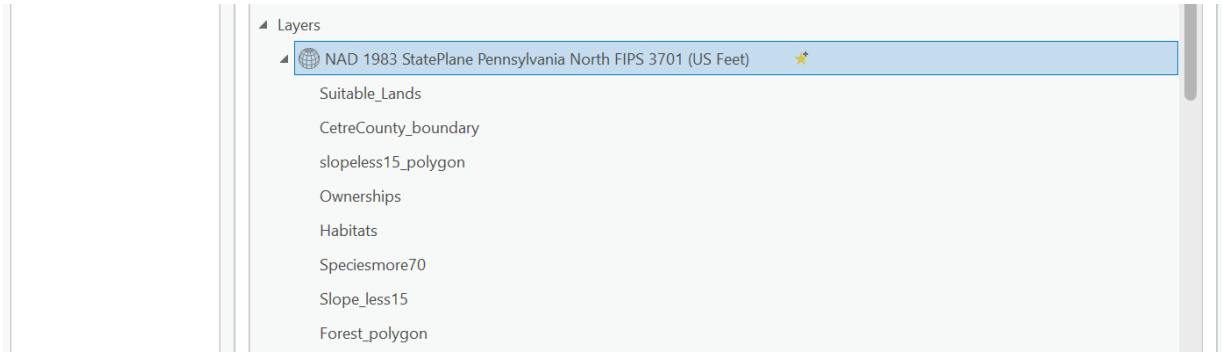
Documentation of Each Criteria

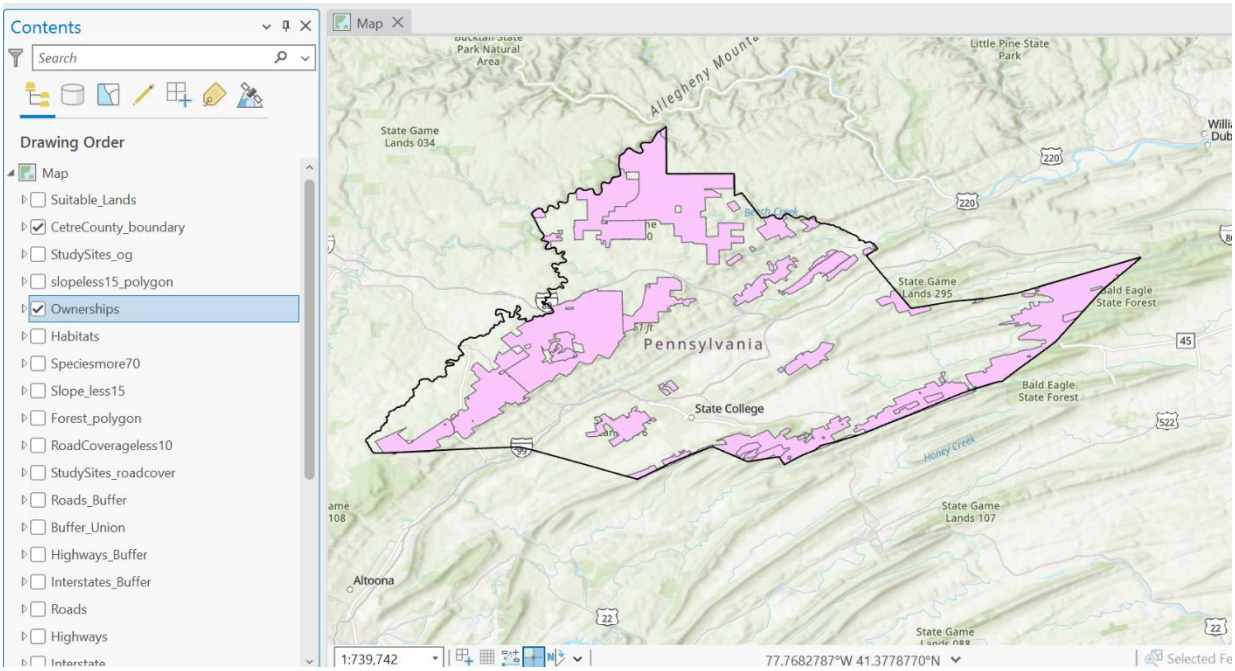
- **All layers are in the same projection system**



- **Ownership: Publicly owned land.**

Steps:

