Assignment 4 – GGS416

Due October 22nd, 2022

Extracting pixel/objects from satellite imagery is a very powerful technique. Building on the class work in week 8, you should carry out the following:

1. Get the coordinates for Great Falls Park.
2. Download a clear image and clip to a small area, ideally showing the river around Olmsted Island and/or Rocky Island. Your first choice should be via Planet, but use Sentinel as a backup, if necessary.
3. Extract the water areas, so that you have a clear shapefile for Great Falls.
4. Overlay the shapes on the original image (e.g., via a piece of GIS software).
5. Critically review this process and what you found (~200 words).

Once you have collated the code, either submit the underlying notebook as a pdf, or take screenshots of your notebook, and paste into a word document for inspection. Make sure you submit the final shape files you create too. The best submissions usually include all of this content placed in a word document, with a written narrative accompanying it, and then provided for review in a pdf format.

50% of the grade is dependent on your submitted code, which should feature your annotations/comments, to demonstrate you understand what the extraction code is doing. This matters because future classes build on this knowledge sequentially.

The point of this exercise is to enable you to become familiar with (i) extracting imagery from an imagery provider (ii) clipping these images to an Area of Interest (AoI), and then (iii) extracting pixels/objects for analysis, as this is critical for your coursework projects (and future careers!).

The Mason honor code applies.

You must ensure your submissions are in a respectable report format with proper headings, figure numbers, figure titles, citations, page numbers etc. Use this as an opportunity to demonstrate your professional scientific writing voice (e.g., authoritative in tone, and avoiding easy mistakes like abbreviations).