



Current Extent and Distribution of Mangrove Cover in the Southern Coastal Belt of Sri Lanka - A Field Validated Remote Sensing Study

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Abstract

Mangrove forests are valued ecosystems owing to their ecological services and economic benefits. Available estimation on mangrove cover in Sri Lanka varies in a broad range, 6000-12000 ha, implying that accuracy of such estimates may be low and accepted standard methods may not have been followed properly. Accurate and accepted methods need remote sensing work based on standard images (i.e. aerial images or satellite images) with high resolution, incorporating field verifications and error estimations. This study is aimed at achieving an accurate estimate of total current mangrove area in the southern province using proper and standard GIS techniques. Google earth 2017 images covering coastal areas of Galle, Matara and Hambantota districts in southern province were used to prepare GIS layers to show the mangrove distribution using ArcMap10.1 software. Each mangrove site was visited for ground-truthing and information regarding socio-economic aspects were collected through a questionnaire survey. Accordingly, the total mangrove cover of Galle, Matara and Hambantota districts were estimated as 338.0 ha, 41.8 ha and 790.1 ha, respectively, with 1169.9 ha in total for the Southern Province. Number of separate mangrove sites identified for the three districts are 8 in both Galle, and Matara and 7 in Hambantota. The largest mangrove forest in the southern province is Kalametiya with 428.3 ha. Comparison of the current extent of the mangrove cover estimated under this study with available past records of estimates was done and possible reasons for variability are discussed. A net increase of mangrove forests in Southern Province over last decade has been observed and it can be attributed to the dramatic mangrove increase recorded in Kalametiya lagoon and replanting programs in Galle and Madu Ganga introduced after Tsunami in 2004.

Key words: mangrove forest distribution, southern coast, Sri Lanka

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