**Crop Classification and Land Cover Change Analysis  
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**Project Overview**

This lab used the USDA Cropland Data Layer (CDL) to analyze agricultural land use patterns, crop diversity, and land cover changes across time (2008–2023). Raster data was processed using attribute table generation, reclassification, and temporal comparison to evaluate shifts in land cover classes. The study also investigated rare and dominant crop types, spatial variability in agricultural diversity, and land cover change by county.

**Map 1: Crop Variety Hotspots with County Boundaries**

**Description:**  
This map visualizes the 2015 cropland raster across the study area, overlaid with county outlines. Specific points are marked where the highest crop diversity (9 unique crops) was detected within local areas. These “hotspots” indicate regions of intensive and varied agricultural activity, providing insight into regions of agronomic complexity.

A map of the state of georgia

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**Table 1: Most and Least Common Crops in Raster Layer**

**Description:**  
This table summarizes the most and least frequently occurring crop types in raster layer by area. It highlights the dominance of crops like peanuts, corn, and pecans, while pears, cantaloupes, and barley appeared only sparsely across the landscape.

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| --- | --- | --- | --- |
| 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 |

**Table 2: Major Land Cover Transitions (2015–2023)**

**Description:**  
This table displays the percentage of raster cells within each region that experienced a land cover change between 2015 and 2023. By calculating change as a proportion of the total cells in each county, this metric normalizes change intensity across different geographic areas. Regions with higher percentages suggest more dynamic land use patterns—whether due to agriculture, urban expansion, or ecological succession—while regions with lower percentages indicate relative landscape stability. This analysis provides a comparative view of spatial change across counties and helps identify priority areas for environmental monitoring or land management interventions.

**A table with text and numbers

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**Map 2: Land Cover Change (2015–2023) by County**

**Description:**  
This choropleth map illustrates land cover change from 2015 to 2023 at the county level, with regions shaded by the percentage of cells that changed. Brighter and more alarming colors represent higher degrees of transformation. Labels and a legend support clear interpretation. The visualization shows which counties experienced the most ecological or agricultural turnover.

A map of the state of georgia

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