

# ENSC 401 Fall 08 (Draft)

## Ecological Assessment

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**Location:** Ellis Hall 333  
**Time:** Mondays 2:30 – 5:30

### **Scope and purpose:**

This course will provide a theoretical and practical introduction to environmental assessment processes. The course explores the evolution of environmental assessment, the major components within such processes including scoping, use of alternatives, significance and trade-offs, public consultation, mitigation and monitoring. The course will focus on ecological monitoring processes along with social, strategic and sustainability assessment.

### **Approach**

The course will include lectures, videos, and facilitated sessions to encourage discussion. Students will be exposed to a variety of facilitation techniques used in environmental assessment processes. The assignment, detailed below, will provide students with the opportunity to design an environmental assessment process and develop their writing and communication skills.

### **Readings**

Readings will be assigned for each class and are available electronically through the web or Queen's library.

### **Academic Integrity**

Academic integrity is constituted by the five core fundamental values of honesty, trust, fairness, respect and responsibility (as articulated by the Centre for Academic Integrity, Duke University; see [www.academicintegrity.org](http://www.academicintegrity.org)) all of which are central to the building, nurturing and sustaining of an academic community in which all members of the community will thrive. Adherence to the values expressed through academic integrity forms a foundation for the "freedom of inquiry and exchange of ideas" essential to the intellectual life of the University (see [Report on Principles and Priorities](#)) Queen's students, faculty, administrators and staff therefore all have ethical responsibilities for

supporting and upholding the fundamental values of academic integrity. (Senate meeting of January 26, 2006)

### **Evaluation:**

Grades will be calculated according to the following breakdown:

<u>Mid Term</u>	30%
<u>Assignment</u>	40%
<u>Final Exam</u>	30%

Assignment: *The benefits and substance of assessment (Authored by Dr. Robert Gibson)*

This assignment is intended to encourage thinking about two related things - the benefits that should come from requiring and carrying out proper environmental assessments, and the matters that should be addressed in assessment work to ensure that these benefits are won. The assignment has six steps:

1. Choose one of the following cases. Each one involves a potential development or management issue in the Niagara Escarpment area of Ontario. Further information on each case and the geography of the Niagara Escarpment area will be provided during the course lectures to assist you with the assignment.
  - (a) A private company is proposing a wind turbine farm near Collingwood, Ontario.
  - (b) One of the Escarpment municipalities is proposing to build a road through portions of the Niagara Escarpment.
  - (c) A conservation authority is proposing to establish a recreational conservation area on lands recently acquired.
2. elect the case to be discussed. Identify and describe what you believe to be the five most important valued ecosystem components (VECs) for the case. (5 marks) S
3. Construct a brief argument explaining why the selected case should be subject to environmental assessment. Outline the main benefits to be expected from a proper assessment in this case. (5 marks)
4. Describe how environmental assessment should proceed in this case. The description should cover all steps of proper environmental assessment and set out the roles of all major participants. The discussion of assessment work by the proponent should include an illustrative table of contents for the environmental assessment document as a means of summarizing the main categories of matters to be addressed. In the accompanying text be sure to set out and justify your decisions on the boundaries for

the assessment and the focus/foci of attention. (15 marks)

*While you will need a general understanding of the kinds of undertakings and potential impacts involved, you are not expected to have detailed knowledge of the possible undertakings, the local environment or the likely effects. Where necessary you can make up plausible "facts" about the undertakings and/or their economic, social, political and biophysical context. You are free to consult materials from assessments of similar cases; however, you should recognize that these may have been less than perfect assessments. You do not need to know, at this point, what assessment requirements would actually be imposed in the selected case if an assessment were done today under current government requirements.*

5. Select one of the most important impact issues raised by the case and outline the main steps that those responsible for doing the assessment should take in designing and carrying out the relevant impact assessment studies to address the selected issue. (10 marks)
6. Identify the aspects of your proposed assessment that would be most crucial in ensuring that the assessment does provide the benefits noted at the beginning, and explain briefly how your proposed approach to these aspects of the assessment would help provide the desired benefits. (5 marks)

Total Marks - 40

The assignment, meeting the requirements set out above, is due on November 3, 2008 at the beginning of class. The report should be no longer than 2,500 words excluding references, tables and figures. **Your submission should include information gathered from at least five journal articles.** Late submissions will be marked out of 30. Reports received after November 10, 2008 will not be graded.

