

RINGKASAN

EKA FITRIANA SIRAIT. Analisis Hambur Balik Akustik Karang *Foliose* Menggunakan *Singlebeam Echosounder* (Studi Kasus: Perairan Teluk Bakau). Dibimbing oleh DONY APDILLAH dan ASEP MA'MUN.

Informasi mengenai hambur balik akustik karang masih terbatas di perairan Teluk Bakau. Tujuan penelitian ini dilakukan untuk mengetahui nilai *volume backscattering strength* (Sv) dan *surface backscattering strength* (SS) dan hubungan terhadap tutupan karang. Penelitian ini berlangsung pada bulan Mei 2023 menggunakan metode hidroakustik dengan instrumen *singlebeam echosounder SIMRAD EK-15* frekuensi 200 kHz. Pengumpulan data dilakukan menggunakan metode survey, saat perekaman data akustik dilakukan secara *puposeive sampling* yang telah ditentukan ukuran tiap karang ± 50 cm. Pengambilan data akustik karang dan tutupan karang dengan cara *underwater camera*. Pengolahan data akustik menggunakan *software echoview 4.0* untuk mendapatkan nilai *volume backscattering strength* (Sv) dan *surface backscattering strength* (SS) sedangkan pada tutupan karang menggunakan *software photoquad* untuk mendapatkan persentase tutupan karang. Berdasarkan akan hasil analisis diperoleh nilai *surface backscattering strength* (SS) yang dihasilkan dilakukan pendekatan tingkat pengaruh terhadap data tutupan karang. Berdasarkan hasil data akustik hambur balik karang di dasar perairan Teluk Bakau dengan jenis karang *foliose* didapatkan nilai (SV) sebesar -25.35 dB sampai dengan -32.43 dB, kemudian nilai SS sebesar -15.42 dB sampai dengan -20.35 dB dengan presentase tutupan karang terendah 40.90% dan tutupan tertinggi sebesar 96.08%. Hasil analisis regresi linier sederhana menunjukkan $y = 0.0587x - 21.314$ dengan nilai R^2 yang diperoleh sebesar 69% yang memiliki hubungan yang saling berpengaruh terhadap nilai tutupan karang, sedangkan sisanya sebesar 31% dipengaruhi oleh faktor lain.

Kata kunci: Karang *foliose*, Perairan Teluk Bakau, *Surface backscattering strength* (SS), *Volume backscattering strength* (Sv).

SUMMARY

EKA FITRIANA SIRAIT. Foliose Coral Acoustic Backscatter Analysis Using Singlebeam Echosounder (Case Study: Teluk Bakau Waters). Supervised by DONY APDILLAH dan ASEP MA'MUN.

Information regarding coral acoustic backscatter is still limited in the waters of Bakau Bay. The aim of this research was to determine the volume backscattering strength (Sv) and surface backscattering strength (SS) values and their relationship to coral cover. This research took place in May 2023 using the hydroacoustic method with a SIMRAD EK-15 singlebeam echosounder instrument with a frequency of 200 kHz. Data collection was carried out using a survey method, when recording acoustic data was carried out using purposive sampling which determined the size of each coral to be ± 50 cm. Collecting coral acoustic data and coral cover using an underwater camera. Acoustic data processing uses echoview 4.0 software to get volume backscattering strength (Sv) and surface backscattering strength (SS) values, while coral cover uses photoquad software to get the percentage of coral cover. Based on the results of the analysis, the resulting surface backscattering strength (SS) value was used to approach the level of influence on coral cover data. Based on the results of coral backscatter acoustic data at the bottom of the waters of Bakau Bay with foliose coral types, the (SV) value was -25.35 dB to -32.43 dB, then the SS value was -15.42 dB to -20.35 dB with the lowest percentage of coral cover being 40.90% and the highest was 96.08%. The results of simple linear regression analysis show $y = 0.0587x - 21.314$ with the R2 value obtained at 69% which has a mutually influencing relationship with the coral cover value, while the remaining 31% is influenced by other factors.

Key words: Foliose coral, Teluk Bakau waters, Surface backscattering strength (SS), Volume backscattering strength (Sv).