

ENVIRONMENTAL CONSERVATION AND RESTORATION 2019
ENVR 3110 – Sept 5, 2019

COURSE CONTENT, GOAL, AND OBJECTIVES

We will focus on the science of conservation and restoration, their implementation in the "real world" and some recent alternatives that complement and in some cases undermine these science-based approaches. Subsequently, we will evaluate some of the more radical and often marginalized approaches to conservation that require fundamental changes in the way we perceive our environments and one another.

In this course will initially discuss conservation in a North American context and the role of wilderness in perceptions of nature (introduction), then examine science-based conservation (convention), evaluate generally accepted restoration strategies as a response to environmental decline (convenience), and introduce more recent community-based responses, especially those of Indigenous Peoples and the Global South (contention).

Although this course is interdisciplinary in approach, it will emphasize biological and community-based approaches to conservation and restoration (my bias). However, there will be much flexibility for you to tailor the course to conform to your own needs and interests (through written assignments and debates). This year, we will also provide many opportunities for field-work and data collection and analysis as facilitated through the labs. The emphasis is on in-class work, and only 20% of the mark is exam-based.

My teaching philosophy is that learning should be a participatory, creative, and emphasize critical thinking. Thus, much of the course work will involve discussion and collaborative (2-4 people) assignments. In-class discussion will also be emphasized; as many of these subject areas are subjective and controversial, I ask you to respect the right of class members to voice opinions that may conflict with your own.

The learning objectives of the course are for you:

- i) To encounter and evaluate many current conservation issues such as fragmentation and species extinction;
- ii) To assess the current state of the science-based conservation and restoration;
- iii) To become familiar "real world" management responses such as protection, ecological restoration, reintroductions, protected area design, and the theory underlying these responses;
- iv) To develop hands-on, technical data collection and analytical skills in conservation and restoration
- v) To critically evaluate these conventional management responses, in particular the science-based "world views" that currently dominate the conservation and restoration literature;
- vi) To examine community-based efforts that complement and in many cases actively undermine expert-based conservation and restoration strategies
- vii) To explore Indigenous (and Indigenist) approaches to environmental management and protection; and

- viii) To develop your own informed ability to make decisions regarding many of the controversial issues that percolate through conservation and restoration

GENERAL INFORMATION

Instructor: Steph McLachlan, PhD

Office and Lab: 303 Wallace

Tel (Office): 204-474-9316

Tel (Cell): 204-293-4500

Email: steph.mclachlan@umanitoba.ca

Contact times: open-door; please arrange by email

Lecture:

- Tuesday & Thursday 11:30 - 12:45 PM 229 St Paul's College

Labs:

- Thursday 2:30 - 5:30 PM 217 Wallace

Assigned Readings:

- reading package (electronic only, posted on UM Learn)
Please read them before class as they will provide background for the lectures/discussions

Email:

- course updates and occasional skeletal notes will be e-mailed in advance

Teacher Assistant:

- Anderson Assuah <assuaha@myumanitoba.ca>

Other:

- late submissions will be penalized 5% per day (unless arrangements are made with TAs)
- students should be familiar with the University's policy on academic dishonesty including plagiarism, cheating, and exam impersonation (pp.32 of General Calendar)
- marking scheme is: A+ (≥ 90), A (80-89), B+ (75-79), B (70-74), C+ (65-69), C (60-64), D (50-59), F (0-49)

COURSE STRUCTURE

- Lectures
- Small-group and whole-class discussion
- Hands-on project work with PM and FWA
- Field work
- Small group work (~4 people per brief group)
- Lab assignments (4-6 people per group)
- Student presentations
- Guest presenters

