



NRI
Natural
Resources
Institute

Master of Natural Resources Management

Thesis Process

Stages of Completion

2021/2022

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Master of Natural Resources Management

Thesis Process

1.0 The Thesis

The thesis is an independently written document that establishes the results of an interdisciplinary research project aimed at addressing a problem or issue in natural resources and/or environmental management. The thesis should show that the student has mastery of the specific field of natural resources and/or environmental management under investigation, and is fully conversant with the relevant literature. The thesis should also demonstrate the candidate's competence in completing a research project. The thesis may entail cooperation with agencies in the community at large and with other faculties at the University of Manitoba.

In general, the overall goal of the thesis is to build or apply concepts and theories through disciplined and focussed independent study. Therefore, the thesis should be based on scholarly study and include research that is of a theoretical and/or practical focus oriented to problem-solving.

The purpose of the thesis is: (1) to develop the student's skills and abilities to conduct applied research in the natural resources and environmental management field; and (2) to develop expertise in preparing clear and concise thesis.

Students are expected to work closely with faculty to identify researchable topics and secure financial support for a research project or to identify a research topic appropriate for study without financial support.

2.0 The MNRM Thesis Process

The thesis research process has five distinct stages as outlined below. Please note that timing of the five stages may differ from candidate to candidate.

STAGE 1 Development and Approval of Research Proposal

During this stage, a number of activities take place: students participate in the Master's Thesis Research Seminar course and potentially one of two other research methods courses, a research proposal is developed and a thesis research advisory committee is appointed using the appropriate forms. The advisory committee meets to review the research proposal (usually during the first 8 months), and financial support from various agencies is potentially sought. Once the proposal is approved, the candidate must secure Animal Care and/or Human Ethics approval as necessary.

STAGE 2 Data Collection

During this phase students will work in the field collecting their data in accordance with the thesis research proposal and ethical/animal care protocols.

STAGE 3 Development of First Draft of the Thesis

During this stage students will complete the first draft of their thesis. This will include presentation of findings from the data collected, analysis and discussion in the context of the literature reviewed and conclusions drawn. Students distribute the first draft to their advisory committee and arrange a meeting to discuss the draft and receive input for preparing the final thesis document.

STAGE 4 Preparation of Final Thesis Document

Development of the final thesis document will involve: interaction with individual committee members to refine, edit and clarify arguments presented; preparation of the final thesis document for oral defence, including maps, charts, tables and figures, abstract, acknowledgements, and appendices; and, circulation of the final thesis to the examining committee.

STAGE 5 Oral Examination

The final stage is the oral defence of the thesis. For this to occur the student must: circulate their thesis; schedule the date of oral defence; prepare their presentation for the oral examination committee meeting; and complete Faculty of Graduate Studies and NRI forms for oral examination. Following a successful defence, students must make any required revisions to the thesis and complete the administrative requirements required prior to submission to the Faculty of Graduate Studies.

Each of the preceding stages is described more fully in the material that follows.

STAGE 1 Development and Approval of Research Proposal

A thesis research proposal is developed by each student in consultation with their faculty advisor as the first step in the thesis research process at the NRI. The research proposal will consist of: i) The research context or introduction; ii) Literature Review; iii) Methods. An NRI course (NRI 7262 Master's Thesis Research Seminar) is offered to assist students with the thesis research process. This course has been designed for students to help identify areas for thesis research, to learn about the range of research methods used in the field of Natural Resource and Environmental Management, to gain practice in preparing a thesis research proposal, and to receive feedback from advisors on their written and oral work. The course also introduces students to concepts and skills necessary to conduct research related to issues or problems in resource and environmental management. The course explores research methodologies and paradigms, the basics of research design, data collection and analysis and various techniques for proposal preparation and presentation.

The research proposal generally has the following format:

Section 1 - Research Context or Introduction

- Background
- Statement of Problem or Issue
- Research Objectives
- General Methods
- Justification for Research
- Research Budget
- Critical Path or Schedule

Section 2 - Literature Review

Review and analysis of literature related to the subject area, with the proposed research placed oriented in relation to the literature.

Section 3 - Methods

Explanation of research design, emphasizing the application of existing methodologies or development of novel approaches to address the objectives set. Detailed presentation and explanation of data collection and analysis methods.

Students are encouraged to begin working with their advisor as soon as possible to develop the format to be used in their individual proposals and theses.

