

Abstract. Fitriani A, Arifin YF, Hatta GM, Wahdah R, Payung D. 2022. Suitability habitat model of *Mangifera rufocostata* under different climatic and environmental conditions. *Biodiversitas* 23: 4570-4577. *Mangifera rufocostata* Kosterm is known as a medicinal plant for antidiabetic. Therefore, intensive use of the bark of this plant results in a significant decline in the plant population which can eventually cause the plant to become extinct. This study aimed to determine the potentially suitable cultivation region of *M. rufocostata* using Maximum Entropy (MaxEnt) modelling. Twenty-three environmental variables including bioclimatic, soil type, slope, altitude, and solar radiation have been used for the development of distribution modeling. The results showed that precipitation seasonality, precipitation, mean temperature, and solar radiation are important variables in the development of the habitat suitability model. Suitable habitat locations for *M. rufocostata* include the Hulu Sungai Tengah, Hulu Sungai Selatan and Hulu Sungai Utara Regency, South Kalimantan Province, Indonesia. The MaxEnt model provided an area under curve (AUC) value of 0.959, indicating that MaxEnt is accurate and informative for the prediction of habitat suitability of *M. rufocostata*. The results indicate that this suitability prediction model may be applied used for future management, monitoring, cultivation and conservation of *M. rufocostata*.

Keywords: Antidiabetic, climatic variables, conservation, rare species, suitability model