MARK ALLOCATION

- E-biosheets (Pass/Fail: participation mark)
 - picture, contact info, academic background
 - expectations of course, instructor and TA, what you hope to do in 10 years
 - **email due: Sept 12**
- Projects for Parkland Mews or Fort Whyte Alive (60%)
 - project management plan (group) (10%)
 - description of project goal, activities, and schedule (group, 3pp)
 - learning outcomes and responsibilities (individual, 1pp)
 - **due: Sept 23** (email to SM and AA, RW and KF)
 - interim report (10%)
 - description of progress and departures from proposal (group, five pp)
 - reflection on activities (2pp, individual)
 - **due: Oct 16** (email to AA)
 - oral presentation to PM and FWA, guests as well as SM and AA
 - 30min each; presented by whole group (individual and group)
 - **due: Dec 5** (in lab) (10%)
 - technical report to RW and KF as well as SM and AA
 - **due Dec 12** (in class) (30%)
 - 10 pages (min) – 15 pages (max); *plus* tables, figures, photos, references etc. (group)
 - learning outcomes, critical evaluation (individual, 2pp)
- briefs (individual) (10%)
 - in-class reading and Briefs 1-8 (2 Briefs /person)
 - these will focus on reading and distributing notes to group members and for marking
 - objectives (1mk), summary (3mks), critical evaluation of reading based on in-group and class discussion (4mks), questions (2mks)
 - two-pager (4-600 words); point form, pamphlet etc.
 - brief-a (5%) + brief-b (5%)
 - due: at the *beginning* of the class in which the brief takes place
 - attendance in your brief session mandatory, otherwise F-grade
- Conservation / restoration in the news (individual) (5%)
 - case study of topical issue and response of your choice
 - 5-minute presentation at the beginning of corresponding class
 - **due: evaluated on presentation date**
- Participation (individual + instructor) (5%)
 - optional self evaluation (max one-page)
 - **due Dec 19** (submit with take-home exam to SM)
 - instructor assessment
- Final exam (individual) (20%)
 - take-home
 - in-lab screening and group discussion of documentary film on **Nov 28**
 - **hand out date: Nov 26**
 - **due date: Dec 19** (email as Word document to SM)

CLASS SCHEDULE

DATE	1. TOPIC	READINGS
Sept 5	Class Introduction; e-biosheets, teaching philosophy + inclusive content exercise	e-biosheets Due Sept 13
Convention		
Sept 10	Fragmentation	Wilson et al. 2016
Sept 12	Connectivity and corridors	Keeley et al. 2018
Sept 12 - L	Introduction of ENGOs and term projects Guests: Robert Wheeldon (Parkland Mews) Katrina Froese (FortWhyte Alive)	E-biosheets due
Sept 17	Parks and management <i>Brief1</i>	Watson et al. 2014
Sept 19	Ecology and national parks Case study: fire	Bond and Keane, 2017
Sept 19-L	Field trip to PM and FWA - site scoping & tour	
Sept 24	Spatial strategies to landscape management	Haufler, 1999
Sept 26	Parks and conservation; a pointless privilege?	Editors, 2009
Sept 26 - L	Site visit to PM / FWA: working on term projects	
Oct 1	Conservation in Africa Anderson Assuah	
Oct 3	Conservation and human-wildlife conflict	Peterson et al. 2010
Oct 3 – L	Fieldwork at PM / FWA	
Contention		
Oct 8	Eco-colonialism <i>Brief2</i>	Soomin and Shirley. 2009
Oct 10	Restoration vs. conservation <i>Brief3</i>	Young, 2000
Oct 10 – L	The Nile perch and colonization Video: Darwin's Nightmare	Goudswaard et al. 2008
Oct 15	Case Study: Lake Winnipeg. Guests Alexis Knispel Kanu (Lake Winnipeg Foundation) Chelsea Lobson (Lake Winnipeg Foundation)	LWF, 2018a LWF, 2018b
Oct 17	Ecological restoration: introduction <i>Brief4</i>	Hobbs and Norton, 1996
Oct 17 – L	Field trip to PM / FWA	
Oct 22	Success in restoration <i>Brief5</i>	Wortley et al. 2014
Oct 24	Re-imagining invasive species <i>Brief6</i>	Neyfakh, 2011
Oct 24 – L	ABCs of analyzing project data	
Oct 29	Citizen science and conservation	McKinley et al. 2017
Oct 31	Multi-stakeholder collaboration and environmental management <i>Brief7</i>	Redpath et al. 2012

