

Sirjana Dhungel T. U. Registration No: 5-2-37-341-2005 T. U. Examination Roll No: 6202 Batch: 2065/66

A thesis submitted in partial fulfillment of the requirements for the award of the degree of Master of Science in Zoology with special paper Ecology.

Submitted to

Central Department of Zoology Institute of Science and Technology Tribhuvan University Kirtipur, Kathmandu Nepal

April, 2014

RECOMMENDATIONS

This is to recommend that the thesis entitled "**Population Status, Habitat Preferences and Conservation Threats of Kalij Pheasant** (*Lophura leucomelana leucomelana*) in **Narmadeswor VDC, Okhaldhunga, East Nepal**" has been carried out by Sirjana Dhungel for the fulfillment of **Master's Degree of Science in Zoology** with special paper Ecology. This is her original work and has been carried out under my supervision. To the best of my knowledge, this thesis work has not been submitted for any other degree in any institutions.

Date:

Mukesh K. Chalise, PhD Associate Professor, Central Department of Zoology Tribhuvan University Kirtipur, Kathmandu, Nepal

LETTER OF APPROVAL

On the recommendation of the Supervisor Dr. Mukesh K. Chalise, Associate Professor of Central Department of Zoology, Tribhuvan University, this thesis submitted by Sirjana Dhungel entitled **"Population Status, Habitat Preferences and Conservation Threats of Kalij Pheasant** (*Lophura leucomelana leucomelana*) in Narmadeswor VDC, Okhaldhunga, East Nepal" is approved for the examination and submitted to the Tribhuvan University in partial fulfillment of the requirements for Master's Degree of Science in Zoology with special paper Ecology.

Date:

Prof. Dr. Ranjana Gupta Head of Department Central Department of Zoology, Tribhuvan University, Kirtipur, Kathmandu, Nepal

CERTIFICATE OF ACCEPTANCE

This thesis work submitted by Sirjana Dhungel entitled entitled "Population Status, Habitat Preferences and Conservation Threats of Kalij Pheasant (Lophura leucomelana Leucomelana) in Narmadeswor VDC, Okhaldhunga, East Nepal" has been accepted as a partial fulfillment for the requirements of Master's Degree of Science in Zoology with special paper Ecology.

EVALUATION COMMITTEE

Supervisor

Mukesh K. Chalise, PhD

Associate Professor,

Tribhuvan University

Kirtipur, Kathmandu, Nepal

Head of Department

Prof. Dr. Ranjana Gupta

Central Department of Zoology

Tribhuvan University

Kirtipur, Kathmandu, Nepal

External Examiner

.....

Internal Examiner

Date of Examination:

DECLARATION

I hereby declare that the work presented in this thesis has been done by myself, and has not been submitted elsewhere for the award of any degree. All sources of information have been specifically acknowledged by reference to the author(s) or institution(s).

Date

Sirjana Dhungel

ACKNOWLEDGMENTS

It is my great pleasure to express my eternal gratitude to Dr. Mukesh K. Chalise, Associate Professor, Central Department of Zoology, Tribhuvan University, for his constructive suggestions, guidance, techniques and procedure of research that provided me the confidence to make this thesis possible.

I am highly grateful to Prof. Dr. Ranjana Gupta, Head of Central Department of Zoology, T.U. for her kind support, valuable suggestion and encouragement during the study period.

I am very much grateful to Bird Conservation Nepal (BCN), Lazimpat, Kathmandu for providing data and research report for the initiate phase of this study. I would like to thank to the staff of Department of Hydrology and Meteorology, Babarmahal, Kathmandu for providing the meteorological data.

I express my sincere thanks to all staff of Central Department of Zoology, TU for their official support. My heartily thanks goes to my friends Hem Bahadur Katuwal and Jitendra Biswas for providing me necessary instruments and guidance during this study. I would also like to thank to Bimala Dhungel, Gita Dhungel, Ranjana Subedi, Siva Shrestha for their valuable support during field work. I am very much thankful with Saraswati Pokharel and Bhawana Dhungel for typing this dissertation. I am utmost thankful for their cooperation.

I am indebted to all my family members i.e. parents and my husband for their inspiration, continued encouragement and support for successfully completion of this study.

Sirjana Dhungel Reg. No.: 5-2-37-341-2005 Exam Roll No.: 6202 Class Roll No.: 24 Batch: 2065/066 Ecology group

ABSTRACT

This study aimed to estimate population status, habitat preferences and conservation threats of Kalij pheasant (*Lophura leucomelana leucomelana*) in Narmadeswor VDC, Okhaldhunga district. Roost survey method was used to collect data on population status of bird, habitat preferences index (HPI) method was used to assess the habitat preferences and conservation threats was evaluated by questionnaire survey.

