FOOD HABITS OF ASIAN ELEPHANT (*Elephas maximus maximus*) IN HANDAPANAGALA , SOUTH EAST SRI LANKA

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Handapanagala tank area is home for the largest Elephant aggregation *(Elephas maximus maximus)* in Wellawaya area during the dry season. Most of these Elephants come from different areas mainly from adjacent protected areas such as Yala, Udawalawe and Lunugamwehera National parks. The main traditional migratory route lies across the study area connecting Yala – through Demodara. The local migration is mainly due to lack of food and water within the protected areas.

The study attempted to find the food habits of elephants in Handapanagala area during dry season. This study was carried out for six months. The main objectives were to determine both food availability and feeding habits in relation to the habitats. Food availability and their Relative Importance Values (RIV) were estimated using line transect and direct observation method within study area. Relative importance values were comparatively high in species like *Bauhinia racemosa* (12.39 %), *Fleuggea leucocarpa* (17.32 %), *Securinrega leucopyrus* (14.3 %). Relative frequency value indicated that most common species distributed in the study area were *Bauhinia racemosa, Dichrostachys cinera, Phyllanthus sp., Premna sp.* The micro histological analysis was done to determine food habits of elephants. The major food plant parts in dung samples were analyzed to identify the categories of plants consumed by elephants. This study revealed that the major food items consumed by elephant during dry season were the monocotyledon leaves (65 %), Culm (12 %), Sheath (6 %) and Dicotylidens Bark (7 %) and, Woody fiber (2%). The predominant grasses identified in dung samples were *Imperata cylindrica* (Gini grass) and *Panicum maximum* (Illuk). The field observations revealed that the elephants were mainly consuming plants in families such as Leguminosae, Graminae, Euphorbiaceae and Verbenaceae. Majority of bark damages were seen in plants such as *Bauhinia racemosa* (RIV – 12.39), *Treminalia arjuna* (Kumbuk) *and Phyllanthus spp.* A total of 112 plant species were identified and 35 species (31% of the available plants) were consumed by elephants. The results indicate that the Elephants in the Handapanagala are grazers and mainly feed on tall grasses during the dry season. Results also indicated that

there is an impact on forest tree species like *Bauhinia racemosa, Fleuggea leucocarpa* and *Securinrega leucopyrus, which* have high RIV. Since the present study was carried out during dry season, this should be continued during wet season to get a broad idea about the seasonal changes in food habits of Elephants.

Key words: Asian elephants, Food Availability, Food preferences, protected areas, micro histological analysis