The oral examination of the thesis proposal will be reported to the Faculty of Graduate Studies on the [Master's Thesis/Practicum Proposal](#) form, whereby the student is given approval to proceed with the thesis research. The thesis proposal, first draft, and final defence draft should have a proper title page as displayed in Appendix A.

2.1 The Thesis Advisory Committee

The student's advisor will work with the student to establish a thesis advisory committee and recommend same to the Director of NRI for approval. Once members agree to serve, this must be reported to the Faculty of Graduate Studies Office on the [Master's Thesis/Practicum Title and Appointment of Examiners](#) form. The committee must consist of a minimum of three (3) members (including the advisor), at least two (2) of whom must be members of the Faculty of Graduate Studies. If there is a Co-Advisor the committee must consist of four (4) members, at least two of whom must be members of the Faculty of Graduate Studies. All examiners must be deemed qualified by the Advisor and the Institute Director and be willing to serve.

Academic and non-academic committee members who have considerable experience in the subject area of the research or possess special knowledge are appropriate as additional committee members. Committee members must hold a Master's degree or permission from Graduate Studies must be sought for their participation if they are to be a voting member.

The purpose of the committee is to assist the student during the research process by bringing expertise and to recommend, on a pass/fail basis, the acceptability of the final written thesis. The committee should review the student's proposal and provide comments on proposed research activities prior to the initiation of the research.

The Institute faculty advisor is formally appointed by the Director based on the student's stated research interest. The faculty advisor provides on-going guidance to the student, directs the work of the committee, and calls and chairs all meetings of the committee leading to the final oral defence of the thesis. At each stage of the research process, the student must submit draft material to their faculty advisor for review and make necessary changes prior to submission to the committee as a whole. In addition, the faculty advisor and the student are responsible for ensuring that all forms required by the Natural Resources Institute and the faculty of Graduate Studies are duly and accurately completed.

Each student, working in close consultation with their faculty advisor, is responsible for co-ordinating committee meetings and for ensuring that committee members are informed by the NRI, in writing, of meeting date, time and location. Submission of documents to the advisory committee must occur **at least two weeks** prior to any meeting. Students should take into account committee members' schedules in arranging meeting dates. Once the student

has identified an appropriate date and time, the faculty advisor and General Office should be notified two weeks in advance using the appropriate form so that proper arrangements for the meeting can be made (confirmation e-mails and seminar room booking).

Although the student is expected to consult on a regular basis with individual committee members, the following three meetings of the full committee are required:

- Proposal Approval Meeting
- First Draft Meeting; and
- Oral Examination of the Thesis.

If at any time during the research process the student feels a committee member is not fulfilling their role, the Director should be approached with the concern. If a student wishes to change faculty advisors at any time, written request for such a change must be provided to the Director, or Associate Head if the Director is the faculty advisor. If a student wants to switch from the MNRM thesis stream to the practicum stream, this is possible with the permission of the Director and Advisor. If a student chooses to switch streams, they must complete all the requirements of the stream they plan to complete.

2.2 Ethics Review Process

Ethical conduct related to research activities at the University is governed by [Policy #1406](#). All students who carry out “human research” must consult this Policy, complete the Course on Research Ethics (CORE), and complete a [“Human Subject Research Ethics Protocol Submission Form”](#). The Policy and forms can be obtained from the [Office of Research Ethics Compliance](#). Submission forms should indicate that the protocol is to be submitted to the Fort Garry REB through the RAS system (<https://umanitoba.ca/research/opportunities-support/research-administration-system-ras>). Ethics protocol forms can only be submitted once the research proposal has been approved by the advisory committee.

Policy #1406 defines human research as: any project that involves the collection of specimens, data or information from persons, through intervention or otherwise. Included are procedures that have a low degree of invasiveness (e.g., surveys, interviews, naturalistic observation, exercise or psychometric testing, examination of patient records), as well as more invasive procedures (e.g., blood sampling, administration of a substance). A subject in human research is defined as “a person, who by virtue of his/her involvement in a data gathering situation or activity is a source of primary data or information”.

The full ethics review procedures can be obtained from the Office of Research Services. Forms and guidelines are available from <http://umanitoba.ca/research/orec/735.html>.

