

Habitat Suitability Model to Determine a Suitable Area for Translocation of Sumatran Tiger (*Panthera tigris sumatrae* Pocock, 1929)

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ABSTRACT

Translocation has been used in human-tiger conflict mitigation for more than 5 decades, but the records show the success rate still relatively low. A comprehensive study is needed to determine the ideal and suitable area for tiger translocation within one landscape. Beside the physical characteristic habitat (such as the adequacy of forested areas, topography, as well as availability of ecotone and clean water), potential threats and the history of human-tiger conflict factors, it is very important to consider the factors of wild local tigers presence and their prey in the areas for the future translocation, so that the activities of tiger translocation can be more effective and the success rate will also be increased. In this study we developed a habitat suitability model of translocated tiger, and determined the areas that suitable for the location of tiger translocation in Ulu Masen Landscape. In 2008 we captured an adult female conflict tiger and translocated her 70 km from capture sites in Northern Sumatra. The tiger was fitted with global positioning system (GPS) collars. The collars were set to fix 48 location coordinates per day, and collected 6,680 points of tiger positions during 213 days of observation. Based on the habitat suitability model, 95% of the Ulu Masen forest landscape (approximately 7,500 km²) has the criteria of suitable and most suitable as habitat of Sumatran tigers (*Panthera tigris sumatrae* Pocock, 1929). Suitable location for Sumatran tigers translocation is a landscape where there is a mosaic of lowland forest with shrubs vegetation, has a flat to sloping topography, and elevation below 1,000 meters above sea level. The area should also be free from poaching and encroachment, as well as far away from villages. Predicted that there is a 388.10 km² (5.2% of the total area) of area that most suitable, and a 2,135.67 km² (28.5%) area that suitable for the location of Sumatran tiger translocation. Despite being preliminary the finding of this study highlight the conservation value of tiger translocation and have provide valuable information for improving future management of conflict tigers.

Key words: GPS collars, habitat suitability model, spatial model, Sumatran tiger, translocation, Ulu Masen Landscape, Aceh, Indonesia

