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Geo-spatial Analysis about Habitat Preferences of Odonata within the Diyasaru Wetland Park, Sri Jayewardenepura Kotte, Sri Lanka**Dissanayaka H.M.S.**

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Abstract

The Odonata (dragonflies and damselflies) have both aquatic and terrestrial life cycle and are considered good bio indicators. Diyasaru Wetland Park was selected as the study site is located in Sri Jayewardenepura Kotte and the main objective of this study was to identify the distribution of Odonata habitats in the Diyasaru Wetland Park. It was determined to identify the best suitable parts of urbanized area to increase their habitats using the developed distribution map. Line transect surveys were used to encounter species within the sampling areas. All Odonata species observed directly were recorded. The data collection was carried out from 0600 h to 1200 h, 1500 h to 1800 h. Field work was conducted from 11th February 2020 to 20th January 2021. Endeavor ED binoculars (10.5×45), DSLR cameras (Canon EOS 155D/EFS 18-55 mm F/3.5-5.6), Garmin GPS etrex 10 machine were used for closure observations, spotting locations and obtaining photographs. Odonata habitats have been identified, analyzed to identify their distributions within the park premises from using Geographic Information system (ArcGIS 10.8), and Odonata checklist was developed. Hotspot analysis was used to determine the clustering of Odonata, Kernel Density was calculated to identify the density of Odonata's distribution, and Inverse Distance Weighted (IDW) was used to measure values surrounding the prediction locations maps within the park. According to the developed maps, high level distribution or favorable areas were near the bank sides and channels, but some individual species distributed in another areas within the premises as they prefer the most suitable habitat for their living activities. A total of 33 Odonata species were recorded belong in to five (5) families. This number includes one (1) endemic species, two (2) endemic sub species, also one migratory species. The threatened are Endangered (EN) one (1) species, Vulnerable (VU) two (2) species and Near Threatened (NT) nine (9) species were observed in the area. The wandering glider (*Pantala flavescens*) which has both migratory and resident population has been recorded throughout the year. Indicating the presents of resident population. The findings of this study could be used as preliminary information for further developments and maintenance of the Diyasaru wetland park by Sri Lanka Land Development Corporation.

Keywords: Odonata, Geo spatial analysis, Urbanization, Diyasaru park, Wetland