### **Class Schedule** (subject to revision)

#### **September 8 - Introduction to the course**

Review of course content and assignment

Main steps and elements of EA

Issues and context

#### **September 15 - Canada's first environmental assessment process – The MacKenzie Valley gas pipe line proposal (1974)**

*Case Study:* The Berger Inquiry

*Video:* The Inquiry Film

*Reading:* D.J. Gamble, 1978, The Berger Inquiry: An Impact Assessment Process, Science, Vol. 99, No. 4332, pp946-952,

<http://www.sciencemag.org/cgi/rapidpdf/199/4332/946.pdf>

### **September 22 - Review of assignment**

Explanation of the requirements of each section of the assignment

Geography of the Niagara Escarpment

UNESCO World Biosphere Reserves

*Video:* Tomorrow's Land

*Reading:* Please review the following website – [www.escarpment.org](http://www.escarpment.org)

### **September 29 - Ecological assessment and cumulative effects assessment**

Basic approaches, data collection and interpretation

*Videos:* Landforms: Inventories and Issues; Terrestrial Biological Communities; Aquatic Inventory

*Reading:* Cumulative Effects Assessment Working Group, 1999. Cumulative effects assessment practitioners guide, Canadian Environmental Assessment Agency, <http://dsp-psd.pwgsc.gc.ca/Collection/En106-44-1999E.pdf> <http://dsp-psd.pwgsc.gc.ca/Collection/En106-44-1999E.pdf>

### **October 6 - Ecological assessment and land use planning**

Land use planning 101

Environmentally sensitive area planning

Natural heritage system planning

*Case Study:* Niagara Escarpment Plan and Oak Ridges Moraine Conservation Plan

*Video:* Oak Ridges Moraine

*Reading:* Whitelaw, Graham and Paul F. J. Eagles. 2007. Planning for long, wide conservation corridors on private land in the Oak Ridges Moraine, Ontario, Canada, *Conservation Biology* 21 (3): 675-683.

### **October 13 - Social impact assessment and public participation**

Basic approaches, data collection and interpretation

Public participation techniques

*Videos:* Social Development: A Quality Life for all; Coconut Revolution

*Reading:* Interorganizational committee on principles and guidelines for social impact assessment, 2003. Principles and guidelines for social impact assessment in the USA, *Impact Assessment and Project Appraisal*, Vol. 21, No. 3, 231-250.

### **October 20 Mid-term**

#### **October 27 – Environmental Assessment Legislation**

Ontario's Environmental Assessment Act ([http://www.e-laws.gov.on.ca/html/statutes/english/elaws\\_statutes\\_90e18\\_e.htm](http://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_90e18_e.htm))

*Case Study* - Haley Station to Meath Hill Road EA

Canadian Environmental Assessment Act (<http://laws.justice.gc.ca/en/C-15.2/>)

*Case Study* - Voisey's Bay Mine and Mill EA

*Reading:* Canadian Environmental Assessment Agency, 1997. Environmental Impact

Statement Guidelines for the Review of the Voisey's Bay Mine and Mill Undertaking,  
[http://www.ceaa.gc.ca/010/0001/0001/0011/0004/guidelines\\_e.htm](http://www.ceaa.gc.ca/010/0001/0001/0011/0004/guidelines_e.htm)  
*Video* – Eye of the Storm

### **November 3 – Monitoring**

Basic concepts and application to environmental assessment

Ontario Niagara Escarpment Monitoring Program

Monitoring the Moraine Project

Readings: Please review the following websites – [www.mtm.org](http://www.mtm.org) and  
[www.escarpment.org](http://www.escarpment.org)

### **November 10 - Diamond Exploration and Mining in Canada's north**

*Case study:* Victor Diamond Mine, James Bay, Ontario

*Reading:* Whitelaw, G., McCarthy, D. and Tsuji, L., (draft). A Critical First Nations Perspective of the Victor Diamond Mine EA, unpublished (will be sent via email).

### **November 17 - Ecological assessment at the watershed scale**

The role of conservation authorities

*Reading:* Shrubsole, D. 1996. Ontario Conservation Authorities: Principles, practice and challenges 50 years later, *Applied Geography*, Vol. 16, No. 4, 319-335.

### **November 24 – Recent innovations in environmental assessment**

Strategic environmental assessment and sustainability assessment

*Case study:* York Region infrastructure environmental assessments

*Readings:* Partidario, M.R. 2000. Elements of an SEA Framework: improving the added value of SEA, *Environmental Impact Assessment Review*, Vol. 20, no. 6, 647-663

Gibson, R.B. 2006. Sustainability assessment: Basic components of a practical approach, *Impact Assessment and Project Appraisal*, Vol. 24, No. 3, 170-182.