STUDY ON ECOSYSTEM REQUIREMENTS OF HORNBILLS (GREAT PIED, MALABAR PIED, INDIAN GREY AND MALABAR GREY) IN MUNNAR LANDSCAPE PROJECT AREA

for the project

INDIA HIGH RANGE LANDSCAPE PROJECT, MUNNAR, KERALA
(GEF-MUNNAR LANDSCAPE PROJECT)

Final Report

Principal Investigator: **Dr. P. Balasubramanian**
Co-investigator: **Dr. P. V. Karunakaran**

Project Staff

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SUMMARY

The study was carried out to i) Assess the distribution of hornbills in Munnar Landscape and develop a hornbill distribution map, ii) Locate hornbill nesting locations and find out important nest tree species, iii) Identify important foraging habitats of hornbills and find out their food tree species and iv) Chart out the ecosystem requirements of hornbills.

Project personnel were recruited and work initiated as per schedule. However it could not be continued for full duration of the project. A brief of the work done and inferences made are given below.

Reconnaissance surveys were carried out in different habitats of the Munnar Landscape. Censuses were done in the potential hornbill habitats. The habitats surveyed included evergreen forest, semi-evergreen forest, moist deciduous forest, dry deciduous forest, mixed forest, low-land riparian forest and plantations. During the surveys, geo-coordinates of hornbill sighting locationswere noted by using a GPS.Based on the geo-coordinates, distribution maps for all the four hornbill species were prepared.Also, information on hornbill distribution and occurrence were obtained from published sources.

Reconnaissance surveys covered six major areas namely Idukki Wildlife Sanctuary, Thattekad Wildlife and Bird Sanctuary, Cardamom Hill Reserve, Idamalayar Range, Chinnar Wildlife Sanctuary and Anaimudi Shola National Park. Intensive study could not be carried out as the field work was stalled due to non-cooperation from the local community of the Munnar area. Hence, based on the reconnaissance survey findings and secondary source information, a brief project report has been prepared and submitted to the funding agency.

Preliminary surveys revealed the occurrence of four species of hornbills (Malabar Grey Hornbill*Ocycerosgriseus*, Malabar Pied Hornbill*Anthracoceroscoronatus*, Great Pied Hornbill *Bucerosbicornis*, and the Indian Grey Hornbill*Ocycerosbirostris*) in the Munnar Landscape. Great Hornbill is mainly restricted to evergreen forests, Malabar Pied Hornbill to lowland riparian forests, Indian Grey Hornbill to dry deciduous forests and

Malabar Grey Hornbill to evergreen and semi evergreen forests. A total of 28 nest tree species belonging to 19 families were found in Munnar area. The diet of hornbills in the Western Ghats comprised nearly 100 fruit species (Kannan and James, 1997;Mudappa, 2000;Balasubramanian*et al*., 2004 and Balasubramanian*et al.*, 2007). Munnar Landscape area harbours all the known hornbill diet species. About one fourth of the 100 food plant species were highly favoured by the hornbills.Major plant families that contribute to hornbill's diet included Moraceae, Lauraceae, Meliaceae, Oleaceae and Myrtaceae.

Large trees such as *Terminaliaarjuna, Mangiferaindica*and*Syzygiumcumini* found in the low-elevation riparian forests are used by Malabar Pied hornbills and Great hornbills for nesting. Expansion of agricultural activities alongside the river leads to fragmentation of riparian forests.Hence, it is suggested to link the fragmented forests of the river banks by planting native tree species. Plantations (Tea & Coffee), though cannot substitute the original forests do support the hornbills, as several shade trees i.e*Ficus*spp, *Syzygiumcumini, Lagerstroemia microcarpa, Terminalia*sppand *Mangiferaindica*attract hornbills by providing fruits or form ideal nesting sites. Hence, major food and nest trees of hornbills occurring in plantations need to be protected with the co-operation of planters.