ABSTRACT

Ermita Khusniyatul Alawiyah. 24020122420016. **Potential and Development Strategies for Mangrove Ecotourism in Tapak Village, Tugurejo Subdistrict, Tugu District, Semarang City, Central Java.** Master's Program in Biology, Faculty of Science and Mathematics, Diponegoro University, supervised by Fuad Muhammad and Jafron Wasiq Hidayat.

Mangrove ecotourism plays a crucial role in supporting coastal ecosystem conservation, community empowerment, and local economic development. Tapak Village, Tugurejo Subdistrict, Tugu District, Semarang City, is an area with considerable mangrove ecotourism potential; however, its utilization remains limited, thus requiring a comprehensive study to support sustainable development. This research aims to identify and analyze the ecological potential of the Tapak mangrove ecotourism area (vegetation composition–structure and associated fauna), evaluate its suitability for ecotourism activities, estimate the physical carrying capacity, and formulate development strategies aligned with the ecological conditions and biological potential of the area. Data were collected using purposive sampling, quadrat plots, point count, and interviews. Data analysis employed the Important Value Index (IVI), Species Diversity Index (H'), Tourism Suitability Index (TSI), Physical Carrying Capacity (PCC), and SWOT analysis and Analytical Hierarchy Process (AHP). The results revealed three mangrove species, namely *Rhizophora mucronata, Rhizophora stylosa,* and *Avicennia marina*, with a total density of 342 ind/ha, dominated by R. mucronata (IVI for saplings: 262.85%; trees: 213.05%). Vegetation density was classified as dense (saplings: 17,600 ind/ha; trees: 7,000 ind/ha), with low species diversity (H' = 0.413). The associated fauna were diverse, including fish, birds, reptiles, crustaceans, gastropods, and bivalves. The mangrove ecotourism suitability index in Tapak Village fell into the S2 (suitable) category, at 72.5%. The physical carrying capacity of Tapak mangrove ecotourism reached 1,160 visitors/day, calculated based on spatial availability and visitor time allocation. The recommended development strategies emphasize strengthening community-based mangrove conservation, optimizing mangrove and fauna diversity as educational attractions, and improving ecotourism management in accordance with environmental carrying capacity. Overall, the Tapak mangrove ecotourism area is feasible for development, although sustainable management remains essential to maintain its ecological potential and carrying capacity.

Keywords: *Mangrove Ecotourism, Tourism Suitability Index, Physical Carrying Capacity, Ecotourism Development Strategy, Semarang.*