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LAND USE TRANSFORMATION AND ECOSYSTEM SERVICES: A CASE STUDY FROM THALANGAMA ENVIRONMENTAL PROTECTED AREA, SRI LANKA

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Ecosystem Services (ES) provided by wetlands for the community are being acknowledged by researchers and policymakers at present. As in many other natural habitats, urban wetlands are increasingly influenced by anthropogenic pressures. Transformation of natural elements in wetlands, whether they represent landscape or waterscape, to other land uses under human pressure could affect ES provided by them. In this context, the present study attempted to investigate the impact of Land Use and Land Cover (LULC) changes on ES in Thalangama Environmental Protected Area (EPA), which constitutes a major element in the Colombo wetland network. This study used a combination of remote sensing and the Geographical Information System (GIS) to investigate changes in LULC of Thalangama EPA and its surrounding over two decades from 2000-2020. A questionnaire survey was conducted using fifty local residents and six national experts to assess the provisioning and cultural ES of Thalangama EPA, and they were analyzed using Principal Component Analysis in SPSS Statistical software. Anthropogenic activities have transformed natural areas: the paddy fields were reduced by 3.95%, and an expansion of settlements by 3.72% within the wetland. The vegetation in the surrounding areas declined by 8.14%, with an expansion of settlements by 4.99%. Similarly, the provision of ES has changed from the provisioning of fibre, medicine, recreational and religious values in the past to the provisioning of flowers, fisheries, health values: and therefore; currently, the wetland plays a significant role in providing fresh water, flowers, fisheries, fuel, educational value, recreational value, tourism, making social relations and health and mental relaxation. This study sheds light on the link between land use and ES and highlights the importance of obtaining views of the communities in wetland management. Furthermore, the urgent need for the promotion of sound land use practices, community awareness and participatory conservation methods to address this issue is reflected in this study.

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