

## MAPPING SEAGRASS BEDS USING LANDSAT 8: CASE STUDY FROM PASCAGOULA RIVER BASIN, MISSISSIPPI, USA

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**Abstract:** Seagrass beds greatly contribute to the health and productivity of wetland and estuary ecosystems. Seagrass beds shelter aquatic organisms, improve the clarity of water by trapping sediment via photosynthesis, and serve as a nursery for aquatic organisms. Seagrass beds are identified as blue carbon ecosystems because of their ability to sequester carbon. Due to their importance, land managers should regularly map the distribution of seagrass beds to monitor their stressors and overall productivity. Seagrass beds within the Pascagoula River Basin of Mississippi has been mapped before using GIS software. With modern remote sensing technology there is an opportunity to create affordable and convenient mapping techniques to monitor seagrass beds distribution in the Pascagoula River Basin. Within this background, this study aims to evaluate the applicability of medium resolution remote sensing data (Landsat) to map spatial extent of seagrass beds within Pascagoula River basin of Mississippi. Using data points of known seagrass location from a previous study, remote sensing data was classified to map and derive spatial extents of the seagrass beds. With this information, field data collection was completed to support the predicted location of seagrass by logging the GPS coordinates. Accuracy assessment of the derived maps support the collected ground observations. Our findings contribute to understanding the applicability of remote sensing data for mapping seagrass beds of coastal Mississippi.

**Keywords:** Remote sensing, blue carbon ecosystem, seagrass beds