

Ver. 3 [6 Mar 2023]

CONSERVATION BIOLOGY Syllabus Spring 2023 BIOS 4803/8803

Class time & location:

CoC 102; MW 2–3:15pm

Instructor:

Dr. Linda Green, School of Biological Sciences; linda.green@gatech.edu

Clough 283D

Office Hours: by appointment online or in-person

Pronouns: she/hers

Course Overview and Objectives: This course considers the broad diversity of disciplines that comprise the modern field of Conservation Biology, though our emphasis will be focused on biological phenomena including the human–biodiversity interface. Recent and current events ranging from national and international policymaking, environmental catastrophes, and emerging crises in wildlife populations will be actively discussed, with attempts made to appreciate the views and values of disparate stakeholders.

By the end of this course, students will be able to:

- explain the criteria considered in evaluating and red-listing species, and in developing and implementing new policies aimed to protect biodiversity and the environment
- understand and analyze the biological criteria and data that drive conservation decision-making
- use scientific knowledge to interpret examples and case studies involving contemporary issues affecting biodiversity
- articulate and communicate a breadth of knowledge of conservation challenges, policies, and programs in a variety of formats

Reading Materials:

Optional: Sher, Anna 2022. *An Introduction to Conservation Biology, 3rd Edition*. Sinauer.

Available commercially, e.g. <https://a.co/d/4eLGFwy>. Earlier editions are also available on Amazon for rental (\$13). This is one of many excellent introductory texts, and if you are particularly interested in pursuing Conservation Biology in your career, I recommend you use this alongside our course. Otherwise, I will provide links and literature to support topics presented in class.

Required: readings from primary literature that will be provided on Canvas, as well as links to a wide variety of online materials (e.g., blogs, reports, news media, video documentaries, podcasts).

Additional Resources of Interest:

- <http://www.conbio.org/publications/free-textbook> (no-charge pdf download), Sodhi & Ehrlich. 2010. *Conservation Biology for All*. Oxford University Press.
- Half-Earth Project <https://www.half-earthproject.org/>
- IUCN <https://www.iucn.org/> and IUCN-RedList <https://www.iucnredlist.org/>
- EcoHealth Alliance <https://www.ecohealthalliance.org/>
- IUCN Conservation Planning Specialist Group <http://www.cpsg.org/our-approach/one-plan-approach-conservation>
- Conservation Bytes (blog) <https://conservationbytes.com/>

Honor Code and Code of Conduct: All students are expected to abide by the Academic Honor Code, <https://policylibrary.gatech.edu/student-life/academic-honor-code> and Code of Conduct, <https://policylibrary.gatech.edu/student-life/student-code-conduct>. Some specific examples of Honor Code

violations that I've encountered include: falsifying attendance, copying during quizzes/exams, incorrect citations or lack of citations in writing, or submitting another's work as your own. Students found in violation of the Honor Code will be reported to the Office of Student Integrity.

Accommodations: Please contact me during the first week of class or as soon as possible if you need classroom accommodations. Accommodations should be arranged in advance and in accordance with the Office of Disability Services (<http://disabilityservices.gatech.edu/>)

Inclusivity & Diversity: In an ideal world, science would be objective. However, much of science—and, especially, conservation—is subjective and is historically built on a small subset of privileged voices. In this class, I will make an effort to read papers from a diverse group of scientists and stakeholders, but limits still exist on this diversity. I acknowledge that it is possible that there may be both overt and covert biases in the materials due to the lens with which they were written; that really is the nature of the topic. Integrating a diverse set of experiences and acknowledging contrasting value systems and differing cultural norms is important for a more comprehensive understanding of conservation and science. Please contact me (in person or electronically) with concerns, or to bring suggestions to improve the quality of the course materials. Furthermore, I strive to create a learning environment for students that supports a diversity of thoughts, perspectives and experiences, and honors your identities (including race, gender, class, sexuality, religion, and ability). To help accomplish this:

- If you have a name and/or set of pronouns that differ from those that appear in your official records, please let me know.
- If you feel like your performance in the class is being impacted by your experiences outside of class, please don't hesitate to come and talk with me. If you prefer to speak with someone outside of the course, your advisor or the Dean of Students office are excellent resources.
- We are all on the continuum of learning about diverse perspectives and identities. If a particular topic or something that was said in class (by anyone) makes you feel uncomfortable, please talk to me about it.
- Much of conservation action, policies, and rhetoric is based on opinions. In our course, all opinions are valid and students will be challenged to deeply consider the opinions and values of a diversity of stakeholders.

Course Format: Class meetings will include mini-lectures, discussions, and multimedia presentations. Your preparation and willing participation are a key component of a productive and fun environment. Our course topic lends itself to personal opinions and values, so I ask that you strive to use data, legal precedents, well-documented cultural values and traditions, etc. to support the positions that you present.

Semester Activities and Assignments

Class Preparation: To promote lively discussion of conservation issues during class, we will organize our readings in Perusall. This is an online platform that promotes social reading. Class readings will be assigned via Perusall, with the expectation that you will engage in annotating the reading and responding to your peers prior to the assigned class period. We will draw upon your preliminary discussions in Perusall during our in-class meetings.

Tri-weekly Reflections: These tri-weekly assignments will explore connections to the content, your personal experiences, and class dynamics. Beyond the content-specific questions, reflections help deepen your learning, your personal agency, and your ability to fail forward. You will submit your reflections in Canvas by Sunday at 8pm.

Graduate Student Presentations: Students enrolled in 8803 will work in pairs to prepare a set of classroom activities, readings, and lectures on one of the assigned topics below.

- Topic 1: Effectiveness of protected areas – design & execution
- Topic 2: Human-animal conflict in conservation efforts – subsistence living in protected areas, community-based conservation
- Topic 3: Conservation in urban environments – challenges and opportunities
- Topic 4: Funding for conservation – sources, land trusts, international treaties
- Topic 5: De-Extinction – approaches, successes, and hyperbole

Undergraduate Digital Posters: Students enrolled in 4803 will prepare a digital poster that explores an imperiled species or current conservation issue. Your poster should analyze the challenges, known and unknown data, and articulate recommendations for a conservation plan. The poster can be designed for either a scientific audience or the general public (i.e. an infoboard at a museum or park). All students will submit a peer critique of 3 posters in the last week of class.

Final Exam: We will have a written assessment during the final exam period. This “exam” will assess your ability to assemble evidence to support particular views, traditions, or policies—whether those may or may not coincide with your own personal views. This will be in the format of a 1-page summary that provides a critical analysis of a given issue. These generally are referred to as Position Papers, and usually are framed around persuading the reader toward (or away from) specific conservation policies, programs, or actions. You will be able to draw upon the readings and any resources from the course.

Attendance: All class sessions are planned to be in-person. You are expected to attend the in-person class sessions unless you have a compelling reason not to do so; and we ask you to communicate regarding all absences. If you are absent from class, an alternate assignment will be provided; this may include a virtual meeting with the instructor to discuss missed material. In-person class sessions will not be recorded.

Assessment for Students in 4803:

Contributions & Preparedness (Perusall responses, in-class activities)	25%
Tri-weekly reflections	20%
Digital poster	20%
Critique of 3 posters	10%
Position paper (Final exam)	25%

Students enrolled in 8803 will be expected to complete longer reflections and co-lead one class period. Thus, the assessment breakdown will be modified as follows:

Contributions & Preparedness (Perusall responses, in-class activities)	25%
Tri-weekly reflections	20%
Class Presentation	25%
Critique of 3 posters	10%
Position paper (Final Exam)	20%

A = 100–89.5%, B = 89.4–79.5%, C = 79.4–69.5%, D = 69.4–59.5%, F = 59.4–0%

Course Schedule – This schedule of class topics and reading assignments may be updated throughout the semester.

