



MASTERS DEGREE OF SCIENCE IN ZOOLOGY
DISSERTATION GUIDELINES

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

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December 2023

E-mail: admin@cdz.tu.edu.np

Phone: +977-1-4331896

Website: <https://www.cdz.tu.edu.np/>

Contributors:

Sharma, H. P., Pandey, K. P., Khanal, L., Subedi, I. P. & Bhattarai, B. P. (2023). *Master's Degree of Science in Zoology: Dissertation Guidelines*. Central Department of Zoology, Institute of Science and Technology, Tribhuvan University, Kirtipur, Kathmandu, Nepal.

Preface

The Central Department of Zoology (CDZ) at Tribhuvan University is one of the oldest departments. Since 1966, the department has offered Master's and Ph.D. degrees in Zoology with specializations in Entomology, Fish and Fisheries since 1968, Ecology since 1978, and Parasitology since 1985. Dissertation writing in Zoology began in the 1970s as a partial fulfillment for the Master's degree, with the first M.Sc. dissertation in Zoology submitted in 1974. Currently, the dissertation has become a compulsory requirement for the Master's degree in Zoology.

This revised document, in 2023, serves as a comprehensive guideline for the preparation and presentation of a dissertation, representing the culmination of academic research, critical thinking, and scholarly inquiry. It aims to provide clear and structured instructions for creating a dissertation that embodies rigorous analysis, originality, and academic excellence.

The process of developing a dissertation is an intellectually stimulating journey that demands dedication, perseverance, and a meticulous approach. From the initial stages of formulating a research question to conducting in-depth literature reviews, gathering empirical evidence, and ultimately presenting findings, each step requires careful attention to detail and adherence to scholarly and ethical standards.

In the dissertation, students will develop a systematic outline of various components. For example, an introduction with an extensive literature review that contextualizes the study within existing research and gaps, the guideline directs through methodologies, data analysis techniques, and the presentation of findings. Additionally, it includes discussions, conclusions drawn, and possible recommendations for future work—crucial elements contributing to the depth and credibility of the dissertation.

Furthermore, the guideline emphasizes the significance of academic honesty and ethical considerations in research. It underscores the need for proper citation, referencing, and acknowledgment of sources, as well as ethical principles guiding the treatment of research participants. This ensures that scholarly work upholds the highest standards of honesty, transparency, and fairness.

Students are encouraged to follow this guideline alongside the Central Department of Zoology's regulations and consult their supervisor(s) or faculty members for discipline-specific instructions and clarifications regarding administrative requirements.

I would like to thank the team members preparing this document and all the faculty members for their inputs during the preparation of the guidelines.

Kumar Sapkota, Ph.D.
Professor and Head
Central Department of Zoology
Institute of Science & Technology
Tribhuvan University, Kirtipur
Kathmandu, Nepal
E-mail: head@cdz.tu.edu.np

Dissertation Research Proposal Guidelines

The research proposal and dissertation are mandatory components of the Master's degree program at the Central Department of Zoology (CDZ), Institute of Science and Technology, Tribhuvan University. The proposal serves as the foundation for their dissertation work. In the second semester, students are required to submit the dissertation research proposal with a cover letter. Students are required to defend it to the departmental evaluation committee.

The students need to develop the research proposal for dissertation work under the guidance and consultation with supervisor who must be a faculty member from CDZ and if essential a subject expert can be included as a joint supervisor. Students will select research topic pertinent to their specialized paper for their dissertation work. The research work may be field-based, observational, or experimental. Regardless of chosen approach, it is imperative to conduct a thorough and critical review of relevant literatures with a specific focus on identified problems. An extensive and relevant literature review is essential to align the project title, objectives and methods.

The research proposal must not replicate or reiterate prior research. The students must follow the department's standard format provided in the proposal guidelines. The proposal has to be submitted to the department within the stipulated deadline, and it will undergo assessment by the departmental evaluation committee.

Research proposal format

- **Language:** The research proposal is required to be written in English language, and either US English or British English is fine, but not combination of both.
- **Proposal length:** The proposal should not exceed 10 pages excluding the Title page and Appendices. Page no. 1 should have abstract followed by introduction.
- **Paper, pagination and margins:** Page number should be placed at the centre of the bottom of the pages. Each page (Paper size- A4, one side) must be kept within 1" margin or 2.5 cm at top, bottom, right and the left margin should be 1.25".
- The figure should be numbered in Arabic numerals followed by concise **heading just below the figure**. Numbers should be given sequentially (e.g., Figure 1, Figure 2, etc.). The figures must be with high resolution (>300 dpi)

- **System unit**

International system units should be used throughout the proposal, e.g.,

Meter m

Kilogram kg

Second sec

(Examples: 0.5 μ , 15 m, 25 km², 25 kg, 35 sec, 37°C, 75%, etc.)

