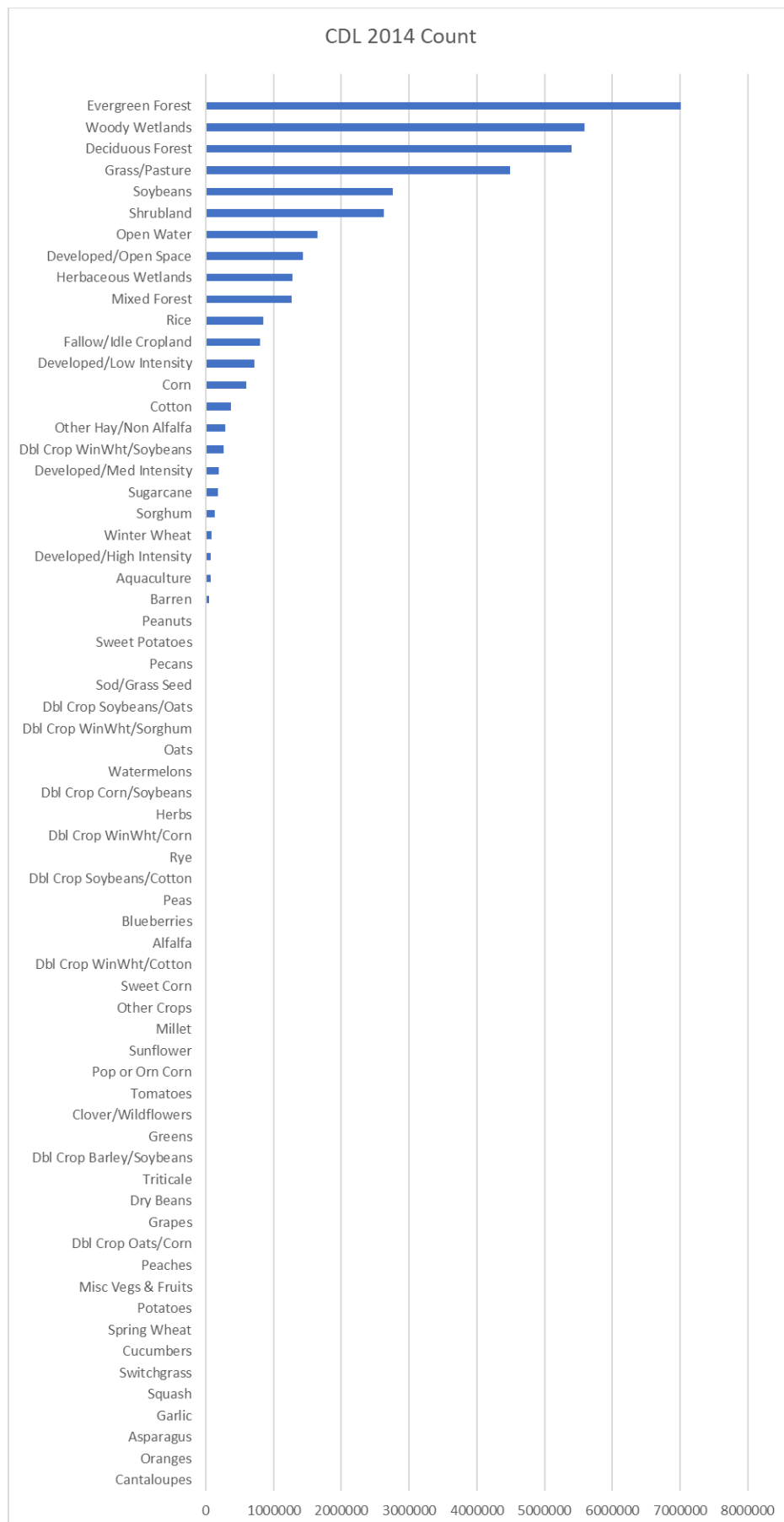
b. What are the three most common foods grown, and what percentage of the Delta region is devoted to these crops? (to get the %, divide the count field by the total cells from question 2)

