GEOG577 F25 – Lab 3 – Collect Training Data for Classification

Due T 02/14/25.

Devise a land-cover taxonomy for the scene and collect training data for each class in your taxonomy. In practice you will create one *feature collection* for *each class* and *collect training pixels* for each class from throughout the image.

The process for collecting training data in GEE is outlined in the steps below. The process can be generally described as three primary steps:

1. Creating a new *feature* class for each land-cover type to store the training data.
2. Load a basemap to use for selecting your training sites.
3. Collecting the training data by manually defining training points or polygons.
4. Exporting the training data.

Define a new *Feature Collection* for each land-cover type of interest:

Find the drawing tools in the upper left corner of the map window. Click the icon to add point markers.
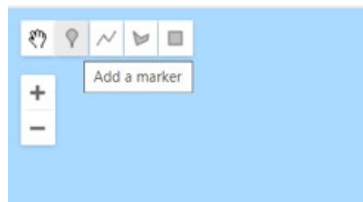
A new *Geometry Imports* panel will appear containing a default name ('geometry') for the new geometry that you can now draw in the map window.
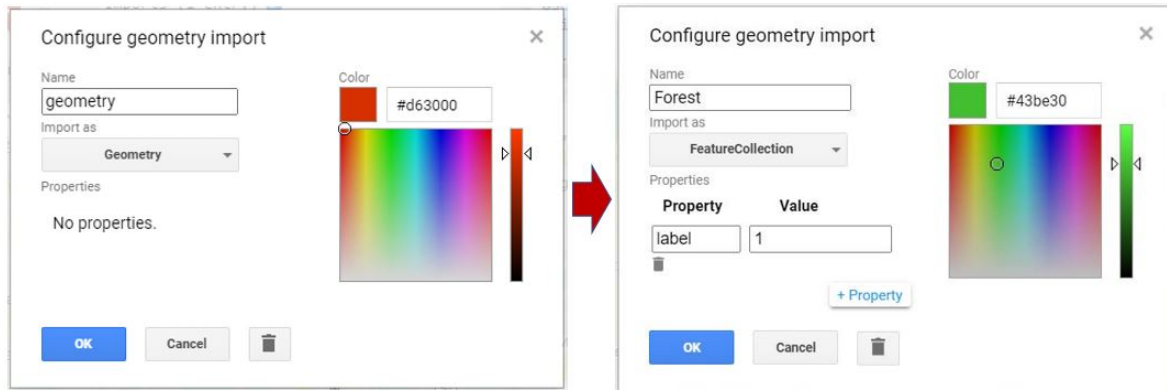

Hover over the name 'geometry' and select the gear icon that appears so that you can edit the layer configuration.

1. Give the layer a name related to the first land-cover type of interest, for example 'Forest'.
2. Set the *type* (import as) to *FeatureCollection*.
3. Add a property by clicking on the *+ Property* box.

4. Provide a 'label' property with a *unique* integer ID. For example, '1', for forest as below.
5. Change the color if you like. For example, you can use green for forest.

Your panel should now look something like:

6. Click *OK* to save your changes.

Back in the map window, hover over the geometry imports and select the option *+ new layer*.

Repeat steps 1 to 6 until you have a *Feature Collection* set up for each land cover type of interest.

Now that you've got the feature collections established, proceed class by class collecting point data. Here are a few considerations:

*   Training data should be representative of your entire study region. This means that collecting more data across the study area is better than a few large training areas.
*   Be sure to include examples on the edge of class boundaries, as these areas will be most challenging to distinguish in the classification stage.
*   There is no magic number for an adequate number of training points. Be prepared for this to be an iterative process in which you collect training data, perform your analysis, and then collect more training data to address misclassification errors.
*   Take your time. Select the land cover layer in the *Geometry imports* panel in the map window.
*   Select the point marker and click in the map to add points of that land cover. You can toggle the image composite on and off in the Layers panel. You can also toggle between the map and satellite composite in the upper righthand corner of the map window.

1. ***If you drop a point accidentally, you can move it or delete it with the pan hand.***

2. Repeat the process until you have many samples of each of your land-cover classes throughout your study region. Save your script occasionally during the process by selecting the *Save* button at the top of the code editor window.