- **Title page:** The title page must include the University's logo, **proposal title, name and identity of the student** (Exam Roll No., Batch, Special paper); **name, designation and organization** of the **supervisor(s)**, and name of the **department** (e.g., Central Department of Zoology, Institute of Science and Technology, Tribhuvan University, Kirtipur, Kathmandu, Nepal, and month and year of submission. All the contents should be center aligned. Title should be in the title case (capitalize first letter of every word except conjunction and specific name) and bold print in Times New Roman 16 pt font size and other matter in 14 pt font size.
- **Headings and sub-headings:** Headings and sub-headings should be all in sentence case, and bold. Headings should be in 14 pt and centered. Sub-headings should be in 12 pt and left aligned. The sub-headings can be numbered according to the heading number (e.g., 1. Introduction; sub-headings: 1.1 Background, 1.2 Statement of the problem, 1.3.....)
- **Font size and spacing:** Standard font size for text should be set at 12 pt in Times New Roman. Line spacing of regular write up should be of 1.5 space (spacing before and after 6 pt)

Proposal Title

- Title should be concise, specific, impressive and informative – preferably short titles (less than 20 words; limit to three lines).
- Use scientific names of the organisms (with author name and year if needed).
- Avoid abbreviations

Abstract

A concise abstract with maximum 250 words is required. The abstract should state briefly the background, objectives of the research, methods and the expected outcomes. Non-standard or uncommon abbreviations should be avoided, however, if essential they must be defined at their first mention in the abstract.

Introduction

In the introduction section, students provide an adequate background, with a detailed literature survey. It must be with a general overview of the global and national issues, and background leading to the problem and research gap. It should provide a clear and concise overview of the research topic, its significance, and the context.

The introduction section should include:

- Background
- Statement of the problem
- Objectives
- Significance of the study
- Research hypothesis(es) or Research question(s)
- Limitations of the study (if any)

Background

This section includes historical context, and any previous research or theories that are relevant to the topic with a detailed literature review. It can be divided into sub-headings, if needed (1.1.1, 1.1.2.....).

Statement of the problem

This section should include the existing research gaps in the proposed research.

Objectives

Objectives should be clear, concise, and specific. They should leave no room for ambiguity or misinterpretation. Ensure that each objective directly addresses the research problem or question identified in the introduction. It includes the general and specific objectives.

General objective should be overall aim of the research (in one sentence).

The **specific objectives** (generally two or three) which are the breakdowns of the general objective into smaller logically connected parts.

Specific objectives should be measurable, relevant to the overall aim of the study, should be realistic and attainable within the scope of the study, objectives can be accomplished within the allocated time, if the study has multiple objectives, consider whether they have a hierarchical relationship.

Significance of the study

This section is crucial as it helps to justify the need for the research and demonstrates its potential impact. Explain why the research is important and what potential contributions it can make to the field of study, as well as to broader societal or practical contexts.

Explain how your research fills a gap in existing knowledge or addresses a specific issue that has not been adequately explored. This highlights the novelty and originality of your study. Discuss how your research contributes to the theoretical framework or conceptual understanding of the topic. Finally, highlight any practical implications or applications of your research findings. Explain how the results could be used to inform policy, improve practices, or solve real-world problems.

Research hypothesis(es) or Research question(s)

A hypothesis must be with a testable statement or prediction about the relationship between variables. It should be with tentative explanation for a phenomenon or assumption about the outcome of the study.

Limitations of the study (if any)

The limitations of a study refer to the factors that may impact the interpretation and generalizability of the findings. It's important for researchers to acknowledge and discuss these limitations to provide a transparent and accurate representation of the study's scope and potential weaknesses

Literature review

A literature review is a critical analysis and summary of existing research and scholarly articles on a research topic. Students should analyze the collected information to identify common themes, conflicting viewpoints, or gaps in the existing research. Therefore, students must provide an overview of what has already been done/investigated, identify gaps, and establish the context for their own research. A literature review should not just be a summary of existing works but should critically analyze, synthesize, and present the information in a structured and meaningful way to contribute to your own research. At the end of literature review, students need to provide a paragraph explaining the research gap.

Materials and methods

This section describes in details where and how the research is to be carried out. Following points can be considered while designing the research methods:

- Describe the study area showing study sites in the map (if necessary).
- Mention briefly the materials used.
- Discuss research/experimental design.
- Follow standard methods and cite references of methods employed.
- Mention the institution(s) from where the facilities (e.g., laboratory, etc.) will be provided.
- Discuss research alternatives if your original assumptions/hypotheses prove incorrect.
- Mention how the data will be statistically analyzed.

Ethical, legal and social implications

The ethical approval related to human, animals, plants or any form of bios or biomes must be obtained from concerned authority.

Expected outcomes

Expected outcomes in a research proposal must be referred to the anticipated results or findings that you predict, and will be obtained as a result of conducting the study. State outcomes of research based on your research objectives.

Time frame of the study

- Provide an estimated time schedule/working scheme of your work. Time schedule presentation can be given in a tabular form.
- Headings of the activities can be different depending on the nature of the work.

Budgeting (optional)

The budget for the proposed research must encompass all expected expenses, especially focusing on field equipment, consumables and laboratory supplies. It should be structured under multiple headings and align with the various aspects of the proposed study. However, each item and amount within the budget should be justified.

References

Format: APA 7th Style, students are suggested to use reference management tool while citing literature and listing them in the references. Use Times New Roman 12 pt. See further details in the dissertation guidelines (Page No. 29–31)

Appendices (if necessary)

An appendix should include materials that supplement the main text of the proposal. This section can consist of data sheet, questionnaires, maps, sketches, photographs, description of equipment, Consent Form (if necessary), etc. Number the appendices must be arranged sequentially (Appendix I, Appendix II, etc.).



