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Plant Community Analysis of Bhubaneswar Smart City, Odisha, India

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Abstract: Analysis of the plant community in four sites of each of Central and Transition zones of Bhubaneswar city showed that in the transition zone, *Mangifera indica* L., *Neolamarckia cadamba* (Roxb.) Bosser were the dominant trees. From the calculated values of relative frequency, relative density, relative dominance and importance value index, *Delonix regia* was quite dominant. In the Transition zone *M. indica* L. followed by *N. cadamba* (Roxb.) Bosser. were present in high population. Raunkiaer's frequency class, indicated that half of the sites in the central zone and three out of four sites in the transition zone were disturbed in terms plant community. Family Importance Value index, that Poaceae was the most dominant family followed by Cyperaceae and Fabaceae. The distribution pattern showed that in the central Zone, out of 276 species, 146 species showed contagious distribution, 90 species had random distribution and 40 species had regular distribution. In the transition zone, with 286 species recorded, 155, 84 and47 species showed, contagious, random and regular distribution respectively. Because of more anthropogenic activities in the core areas, species richness was more in the transition zone than the central zone. The various above parameters showed marked differences among the study sites because of variations in soil conditions, local climate and biotic interferences.

Keywords**:** Community, Diversity index, relative dominance, Importance value Index, Family Index value