Course outline

Ecology of Disturbed Habitats (Biology 4115)

Introduction: With the rapidly increasing human population and technological advancements, disturbance in natural ecosystems has become a fact of life. Hardly any corner of the planet is free from the influence of anthropogenic disturbance. Many influential ecological theories and concepts such as ecosystem, succession, energy flow, competition, biodiversity, biological invasion, and material cycling were developed by studying relatively undisturbed systems. Our increasing demands for resources have touched every hidden corner of the earth. Under the circumstances, can we explain or predict changes in ecological systems and processes on the basis of the existing ecological theories and concepts? This course shall discuss the role of disturbance on ecosystem integrity, sustainability and degradation. It will identify the nature and type of disturbances and ecosystem response to disturbance. Sensitivity and recovery of ecosystems subjected to single or multiple disturbances. Ecological solutions to overcome chronic ecosystem disturbance and ways to revitalize degraded habitats will be sought by examining case studies and reconnecting with ecological theories and concepts.

Required textbook

The Biology of Disturbed Habitats 2012. By Lawrence Walker. Oxford University Press, New York. 319 p. $136.50 (cloth), ISBN: 978-0-19-957529-9; $62.95 (paper), ISBN: 978-0-19-957530-5.

Other optional textbook

Environmental Biology (1989, second edition) by Bill Freedman, Academic Press, London.

In addition to the textbooks, this upper level course will cover classic & contemporary peer-reviewed articles relevant to the subject.

Course Structure

Two lectures/discussions per week

i) First 8-10 lectures by the instructor.

ii) Subsequent classes will be devoted to reviewing and critiquing selected journal articles on the subject.

Lab Assignments

i) Two mandatory field trips including a full day of fieldwork on a

Sunday (September 20) at different naturally and man-made disturbed habitats near Thunder Bay.
ii) One controlled experiment in the laboratory to determine biological processes operate in disturbed habitats.
One Term Paper
A ten-page term paper (1.5 line spacing) selected from one of the given topics or a mutually agreed upon topic.
One Class Presentation
A 20-minute oral presentation followed by a 5-minute question period on a topic other than the topic selected for the term paper.

Distribution of Marks

Break up Marks*

Term Paper		10
Mid-term exam		10
Class discussion		5
Oral presentation		10
Lab reports		
	Lab 1	5
	Lab2	20
	Lab3	10
Final exam		30
	Total	100

* Details of assessment criteria are in appendix IV of Lab Manual.