Contravention		
Nov 5	Environmental justice in Canada <i>Brief8</i>	Haluza-Delay, 2007
Nov 7	Community-based monitoring	Conrad and Hilchey, 2011
Nov 7-L	Case study: MMTP	Manitoba Hydro 2016 McLachlan, 2018
Nov 11-15	Fall Term Break	
Nov 19	Case Study: Lake Winnipeg Indigenous Collective Guest: Daniel Gladu Kanu (LWIC)	
Nov 21	Case Study: Kis Kin Ha Ma Ki Win land-based youth camps	
Nov 26	Conservation/restoration and neoliberalism	Holmes et al. 2016 Final Exam: hand out
Nov 28	Conservation and restoration: reflections and the future	
Nov 28 – L	Video: A River Between Us (exam) Small group discussion	
Dec 3	Presentation and report preparation	
Dec 5	Final presentations (40min*2)	
Dec 5 - L	Final presentations (40min*3)	

REFERENCES (ON UM LEARN)

- Bond, W.J., and R. Keane. 2017. Fires, ecological effects of. Reference Module in Life Sciences. doi: 10.1016/B978-0-12-809633-8.02098-7.
- Conrad, C.C., and K.A. Hilchey. 2011. A review of citizen science and community based environmental monitoring: Issues and opportunities. *Environmental Monitoring and Assessment* 176:273-291.
- Editors, 2009. What's Wrong With the National Parks?
http://roomfordebate.blogs.nytimes.com/2009/09/27/whats-wrong-with-the-national-parks/?_r=0
- Goudswaard, K.P.C., F. Witte and E.F.B. Katunzi. 2008. The invasion of an introduced predator, Nile perch (*Lates niloticus*, L.) in Lake Victoria (East Africa): chronology and causes." *Environmental Biology of Fishes* 81: 127-139.
- Haluza-Delay, R. 2007. Environmental justice in Canada. *Local Environment* 12:557-564
- Haufler, J.B. 1999. Strategies for conserving terrestrial biological diversity. Pages 17-30 in R.K. Baydack, H. Campa III, and J.B. Haufler, eds. *Practical approaches to the conservation of biological diversity*. Island Press, Covelo, CA.
- Hobbs, R. J. and D. A. Norton. 1996. Towards a conceptual framework for restoration ecology. *Commentary. Restoration Ecology* 4:93-110.
- Holmes, G., and C.J. Cavanagh. 2016. A review of the social impacts of neoliberal conservation: formations, inequalities, contestations. *Geoforum*, 75:199-209.
- Keeley, A.T.H., G. Basson, D.R. Cameron, N. E. Heller, P. R. Huber, C. A. Schloss, J.H. Thorne, and A.M. Merenlender. 2018. Making habitat connectivity a reality. *Conservation Biology*, <https://doi.org/10.1111/cobi.13158>

- (LWF) Lake Winnipeg Foundation. 2018a. Lake Winnipeg community-based monitoring network. 2018 Report. Winnipeg, MB
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- (MH) Manitoba Hydro, 2016. Executive Summary, Environmental Impact Statement, Manitoba Minnesota Transmission Project.
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- McKinley, D.C., A.J. Miller-Rushing, H.L. Ballard, R. Bonney, H. Brown, S.C. Cook-Patton, D.M. Evans, R.A. French, J.K. Parrish, T.B. Phillips, and S.F. Ryan. 2017. Citizen science can improve conservation science, natural resource management, and environmental protection. *Biological Conservation*, 208:15-28.
- McLachlan, S.M. 2018. Death by a thousand dams. A cross-cultural critique of the socio-environmental dimensions of the Manitoba Minnesota Transmission Project. Submitted to Wa Ni Ska Tan Alliance of Hydro-Impacted Communities. May 4, 2018.
- Neyfakh, L. 2011. The Invasive Species War. Do We Protect Native Plants Because They're Better for the Earth, or Because We Hate Strangers?. July 31 2015. Boston Globe.
http://articles.boston.com/2011-07-31/bostonglobe/29836256_1_invasive-species-native-plants-water-chestnut
- Peterson, M. N., J.L. Birckhead, K. Leong, M.J. Peterson, and T.R. Peterson. 2010. Rearticulating the myth of human-wildlife conflict. *Conservation Letters* 3:74-82.
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- Soomin, L. and S. Shirley. 2009. Eco-Imperialism: The global North's weapon of mass intervention. *Journal of Alternative Perspectives in the Social Sciences* 1: 846-860.
- Young, T.P. 2000. Restoration ecology and conservation biology. *Biological Conservation* 92: 73-83.
- Watson, J.E., N. Dudley, D.B. Segan, and M. Hockings. 2014. The performance and potential of protected areas. *Nature*, 515(7525), 67.
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- Wortley, L., J.M. Hero, and M. Howes. 2013. Evaluating ecological restoration success: a review of the literature. *Restoration Ecology*, 21:537-543.

