

ERS 110 - Environmental Analysis and Solutions I: Foundations (Fall 2015 Course Syllabus)

Taught by two professors for the price of one!

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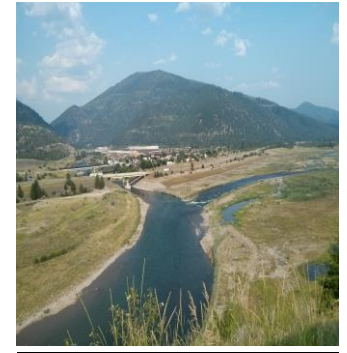
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The only hardcopy text you need is Newcomb's Wildflower Guide (buy @ bookstore or elsewhere).

Otherwise, we use a “meta-text” that consists of the syllabus, webpages, & on-line pdfs (i.e. minimizes costs & waste)

For the power-point slides of the class lessons, pdfs of the required readings, more information on this course, you will log into the University of Waterloo on-line learning resource known as “LEARN”¹

ERS 110 Class Lessons are on Tuesdays 10:30-12:30 in MC 2054

**ERS 110 Tutorials are on Thursdays (you will either be in PAS 2086 or HH 123 or HH 124)
Tutorials start the 1st week of classes² - see your course schedule for your assigned section/location**

**Assignments will be uploaded to Waterloo's online system known as "LEARN"³;
all assignments are due before 23:59 h on the date indicated in the At-A-Glance Chart (next page)**

Students are encouraged to make one-to-one appointments (we suggest this be done by e-mail for speed and convenience) or to e-mail questions using the LEARN Communications tool.

Students are also welcome to drop by without appointments but should be aware there may be times when others have appointments with me so we will not necessarily be available immediately. Because university professors also are required to perform research and administrative duties, there may be days when we are not available or have to re-schedule office hours so we post this information on my office door. SDM also has cookies - lots and lots of cookies because it beats drinking Scotch all day (too clichéd).

¹ Use your UW ID & password for access; access usually opens only on the 1st day of classes; we do not expect you to have read ahead during class 1 so don't panic.

² If anyone tells you “there are no tutorials in 1st week”- they are wrong as far as ERS 110 goes (i.e. a few courses eschew them; ers 110 does not).

³ Or occasionally, we call it "Crash and Burn".

ERS 110 At-A-Glance Schedule (Includes Assignment Dates)

DATES	CLASS LESSON (WEDNESDAYS)	READINGS (@LEARN WEBSITE)	TUTORIALS (THURSDAYS)	LEARNING OBJECTIVES
Se 15, 17 (SDM)	Solving problems: thinking, visions, disputes, analysis	Murphy 2012	How to do ERS based analysis & how to do the term assignments	Master basics of critical thinking & transdisciplinarity
Se 22, 24 (SDM)	Ecological principles	Ellis et al 2010 Kareiva et al 2011	Project Aster: Ecological field study I	Apply basic & advanced ecological & social analyses for problem solving; learn basic field ID & experimental skills
Se 29, Oc 1 (SDM)	Analysis of ecological & social data - working with numbers	Spellerberg & Fedor 2003 Jamieson 2004	Project Aster: Ecological field study II	
Oc 6, 8 (AMC)	Using governance, policy & law for conserving ecosystems	Winfield 2009 Chaloux and Paquin 2013 Shorr 2014	Project Aster: Analyzing Data	Practice analysis of data & tie ecological data to policy issues
Oc 13, 15 (AMC)	Using ecological economics to solve problems	Rockstrom et al 2009 Kallis et al 2012	Presentations I	Apply ecological economics in problem solving
Oc 20, 22 (SDM)	Using sustainability & impact assessment to solve problems	Afghan & Carvalho 2004 Lozano 2006	Presentations II	Apply sustainability & impact assessment
Oc 27, 29 (AMC)	Complexities of international environmental problem solving	Pauly et al 2002 Barkin and DeSombre 2013 Urbina 2015	Presentations III	Environment & resource issues are often linked to larger political issues
No 3, 5 (SDM)	Complexities of urban socio-ecological action & planning	Murphy 2006	Assess & suggest how to “green” urban areas	Assess & act on greening urban areas
No 10, 12 (AMC)	Creative problem-solving through public participation	Ballard & Belsky 2010	Let's get creative: Planning, action & creative problem solving	Challenge yourself; think laterally under a deadline
No 17, 19 (AMC)	Incorporating gender into environmental studies	Martinez-Salazar 1999 Kameri-Mbote 2006	Brainstorm: How does gender influence our relationships with the environment?	Apply social concepts in studying environmental problems
No 24, 26 (AMC)	Analyzing the gaps between environmental awareness, behaviour, and policies	Kennedy et al 2009	Final Research Paper Due No 26 @ 2359 h via LEARN. <u>No tutorial</u> ; go stark raving mad	Use a transdisciplinary approach to develop better policy
De 1, 3 (SDM)	What have we learned about disciplinary & transdisciplinary problem solving?	Höchtel et al 2006	No tutorial; plan world domination just like some pundits claim; bwa-ha-ha-ha!	One outcome desired with different paths to get there: Exploring creative options

