STATUS OF ASSAMESE MACAQUE (Macaca assamensis McClelland, 1840) IN LANGTANG NATIONAL PARK, NEPAL



A Dissertation

Submitted for the Partial Fulfillment of the Requirements for the

Master's Degree of Science in

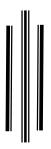
Zoology (Ecology)

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To

Central Department of Zoology

Tribhuvan University, Kirtipur

Kathmandu, Nepal

2008

RECOMMENDATION

It is my pleasure to mention that Mr. Ganga Ram Regmi has carried out the Dissertation entitled "Status of Assamese Macaque (Macaca assamensis McClelland, 1840) in Langtang National Park, Central Nepal" under my supervision and guidance. This is the candidate's original work, which brings out important findings essential for biodiversity conservation in remote mountain region. To the best of my knowledge, this dissertation has not been submitted for any other degree in any institution. I recommend that the dissertation be accepted for the partial fulfillment of the requirement for the Master's Degree of Science in Zoology Specializing in Ecology.

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ACCEPTENCE

This dissertation submitted by Mr. Ganga Ram Regmi entitled "Status of Assamese Macaque (*Macaca assamensis* McClelland, 1840) in Langtang National Park, Central Nepal" has been accepted as a partial fulfillment of Master's Degree in Zoology specializing in Ecology.

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APPROVAL

On the recommendation of supervisor **Dr. Mukesh Kumar Chalise**, this dissertation submitted by **Mr. Ganga Ram Regmi** entitled "**Status of Assamese Macaque** (*Macaca assamensis* **McClelland, 1840**) in Langtang National Park, Central Nepal" is approved for examination.

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DECLARATION

This study entitled "Status of Assamese Macaque (*Macaca assamensis* McClelland, 1840) in Langtang National Park, Central Nepal" is original of its kind and has not been submitted anywhere. The findings and statements stated in this dissertation are based on my own field works.

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ABSTRACT

The study was carried out in the month of May June, July and August of 2007. A total of 213 Assamese macaques (Macaca assamensis) were encountered in 9 groups within the total area surveyed of 113 km² at Langtang National Park. The group density was found to be 0.0790 groups / km² with a population density of 1.8691 individuals/ km² and a mean group size of 23.66 individuals. Age-sex composition of macaque comprised 31% adult females, 16% adult males, 18% youngs, 16% Juveniles and 19% were infants in the study area. The adult sex ratio and the recruitment rate were found to be 1:1.92 and 0.61 (61 infants per 100 females) respectively. Four major behaviors were recorded from the selected Assamese macaque group at Ronga Pool as foraging 49%, moving 26%, resting 16%, and grooming 9%. The estimated crop damage from 75 households was about Rs. 150,000 per annum with the average of Rs. 2,000 per household. Presence or absence of macaque damage is significantly related to the distance of the farm from the forest ($t^2 = 30.9$, df = 2, $P \ll 0.05$). The costs of crop protection per household ranged between Rs.500-1500 per household per year, which comes to Rs. 37,500-112,500 for 75 households. It was found that Assamese macaques spoiled more crops than they actually eat; juveniles and infants in particular brought about damage during play on the ground. Among the crops raided by Assamese macaques, maize cobs were found to be highly preferred (62%) followed by potato tubers (23%), millet (7%), buck wheat (6%) and others 2%. The most commonly used crop protection strategy was constant vigilance during crop seasons and used by 60% of the farmers in the study area. Despite the measures of crop protection, macaques did manage to invade the crops in the area. Agricultural crop and livestock depredation by wildlife results in disputes between the park authorities and the local people. Potential solutions recommended here emphasize the need for the Park administration to accept responsibility for the protection of crops and livestock from park wildlife and measures taken immediately to minimize them up to the level of tolerance for sustainable conservation.

Key words: *Macaca assamensis*, Langtang National Park, population, behavior, crop damage, crop protection strategy, conservation

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ABBREVIATIONS AND ACRONYMS

asl - Altitude from Sea Level

BCN - Bird Conservation Nepal

CAMP - Conservation Assessment and Management Plan

- Convention on International Trade in Endangered Species of Wild Flora and

Fauna

DNPWC - Department of National Parks and Wildlife Conservation

ft - Feet

GoN - Government of Nepal

INGO - International Non-Governmental Organization

IUCN - International Union for Conservation of Nature and Natural Resources

Kg - Kilogram

LNP - Langtang National Park

m - Meter

MBCA - Makalu Barun Conservation Area

mm - Millimeter

NGO - Non-Governmental Organisation

NPWC - National Park and Wildlife Conservation

Rh - Rhesus

km² - Square Kilometer

T/HB - Tail to Head Body Ratio