Final Project:
Habitat Suitability Analysis

Introduction
The goal of this project is to learn how to tackle a complex problem using GIS. This includes acquiring the data necessary for the project, identifying the steps and tools needed to accomplish the project, completing the analysis, and summarizing your results.

Selection Criteria:
Priority conservation areas should fulfill the following criteria:
- Greater than 70 bird and mammalian species combined.
- Less than 10% of each study site (studysites) occupied by buffered roads, highways and interstates.
- High habitat potential.
- Publicly owned land.
- Forested areas.
- Slopes less than 15%

Notes:
- Use ArcGIS Pro to explore the data first to get a sense of where the analysis is located, what data is contained within each data file, and what types of relationships there are between the different data sets. For example, identifying which layers, rasters or tables need to be joined, queried, buffered, dissolved, intersected, etc.
- Experiment with the geoprocessing tools so that you get an idea of which methods will be required for this analysis.
- You should also think about the order in which you intend to analyze the data, as this will have a big impact on the amount of time it takes to process the data. You should structure the order of operations so that in each step you reduce the amount of input data required for subsequent steps. Order is especially important when performing overlay operations (e.g., union) and joins between any two feature classes. Processing time to complete one of these operations can be reduced substantially if you sequence your operations correctly.
- In order to properly calculate percent area transportation and also the total area of the final candidate areas all data should be projected to a coordinate system that displays area accurately. In this case you will use ***NAD83 Pennsylvania State Plane North (US Feet)***
- To calculate the percent road area of each study site, you must approximate the road corridor by creating buffers around each of the road features. Use the road types to create buffers around the **Roads, Highways** and **Interstates** that measure **20 meters, 50 meters** and **100 meters,** respectively. Remember: in order to buffer accurately, the map units must be set in the data frame properties. Area within the buffers is not suitable land.
- Since total area is of interest for final decision, you will need to update the area calculation.