

**ESTIMATION OF TOTAL LIVE CORAL COVER OF PROMINENT CORAL REEFS ON THE EASTERN COAST OF SRI LANKA**

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Coral reefs are highly diverse ecosystems and biodiversity hotspots in the world, providing many ecosystem services. However, these ecosystems have changed in the last few decades due to natural and anthropogenic impacts. Therefore, it is important to monitor their status for conservation and management purposes. Thus, Pigeon Island (PIR), Adukkuparu (AR), Salli Beach (SBR), Kayankerni (KR), and Passikudah (PR) reefs which are considered the most prominent coral reefs on the Eastern coast of Sri Lanka were surveyed in 2020, 2021, and 2022 by using the line intercept transect method. The total coral cover of the respective sites was demarcated by the Allen Coral Atlas online platform that offers high-resolution and up-to-date images of the coral reefs with their structure and composition. Data were taken by snorkelling or diving over, randomly selected, 30 of 30 m long permanent transects per site. According to Allen Coral Atlas data, the Coral/Algae covers were 0.03 km<sup>2</sup>, 0.16 km<sup>2</sup>, 0.16 km<sup>2</sup>, 0.60 km<sup>2</sup>, and 0.38 km<sup>2</sup> for PIR, AR, SBR, KR, and PR, respectively. The live coral percentages at PIR, AR, SBR, KR, and PR were 59%, 12%, 13%, 38%, and 21% in 2020, 59%, 16%, 19%, 37%, and 20% in 2021, and 60%, 28%, 34%, 36%, and 20% in 2022, respectively. Therefore, the live coral covers for PIR, AR, SBR, KR, and PR were 0.0177 km<sup>2</sup>, 0.0192 km<sup>2</sup>, 0.0208 km<sup>2</sup>, 0.2280 km<sup>2</sup>, and 0.0798 km<sup>2</sup> in 2020, 0.0177 km<sup>2</sup>, 0.0256 km<sup>2</sup>, 0.0304 km<sup>2</sup>, 0.2220 km<sup>2</sup>, and 0.0760 km<sup>2</sup> in 2021, and 0.0180 km<sup>2</sup>, 0.0448 km<sup>2</sup>, 0.0544 km<sup>2</sup>, 0.2160 km<sup>2</sup>, and 0.0760 km<sup>2</sup> in 2022. The live coral cover (as a percentage) has increased by 1%, 16%, and 21% in PIR, AR, and SBR, respectively, while reduced by 2% and 1% in KR and PR during the past three-year period. The study recommends declaring AR and SBR as Marine Protected Areas (MPAs) to conserve these emerging live corals.

**Keywords:** Adukkuparu, Kayankerni reef, Live coral cover, Passikudah Reef, Pigeon Island, Salli Beach