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Zonal Distribution of Biota on the Sheltered Side of Intertidal Rocks at Mount Lavinia

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Abstract

The rocky shore of Mount Lavinia Beach in the Colombo coastal area boasts a rich diversity of fauna and flora, with a particular emphasis on the intertidal rocks. Our study, initiated on October 25, 2023, is designed as a qualitative visual observation study to gather scientific data on the intertidal zonal distribution. For our site, we selected an area near to the Mount Lavinia Hotel, primarily focusing on the Oragala rocky shore, and randomly chose around six rocks for our analysis. Five distinct zones were identified based on the distribution of major biota on these rocks, which included a band of sedentary bristle worm tubes, a band of red algae, a band of green algae, a band of supratidal oysters and limpets, and the top of the rocks. The width of these zones was carefully measured. Intertidal biota exhibits a vertical distribution based on the rocks' surfaces, periodically submerged by water and exposed to air and sunlight. The lowest zone of sedentary worm tubes was 5-40 cm wide, red algae above was 25-55 cm, green algae zone 25-30 cm and the zone of supratidal oysters and limpets 20-35 cm. The fauna and flora were photographed for later identification. Our study revealed several key findings. Fauna and Flora were placed according to their feeding behaviours and survival strategies. Red algae received most immersion, green algae were exposed for longer periods and the higher areas with oysters were near the high tide line with wave splash zone above with periwinkles. A rock in the Oragala group displayed a distinct lack of water submersion and an unclear top. With an abundance of green algae that received intermittent exposure to intense sunlight. A rock in the Oragala group received water infrequently, resulting in a very low biota distribution. In conclusion, our study highlights the significance of tides and light in the extensive distribution of biota on this beach. Moreover, it highlights the pressing issue of coastal mismanagement and the need for conservation efforts to preserve the zonal distribution of biota in our coastal areas.

Keywords: Mount Lavinia, Zonation of biota, Rocky shore, Intertidal