<u>Assignment 2 – Due October 1st 2023</u>

In this assignment you will demonstrate your ability to obtain satellite imagery, display that imagery within your jupyter notebook, and then explore the associated metadata.

This task contributes to you achieving learning outcomes 1 & 3 for GGS416.

Please complete the following:

1. Go obtain a multiband satellite image of a chosen location (preferably to do with one of your potential coursework project study areas).
2. Use rasterio to load this image, and then pyplot to export as:
    a. Three separate red, green, blue single-band images, each exported as .png or .jpg (30 points)
    b. A single true color composite image (20 points).
3. Write code to separately print the following from the image metadata, including the:
    a. Coordinate reference system (10 points)
    b. Band count (10 points)
    c. Width (10 points)
    d. Height (10 points)
    e. Dtype (10 points)

50% of the points for each task are dependent on the code submitted in tandem with these answers. Without the code, it is not possible to establish how you obtained the answers. Providing the code ensures you actually used the methods taught in class. Adding comments to your code to explain how you carried out each step, will make your submission stronger.

Make sure you submit your single band and true color composite image files too.

Provision of the underlying code also enables the assignment to be evaluated for cheating/plagiarism. Please remember the Mason Honor code applies. All work must be your own. If you fail to work through these questions on your own, you will make it considerably harder to perform in your individual coursework project, later in the semester.

Make sure you either copy and paste your code at the end of your submission document for review, or upload your notebook to GitHub. If you copy and paste the code, it would help to take a screenshot of your code response of each question, so the printing part of the task can be viewed.

Any questions on this assignment should be directed to the MyMason discussion board.