Distribution and Composition of Target Invasive Alien Plant Species in the Crow Island Beach Park, Mattakkuliya.

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Wetland ecosystems face severe threats from the unchecked propagation of Invasive Alien Plant Species (IAPS), which are non-native species that cause ecological and economic harm after naturalization. These plants can reduce native biodiversity, alter habitat structures, and disrupt food web functioning. Crow Island Beach Park is an urban coastal wetland ecosystem, which provides diverse habitats for numerous flora and fauna species. As there have been very few recent studies regarding the threats of IAPS on the biodiversity of this area, this research is aimed to identify the spatial distribution and percentage cover of 19 targeted invasive species across the park. The selection of 19 invasive species is based on aligning the study with national lists, research articles and guides on invasive alien plants, restricting the scope to ecologically relevant species specific to the coastal habitats and logistical feasibility. The research was conducted between September and October 2025. Five 100 m x 4 m belt transects and twenty 1m x 1m quadrats per transect were used to survey large and small plants. The belt transects were placed randomly across the study area, and the quadrats within each transects were also randomly placed. The total cover values of each invasive plant species in the total sampled area (2000 m^2) were calculated separately and represented as a percentage cover. The percentage cover for aquatic plants was determined via visual estimation. Out of the 19 targeted species, six were detected in the study area. *Eichhornia crassipes* showed the highest overall distribution by showing a total cover percentage of 2.86% while *Mikania micrantha* dominated beachside areas with the second-highest distribution of 2.3%. Both *Panicum maximum* and *Sphagneticola trilobata* species exhibited an equal distribution of 1.15%. *Ageratum conyzoides* and *Annona glabra* recorded minimal coverage at 0.0095% and 0.00001%, respectively. The study concludes that *Eichhornia crassipes* is the dominant invasive species in the open water areas, while *Mikania micrantha* being the dominant invasive species in the terrestrial area. It is recommended that park authorities implement regular physical removal strategies and innovate eco-friendly chemical methods such as essential oil herbicides, mycoherbicides, etc., to inhibit growth. Future research should investigate how these invasive coverages correlate with water quality, soil quality, and climate change impacts.

Keywords: *Crow Island Beach Park, Invasive Alien Plant Species, Species composition, Species distribution,*

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