Title of the Dissertation Proposal

Student's Name

TU Registration No.: 2-2-523-19-2014

M.Sc. Zoology (Special Paper)

Supervisor

Full Name

Designation

Dissertation Proposal Submitted to

Central Department of Zoology

Institute of Science and Technology

Tribhuvan University

Kirtipur, Kathmandu

Nepal

Month Year

(in single page)

Declaration

I hereby declare that this dissertation proposal has been prepared by myself, and has not been submitted for the purpose of any other degree. All sources of information have been specifically acknowledged by reference to the author(s) or institution(s).

Signature

Candidate's full name:

Roll No.:

Email ID:

Date:

(in single page)

TRIBHUVAN UNIVERSITY
INSTITUTE OF SCIENCE AND TECHNOLOGY
CENTRAL DEPARTMENT OF ZOOLOGY
Kirtipur, Kathmandu, Nepal

Supervisor(s) consent

I/We hereby give consent to supervise the dissertation proposal entitled “Title of Dissertation Proposal” has been prepared by..... (Candidate’s name) for the dissertation requirements of Master’s Degree of Science in Zoology with special paper..... .

(Signature)

Full name of supervisor

Designation

Central Department of Zoology

Tribhuvan University

Kirtipur, Kathmandu, Nepal

Full name of co-supervisor (if any)

Designation

Affiliation

Date.....

(in single page)

Abstract

Times New Roman 12 pt, 1.5 line spacing

Contents

	Pages
Declaration	i
Supervisor(s) consent	ii
Abstract	
.....	
1. Introduction	
1.1.....	1
1.2.....	2

1. Introduction

1.1 Background

Times New Roman 12 pt, 1.5 line spacing

1.2 Statement of the problem

Times New Roman 12 pt, 1.5 line spacing

1.3 Objectives

1.3.1 General objective

Times New Roman 12 pt, 1.5 line spacing

1.3.2 Specific objectives

- Times New Roman 12 pt, 1.5 line spacing

1.4 Research hypothesis(es) or Research question(s)

- Times New Roman 12 pt, 1.5 line spacing

1.5 Significance of the study

Times New Roman 12 pt, 1.5 line spacing

1.6 Limitations of the study (if any)

- Times New Roman 12 pt, 1.5 line spacing

2. Literature review

Times New Roman 12 pt, 1.5 line spacing

This section should follow the specific objectives, can be organized as 2.1, 2.2, 2.3

3. Materials and methods

Times New Roman 12 pt, 1.5 line spacing

3.1 Study area

3.2. Materials (if necessary)

3.3. Methods

For citations of tables, figures and appendices: (Table 1), (Figure 1), (Appendix Table 1), (Appendix Figure 1)

Table 1. Table caption

Abcd	Efgh	Ijkl	Mnop

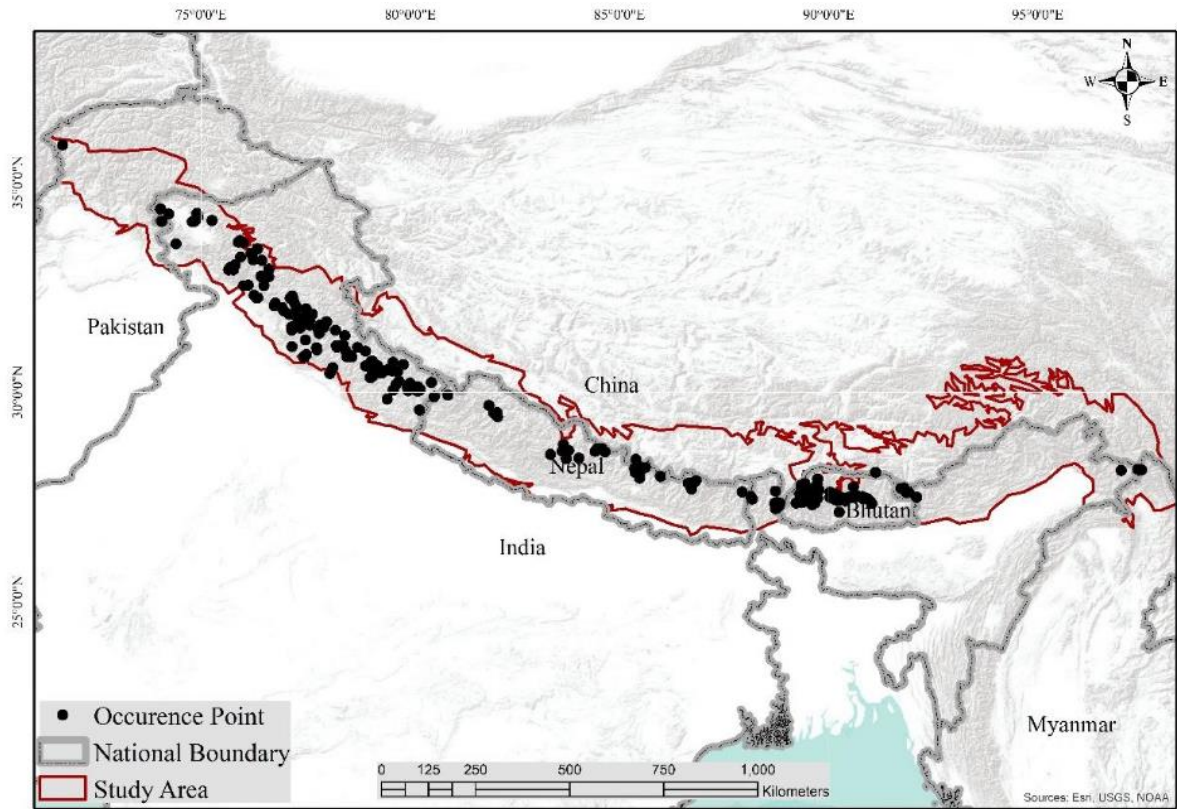


Figure 1. The presence points used for model building, the species range, and the study area