Class	Day	Date	Topic	Assigned Readings (<i>*Optional readings italicized</i>)
1	M	Jan 9	Syllabus Review & Introductions Case study: Killing Cats & Birds	Barcott 2007, Loss et al 2013
2	W	Jan 11	Establishing the field of conservation Reflection due Sun 1/15	Mace 2014, <i>Sher 1</i>
	M	Jan 16	<i>MLK Jr Holiday – no class</i>	
3	W	Jan 18	Sustainable Development Goals	https://sdgs.un.org/goals , tbd, <i>Sher 12</i>
4	M	Jan 23	Ecosystem Services	Winter et al 2020, MEA website , <i>Sher 3</i>
5	W	Jan 25	Biodiversity: Enumeration, Location, Identity vs Function	Isbell et al 2022, <i>Sher 2</i> (*pdf provided of this chapter)
6	M	Jan 30	Species Concepts, Taxonomy & Conservation	Mendelson 2011; NY Times tiger taxonomy
7	W	Feb 1	Biodiversity film discussion Reflection due Sun 2/5	Strona Ch 2
8	M	Feb 6	Threats: Habitat Change	Haddad et al. 2015, <i>Sher 4</i>
9	W	Feb 8	“ Case Study: Oil Palm industry	Meijaard et al. 2020 (x2)
10	M	Feb 13	Threats: Climate Change	Henson Ch 13, Hanson & Sabo 2016, <i>Sher 5</i>
11	W	Feb 15	“ Species range shifts	Lenoir et al 2020
12	M	Feb 20	Threats: Overexploitation	Caro et al 2022 & Theirry et al 2022
13	W	Feb 22	Threats: Invasives & Disease Reflection due 2/26	Hoyt et al 2021
14	M	Feb 27	Extinction Risk	<i>Sher Ch 6</i> , Ripple et al. 2017
15	W	Mar 1	Problems of Small Populations	Pimm et al 2006
16	M	Mar 6	Population Biology: PVA & Metapopulations	Hedrick & Fredrickson 2010, Benson et al. 2016.
17	W	Mar 8	PVA & Metapopulations, IUCN Red List	Benson et al 2017, <i>Sher 7</i> , Estrada et al 2017
18	M	Mar 13	Prioritization & Legal Matters (ESA & more)	Henson et al 2018
19	W	Mar 15	Guest lecture: Al Dove, Georgia Aquarium Reflection due Sun 3/19	Gill et al 2017
		Mar 20	<i>Spring Break</i>	--
		Mar 22	<i>Spring Break</i>	--

20	M	Mar 27	Reintroductions	Santymire et al 2014, Tibbetts 2022
21	W	Mar 29	In situ vs Ex situ strategies	Dolman et al 2015, <i>Sher 8</i> 4803: Digital draft due for optional feedback
22	M	Apr 3	Guest lecture: Dr. Emily Coffey, Atlanta Botanical Garden	Linsky et al. 2022
23	W	Apr 5	Guest lecture: Dr. Joseph Mendelson, Zoo Atlanta	Minteer & Collins 2013, The Condor Question revisited article
24	M	Apr 10	Grad Presentation: Human-animal conflict	Dickman 2010, <i>Sher 10</i>
25	W	Apr 12	Grad Presentation: Conservation in Urban Env Reflection due Sun 4/16	Baldock 2020 4803: Digital poster due
26	M	Apr 17	Grad Presentation: Funding for Conservation	Deutz et al. 2020
27	W	Apr 19	De-Extinction	Tedx video selection
28	M	Apr 24	Sustainable Development Goals wrap-up	<i>2030 Agenda for SDGs, The Half-Earth Project, One Forest Summit summaries</i>
	Fri	Apr 28	Position Paper	2:40–5:30pm