Schedule “A”

Schedule “A” is the new requirement passed by the University of Manitoba Senate in 2016, which requires that a list of available supports for services plus contact information be provided to all students. *While this information is important and useful, should you require advice and support, I will of course happy to meet with you and discuss any issues and concerns you might have*

Academics**The Academic Calendar**

An important source of information that is relevant to your coursework is the academic calendar: <http://umanitoba.ca/student/records/academiccalendar.html>. Please review the sections on University Policies and Procedures and General Academic Regulations. While all of the information contained in these two sections is important, the following information is especially relevant:

- If you have questions about your grades, please talk to me as your instructor. There is a process for term work and final grade appeals. Note that you have the right to access your marked final exam. Please see the Registrar’s Office website for more information including appeal deadline dates and the appeal form <http://umanitoba.ca/registrar/>
- You are also expected to be conversant with the General Academic Regulation section within the Academic Calendar, and more specifically the regulations regarding Academic Integrity. Please review the above information on this syllabus regarding academic integrity and feel free to ask me as your instructor about any concerns you might have. For the Academic Integrity Site for tools and support: <http://umanitoba.ca/academicintegrity/> View the Student Academic Misconduct procedure for more information.

Academic Programs and Regulations

For information on regulations that are specific to your academic program, read the section in the Academic Calendar and on the respective faculty/college/school web site <http://umanitoba.ca/faculties/>

For additional information on your academic program and regulations, please contact Ilka Cudmore (204-474-9847) or Jason Jorgenson (204-894-8710) as Academic Advisors within our Faculty.

Copyright

All students are expected to respect copyright as per Canada’s Copyright Act. Instructors and students both play a key role in the University’s copyright compliance as we balance user rights for educational purposes with the rights of content creators from around the world.

The Copyright Office provides copyright resources and support for all members of the University of Manitoba community. Visit <http://umanitoba.ca/copyright> for more information.

Your rights and responsibilities

As a student of the University of Manitoba you have both rights and responsibilities. It is important for you to know what you can expect from the University as a student and to understand what the University expects from you. Please become familiar with the policies and procedures of the University and our Faculty-specific regulations.

Writing and Learning Support

The Academic Learning Centre (ALC) offers services that may be helpful to you throughout your academic program. Through the ALC, you can meet with a learning specialist to discuss concerns such as time management, learning strategies, and test-taking strategies. The ALC also offers peer supported study groups called Supplemental Instruction (SI) for certain courses that students have typically found difficult. In these study groups, students have opportunities to ask questions, compare notes, discuss content, solve practice problems, and develop new study strategies.

You can also meet one-to-one with a writing tutor who can give you feedback at any stage of the writing process, whether you are just beginning to work on a written assignment or already have a draft. If you are interested in meeting with a writing tutor, reserve your appointment two to three days in advance of the time you would like to meet. Also, plan to meet with a writing tutor a few days before your paper is due so that you have time to work with the tutor's feedback.

These Academic Learning Centre services are *free* for U of M students. For more information, please visit the Academic Learning Centre website at: <http://umanitoba.ca/student/academiclearning/>. You can also contact the Academic Learning Centre by calling 204-480-1481 or by visiting 201 Tier Building.

University of Manitoba Libraries (UML)

As the primary contact for all research needs, the librarian serving our Faculty (liaisons) can play an important role when completing academic papers and assignments. They can answer questions about managing citations or locating appropriate resources, and may be able address any other course-specific concerns you may have, regarding education and research. Liaisons can be contacted by email or phone, and are also available to meet with you in-person. A complete list of liaison librarians can be found by subject: <http://bit.ly/WcEbA1> or name: <http://bit.ly/1tJ0bB4>.

In addition, general library assistance is provided in person at 19 University Libraries, located on both the Fort Garry and Bannatyne campuses, as well as in many Winnipeg hospitals. For a listing of all libraries, please consult the following: <http://bit.ly/1sXe6RA>. When working remotely, students can also receive help online, via the Ask-a-Librarian chat found on the Libraries' homepage: www.umanitoba.ca/libraries.