4. Ethical, legal and social implications

Times New Roman 12 pt, 1.5 line spacing

- 4.1. Describe ethical aspects including required ethical approval from University Ethical Committee
- 4.2. Describe required permission letters from concerned agencies including legal issues performing the research.
- 4.3. Describe social implications of research

5. Expected outcomes

Times New Roman 12 pt, 1.5 line spacing

Write expected outcomes of the research based on your specific objectives

Time frame of the study

Time period: Month/Year – Month/Year								
S.N.	Activities	1	2	3	4	5/6/7	8/9/10	11/12
1.	Literature review							
2.	Proposal defense							
2.	Research design							
3.	Preliminary survey							
4.	Field survey/ Data collection							
5.	Data analysis and interpretation							
6.	Dissertation writing							
7.	Dissertation pre-defense							
8.	Dissertation final defense							

Budget (optional)

Particulars	Description	Total (Rs)
A. Personnel costs		5000
	A.1. Field gears, first aid, travel insurance	5000
B. Field costs		37000
	B.1. Travel costs (investigators, assistants, enumerators)	11000
	B.2. Daily allowance (investigators, assistants, enumerators)	15000
	B.3. Survey cost (hiring, subjects compensation, refreshment, chemicals, equipment, special need)	11000
C. Office costs		2500
	C.1. Communication	2500
D. Facilities and administrative costs		5000
	D.1. Proposal preparation cost	1500
	D.2. Documentation and publication cost	3500
Total		49500

References

Format: APA 7th Style, students are encouraged to use reference management tool while citing literature and listing them in the references. Use Times New Roman 12 pt, 1.5 line spacing. See further details in the dissertation guidelines (Page No. 29–31).

Appendices

Times New Roman 12 pt

Appendix 1.

Appendix 2.

Dissertation Format Guidelines

The dissertation is mandatory component for all M.Sc. Zoology students enrolled at Tribhuvan University. It is a requisite submission to partial fulfilment of the requirements for the award of Master's Degree of Science in Zoology. This guideline has been prepared to provide comprehensive assistance to M.Sc. Zoology students specializing in Ecology and Environment, Entomology, Fish and Aquaculture and Parasitology. Its purpose is to aid in the meticulous preparation of their dissertation to meet the standards developed by CDZ. The regulations outlined within this guideline have been updated to align with current international trends and norms of scientific writing of zoology related dissertations.

The dissertation must be original research conducted by the student. Submission of a dissertation based on work for which the student has previously been awarded a degree, whether from this institution or any other university, will not be permissible.

- The supervisor takes the responsibility of ensuring that any dissertation submitted as a part of the requirements for a Master's degree at Central Department of Zoology, featuring specialized papers, confirm to the regulations delineated within this guideline.
- Responsibility for the content of any dissertation remains with the student.
- After fulfilment of all the administrative and financial requirements, each student has to submit three unbound copies of draft dissertation to the department administration with the recommendation of the supervisor.
- The student will have to make presentation before a panel of experts both from department and outside after the Department Head approves his/her work for the examination.
- The students must deposit specimens collected, prepared and cited in the dissertation at the departmental repository, the Museum of Central Department of Zoology as a part of the student' research work. The depositions, may include, but are not limited to, museum specimens, slides, images, audio, video recordings, field notes with geographic position, raw or processed data sheets, and documentary materials generated as a part of research. However, collections which are not used or cited in the dissertation can exempt deposition.
- During presentation all the necessary comments on the work raised by the experts and the student's confidence over his/her work is gauged by the way he/she answers the questions put forward.
- All comments and suggestions raised by the experts need to be addressed in dissertation and response letter before submitting the final hard-bound copy (black color cover). The dissertation title and student's name with year also should be printed on the side of the hard-bound copy.
- Altogether five hard copies need to be submitted to the department administration.

General Guidelines

Number of copies: Central Department of Zoology requires THREE copies of the unbound dissertation at the time of submission.

Language: The dissertation is required to be written in English language, and either US English or British English is fine, but it cannot be mixed.

Paper: The dissertation must be printed on **one side** only of good quality white paper (e.g., 80 gsm paper) of A4 size (210 mm x 297 mm). The same grade of paper must be used throughout the dissertation.

Margins: For binding purposes, every page of dissertation must be kept within the following margins:

Top: 1" Right: 1"
Bottom: 1" Left: 1.25"

All contents must fit within these margin requirements (including tables, figures, graphs, photographs and page numbers).

Spacing and pagination

- (a) Line spacing should be of 1.5 space (spacing before and after 6 pt.) (except indicated).
- (b) Each page of the entire dissertation, except the title page, must be numbered.
 - i) Preliminary pages must be numbered in Roman numerals (i.e., i, ii, iii....x).
 - ii) Main text and end matter should be continued with Arabic numbers (i.e., 1, 2, 3, 4,).
- (c) Page number should be placed at the center of the bottom of the pages.

