



**NRI**  
Natural  
Resources  
Institute

**Master of Natural Resources Management**

# **Thesis Process**

**Stages of Completion**

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# **Thesis Process**

## **1.0 The Thesis**

The thesis is an independent written document that establishes the results of an interdisciplinary research project aimed at addressing a practical 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 research reports useful in decision-making.

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 funding.

## **1.1 The MNRM Thesis Process**

The thesis research process has five distinct stages which are 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: 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 possible securing of financial support from various agencies.

### **STAGE 2 Data Collection**

During this phase students will work in the field collecting their data in accordance with the thesis research proposal.

### **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 the data collected, analysis and discussion in the context of the literature reviewed and conclusions drawn in a first draft of the thesis.

### **STAGE 4 Preparation of Final Thesis Document**

Students will provide the final thesis document. This will involve interaction with individual committee members to refine, edit and clarify arguments presented; completion of final thesis document for oral defence including quality maps, charts, tables and figures, abstract, acknowledgements, and attachments. This is followed by the circulation of the final thesis to committee.

### **STAGE 5 Oral Examination**

The final stage is the oral defence of the Thesis. For this to occur: the student must schedule the date of oral defence; have a final consultation with committee members; prepare the presentation materials for the oral examination committee meeting; complete Faculty of Graduate Studies and NRI forms for oral examination; complete final report changes and administrative requirements for the thesis report 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 his or her 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 research places in perspective in relation to the literature.

### **Section 3 - Methods**

Research design explanation emphasizing the application of existing methodologies or development of novel approaches to address the objectives set. Detailed examination and explanation of data collection and analysis.

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 thesis.

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.

### 1.1.1 The Thesis Advisory Committee

The student's advisor will recommend a suggested thesis advisory committee to the Director of NRI for approval, which shall then 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 persons, one of whom must be from outside the Natural Resources Institute. At least two examiners must be members of the Faculty of Graduate Studies. The third member must be an individual that the Advisor and the Institute Director deem qualified for the assignment, is external to the Natural Resources Institute and is 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.

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 appointed by the Director based, whenever practicable, upon 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 reports 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 his/her role, the Director should be approached with the concern. If a student wishes to change faculty advisors at any time, written justification for such a change must be provided to the Director, or Associate Head if the Director is the faculty advisor.

### **1.1.2 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 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 Joint-Faculty REB.

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 and forms can be obtained from the Office of Research Services or the University website at the address above. These forms can only be submitted once the research proposal has been approved by the advisory committee.

### **1.1.3 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 commencement. 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.

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

## **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 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 should 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**

Prior to the final oral defence, the student and the advisor must organize a “First Draft” meeting once a draft of the thesis is complete.

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.

### **1.1.4 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  
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 submittal 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](#). Faculty of Graduate Studies has developed [this form](#) that can be utilized when requesting the use of copyrighted material. Other forms are acceptable including electronic permission.

### **1.1.5 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 (hard copy) 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 Final Research Report**

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, 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 should 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 on the subject of the thesis to obtain the M.N.R.M degree.

## **STAGE 5 Oral Examination and Defence**

At the final oral examination, the thesis is evaluated by the following standards:

- Is the research report defensible as a written document, and does it meet Faculty of Graduate Studies standards?
- Has the student demonstrated mastery of interdisciplinary research in the subject area?
- Has the student demonstrated the ability to produce applied research that is useful in decision-making?

The oral examination (usually held at the University of Manitoba and open to 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 aides.
- 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 all the final copies to the NRI General Office **one week** prior to the Faculty of Graduate Studies deadline. Copy submission is as follows:

**Bound copies:**

- One copy for each committee member
- One copy for the Advisor
- One copy for the NRI Library

**Unbound copies:**

- Two copies for storage at the NRI
- One copy, single-sided, black and white for Graduate Studies

**CD copies:**

- One compact disc copy to the NRI

**Digital version:**

- One digital version submitted as an e-thesis at the [MSpace website](#)

- Students are required to submit the two final copies to the Graduate Secretary of the Natural Resources Institute in person, and complete the necessary documentation prior to graduation.
- Upon completion and approval of the thesis by the examining committee, the student completes a [Thesis/Practicum Copyright License Form](#).

Costs for duplication and binding of all copies are the student's responsibility.

### **1.1.6 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.

### **1.1.7 Electronic submission of Thesis**

The electronic version must be submitted in Portable Document Format (PDF) which can be done at one of the Libraries 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 ([trudy\\_dyck@umanitoba.ca](mailto:trudy_dyck@umanitoba.ca), ph: 474-7895).

To submit an ETD or learn more about ETDs 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  
University of Manitoba  
Winnipeg

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