Soybeans: 7.20672756678148%

Rice: 2.22935898668051%

Corn: 1.55674988512444%

**GRAPHIC 1: Right-click on your graph and export it to an image file. Turn this in with your short report at the end.**

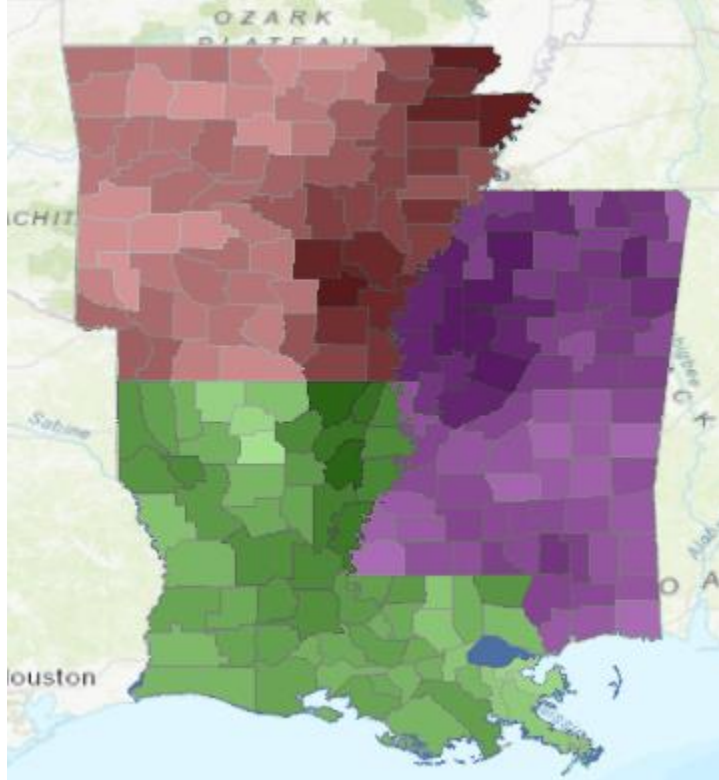


**QUESTION 5: In a few sentences describe the spatial pattern**

There seems to be a concentration of varieties near the intersections between Arkansas, Louisiana, and Mississippi.

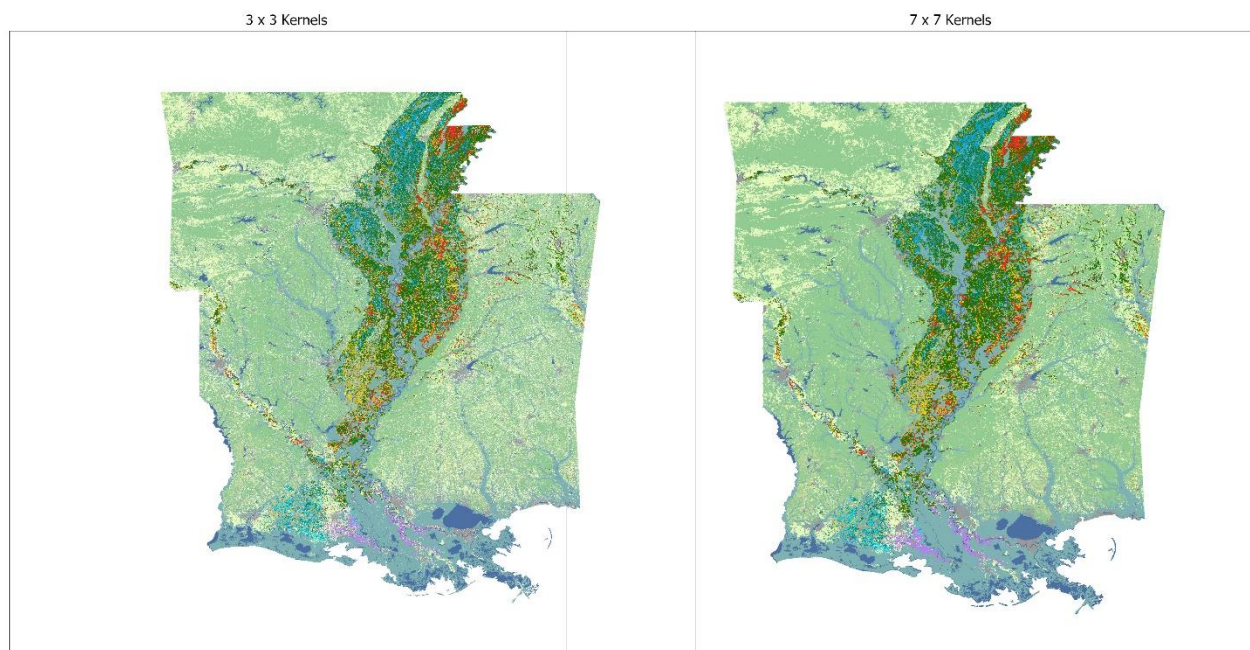
**QUESTION 6: What would happen if we used Sum instead of Variety? Why could this cause a problem?**