Typeface and font size

- (a) Standard typeface for the dissertation is **Times New Roman**.
- (b) The font size for text should be at 12 pt.
- (c) Photographs and other illustrative material annotation text can be smaller (minimum 10 pt).
- (d) Headings and sub-headings should be set bold in Times New Roman 14 pt and 12 pt font size, respectively.
- (e) **Bold** print should be used for headings and sub-headings.
- (f) The dissertation should be printed in letter quality with black characters that are clear and easy to read (except color photographs and maps).

Photographs and other illustrative materials

- (a) Photographs and other illustrative materials must be fitted within the specified margins.
- (b) Photographs and other illustrative materials (tables, graphs and figures) should be integrated with the text or in the separate page where ever related description appears.

- (c) Photograph number should be numbered in Arabic numerals followed by concise **heading just below the photograph.**
- (d) Graphs and figures should be numbered in Arabic numerals followed by concise **heading just below the graphs and figures.** Numbers should be given sequentially (e.g., Figure 1, Figure 2, etc.). The figures must be with high resolution (>300 dpi)
- (e) **Tables** should be numbered in Arabic numerals followed by concise **heading just above the body of the table.** Table numbers should be given sequentially (e.g., Table 1, Table 2, etc.).
- (f) Colored materials can be used.
- (g) Concise but enough description needs to be provided in figure legends to allow interpretation of the figure without reference back to the text.

System unit

International system units should be used throughout the dissertation. e.g.,

Meter	m
Kilogram	kg
Second	sec

Taxonomic name and authority

Italics must be used for scientific names (Genus and species) of the animals and plants.

- a) When scientific name of animal/plant is written for the first time, authority should be written as the name(s) of the author(s), e.g., *Seriola gracilis* Lowe, 1843.
- b) While in case of plants, year of publication is not cited. e.g., *Abies beshanzuensis* Wu
- c) When referring to a group of species with the same generic name, the abbreviation “spp.” should be used, e.g., *Bensonies* spp. But for one unspecified species belonging to same genus only “sp” is used, e.g., *Bensonies* sp.
- d) Taxonomic level higher than genus (i.e., family, order, class, etc.) are not italicized but term should be capitalized.

Scientific and common names

- a) While writing common name and scientific name together, scientific name should be kept within bracket, e.g.,
greater one-horned rhino (*Rhinoceros unicornis*)
blue bull (*Boselaphus tragocamelus*)
- b) All initials of the common name must be always written in lower case except for proper nouns, e.g.,
“Asian koel”, “Chinese pangolin”, “Royle's pika”, “spiny babbler”

Numbers

- a) Numbers between one and nine should be written in words, e.g.,
“Regular surveys have been carried out in three sites in the forest and seven sites in human habitation.”
- b) Numbers above nine should be written numerically, e.g.,
“After 105 sightings, 450 bird species were recorded.”

- c) But if the sentence begins with numbers, the number should be written in words, e.g., “Fifteen spiny babblers were spotted outside the reserve.”
- d) For numbers with four or more numerals, no need to use commas to separate the hundreds, e.g., “Fish are found up to the depth of 2000 m.”

Dates

- a) When writing a date in full, mm/dd/yr structure should be followed, e.g., “December 20, 2023”.
- b) When referring to a particular century, following structure should be followed, e.g., “19th century”.

IUCN Red List terminologies

Global Red List Categories (<https://www.iucnredlist.org/>) and National Red List Categories (e.g., <https://www.himalayannature.org/citizen-science/natonal-red-list-of-birds/>) must be always cited in capitalized form, e.g.,

Category	Abbreviation
Extinct	EX
Extinct in the Wild	EW
Critically Endangered	CR
Endangered	EN
Vulnerable	VU
Near Threatened	NT
Date Deficient	DD
Not Evaluated	NE

Specific guidelines

A dissertation should be written in a standard format. It should include three major components:

1. Preliminary pages
2. Main text
3. End matter

1. Preliminary pages

(i) Cover page

- a) All the contents should be centered alignment.
- b) It contains – T.U. logo, Title of dissertation, name/T.U. registration number/T.U. examination roll no./batch of candidate, name of department and year of submission.
- c) Title should be in New Times Roman 14 pt font size, all caps and bold, while other matter like name of candidate, department should be in 12 pt font size.
- e) An inner page containing copyrights and citation of dissertation

(ii) Declaration by the candidate

(content must be in justified alignment)

(iii) Recommendation by the supervisor(s)

Should be typed in the **format** of Departmental letter head.

(content must be in justified alignment)

(iv) Letter of approval from head of department

Should be typed in the **format** of Department letter head.

(v) Certificate of acceptance by the evaluation committee

Should be typed in the **format** of Departmental letter head.

(vi) Acknowledgements

Heading should be centered and body should be justified

(ethics required to be strictly followed, individual's and institution's significant contribution to the work should be acknowledged)

(vii) Contents

a) Heading should be center aligned.

b) Components of the contents should be left aligned.

c) Page number should be right aligned.

(viii) List of tables

a) Heading should be center aligned.

b) Table number should be left aligned.

c) Description of the table should be one tab after table number.

d) Page number should be right aligned.

(ix) List of figures

(Same as list of tables).

(x) List of photographs

(Same as List of Tables).

(xi) List of appendices (if required)

(Same as List of Tables).