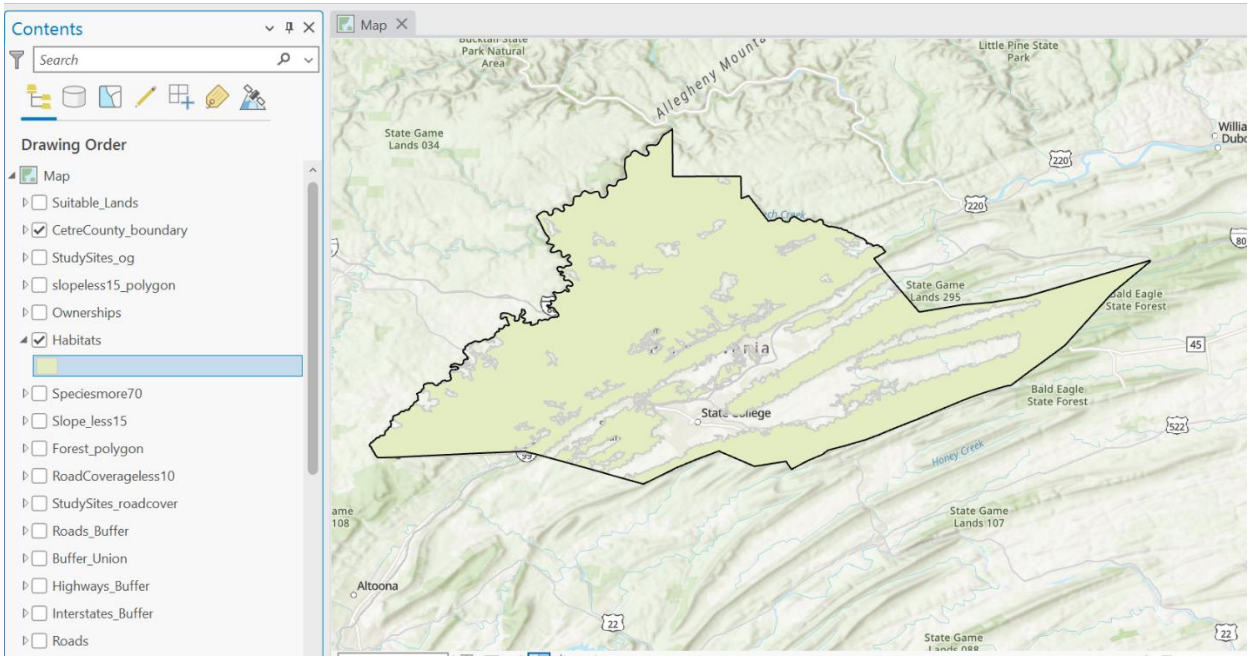
- After adding the layer to the current map, the map has been projected to the "NAD 1983 StatePlane Pennsylvania North FIPS 3701 (US Feet)" coordinate system.
- Public-owned land has been exported from the layer selecting the desired lands using "select by attributes", satisfying the condition "OWNERSHIP=Public"



- **Habitat Potential: High habitat potential.**

Steps:

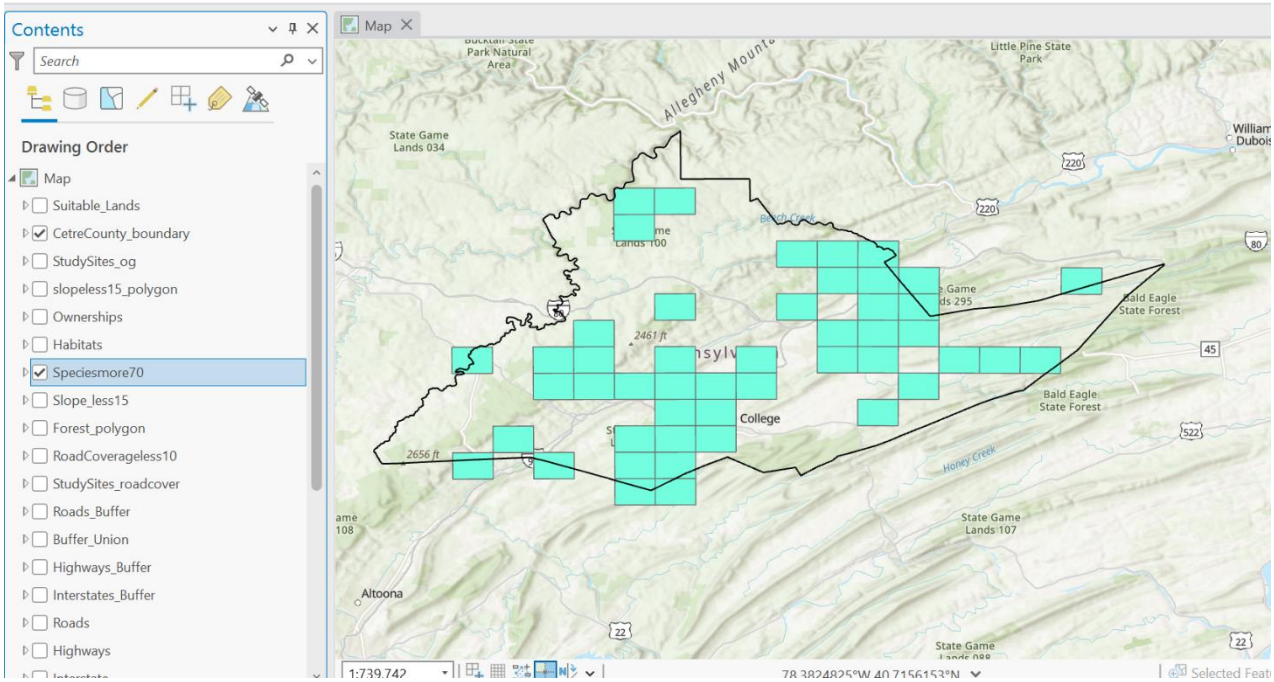
- After adding the layer to the current map, the map has been projected to the "NAD 1983 StatePlane Pennsylvania North FIPS 3701 (US Feet)" coordinate system.
- Higly potential habitat lands have been exported from the layer selecting the desired lands using "select by attributes", satisfying the condition "HABITATPOT=High"



