

The Use of Habitat Suitability Index Map for Designing Population Monitoring of Banteng (*Bos javanicus*) in Alas Purwo National Park-East Java-Indonesia

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(Accepted June 25, 2016)

ABSTRACT

Despite banteng is assigned as conservation priority species and its population is expected to increase by 10% in the wild, systematic and accurate population estimation including in the Alas Purwo National Park has been hampered by incomplete estimation. We studied habitat suitability index (HSI) map model to predict the distribution of banteng in the park as the basis for selecting areas for population monitoring. The presence of banteng was collected from 2007-2012 based on ranger reports in the field, whereas pseudo-absence data were generated randomly. We tested 548 points for Binomial Multiple Logistic Regression analyses and evaluated four different scenarios of habitat factor for predicting the presence of banteng, and compared their Kappa Index of Agreement for validation analysis. The presence of banteng was explained by elevation, distance from the beach/ seashore, distance from water/ rivers and distance from roads. The results from the binomial multiple logistic regression then extrapolated to the whole park and resulted in 8441.93 hectares of high suitability area. For establishing a reliable population estimation of banteng in the park, surveys should focus on four blocks with the total area of 9846.69 hectares, which are combination highly suitable area and some suitable areas.

Keywords: Alas Purwo National Park, binomial multiple logistic regression, banteng conservation, habitat selection, population monitoring.
