

**EVALUASI METODE SURVEI FOTO-TRANSEK DAN INTERPRETASI
VISUAL FOTO UDARA SEBAGAI SAMPEL LAPANGAN UNTUK
PEMETAAN LIFEFORM TERUMBU KARANG MENGGUNAKAN CITRA
PENGINDERAAN JAUH**

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INTISARI

Pemetaan *liform* terumbu karang dengan klasifikasi *supervised* membutuhkan data *training* untuk membangun model.. Data validasi sangat dibutuhkan untuk menguji model. Data tersebut diperoleh dari survei langsung di lapangan. Terdapat beberapa macam survei lapangan diantaranya yaitu foto transek dan interpretasi foto udara. Kedua survei lapangan tersebut memiliki teknik yang berbeda. Tujuan dari penelitian ini yaitu 1) Membandingkan efektivitas (akurasi, waktu , *cover data*, dan *cover area*) metode survei lapangan photo transect, dan foto udara pada resolusi spasial yang berbeda, 2) Mengevaluasi metode survei yang paling efektif digunakan pada citra resolusi spasial 1 m, 3 m, 10 m, dan 30 m.

Pemetaan *liform* diawali dengan melakukan klasifikasi habitat bentik terlebih dahulu untuk memisahkan objek terumbu karang dengan objek lainnya. Algoritma klasifikasi yang digunakan yaitu *Support Vector Machine (SVM)*. Efektifitas metode survei dibandingkan melalui akurasi, waktu, *cover data*, dan *cover area*. Hasil yang diperoleh dari penelitian tersebut yaitu citra resolusi 10 m dan 15 m lebih efektif dengan menggunakan interpretasi foto udara, sedangkan citra 1 m dan 3 m masih dapat menggunakan interpretasi foto udara tetapi tetap membutuhkan foto transek. Hal ini disebabkan tidak semua tempat di wilayah kajian dapat terinterpretasi secara maksimal hanya dengan sampel interpretasi foto udara.

Kata Kunci : Foto Transek, Interpretasi Foto Udara, *Liform*, *Support Vector Machine*, Terumbu Karang

EVALUATION OF PHOTO-TRANSECT SURVEY METHODS AND VISUAL INTERPRETATION OF AERIAL PHOTOGRAPH AS FIELD SAMPLES FOR MAPPING CORAL REEF LIFEFORMS USING REMOTE SENSING IMAGERY

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ABSTRACT

Mapping coral reef lifeform with supervised classification requires training data to build a classification model. Furthermore, validation data is needed to test the accuracy of the classification results of the model. The validation data were obtained from direct field surveys. There are several types of field survey techniques including photo-transect and aerial photography interpretation. The two field survey techniques have different approaches. The objectives of this study are: 1) Comparing the effectiveness of the photo-transect field survey method and aerial photography in the classification process using images with different spatial resolutions, and 2) Evaluating the most effective field survey method for use on images with spatial resolution of 1m, 3m, 10m, and 30m.

Mapping of coral reef lifeform begins with classification of benthic habitats, to separate coral reefs from other benthic habitats. The classification algorithm used is the Support Vector Machine (SVM). The parameters of the effectiveness of the field survey methods being compared were accuracy, time, amount of data, and coverage area. The results obtained from this study are, images with a spatial resolution of 10m and 15m are more effectively classified using aerial photo interpretation, while images with a spatial resolution of 1m and 3m can still use field data from aerial photo interpretation but still need information from transect photos. This is due to the fact that not all places in the study area can be interpreted optimally only by using aerial photo, especially in areas with high lifeform complexity and in deeper waters.

Keywords : Aerial photograph, Coral reef, Interpretation, Lifeform, Photo-Transect, Support Vector Machine, Classification
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