2.3 Animal Care and Use Review Process

The Natural Resources Institute adheres to the University of Manitoba Policy and Procedures on the Care and Use of Animals for research and teaching. The use of animals is governed by the Senate Animal Care Policy Committee, which recommends policy for the entire University. All NRI projects involving animals must be reviewed and approved by a Protocol Management and Review Committee prior to beginning data collection. It is the responsibility of those needing to use animals to provide sufficient information to the Committee in order that an informed ethical decision can be made regarding their request to use animals. Approval is granted only after the proposed usage and care of the animals, i.e., the protocol of procedures, has been carefully examined.

Animal Use Protocol Forms are available from the Office of Research Services Home Page at <http://umanitoba.ca/research/orec/ac.html>

STAGE 2 Data Collection

Once the research proposal has been approved by the thesis committee, and ethics or animal care clearance obtained, the job of collecting the data can begin. For some students this involves travelling to the field to obtain data through interviews, experimental procedures or other means. For others it will involve mailing out a survey or working in the lab. Whatever approach is taken to data collection it is critical that students follow the methods outlined in their research proposal as closely as possible and stay in close contact with their advisor – even if out of the country – so that progress during this critical stage can be monitored. Fieldwork and other empirical data collection techniques are critical components of the research process. Accurate records of data sources are essential. Students should ensure that duplicate copies of reports (electronic or hard copy) are safely kept in alternate locations to prevent loss of irreplaceable material. Care must also be taken to maintain confidentiality of material entrusted to the student by agencies or individuals.

STAGE 3 Development of First Draft of the Thesis

Once data collection has taken place, writing the first draft report requires careful presentation and analysis of the data and attention to composition, grammar and to the logical organization of the report. An appropriate style manual should be consulted prior to report writing. An outline is useful in the writing process and care must be taken in the preparation of maps, figures, and tables. The Faculty of Graduate Studies [Thesis Guidelines & Information](#) outlines the publication requirements of the University.

2.4 Thesis Format

Students should be made aware that the thesis report requirement may be met using different formats. Students should discuss possible formats with their faculty advisor and thesis committee members.

A typical format often used in the preparation of the thesis is as follows:

- Title Page (see Appendix A for a sample)
- Faculty of Graduate Studies Copyright Page
- Signature Page (to be included in one unbound copy given to the FGS)
- Abstract
- Acknowledgements
- Dedication
- Table of Contents
- List of Tables
- List of Figures
- List of Copyrighted Material for which Permission was Obtained
- Chapter One: Introduction
- Chapter Two: Review of (Related) Literature
- Chapter Three: Methods
- Chapter Four: Results
- Chapter Five: Discussion
- Chapter Six: Summary, Conclusions, and Recommendations
- References
- Appendices

In cases where the student, advisor, and committee deem it appropriate, the format for the thesis may take, in whole or in part, the form of a manuscript, or manuscripts, ready for submission to a recognized, peer-reviewed journal in the appropriate field. The advisor and committee will ensure that all NRI thesis requirements (i.e., problem or issue statement, objectives, literature review, conclusions, recommendations) are met in the manuscript or chapters as required. At the proposal meeting, the committee must agree to the journal(s) and manuscript(s) referred to above. The manuscript cannot be in the form of a journal 'note', 'observation', 'opinion', or other 'minor' publication.

If the thesis includes copyrighted material, permission must be obtained from the copyright holder. A sample copyright permission letter is available from the [Copyright Office website](#). Other forms are acceptable including electronic permission.

2.5 First Draft Meeting

Students and advisors must organize a “First Draft” meeting once a draft of the thesis is complete. At this meeting students should look to committee members to constructively suggest necessary changes to the document before the oral defence. The student must submit the “First Draft” of the thesis to each member of the advisory committee at least two weeks prior to the meeting.

STAGE 4 Preparation of the Final Thesis

Each student is responsible for completing necessary revisions as suggested by committee members at the first draft meeting. Particular care should be taken to ensure that the linkage between the objectives, findings, conclusions, and recommendations is maintained. In addition, all supporting evidence should be clearly provided throughout the document as appropriate. Figures, Tables and Maps should be presented in their final form. An Abstract and Acknowledgements should be included in the final submission. Proper bibliographic referencing should be used according to the appropriate style guide. Detailed publication requirements as described in the [Thesis Guidelines and Information](#) from the Faculty of Graduates Studies must be followed. The onus is on each student to complete a detailed final editing (grammar, punctuation, spelling and other mechanics) prior to submission to his or her faculty advisor.