There might be output, but it would be essentially meaningless, because the data is nominal and can't be summed.

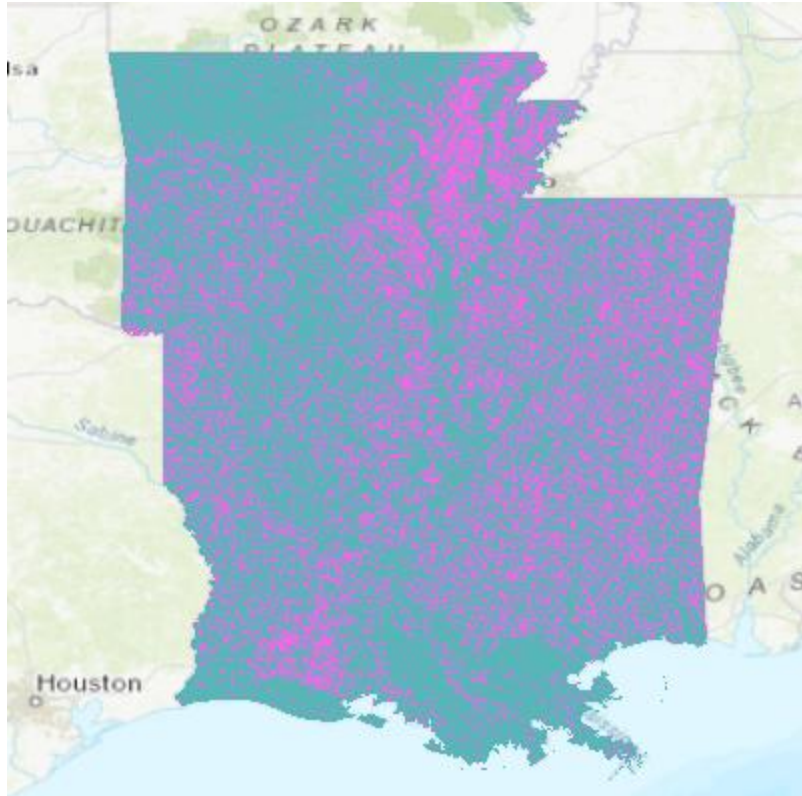
**GRAPHIC 2: Take a screenshot of your Crop14Variety map and include it in your report****QUESTION 7: How do the maps look different between the two different kernels?**

The data is much more granular for the 3 x 3. There are more cells overall, so the precision of the information being conveyed is higher. The 7 x 7 is more generalized.

**GRAPHIC 3: Export your layout as a .jpg and include it in your final report. No need for a legend in this map.**



**GRAPHIC 4:** Take a screenshot of your binary change map showing which crops were changed or not. Include this in your report.



**QUESTION 8:** You have been asked to report on agriculture in the Mississippi Delta region. Using the graphics you have created for this lab and your new knowledge of the agriculture in the region, write a well written paragraph with references to the graphics to explain to an agricultural interest group about what you know.

There is a wide variety of crops in the Mississippi Delta region. Forests, wetlands, and pastures dominate much of the region (Graphic 1). Soybeans, Rice, and Corn are the most commonly grown foods (Graphic 1). The area where Arkansas, Louisiana, and Mississippi meet has the highest amount of crop diversity, as is shown by Graphic 2. There is a large degree of change in crops from year to year, as can be seen in Graphic 4. Overall, the Mississippi Delta region is home to a diverse variety of crops, forests, and wetlands.