The Fundamentals of ERS 110

ERS 110 Has Three Main Objectives

- Introduce analytical approaches for defining and resolving environment and resource issues.
- Introduce transdisciplinary approaches. Environment and resource issues often are defined and analyzed on a narrow disciplinary basis. While this background is essential most issues are not isolated and originate across ecological and socio-economic systems and institutions.
- Introduce students to the requirements of scholarly research and communication.

Assessment of Students in ERS 110 (Assignments & Exams)

- RESEARCH (TERM) PROJECT: 40% OF FINAL GRADE IN TOTAL. See At-A-Glance chart for due dates.
 - Verbal Presentation of Research Project. 5% of final grade
 - Final Research Project. 35% of final grade.
- FINAL EXAM: 60% OF FINAL GRADE IN TOTAL. Final exams are scheduled *by the Registrar's Office* for the December exam period (**professors do not have control over the final exam date or time**). Usually, the date/time/place is announced in November. Note that there usually is a final day scheduled after the anticipated end of exams – this is reserved as a day in case an exam is cancelled because of weather or other serious reason. ***The final exam assesses material covered in tutorials and class lessons and includes the term long media assignment.***

Course Readings (Via LEARN, Listed in the ERS 110 At-A-Glance Schedule)

The course readings will be referenced in the course reader but most of these will not be supplied as paper copies – instead they will be posted to the ERS 110 webpage in LEARN. This saves you money and saves paper - the marginal cost of power to run computers is much lower than paper duplication. Students are responsible for reading material before class, relating it to class lessons and tutorials (the lessons will emphasize the readings), and understanding it all because the readings will be examined – though emphasis will be placed on the aspects covered in course lessons and tutorials. You are expected to review assigned readings before and after each class. All material from readings may be examined but material in lessons will be the emphasis. For your assignments you can use the readings as a way to determine key words and key ideas and help find additional resources; for exams, readings may further explain and illustrate your answers. We *will not* expect obscure details from readings on exam answers – *this course will not focus on trivial information*. Examples of trivia that will NOT be showing up: recalling the scientific name of organisms studied, birth and death dates of historical figures, memorizing every detail of a graph from an article, memorizing boring shit in general.

Term Assignment I: The Media and Environment & Resource Issues

You will be tested on this cumulative term assignment during the final exam

CONTEXT.

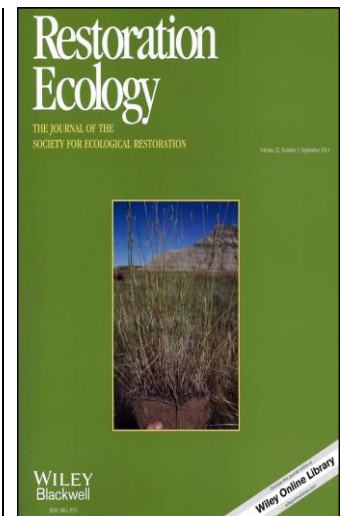
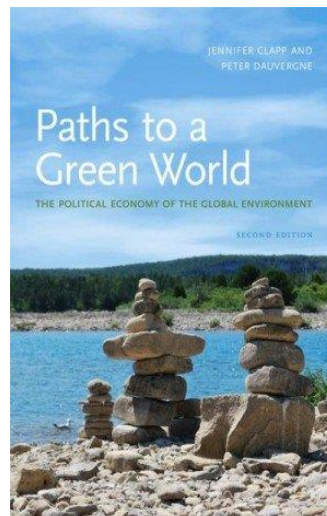
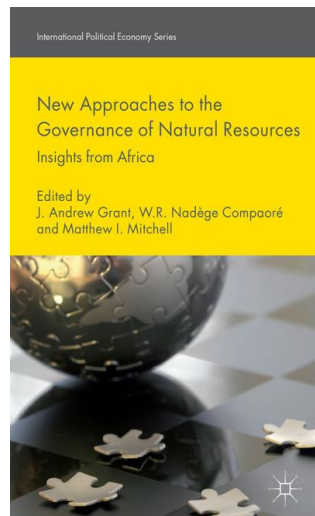
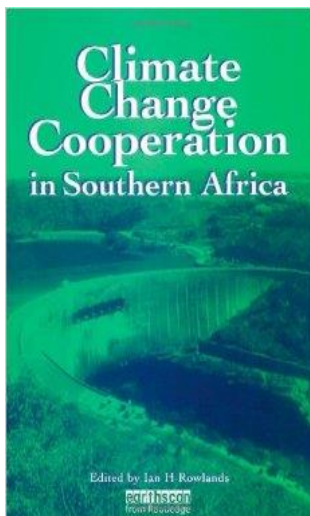
- A main source of news about environment and resource issues is the media – how in depth & accurate is the information you get from various sources and types of media?