A total of an average of 14 individuals of Kalij pheasant were recorded from the study area in altogether four visits in April - June, August - September, October - December and January -March, 2011-2012 The result showed highest monthly density (5.55 individuals per sq. km.) in August - September and lowest (1.11 individuals per sq. km.) in March. Among four types of habitats, the closed forest with high understorey was most preferred by the Kalij (HPI = 1.30) followed by closed forest with low understorey (0.92), open forest (0.75) and terraced field (0.74). In Narmadeswor, 22 species of trees, 8 species of shrubs and 29 species of herbs, 8 species of climbers and 16 species of grass were recorded. Altogether 30 roosts were found, among the roosting trees Pinus roxburghii (50%) was mainly used by Kalij pheasant in the study area followed by Shorea robusta (33.33%), Mangifera indica (10%), Phyllanthus emblica (6.67%). Mean height, mean girth at breast height and mean height of lowest branch of roost tree was 9.69m, 0.92m and 5.27m respectively. Most of the respondents showed negative attitude towards Kalij in Narmadeswor areas. Evaluation of Conservation threats from the information given by respondents suggests feeding of Kalij pheasant on crops were the most important threat whereas other threats were fire wood collection, disturbance by people in the roost, timber collection, poaching, egg collection and grazing.

TABLE OF CONTENTS

Торіс	
Declaration	
Recommendation	
Letter of Approval	
Certificate of Acceptance	
Acknowledgements	
Table of content	
List of Tables	
List of Figures	
List of Abbreviations	
Abstract	
1. INTRODUCTION	
1.1 Background	1
1.2 Objectives of the study	3
1.3 Rationale of the study	4
1.4 Statement of problem	4
1.5 Limitations of the study	4
2. LITERATURE REVIEW	5

3. MATERIALS AND METHODS

	3.1 Reconnaissance Survey	11
	3.2 Field Survey	11
	3.2.1 Population Census	12
	3.2.2 Habitats	13
	3.2.3 Vegetation sampling and identification	14
	3.2.4 Habitat use	14
	3.2.5 Roost analysis	15
	3.2.6 Questionnaire Survey	15
4.	RESULTS	
	4.1 Population status of Kalij Pheasant	16
	4.2 Habitats	17
	4.2.1 Vegetation	
	4.2.1.1 Vegetation characteristics	18
	4.2.2 Habitat utilization	19
	4.2.3 Habitat Preference Rating Index	20
	4.3 Roost analysis	20
	4.3.1 Roosting behavior	20
	4.3.2 Roost habit selection	20
	4.4 Conservation threats	22
	4.4.1 Perception of respondents on threats to Kalij	22
5.	DISCUSSION	
	5.1 Population status	26
	5.2 Habitat selection	26
	5.3 Roost analysis	28
	5.4 Conservation Threats	29
6.	CONCLUSION AND RECOMMENDATIONS	
	6.1 Conclusion	31
	6.2 Recommendation	32

7.	REFERENCES	33
8.	APPENDICES	
	Appendices – 1 Tables	37
	Appendices – 2 Household Survey	44
	Appendices – 3 Photos	46

LIST OF TABLES

Tables		Page No.
Table 1	Schedule of the study	13
Table 2	Seasonal variation in population and population density of Kalij in Narmadeswor VDC.	16
Table 3	Frequency of Tree species	18
Table 4	Nepal Kalij Pheasant Habitat Preference Index (HPI)	20
Table 5	Characteristics of Roost trees of the Kalij in Narmadeswor VDC, Okhaldhunga	21
Table 6	Roosting trees of Nepal Kalij in Narmadeswor VDC	22
Table 7	Household survey in relation to cause of threats in the wards of Narmadeswor VDC	23
Table 8	Attitudes of people towards Kalij in the Wards of Narmadeswor VDC (in %)	25

LIST OF FIGURES

Figure		Page No.
Figure 1	Location of study area in Nepal	8
Figure 2	Average monthly Temperature recorded at Ramechhap district (20 k.m. far from Narmadeswor VDC of Okhaldhunga district), 2008 - 2012	9
Figure 3	Average Monthly Precipitation recorded at Ramechhap (20 k.m. far from Narmadeswor VDC of Okhaldhunga district), 2008 - 2012	9
Figure 4	Seasonal variation in Population Density of Kalij Pheasant in Narmadeswor VDC (2011-2012)	17
Figure 5	Response of local people on threats for Kalij pheasants	24

LIST OF ABBREVIATIONS

C.	Centigrade
CFHU	Closed forest of high understorey
CFLU	Closed forest with low understorey
CITES	The Convention on International Trade in Endangered Species of Wild Fauna and Flora
Cm	Centimeter
DBH	Diameter by Breast Height
HPI	Habitat preferences rating index
IUCN	International Union for Conservation of Nature
Km	Kilo meter
OF	Open Forest
Sq.	Square
TF	Terraced Field
VDC	Village Development Committee
WPA	World Pheasant Association