Respectful Work and Learning Environment

As an instructor, I am absolutely committed to a respectful learning and work environment. You, of course, have the right to be treated with respect as a student, but you are also expected to conduct yourself in an appropriate respectful manner with respect to the other students, teaching assistants, and me as your instructor. Policies governing such behavior include the:

- **Respectful Work and Learning Environment**
 - http://umanitoba.ca/admin/governance/governing_documents/community/230.html
 - **Student Discipline**
http://umanitoba.ca/admin/governance/governing_documents/students/student_discipline.html
 - **Violent or Threatening Behaviour**
http://umanitoba.ca/admin/governance/governing_documents/community/669.html

Student Support

Student Advocacy

Contact Student Advocacy if you want to know more about your rights and responsibilities as a student, have questions about policies and procedures, and/or want support in dealing with academic concerns please consider contacting:

<http://umanitoba.ca/student/advocacy/>, 520 University Centre 204-474-7423, or student_advocacy@umanitoba.ca.

Student Counselling Centre (SCC)

Please consider contacting the Student Counselling Centre (SCC) if you are concerned about any aspect of your mental health, including anxiety, stress, or depression, or for help with relationships or other life concerns. The SCC offers crisis services as well as individual, couple, and group counselling.

Student Counselling Centre: <http://umanitoba.ca/student/counselling/index.html>
474 University Centre or S207 Medical Services, 204-474-8592

Mental Health

For 24/7 mental health support, please consider contacting the Mobile Crisis Service at 204-940-1781.

Student Accessibility Services

If you are a student with a disability, please contact SAS for academic accommodation supports and services such as note-taking, interpreting, assistive technology and exam accommodations. Students who have, or think they may have, a disability (e.g., mental illness, learning, medical, hearing, injury-related, visual) are invited to contact SAS to arrange a confidential consultation.

Student Accessibility Services <http://umanitoba.ca/student/saa/accessibility/>, 520 University Centre, 204-474-7423, TTY 204-474-9790, Student_accessibility@umanitoba.ca

If you are experiencing difficulties with your studies or assignments, or have a disability or illness which may affect your course of study, you should discuss these issues with me as instructor and/or mentors at one of the following Student Affairs offices as soon as possible:

- Indigenous Student Centre (ISC); Phone: 204-474-8850. 114 Sidney Smith St.
- International Centre for Students; Phone: 204-474-8501. 541 University Centre
- English Language Centre; Phone: 204-474-9251. 520 University Centre
- UMSU – University of Manitoba Students’ Union; 101 UMSU University Centre, umsu@umsu.ca , 204-474-8678 (UMSU)
- Numerous of campus ethno-cultural student groups and various communities of interest, action or belonging as funded or supported by UMSU.

Student Support Case Management

Please consider contacting the Student Support Case Management team (SSCM) if you are concerned about yourself or another student and don’t know where to turn. The SSCM helps connect students with on and off campus resources, provides safety planning, and offers other supports, including consultation, educational workshops, and referral to the STATIS threat assessment team.

Student Support Intake Assistant <http://umanitoba.ca/student/case-manager/index.html>. 520 University Centre, 204-474-7423

University Health Service

Please consider contacting UHS for any medical concerns, including mental health problems. The UHS offers a full range of medical services to students, including psychiatric consultation.

University Health Service <http://umanitoba.ca/student/health/>
104 University Centre, Fort Garry Campus, 204-474-8411 (Business hours or after hours/urgent calls)

Health and Wellness

Please consider contacting a Health and Wellness Educator if you are interested in information on a broad range of health topics, including physical and mental health concerns, alcohol and substance use harms, and sexual assault.

Health and Wellness Educator <http://umanitoba.ca/student/health-wellness/welcome.html>. Katie.Kutryk@umanitoba.ca, 469 University Centre, 204-295-9032

Live Well @ UofM

For comprehensive information about the full range of health and wellness resources available on campus, visit the Live Well @ UofM site:
<http://umanitoba.ca/student/livewell/index.html>

Sexual Assault

If you experience sexual assault or know a member of the university community who has, the first thing you need to do is make sure that you or these community members are safe. It is also important to feel that you can reach out and find support regarding this experience it is important to know there is a policy that provides information about the supports available to those who disclose and outlines a process for reporting.

- More information and resources can be found by reviewing the Sexual Assault site <http://umanitoba.ca/student/sexual-assault/>