

Visual and Digital Interpretation of ALOS Image for Benthic Habitat Mapping: Case Study of Wakatobi Islands

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Information derived from medium spatial resolution images like ALOS for benthic habitat mapping is needed in marine and coastal area management, especially for Indonesia with large coastal area. Benthic habitat mapping can be done using remotely sensing methods both visual and digital interpretation. Visual interpretation deals with how clear the image enables interpreter to visually analyse benthic habitat with various condition influenced by atmosphere, wave, and water column. Digital interpretation is basically assist the interpreter to approach and recognise benthic habitat classes based on spectral parameters, and also sometime based on additional geometrical, spatial, textural properties. This paper shows the use of either pixel-based or object-based classification. Each method has different accuracy level, and also different time and cost efficiency.

Comparison of both methods will give a distinct and clear purposes and objectives why using the method. Furthermore, the differences among various digital interpretation methods will give different results as well. This paper discusses these different interpretation methods in benthic habitat mapping. Accuracy assessment of each interpretation result based on groundtruth data will be used as main methods in justifying thematic data quality, besides time and cost efficiency. The result shows that digital interpretation gives beneficial in terms of accuracy and time efficient. Although visual interpretation is conventional, it gives better accuracy result in small area of study only.

Keywords: visual, pixel-based, object-based, thematic accuracy, benthic habitat