

C
599-G1
PKP

**ESTIMATION OF POPULATION DENSITY AND
HERD COMPOSITION OF ELEPHANTS IN
MINNERIYA NATIONAL PARK,
SRI LANKA**

A PROJECT REPORT PRESENTED BY

GAJADEERA ARACHCHIGE THARAKA PRASAD

to the Board of Study in Plant Sciences of the
POSTGRADUATE INSTITUTE OF SCIENCE

*in partial fulfilment of the requirement
for the award of the degree of*

**MASTER OF SCIENCE IN
BIODIVERSITY CONSERVATION MANAGEMENT**

of the

UNIVERSITY OF PERADENIYA

SRI LANKA

April, 2004.

18 AUG 2007

608714

ABSTRACT

The Asian Elephant, *Elephas maximus maximus* is one of the most seriously endangered species of large mammals in the world. Today only three species are alive, the African elephant (*Loxodonta africana*, *Loxodonta cyclotis*) and the Asian elephant, (*Elephas maximus maximus*). Three sub species of Asian elephants (*Elephas maximus*) are currently recognized. The Asian elephants roamed throughout Sri Lanka at the turn of the century.

Present-day efforts to save elephants may be inadequate; Elephants have no natural enemies other than humans. Elephants are a key species in the ecology of forests and savannas. The continually growing human population of Sri Lanka has encroached upon the elephants' dense forest habitat by the beginning of 1952. Clearance of forests for settlement and agriculture disrupted traditional elephant migration routes, leading to violent clashes when hungry elephants raid crops. Present human-elephant conflict results in the loss of both elephants and human beings in large numbers in every year.

Minneriya is a National Park, which has become one of the most popular elephant viewing areas in Sri Lanka. This study will be focus on determining the elephant population and its structure in selected places of Minneriya National Park (MNP). The selection was based on presence of large number of elephants in MNP during August to September 2001 especially during the drought. This study was intended to document the population size, density and composition of elephants in the MNP.

MNP comprises 88.89 km² and the study was confine to the North-western Flank of MNP and its environment. When the water levels decrease in the Minneriya tank, it results in invasions of grasslands along the catchments, providing palatable food for all the herbivores including the elephant in MNP.

The elephants were counted in various places within the MNP, using the direct counting line transect method by roadside count and water hole counts. The recorded highest number of elephants in Minneriya National Park was 236 individuals on 15th

September 2001. The population density of elephants in Minneriya National Park was 2.50 /km² in the period of 25th March to 25th November 2001.

The majority of the elephants were seen on open grassland. A total of 431 elephant groups were counted, and the average group size of elephants in MNP was 12 elephants in a family.

The population structure of elephant in MNP is bias towards adult elephants. Sub-adult males and sub-adult females contributed to 20% and 33% of the overall population. Generally, this population structure is showing adult dominant and has a female biased sex ratio.