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Distribution of the Critically Endangered *Mucuna gigantea* (Willd.) Dc. (Fabaceae) in Bentota River, Southwestern Sri Lanka

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Abstract

Mucuna gigantea (S: Kana-Pus-Wela; E: Elephant Cowitch) is a woody climbing legume vine. It can grow up to 8-15 m long and is about 10 cm in diameter. *M. gigantea* is distributed in tropical countries including East Africa, India, the Pacific Oceans, Australia, and the Pacific Islands. They occupy mostly bushland, forest edges, riverine and coastal moist forests, coastal scrub, and riverbanks. In Sri Lanka, it was first recorded in Batticaloa in 1849, then re-recorded in 2021, after 172 years in the Madampawila Wildlife Sanctuary in Galle. It has been classified as a critically endangered plant species by the 2007, 2012, and 2020 national red lists. In Sri Lanka, its population has never been studied. The main objective of this study is to discuss the distribution and abundance of *M. gigantea* in the Bentota River. Randomly laid five hundred-meter-long transects were deployed to investigate the distribution and abundance of *M. gigantea* in the Bentota River covering a total of 10.7 km. Surveys were conducted by riding boats in the river and walking inside the mangrove. The number of plants and the geo-coordinates were recorded whenever a plant was found. Other species that are co-occurring with *M. gigantea* were also recorded. Moreover, threats to the plant were recorded during the study. At the same time specimens with reproductive and vegetative parts were collected on the 6th of March 2023 and made into herbarium specimens and deposited in the National Herbarium in Peradeniya. A total of 13 locations with *M. gigantea* were recorded along the Bentota River. They have grown as mangrove associates in the ecosystem and were recorded grown with *Rhizophora apiculata*, *Bruguiera gymnorrhiza*, and *Terminalia catappa*. Several largely grown plants were recorded from this ecosystem. This is the first time that the plant has been recorded from the Bentota River. Although this is not a viviparous plant species, it has adapted to extreme conditions. Several floating seeds of *M. gigantea* were observed that can be distributed through tidal flushing. Being a critically endangered plant, it is facing numerous threats viz., illegal encroachment, cutting them for settlements, and clearing them due to blocking the river view. Lack of awareness of people and lack of studies on this plant in Sri Lanka were identified as the major threats. Therefore, it is recommended that appropriate conservation measures be taken to protect this critically endangered plant in Sri Lanka.

Keywords: *Bentota River, Critically endangered, Distribution, Mucuna gigantea*