

ALGORITHM DEVELOPMENT FOR LOCATING SEAGRASS BEDS IN THE PHILIPPINES USING SATELLITE IMAGERY

Silvano Kathleen¹, Laura David², Erlinda Salamante², Rene Rollon² and Mark Windell Vergara²

¹ Ecological Marine Management, Vrije Universiteit Brussel (VUB)
Pleinlaan 2, 1050 Brussels, Belgium
E-mail: mimoyski@gmail.com

² Marine Science Institute, University of the Philippines
Diliman, Quezon City 1101, Philippines

Seagrass beds act as filter of silt incoming from the land and as barrier of incoming waves from the sea. More importantly, these coastal habitats act as nursery grounds for fish and other marine species. Identification of distribution and abundance of these habitats are therefore crucial for fisheries and coastal resource management. With its 36,000km coast and 7,100 islands, locating seagrass beds in the Philippines using standard field measurements is both tedious and impractical. As an alternative approach, this study focused on using LANDSAT 7 satellite images for identifying seagrass areas in Philippine waters. A set of images corresponding to sites rich in *in-situ* data were used to develop and compare appropriate algorithms. The algorithm that gave the lowest of errors (omission and commission), kappa coefficient and confusion matrix was then applied to the remaining available LANDSAT 7 images, producing a satellite-derived map of seagrass beds. Results proved that the method is especially useful in the location of these seagrass beds in the images that are available. Subsequently, these images may be applied in fisheries monitoring and management activities for coastal ecosystems. Though satellite images are still costly; however, it is justifiably cost-effective to use satellite technology for long term and sustainable operations. If there will be data sharing and networking among research users of LANDSAT images the increase pool of available images will make this method significantly more cost effective than standard field measurements.

References

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