(xii) List of abbreviations

a) List symbol abbreviations first.

b) Followed by abbreviations in alphabetic order.

c) Full points (dots) should not be used in abbreviations such as "expt" for experiment.

(all the abbreviations used in dissertation must be listed).

(xiii) Abstract

a) Heading should be centered and body should be justified.

b) Abstract should be a succinct description of the work.

c) Should contain objective of the study, materials and methods used, results and conclusions with recommendations.

d) Shouldn't contain literature citations.

e) Shouldn't exceed more than one page.

(Note: All page numbers of the preliminary pages must be in Roman numerals (i.e., i, ii, iii...))

(xiv) Abstract in Nepali

- a) Write in your own words using Preeti font.
- b) Others same as in English

II Main Text

The main text of the dissertation should include given headings. Headings should be all in bold, centered and of Times New Roman 14 pt font size.

1. Introduction
2. Literature review
3. Materials and methods
4. Results
5. Discussion
6. Conclusions and recommendations
7. References

1. Introduction

In the introduction section, students provide an adequate background, with a detailed literature survey. It must be with a general overview of the global and national issues, and background leading to the problem and research gap. It should provide a clear and concise overview of the research topic, its significance, and the context.

- (a) Should be divided into sub-headings.
- (b) Sub-headings should be bold, Times New Roman 12 pt font size and numbered (i.e., 1.1, 1.2, 1.3.....).
- (c) Figures, photographs and other illustrative materials can be used in the introduction.

1.1 Background

This section includes historical context, and any previous research or theories that are relevant to the topic with a detailed literature review.

1.2 Statement of the problem

This section should include the existing research gaps in the proposed research.

1.3 Objectives

Objectives should be clear, concise, and specific. They should leave no room for ambiguity or misinterpretation. Ensure that each objective directly addresses the research problem or question identified in the introduction. It includes the general and specific objectives. In general objective it should be overall aim of the project in one sentence. In specific objectives

(generally two or three) which are the breakdowns of the general objective into smaller logically connected parts.

Specific objectives should be measurable, relevant to the overall aim of the study, should be realistic and attainable within the scope of your study, objectives can be accomplished within the allocated time. If you have multiple objectives, consider whether they have a hierarchical relationship.

1.4 Significance of the study

In the significance of the study, explain why the research is important and what potential contributions it can make to the field of study, as well as to broader societal or practical contexts. This section is crucial as it helps to justify the need for the research and demonstrates its potential impact. Explain how your research fills a gap in existing knowledge or addresses a specific issue that has not been adequately explored. This highlights the novelty and originality of your study. Discuss how your research contributes to the theoretical framework or conceptual understanding of the topic. Finally, highlight any practical implications or applications of your research findings. Explain how the results could be used to inform policy, improve practices, or solve real-world problems.

1.5 Research hypothesis(es) or Research question(s)

A hypothesis must be with a testable statement or prediction about the relationship between variables. It should be with tentative explanation for a phenomenon or assumption about the outcome of the study.

1.6 Limitations of the study (if any)

The limitations of a study refer to the factors that may impact the interpretation and generalizability of the findings. It's important for researchers to acknowledge and discuss these limitations to provide a transparent and accurate representation of the study's scope and potential weaknesses

2. Literature review

A literature review is a critical analysis and summary of existing research and scholarly articles on a research topic. Students should analyze the collected information to identify common themes, conflicting viewpoints, or gaps in the existing research. Therefore, students must provide an overview of what has already been done/researched, identify gaps, and establish the context for their own research. A literature review should not just be a summary of existing works but should critically analyze, synthesize, and present the information in a structured and meaningful way to contribute to your own research. At the end of literature review, students need to provide a paragraph explaining the research gap.

3. Materials and methods

- a) Materials and methods section should be divided into sub-headings with numbering, 3.1, 3.2,...

- 3.1 Study area/Laboratory set-up

- 3.2 Field techniques

- 3.3 Study design

- 3.4 Experimental design

- 3.5 Statistical analysis

- (Headings and sub headings of the materials and methods could be different from above mentioned, depending on the nature of the study)*

- b) Sub-headings can be further divided if required with numbering, 3.1.1, 3.1.2,.....

- c) Observational or experimental methods employed should be clearly described.

- d) Established methods if employed must be correctly referenced.

- e) If new or substantially modified methods are utilized, must give reasons.

4. Results

- a) Results can be divided into sub-headings with numbering e.g., 4.1, 4.2, 4.3.....and should be bold.

- b) Sub-headings can be further divided if required with numbering e.g., 4.1.1, 4.1.2, 4.1.3...

- c) The results should contain an explanation and description of the data, and highlights of findings, patterns, trends and relationships observed using statistical tools (whenever required).

- d) The results should be presented in logical sequence in the text, tables or illustrations.

- e) Same results should not be interpreted with multiple illustrations.

- (see general guidelines for photographs and other illustration style)*

5. Discussion

- a) Should include statement of primary findings of the study.
- b) Orderly comparison of study findings to other relevant work.
- c) Considerations and implications of specific findings of study.

6. Conclusions and recommendations

- a) Specific conclusions permitted by the study
- b) Should include researcher's suggestions or policy recommendations either for further research or for the development of society or for future action and implementation.
- c) Should be based on results of the study.

7. References

Should be arranged in alphabetical order based on author(s).

