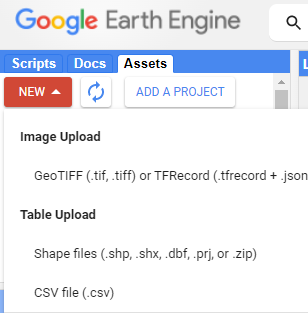
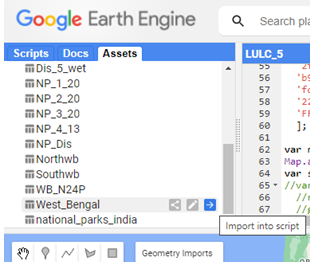
**Objective**: Identify the hotspots of human wildlife conflicts geographically due to urbanization and the goal is to identify the urban and forest boundaries touching each other.

1. Upload the West Bengal shapefile in Google Earth Engine(GEE) via assets tab. Files in Dissolve\_WB

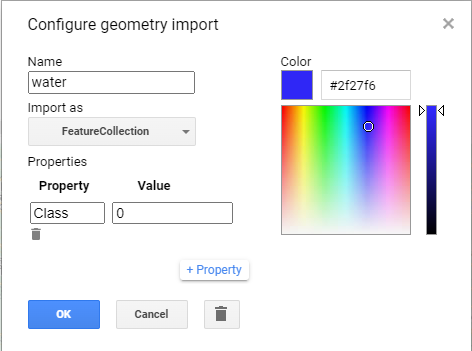
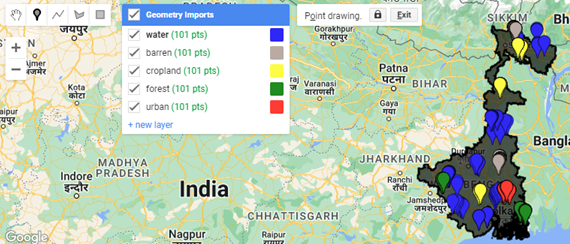


2. Import the file to code editor as shown below

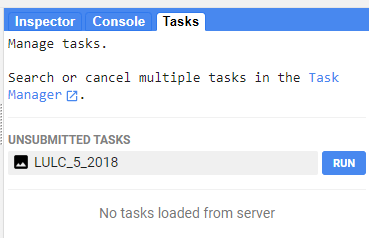


3. Copy the code from LULC\_5.txt to GEE code editor. Code has reading sentinel 2 satellite collection of images for an year and use filter for cloud free image in that year, clippling the cloud free image according to the West Bengal shapefile, Training supervised cart classification on collected data and created a new land use land cover (LULC) layer.

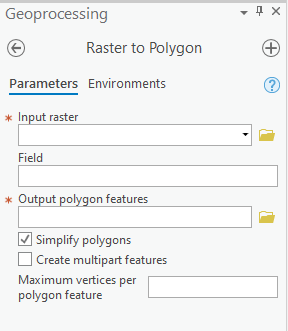
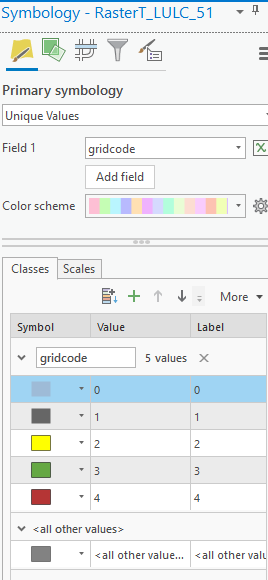
4. Create point geometry and assign classes in settings, manually collect the training data and import the data to code editor



5. Run the code and run the task to export the classified tiff image to Google drive. File is LULC\_5.tif



6. Load the classified tiff file into Arcgis pro and convert it to vector data by using raster to polygon tool. Files in LULC\_vector



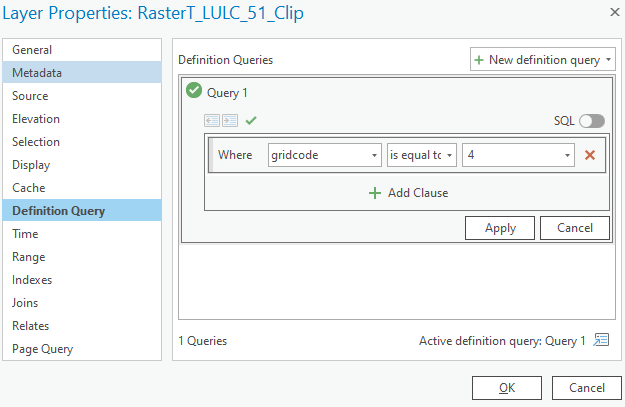
7. Change the symbology to the corresponding colors for classes

