

Distribution of *Pemphis acidula* to enhance conservation measures in Puttalam lagoon, Sri Lanka

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Pemphis acidula have identified as a mangrove associate species, which is a rare species limited only to Puttalam lagoon area. This is identified as a near threatened species in Sri Lanka. The study aimed to identify the distribution of *P acidula* in Puttalam lagoon area and to suggest conservation measures using primary and secondary data. Field survey and interviews were used to obtain primary data. Hundred individuals, live along the periphery of lagoon were interviewed to evaluate threats and awareness of *P acidula*. Vegetation sampling were performed for randomly selected 25 sample sites (S1-S25) to find out the distribution of species in the lagoon area. The sample size was 5m × 5m. Water samples were also collected at the same locations to measure salinity of the lagoon water. Arc GIS mapping techniques and MS excel 2016 version were used for data analysis. The species were enumerated in identified four particular areas in Puttalam lagoon area. Higher distribution was identified towards to the ocean. In addition, the species was also present in Kalpitiya mainland. The preferable salinity level of the species was reported as between 26-30 g/L. Therefore, considering the salinity in the study area, Kala oya estuary area and Dutch bay area were identified as most suitable areas for the distribution of the plant. *P acidula* were not present in the sites where salinity was less than 20g/L, which indicated that the species prefer high salinity levels. *P acidula*, which has high potential to exterminate dengue larvae and have strong antibacterial activity has been reduced drastically due to clearings of mangroves. Though the species are important for industrial and pharmaceutical purposes, there are no conservation measures to protect the species at present. The unawareness of coastal residents live along the periphery of the lagoon was about 90% and the threat has been increased as people used to destroy the plant for firewood. Therefore, conservation measures should be introduced using appropriate methods such as demarcations of buffer zones, to prevent removing the plants. Regular research and observations are important to keep updated records on number and distribution of this species. Northern-most parts in the lagoon where the salinity level is high as 26-30 g/L were identified as possible restoration sites of *P acidula*. As it is an invaluable plant, it is timely important to conserve *P acidula* population in Puttalam lagoon area.

Keywords: Conservation, Near-threatened, *Pemphis acidula*, Puttalam lagoon, Rare