RATIONALE.

- As students and citizens, it is important that you are aware of current issues and controversies surrounding environment and resource issues.
- You need to be aware that media sources may contain bias in their stories; it is up to you to read stories with a healthy skepticism. This means getting information from several different sources.
- Elsewhere in this course, you do a research paper using *academic journals* to help you discover more detailed and objective sources of information.

REQUIREMENTS.

- Read. A lot. There are thousands of media sites or sources. We provide some links to the better ones on the LEARN site. We also have you ferret out some of the worst ones. We recommend that you maintain an awareness of any issues that indirectly affect the environment and resource issues and the reporting of stories on these.
- Essentially, WE will test your awareness of issues and the influence of media. What you will find on the final exam? WE will ask you to:
 - Discuss how the more environmentally-focused sites have analyzed and 'spun' any one environment or resource issue.
 - Discuss the most egregious example of poor reporting on an environment and resource issue that you can find. You should strive to be original, i.e. don't just repeat one that several major websites or blogs have already dissected.



Term Assignment II: Research Project on an Environment/Resource Issue⁴

LEARNING OBJECTIVES.

- Learn to narrow down your study from a big unwieldy problem/issue (i.e. “the *context*” of an issue) to a research question that you can do something about.
- Learn to search for information from the libraries, World Wide Web, and media sources. Specifically, you will learn how to differentiate good evidence from bad evidence and learn to use academic journals as sources of evidence and analysis.
- Learn how to structure a research paper in a scholarly but still interesting manner to ensure you can convince people to act.

BASIC REQUIREMENTS.

- You are to investigate and research almost any environment/resource issue or problem. Your task is basically to analyze why it is (or is not, or should be recognized as) a problem or important issue, assess what alternative solutions or resolutions exist, and suggest the best course(s) of action(s) to solve or resolve the issue or problem. ***The only real requirements are that you have at least 6 journal articles being used for your project and that all information is credible (it’s up to you to demonstrate credibility).*** You are welcome to use additional sources other than journal articles.

THERE ARE SOME RESTRICTIONS ON YOUR ALLOWABLE CHOICE OF ISSUE OR PROBLEM.

- You cannot use the same issue you examine for *any* of your other assignments in other courses (the reason for this is that there is too much risk of inadvertent [plagiarism](#)) or the issues we use as examples that are interpreted in detail in ERS 110.

THE ASSIGNMENT HAS TWO PARTS (SEE “AT-A-GLANCE” CHART ON PAGE 3 FOR DUE DATES/TIMES).

- **The verbal presentation (Presentations I, II or III)** is based on your outline is held in tutorials in the last 3 week s of October (TAs will assign you a slot within one of these tutorials). It is meant to give you practice in public presentations and to give your colleagues a chance to offer constructive suggestions. Details are found in the section describing the tutorial exercises on the LEARN site (i.e. go to the appropriate “folder” under the “Lessons” submenu and read there.
- **The final research paper** will be no more than 2000 words in length and shall include:
 - An “**abstract**” of no more than 200 words that describes, in one continuous paragraph, the broad and narrow issues/problems. 5% of grade.
 - An “**introduction**” of approximately 500 words that describes the broad context of the issues/problems, sufficient relevant literature (e.g. at least 6 articles from peer reviewed and well recognized journals), and narrows down the main issue/problem of interest for the reader. 20% of grade.
 - A brief section on “**methods**” that describes your research approach (interviews, library research, experiments) – this may be *very brief* (e.g. it may just be that you list your keywords used in searching Web of Science/Knowledge) if you simply used the available published literature. Not weighted per se but it has to be there or we lop off 5% of your erstwhile grade.