8. Clip the vector according to the boundary of West Bengal shapefile by

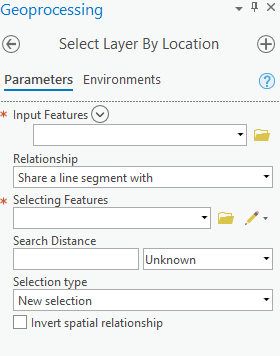
clip tool. Files in LULC\_clip

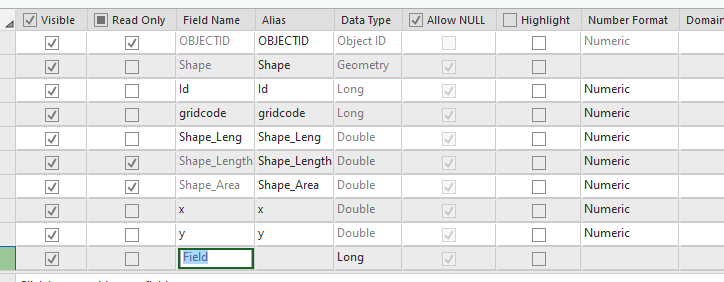
9. Filter by urban and forest and save them as separate vector files

Files in Urban and Forest respectively



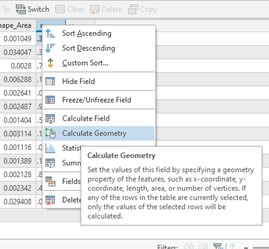
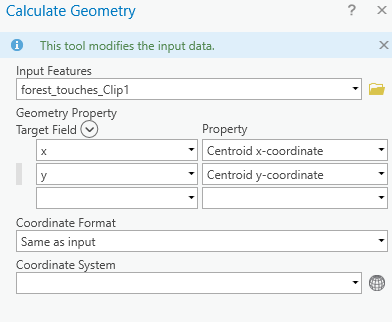
10. By using Select by Location tool to filter only polygons of urban and forest touching each other with a line segment and save them separately. Files in Urban\_touches and Forest\_touches repectively



11. The forest polygons from above, take polygons from median to q3 to eliminate the outliers (not proper metric can be changed). Files in Forest\_filter

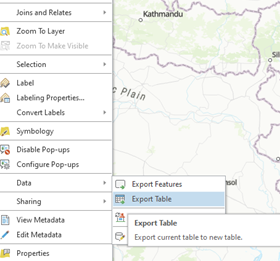
12. Calculate the centroids of those polygons by creating new fields x,y in attribute table

13. Calculate the geometry of created x, y fields and assign to coordinates

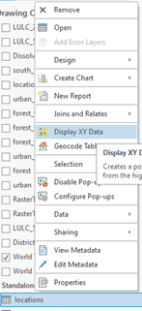


14. Clip the forest polygons according to boundaries of north and south regions by using clip tool. Files are in NorthWB, SouthWB, forest\_touches\_Clip\_north, forest\_touches\_Clip\_south respectively

15. Export the above result layers as tables. Files in locations\_north, locations\_south respectively



16. Display the XY coordinates on to map from the exported table. Files in locations\_north\_XY, locations\_south\_XY respectively



**Analysis for National Parks in India:**

1. Using webscrapping and geopandas extracted national park locations. Files in National\_parks

2. Load the National park csv into arcgis pro and Load the India map shape files - IND\_adm.

3.Using select by location tool filter the district polygons contains the national park locations from csv table in arcgis pro. Files in NP\_Districts.

4. Upload and import this NP\_Districts shapefile in GEE and same steps as above shown for west bengal except skip 4 step(instead of manual collection of training data reading from GEE datasets - <https://developers.google.com/earth-engine/datasets/catalog/MODIS_006_MCD12Q1>) and in step 3 copy script from NP.txt

**Other Data :**

India map shapefiles with including Pakistan and China occupied kashmir - India\_kashmir\_districts, India\_kashmir