General format for the references

Format: APA 7th Style, students are encouraged to use reference management tool (e.g., Mendeley, Zotero, Endnote) while citing literature and listing them in the references. All literatures cited in the text should be listed in an alphabetical order in a standard format (APA 7th style) including DOI (if available) as given below:

Use Times New Roman 12 pt.

In-text citation: Examples

For single author: Mitchell (2017) states... Or ...(Mitchell 2017)

For two authors: Mitchell and Smith (2017) state... Or ...(Mitchell & Smith 2017).

For three or more authors: Mitchell et al. (2017) state... Or ...(Mitchell et al. 2017).

For citing authors with multiple works from one year: (Mitchell 2017a) Or (Mitchell 2017b).

Citing multiple works in one parenthesis: Mitchell (2007, 2013, 2017) state ... Or (Mitchell 2007, 2013, 2017)

(Thomson et al. 2015; Mitchell & Smith 2017).

For citing a secondary source: Lorde (1980) as cited in Mitchell (2017) Or (Lorde 1980, as cited in Mitchell 2017)

References list: Examples

Book referencing examples

Smyth, J. D., & Wakelin, D. (1994). *Introduction to animal parasitology*. Cambridge University Press.

Bahuguna, A., Sahajpal, V., Goyal, S. P., Mukherjee, S. K., & Thakur, V. (2010). *Species identification from guard hair of selected Indian mammals: a reference guide*: Wildlife Institute of India.

Edited book referencing examples

Cox, F. E. (Ed.). (2009). *Modern parasitology: a textbook of parasitology*. John Wiley & Sons.

Seidensticker, J., Jackson, P., & Christie, S. (Eds.). (1999). *Riding the tiger: tiger conservation in human-dominated landscapes*. Cambridge University Press.

Kindlmann, P. (Ed.). (2011). *Himalayan biodiversity in the changing world*. Springer Science & Business Media.

Referencing a chapter in an edited book

Le Couteur, D., Kendig, H., Naganathan, V., & McLachlan, A. (2010). The ethics of prescribing medications to older people. In S. Koch, F. M. Gloth & R. Nay (Eds.), *Medication management in older adults* (pp. 29–42). Springer. https://doi.org/10.1007/978-1-60327-457-9_3

Smith, J. L. D. (1987). Female land tenure system in tigers. In R. L. Tilson, & U. S. Seal (Eds.), *Tigers of the world: The biology, biopolitics, management, and conservation of an endangered species* (pp. 97–109). Park Ridge, NJ: Noyes Publications.

Referencing an e-book

Mitchell, J. A., Thomson, M., & Coyne, R. P. (2017). *A guide to citation*. Retrieved from <https://www.mendeley.com/reference-management/reference-manager> (Accessed on 20 November 2023)

Allen, G. M., & Tozzer, A. M. (1910). *Animal figures in the Maya codices*. Salem. <http://www.gutenberg.org/ebooks/19042> (Accessed on 21 November 2023)

Referencing journal articles

Chabot, D., & Bird, D. M. (2015). Wildlife research and management methods in the 21st century: Where do unmanned aircraft fit in? *Journal of Unmanned Vehicle Systems*, 3(4), 137–155. <https://doi.org/10.1139/juvs-2015-0021>

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- Abrahms, B., Carter, N. H., Clark-Wolf, T. J., Gaynor, K. M., Johansson, E., McInturff, A., ... & West, L. (2023). Climate change as a global amplifier of human-wildlife conflict. *Nature Climate Change*, 13(3), 224–234. <http://doi.org/10.1038/s41558-023-01608-5>
- Santos, J. A., Fraga, H., Malheiro, A. C., Moutinho-Pereira, J., Dinis, L. T., Correia, C., ... & Schultz, H. R. (2020). A review of the potential climate change impacts and adaptation options for European viticulture. *Applied Sciences*, 10(9), 3092.

Referencing dissertations

- Sharma, P. (2019). *Coprolological study on prevalence of protozoan parasites of Asian elephant (Elephas maximus) in Parsa National Park, Nepal* (MSc dissertation). Central Department of Zoology, Tribhuvan University.
- Smith, H. S. (2010). *Deer and tiger* (Doctoral dissertation). Department of Zoology, Oxford University.

Referencing reports

- GoN. (2014). *Nepal Biodiversity Strategy and Action Plan 2014–2020*. Government of Nepal, Ministry of Forests and Soil Conservation, Singhadurbar, Kathmandu, Nepal

Referencing websites

- Slat, B., & Worp, C. (2019, April 10). Whales likely impacted by Great Pacific garbage patch. The Ocean Cleanup. <https://www.theoceancleanup.com/updates/whales-likely-impacted-by-great-pacific-garbage-patch/>

Newspaper article

- Popkin, G., & Draper, K. (2020, August 12). Global warming could unlock carbon from tropical soil. The New York Times. <https://www.nytimes.com/2020/08/12/climate/tropical-soils-climate-change.html>

Appendices

- a) Page break for each appendix
- b) Separate title is to be given for each appendix
- c) Generally, the appendices include:
 - i) Paraphrase and Informed Consent Forms
 - ii) Other forms used
 - iii) University Ethical Committee Approval Letter
 - iv) Research permission letters (e.g., DNPWC, DoF, NHRC)
 - v) Detailed aspects of a protocol, calibration data, etc.
(depends upon nature of the study)



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T.U. Registration No.:
T.U. Examination Roll No.:
Batch:

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

A dissertation submitted
In partial fulfilment of the requirements for the award of the degree
of Master of Science in Zoology with special paper

Month Year



Title of Dissertation

Student's Name

TU Registration No.: 2-2-523-19-2014

M.Sc. Zoology (Special Paper)

T.U. Examination Roll No.:

Supervisor

Full Name

Designation

Co-Supervisor

Full Name

Designation, Institution

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Tribhuvan University

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I hereby declare that the work presented in this dissertation “.....(title of the dissertation in sentence case).....” 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).

