Determining tourist's carrying capacity based on ecological approach in Tunku Abdul Rahman Park, Malaysia

ABSTRACT

Tunku Abdul Rahman Park (TARP) is a Marine Protected Area (MPA) and a famous tourist destination in Sabah. The possible long-term negative impacts on the ecology and sustainability of the Park due to the very high number of tourists is of much concern to the Park management authority. This study was conducted to determine the ecological and tourism carrying capacity in three islands in TARP, Manukan, Mamutik and Sapi islands. The Effective Carrying Capacity (ECC) concept is applied in this study, in which the results are expected to provide the Park Authority with data and effective management actions. Calculation of carrying capacity in this study was based on three distinct visiting patterns or seasons: i) Regular season; ii) High season, and iii) Festive season in order to ensure optimal tourists 'satisfaction and revenue, while still maintaining ecological sustainability was calculated after considering the various limitations imposed by physical, climate, ecological, and management capabilities. Land and ocean areas were considered and calculated separately as they occupied different variables. Our findings showed that Manukan island recorded the highest ECC, while Mamutik and Sapi island shared almost similar ECC value. Optimization of Carrying Capacity (CC) in different seasons was also achieved with a few Correction Factor (CF) adjustments. It shows that Festive season recorded the highest ECC, followed by High Season and Regular Season. The ECC obtained was suggested to be implemented to TARP management as to preserve and sustain the ecological value of the Park.