POPULATION STATUS, GENERAL BEHAVIOUR AND CONSERVATION PRACTICES OF BLACKBUCK [*Antilope cervicapra* LINNEAUS, 1758] AT KHAIRAPUR, BARDIA; NEPAL.

A Dissertation

Submitted to Central Department of Zoology, Tribhuvan University for the Partial Fulfillment of the Requirement for the

Master's Degree in Zoology [Ecology]

By

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August, 2006

ADate: ……....

RECOMMENDATION

It is recommended that **Laxman Khanal** has completed his dissertation work entitled "**POPULATION STATUS, GENERAL BEHAVIOUR AND CONSERVATION PRACTICES OF BLACKBUCK [*Antilope cervicapra* LINNEAUS, 1758] AT KHAIRAPUR, BARDIA; NEPAL**" under my supervision. This is the candidate's original work, which brings out useful findings in the concerned field of conservation biology. To the best of my knowledge, this dissertation has not been submitted for any other degree in any institution. Hence, I recommend this dissertation to be accepted for the partial fulfillment of requirement for the degree of Master's of Science in Zoology (Ecology).

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APPROVAL

On the recommendation of Supervisor Dr. Mukesh Kumar Chalise, Associate Professor, Central Department of Zoology, Tribhuvan University, the dissertation work entitled "**POPULATION STATUS, GENERAL BEHAVIOUR AND CONSERVATION PRACTICES OF BLACKBUCK [*Antilope cervicapra* LINNEAUS, 1758] AT KHAIRAPUR, BARDIA; NEPAL**", submitted by **Laxman Khanal** has been approved for the examination.

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ACCEPTANCE

The dissertation work entitled "**POPULATION STATUS, GENERAL BEHAVIOUR AND CONSERVATION PRACTICES OF BLACKBUCK [*Antilope cervicapra* LINNEAUS, 1758] AT KHAIRAPUR, BARDIA; NEPAL**", submitted by **Laxman Khanal** has been accepted as the partial fulfillment of the requirement for Master's Degree of Science in Zoology with "Ecology" as special paper.

EXPERT COMMITTEE

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ABSTRACT

Population status, general behaviour and conservation practices of the last remaining wild population of endangered species of Blackbuck (*Antilope cervicapra*) at Khairapur, Bardia was studied by the direct observation, field survey and questionnaire method. Field research was conducted mainly from April, 2006 to July 2006 to explore the population dynamics of Blackbuck, general behaviour, diurnal activity pattern, survival threats and conservation efforts being practiced at Khairapur.

The total population of Blackbuck during the study period was 133 with the increase of 18.04% than that of 2005 AD. The male to female sex ratio was of 1:1.29 and the average herd size was found to be of 7.64 individuals. Crude population density at Khairapur was 25.33 individuals/ Km^2 while the ecological density at core habitat was 75.14 individuals/ Km^2. The natality rate was found higher (0.84 per matured female per year) than mortality rate (0.091 per individual per year). Demographic indices indicated the increasing trend in Blackbuck population at Khairapur since 2000.

The social aggregations of Blackbuck were loose- mixed herds, breeding herds, buck herds and isolated adult males. Blackbucks are the true grazers and they preferred the *Cynodon dactylon*, *Saccharum spontaneum* and *Medicago denticulre* on feeding. Keen eyesight, long range of vision and high speed are the defence measures of Blackbuck against the predators. The maternal care is of 'stay put' type. Blackbuck at Khairapur spent most of their time on feeding followed by resting, walking, alert, sparring, and chasing, courtship, etc. Grazing percentage was peaked up in the early morning and late afternoon.

Loss and degradation of habitat by human encroachment, its fragmentation by a number of roads and foot trails and disturbance due to other anthropogenic activities including village dogs were the main survival threats of Blackbuck in Proposed Blackbuck Conservation Area (PBCA). Interference on foraging field and exploitation of biomass by the illegal grazing of livestock made a serious problem in the habitat. Crop depredation by the Blackbuck in the agriculture field of local people was the source of conflict between them which was high in winter and was inversely proportional to the distance of the crop field and core habitat of Blackbuck. Metallic fence on the western boundary with many holes was unable to control movement of animals. Only few artificial water holes were working but they were not in appropriate locations of habitat. Ploughing and seedling growth practices inside the PBCA were found effective to reduce the crop raiding of local people. Blackbuck conservation by the involvement of local conservation committees, Eco-clubs, NGOs and INGOs was appreciative but not sufficient.

Conservation practices of Blackbuck at Khairapur were deemed over the survival threats. The major recommendations of this study are to restore, maintain and extend the existing

habitat at Khairapur and to declare it as ‘Blackbuck Conservation Area’. Proper manipulation of habitat and involvement of local people in conservation and management should be given priority.

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ABBREVIATIONS / ACRONYMS

^{0}C	Degrees Celsius
BNP	Bardia National Park
CCEW	Centre for Conservation of Environment and Wildlife
CITES	Convention on International Trade in Endangered Species of Wild Flora and Fauna
DFO	District Forest Office
DNPWC	Department of National Parks and Wildlife Conservation
GIS	Geographical Information system
GM	Gulariya Municipality
GPS	Geographical Positioning System
HMGN	the then His Majesty's Government of Nepal
ICDC	Integrated Centre for Development and Conservation
INGO	International Non-Governmental Organization
Km	Kilometer
Km^2	Square Kilometer
m.	Meter
mm.	Millimeter
NG	Nepal Government
NGO	Non-Governmental Organization
No.	Number
PBCA	Proposed Blackbuck Conservation Area
RBNP	the then Royal Bardia National Park
TAL	Terai Arc Landscape Programme
VDC	Village Development Committee
WWF	World Wildlife Fund