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Evaluation committee

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Supervisor
Full name with designation

.....
Head of Department
Full name with designation

.....
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Full name

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Internal Examiner
Full name

Date of examination: mm/dd /yr

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Acknowledgments

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Abstract

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शोध सारांश

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Contents

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List of photographs

Photograph	Title of photograph	Pages
1
2
3

List of abbreviations

Abbreviated form

Details of abbreviations

WHO

World Health Organization

MAB

Man and Biosphere

NHRC

Nepal Health Research Council

.....

.....

1. Introduction

1.1 Background

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1.2 Statement of problem

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1.3 Objectives

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1.3.1 General objective

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1.3.2 Specific objectives

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1.4 Research hypothesis(es) or Research question(s)

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1.5 Significance of the study

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1.6 Limitations of the study (if any)

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2. Literature review

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This section should follow the specific objectives, can be organized as 2.1, 2.2, 2.3

3. Materials and methods

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3.1 Study area

3.2. Materials required (if necessary)

3.3. Methods

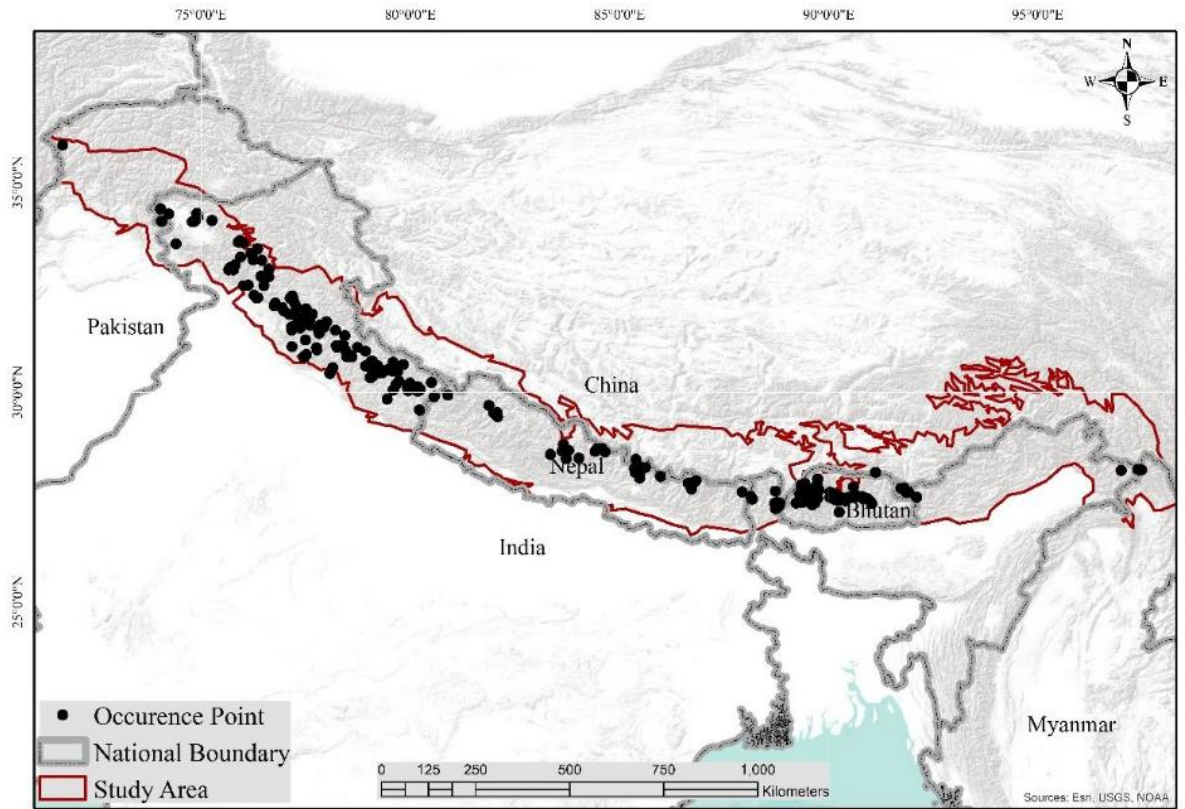


Figure 1. The occurrence points used for model building, the species range, and the study area.

5. Discussion

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Following sub-titles depend on the results or it can be without sub-titles

5.1. Discussion of first objective

5.2. Discussion of second objective

5.3. Discussion of third objective

6. Conclusions and recommendations

Times New Roman 12 pt, 1.5 line spacing

6.1. Conclusions

6.2. Recommendations

7. References

See format above (Page No.29–31)

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Appendices

Times New Roman, preferably 12 pt, for adjustment it can be between 10-12 pt depending upon the contents

Every appendix should start in a new page

Appendix 1.

Appendix 2.