- **Species: Greater than 70 bird and mammalian species combined.**

Steps:

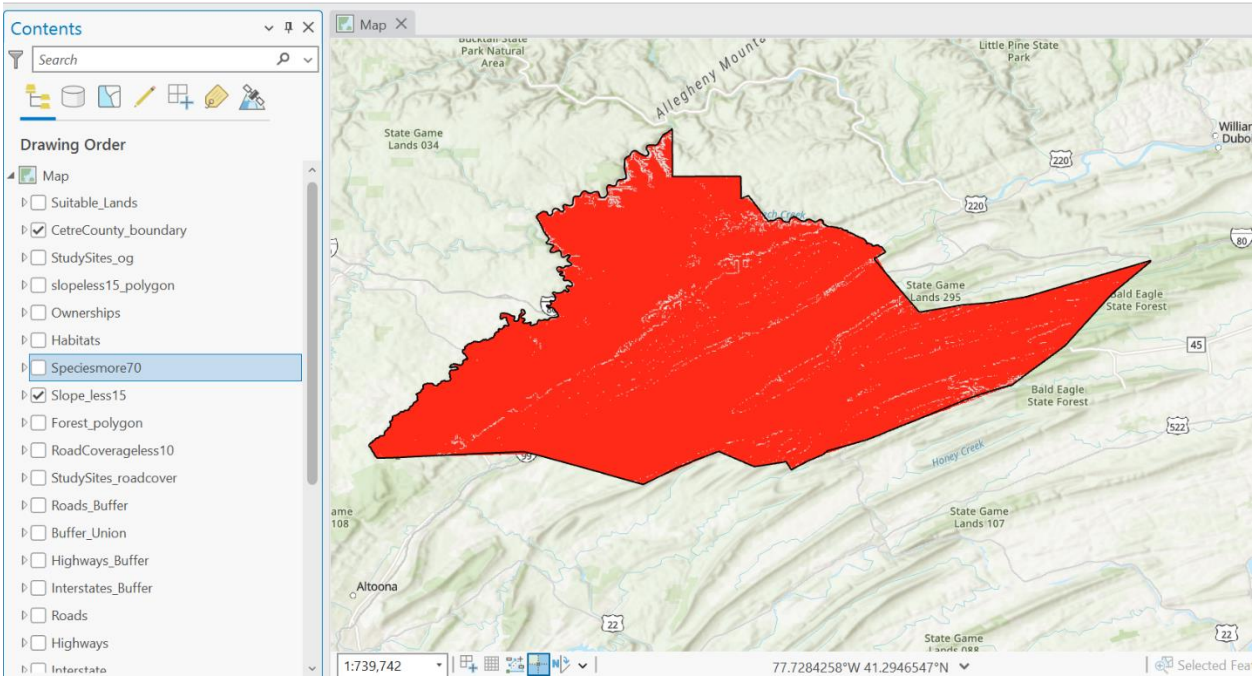
- SpeciesRich.csv was a standalone table. After converting the .csv file into the GIS readable table, “summary statistics” has been performed to combine the values of mammals and birds.
- After changing the projection of studysites to the “NAD 1983 StatePlane Pennsylvania North FIPS 3701 (US Feet)” coordinate system, the table has been joined to this layer to provide it a geometry.
- Then desired study sites were exported from the layer selecting the sites having more than 70 species using “select by attributes”, satisfying the condition “Combined>70”



- **Slope: Slopes less than 15%.**

Steps:

