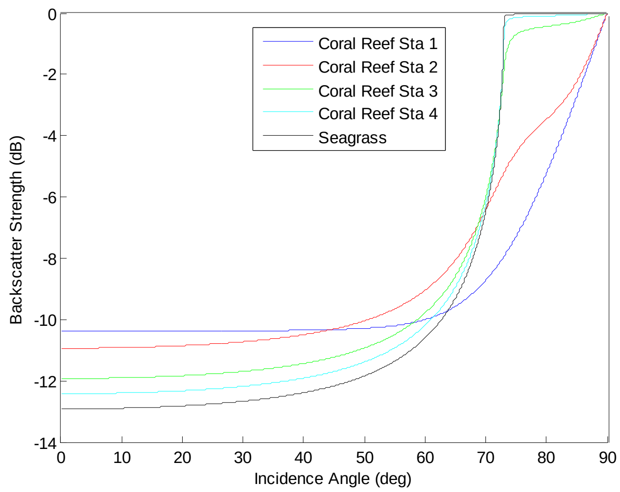
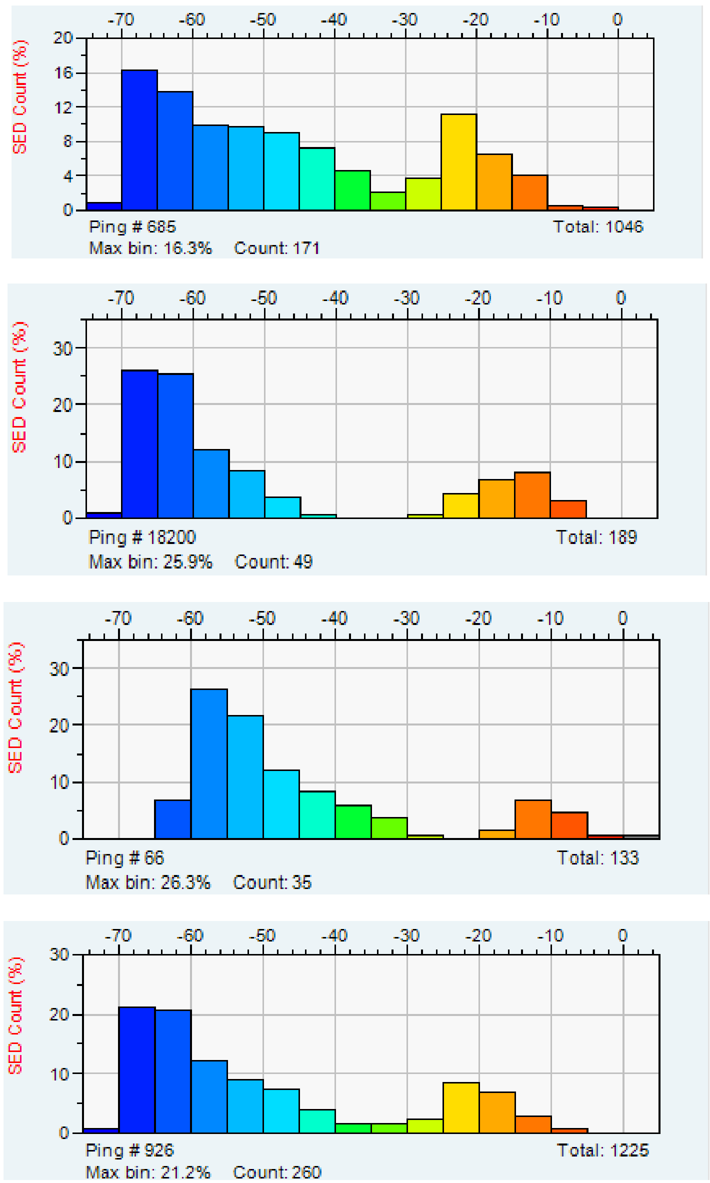


Fig. 11. Acoustic Backscattering of Underwater Objects.



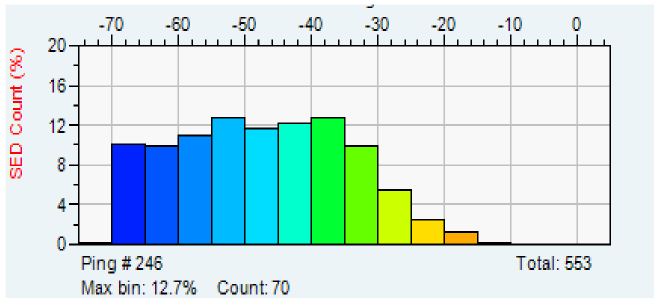


Fig. 12. Single Echo Detector Echogram for Sta 1 to 5, consecutively.

Conclusion

This study had shown that a split-beam echosounder can accurately detect and classify underwater targets. Classification of split-beam acoustic data for coral reef and seagrass was simple, fast, and intuitive relative to other mapping techniques. In areas where more than one type of coral reef was present, underwater video of ground-truth data was needed in order to accurately interpret the acoustic data. We conclude that classification algorithms should be fully automated. Comparison of underwater video and acoustic data collected simultaneously at this site showed that classification of the acoustic data was highly accurate for determining the presence or absence of coral reef. Acoustic methods have a much greater potential for measuring percent cover than underwater video, because the high spatial resolution of the sampling. Another benefit of acoustic methods is the ability to survey in turbid areas, where the area with minimum visibility.

Acknowledgment

Author thanks to Ministry of Research, Technology, and Higher Education and SEAMEO BIOTROP for financial support of this research. Also thank to technicians for their help in data sampling and calibration.

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