The student and faculty advisor will decide when the document is suitable for the final oral examination. Students are not advised to proceed to the final oral examination without faculty advisor approval. Each student must pass an oral examination to obtain the M.N.R.M. degree.

STAGE 5 Oral Examination and Defence

At the end of the final oral examination, the Faculty of Graduate Studies requires the committee to determine if the thesis is a pass or fail. In determining this, the committee will consider the following:

- Is the thesis well written, demonstrating the student’s ability to synthesize complex ideas and produce a well-structured document?
- Does the thesis reflect sufficiently the ability of the student to conduct advanced research in the selected topic/thematic area relating to resource and environmental management?
- Does the thesis demonstrate critical thinking in natural resource and/or environmental management on the topic researched?

The oral examination (usually held at the University of Manitoba and open to the public and members of the University community) is conducted by the thesis advisory committee and chaired by the Director or a designate. The Chair may exercise discretion in allowing informal discussion of the subject following completion of the formal examination. The duration of the oral examination will normally be 2 hours. The oral examination has the following format:

- The chair calls the meeting to order and asks the student to present a 15-20 minute summary of the research with the appropriate visual aids.
- Detailed comments and questions on the research are raised, and, when the committee is satisfied that a thorough examination has been completed, the student and all spectators are required to withdraw while the committee, in camera, considers the acceptability of the thesis. The recommendation must be unanimous.
- The student is informed of the final decision by the chair. The recommendations of the committee can include:
 - No revisions;
 - Minor revisions;
 - Minor corrections to content and modifications in format or presentation;
 - Major revisions requiring changes in substance and content and normally another committee meeting;
 - Failure.
- When the committee recommendation is to approve the thesis, the chair and the committee sign the [Master's Thesis/Practicum Final Report](#), signifying that the document is acceptable in substance.
- When the recommendation is not to approve the thesis, the student is required to correct any deficiencies and to repeat the oral examination. A second attempt is allowed.
- The Director or a designate will ensure that the required time limits for completion of revisions, the necessity of a second oral examination, and other such matters are carried out.

- The student is recommended for graduation after submitting the final copy to the NRI General Office **one week** prior to the [Faculty of Graduate Studies deadline](#). Copy submission is as follows:
 1. [Submit one digital version](#) of the thesis to [MSpace](#)
 2. Submit one digital version to each committee member
 3. Submit one digital version to the Advisor
 4. Submit one digital version to the NRI General Office
- Students are required to submit the digital version to the Graduate Secretary of the Natural Resources Institute in person, and complete the necessary documentation prior to graduation – including the original signed [Thesis/Practicum Final Report Form](#).
- Upon completion and approval of the thesis by the examining committee, the student completes a [Thesis/Practicum Copyright License Declaration](#).

Note: Costs for duplicating and binding are the student's responsibility. As of 2015, the NRI no longer requires or stores paper copies of theses.

2.6 Authorship of Publication

Students are encouraged to publish the results of their research work in addition to the preparation of a thesis report. The right of first authorship rests with the student for a period of one year from the date of the oral examination of the thesis. Secondary authors should also be agreed upon prior to publication.

After the expiration of the one-year period identified above, or in cases where a thesis is not completed, the faculty advisor and/or other committee member may initiate discussion with the student involved respecting waiver of publication rights. Any dispute respecting publication rights shall be referred, in the first instance, to the Director or the Associate Head, by any party involved.

2.7 Electronic submission of Thesis

The electronic version must be submitted in Portable Document Format (PDF), which can be done at one of the Library labs on campus. Students can request the Library to do the conversion for them at no charge. Once the thesis has been converted to PDF, students contact the Library to receive authorization to submit the file to MSpace (wendy.prystenski@umanitoba.ca, ph: 474-7895).

To submit an Electronic Dissertation and Thesis (EDT) or learn more about EDTs visit the [MSpace website](#).

Appendix A – Sample Title Page

The Effect of Cause and Effect on Instances of Déjà vu in
Patients Suffering Chronic Intra-Neural Fatigue Syndrome

by

Jane Doe

A Thesis submitted to the Faculty of Graduate Studies of
The University of Manitoba
in partial fulfilment of the requirements of the degree of

MASTER OF NATURAL RESOURCES MANAGEMENT

Clayton H. Riddell Faculty of Environment, Earth, and Resources
Natural Resources Institute
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Winnipeg

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