⁴Basic formatting of your assignment: Type all assignments. Use Calibri 12 pt font with 2.4 cm margins all around and left justification. Single space since this is e-submitted. Pages must be numbered.

- As the **major section of the paper**, a detailed “**discussion/resolution**” of the problem or issue that uses your research (including relevant journal articles) to analyze, assess, and act on the issue or problem. 75% of grade.
 - *If relevant*, include a brief “**acknowledgments**” section that thanks anyone who you legally interview or who helps you (include names, affiliation, location – unless confidential).
 - A “**literature cited**” section that follows the exact format required and cites all sources used in the text of your report (grades will be *deducted or adjusted* if you ignore the style below).
 - Good written organization, grammar, sentence structure (grades will be *deducted or adjusted* according to how well or how poorly you accomplish this).
- **General Format for Your Assignment.**
 - Type all assignments; use a truetype (e.g. Calibri) 12 pt font with at least 2.0 cm margins all around and left justification.
 - Single space - the submissions are electronic.
 - Do not start sections on a separate page if this means leaving a substantial portion of a page blank (it is annoying). Pages must be numbered.
 - Good use of sub-headings and use of 1st person active voice are my preferred styles.
 - Do NOT simply cut/paste copyrighted tables, figures, or photos from sources; they must be cleared for ‘fair use’ (they would say this on a website and you must allude to that statement) or you need written permission if the copyright requires it. Do NOT violate copyright.
 - Consistent with most other ERS courses, we will use [APA style](#) (to see what this means and how to do it, just follow the link embedded in “APA style” term above or just Google it).
 - Use a format that is compatible with MS Word 2012 (at least).
 - Submit files with a unique and meaningful file name, e.g. best idea is to use something like “yoursurname initials 110 a1.doc”. *Failure to do this important step means we will deduct 2% off your final grade. Why so harsh? Ever try sorting through 100+ assignments with the same name (e.g. “assignment 1”).*



The Key ERS 110 Course Policies

- *Late assignment penalties* apply to all cases except for those few extensions granted for medical reasons or for professional counseling for serious personal problems – extensions can be granted with proper documentation or discussion well in advance (at least 10 days) before deadline if the reason for extension is not an emergency situation. We are sympathetic to those who recognize early that other responsibilities may create problems meeting deadlines (this is especially true for those who are parents or work horrendous hours to afford tuition and living expenses). We are less sympathetic if cumulative stresses finally dawn on you the morning an assignment is finally due.
 - Assignments submitted past the deadline but before 72 hours have elapsed receive a flat 10% deduction.
 - Assignments submitted after 72 hours but before 168 hours past due have elapsed are assessed a flat 25% deduction.
 - Assignments more than 168 hours past due are given a grade of “0” (zero).
 - If you miss your verbal presentation because of a legitimate medical/counselling reason, inform your TA immediately to reschedule. Otherwise, a grade of "0" (zero) is assigned.
- The University of Waterloo has a series of specific *academic policies, procedures and guidelines* that students must be aware of and follow; all course syllabi in the Faculty of Environment are required to include the following information:
 - **Students with Disabilities:** Help is available via the [Office for Persons with Disabilities](#)
 - **Academic Integrity:** To create and promote a culture of academic integrity, the behaviour of all members of the University of Waterloo is based on honesty, trust, fairness, respect and responsibility.
 - **Grievance:** A student who believes that a decision affecting some aspect of his/her university life has been unfair or unreasonable may have grounds for initiating a grievance. Read [Policy 70 - Student Petitions and Grievances, Section 4](#).
 - **Discipline:** A student is expected to know what constitutes academic integrity, to avoid committing academic offenses, and to take responsibility for his/her actions. A student who is unsure whether an action constitutes an offense, or who needs help in learning how to avoid offenses (e.g., plagiarism, cheating) or about “rules” for group work/collaboration should seek guidance from the course professor, academic advisor, or the Undergraduate Associate Dean. When misconduct has been found to have occurred, disciplinary penalties will be imposed under [Policy 71 – Student Discipline](#) (this also has information on categories of offenses and types of penalties).
 - **Appeals:** A student may appeal the finding and/or penalty in a decision made under Policy 70 - Student Petitions and Grievances (other than regarding a petition) or Policy 71 - Student Discipline if a ground for an appeal can be established. [Read Policy 72 - Student Appeals](#).