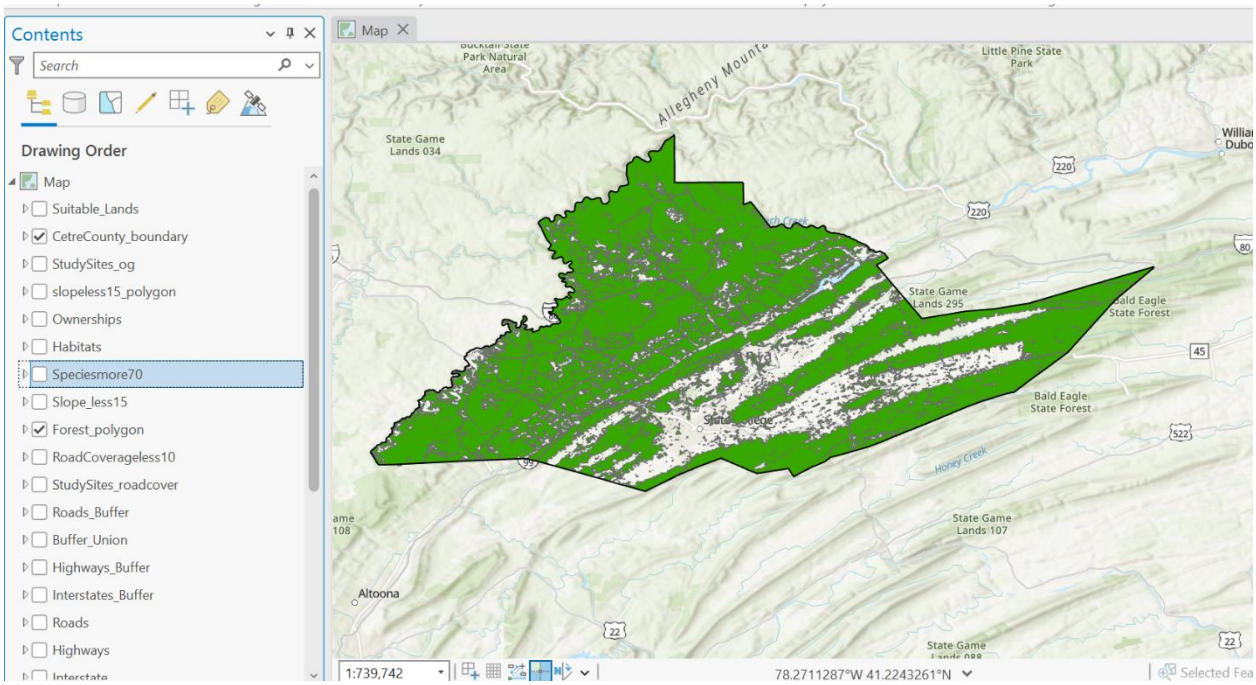
- After adding the layer to the current map, the map has been projected to the "NAD 1983 StatePlane Pennsylvania North FIPS 3701 (US Feet)" coordinate system.
- The file has been clipped to the county boundary.
- Slope percentage data has been created from dem data.
- Then using the "raster calculator", a Boolean raster of the places having slope less than 15% and others has been generated.
- After converting raster data into polygon using "raster to polygon", a polygon feature has been extracted only for the places having slopes less than 15% or having the raster value 1.



- **Landuse: Forested areas.**

Steps:

- After adding the layer to the current map, the map has been projected to the "NAD 1983 StatePlane Pennsylvania North FIPS 3701 (US Feet)" coordinate system.
- The file has been clipped to the county boundary.
- Using "reclassification", I made a reclassed raster file including a class 400 having the values 41, 42, and 43.
- After that using the "raster calculator", a Boolean raster of the forested areas and others was generated.
- After converting raster data into polygon using "raster to polygon", a polygon feature has been extracted only for forested areas or the places having the raster value 1.



- **Transportation: Less than 10% of each study site (study sites) occupied by buffered roads, highways, and interstates.**

Steps:

- After adding the layer to the current map, the map has been projected to the "NAD 1983 StatePlane Pennsylvania North FIPS 3701 (US Feet)" coordinate system.

- The file has been clipped to the study sites.
- Then three different line features were exported from the layer selecting the desired road types, interstate, highway, and roads, using “select by attributes”, satisfying the condition respectively “Interstate not equal to null”; “US_Route not equal to null, State_Route not equal to run”; and “all remaining features are roads”.
- Then using the “buffer” tool, 100m, 50, and 20m buffer feature classes were generated respectively for interstate, highway, and roads.
- Using the “Union” tool, a single feature class has been generated accumulating these three different buffers.
- Then using the “intersect” overlay tool, study site-wise buffer areas of each road have been separated. Also, the areas of the roads have been calculated using “calculate geometry”. After that, using the “summary statistics” study site-wise total areas covered by the roads have been calculated.
- After calculating the area of each study site using “calculate geometry”, the table of the calculated road area of the study sites was joined with the current study site layer.
- Finally, developing an equation using the “calculate field” the coverage of the roads in each study site was generated. And desired study sites were exported from the layer selecting the sites having less than 10% occupied by the road buffers with the help of “select by attributes”, satisfying the condition “occupied area<10”