Marsh Detection/Mapping Method

Study area:

• Virginia coastal areas

Data acquisition:

Images

• Sentinel-2 MSI: 2015 – present (all year round should be included for classification)

• Resolution: 10 m (RGB/NIR), 20 m (5,6,7,8A band: designed for vegetation characterization, SWIR 11&12 band: evaluating vegetation moisture stress), 60m (1, 9, 10: atmospheric correction and cloud screen).

• How to get data?

• Python code retrieve the raw data from santinelsat

• Google earth engine to retrieve the images from study area

Labels

• National wetland inventory (NWI)

• NOAA Coastal Change Analysis Program (C-CAP): Starting 1996 and updated every 5 years, lack of marsh details and remain high uncertainties.

• Collaborating with local agencies and universities, NOAA National Estuarine Research Reserve Systems (NERR) have been providing long-term monitoring with detailed information concerning coastal habitat conditions over the 26 designated estuaries on the U.S. coasts.

• Virginia shoreline inventory (VSI): marsh boundaries with the type of marshes.

• Understand the different types of marshes that coded in this database, and differentiate into high marsh and low marsh.

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