

Comparative study on the sediment characters in selected seagrass meadows of Southern coast of Sri Lanka.

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Seagrass are the only marine angiosperm that adapted to the harsh marine environment. Sediments provide suitable substrate for the seagrass. Thus sediment characters are crucial factors which govern the growth and the distribution of the seagrass. Seagrass meadows are vital ecosystems which enhance the fish production as well as a tourist attraction. The facts finding sites were Ahangama, Dickwella and Dondra, located in the Southern coast of Sri Lanka which are famous for the fisheries and tourism. The species composition and the coverage of these seagrass meadow was estimated using Saitobe Atobe method (1970). Sediment sieve analysis was conducted and Total Organic Carbon (TOC) was measured using standard chemical methods. The highest seagrass cover was recorded from Ahangama seagrass meadow with three seagrass species, *Thalassia hemprichi* (33.39%), *Syringodium isoetifolium* (19.39%) and *Halodule uninervis* (7.78%). Dondra was the mono species seagrass meadow includes *Thalassia hemprichi* (24.63%). *Halodule uninervis* (54.21%) was the prominent species in Dickwella meadow with *Thalassia hemprichi* (4.79%). Fine sand particles showed positive correlation ($r = 0.304$) and the amount of mud particles in the sediments showed negative correlation ($r = -0.049$) with the species richness of the seagrass beds. Ahangama, Dondra and Dickwella observed high levels of fine sand. However, seagrass bed in Dondra revealed the highest amount of mud with high TOC. Therefore, research revealed that seagrass ecosystems are highly influenced by higher amount of fine sand particles and lower amount of mud with TOC. Hence, the seagrass sediments analysis is an appropriate method to measure the health of the ecosystem.

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