“Ignorance more frequently begets confidence than does knowledge”

- Charles Darwin



All about your professors aka 'these two people haranguing you at the front of the class'

Andrea M. Collins, BA (Hons.), MA, Ph.D. [Political Studies] is an Assistant Professor in Environment and Resource Studies, University of Waterloo. She was previously a SSHRC Postdoctoral fellow at the Institute of Political Economy, Carleton University, a Joseph-Armand Bombardier CGS Doctoral Scholar at Queen's University, and Balsillie Research Fellow at the Centre for International Governance Innovation (CIGI). As a veteran of the Waterloo Co-op Education program, she has also worked for the Canadian Department of Foreign Affairs and International Trade (DFAIT, before it became DFATD), the Ontario Office of International Relations and Protocol, and Health Canada. Armed with the tools of a political scientist, Andrea analyzes global land, food, and agricultural politics with a feminist lens. This research has taken her to Tanzania to study the gender politics of land law reform. She wants students to look at environmental issues as social and political, and to look for the political issues in our day-to-day lives – what you eat, what you wear, how you travel, how you learn, how you engage (or don't engage). She encourages you to look at politics not just as what happens on Parliament Hill, but also as the power relations that structure our everyday behaviours and experiences, and the implications for the world we live in. When she's not on campus, Andrea can be found perusing grocery store shelves for elusive ingredients. Andrea is a reservoir of pop culture knowledge, far too competitive at pub trivia, and perpetually disappointed that her favourite TV shows are cancelled prematurely.



Left to Right:

Exploring the spice market in Stone Town, Zanzibar

A particularly bountiful Community Supported Agriculture (CSA) box from Howe Island, Ontario

Enjoying a blustery day at Peggy's Cove, Nova Scotia

Stephen D. Murphy, BSc. (Hons.), Ph.D. [Biology] is a Professor and Chair of the Department of Environment and Resource Studies, University of Waterloo. He is also Research Chair, Centre for Ecosystem Resilience & Adaptation and Research Chair, Centre for Applied Science in Ontario Protected Areas. He is Editor-in-Chief of the journal *Restoration Ecology* - the major journal in the eponymous discipline. He has mentored over 250 graduate students and over 5000 undergraduate students in classes in the technical, business, ethics, and policy aspects of restoration ecology, ecological restoration, invasive species conservation, ecological indicators, and management for private and public lands. Over 800 of his alumni are employed in restoration-related fields. Dr. Murphy's work currently focuses on the theoretical basis for and measurement of resilience, novelty, and invasive species impact in socioecological systems. He has over 600 peer reviewed journal articles, books/chapters, conference papers, and technical reports (that's a lot). Most recently, he has been a contributor to six chapters in Hobbs et al's 2013 book on Novel Ecosystems and a series of papers in 2012-2015 pertaining to resilience, restoration, novelty, and invasive species in parks and protected areas and agroecosystems. His group has worked in 146 countries and he has worked with many professionals in other fields. So much for the formal stuff. The real scoop on Smurph (yes, "Smurph") is that he was once an itinerant musical prodigy of some note and then was seduced by the dark side of the Force the call of the wild. He's been working in the environment field since he was 14; he has not grown any taller since then and we suspect he may wear lifts in his shoes to achieve even 5'6" height. He is known to mentor students kindly and does have lots of cookies as claimed elsewhere. He does not suffer fools gladly and is not kind to blind bureaucracy. He is middle aged and not yet prone to yelling at kids to get off his lawn - he actually knows how to use twitter. He has taught 1st and 2nd year courses forever and hasn't pissed too many people off yet. He is a legend at conferences - not for going to talks but for organizing the dinners and drinks; surprisingly, this is a skill set all students should learn to be successful. He'll teach you math and make you like it. Moreover, smurph's main goal is to teach you how to live and fulfill your dreams. Yes, really. With 90% less 'Kumbaya'.



Left to right:

Steve in the field; yes he does do research (this one is restoring savannahs in old pine plantations)

Steve in his natural habitat (a nice bar with many students and other friends; this one is in New Orleans)

Steve in his office, contemplating some mischief that will make UW nervous (bwa-ha-ha-ha!)

If you deface Steve's photos, he will have you flogged and staple your elbows to your eyelids; he's short but swift

(@prof_smurph will get you more twittery goodness)