**Ver. 11 [13 Mar 2021]**

**CONSERVATION BIOLOGY Syllabus**

**Spring 2021 BIOS 4803/8803**

**Class time & location:**

Klaus 2456; MW 2–3:15pm

**Instructors:**

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

Clough 283D

Office Hours: TR 1-2pm (<https://gatech.bluejeans.com/962285644>), or by appointment

Pronouns: she/hers

Dr. Joe Mendelson, School of Biological Sciences and Zoo Atlanta; jmendelson3@gatech.edu.

Cherry Emerson 301

Office hours: Thurs 11am – 12pm (https://bluejeans.com/387722945/5186 ) or by appointment

Pronouns: he/his

**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

**Required Materials**:

Anna Sher & Richard Primack*.* 2019. *An Introduction to Conservation Biology,2nd Edition.* Sinauer.

Available commercially, e.g. [https://www.amazon.com/Introduction-Conservation-Biology-Anna-Sher-dp-1605358975/dp/1605358975/ref=dp\_ob\_title\_bk](https://www.amazon.com/Introduction-Conservation-Biology-Anna-Sher-dp-1605358975/dp/1605358975/ref%3Ddp_ob_title_bk) or the B&N bookstore. The first edition is also available on Amazon for rental ($13). A print copy will be available at the Library in a few weeks.

Ben A. Minteer. 2018*. The Fall of the Wild: Extinction, De-extinction, and the Ethics of Conservation.* Columbia University Press.Available commercially, e.g. – [https://www.amazon.com/dp/023117778X/ref=cm\_sw\_em\_r\_mt\_dp\_X9l9Fb1B1N20T](https://www.amazon.com/dp/023117778X/ref%3Dcm_sw_em_r_mt_dp_X9l9Fb1B1N20T) or the B&N bookstore. This book is also available as a free ebook rental from the Georgia Tech Library (<https://gatech-primo.hosted.exlibrisgroup.com/permalink/f/1vgrnp4/01GALI_GIT_ALMA51358458430002947>).

Additional readings from primary literature 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://osi.gatech.edu/content/honor-code> and Code of Conduct, <http://policylibrary.gatech.edu/student-life/student-conduct> . Some specific examples of Honor Code violations that we’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 the instructors 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, we will make an effort to read papers from a diverse group of scientists and stakeholders, but limits still exist on this diversity. We 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 the instructors (in person or electronically) with concerns, or to bring suggestions to improve the quality of the course materials. Furthermore, we strive to create a learning environment for our 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 us 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 us. 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 us 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.
* As a participant in course discussions, you should strive to honor the diversity of your classmates.

**Course Format**: Class meetings will include mini-lectures, discussions, multimedia presentations, and work on group projects. 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 we ask that you strive to use data, legal precedents, well-documented cultural values and traditions, etc. in order to support and substantiate the positions that you present. In some cases, you may be assigned a stakeholder position, in which you will use substantiation to promote a value that may not necessarily reflect your own views (Yes, you’ll get to practice your acting skills!).

**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/or responding to your peers prior to the assigned class period. We will draw upon your preliminary discussions in Perusall during our in-class meetings.

**Bi-weekly Reflections**: These bi-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.

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

* Topic 1: Emerging infectious disease in wildlife & zoonotic diseases: policies and mitigation
* Topic 2: Valuation of “ecological goods and services”
* Topic 3: Ethics of animals in captivity for research, education, or conservation
* Topic 4: Genetic technologies and conservation
* Topic 5: Protected versus unprotected areas in species conservation: how do humans fit in?

**“One Plan Approach” Conservation Action Plan:** This is a comprehensive approach to species conservation developed by the IUCN Conservation Planning Specialist Group (<http://www.cpsg.org/our-approach/one-plan-approach-conservation>). A One Plan Approach creates a comprehensive conservation plan for a species, or specific population(s) under threat. Every approach and plan is unique, but primary components are: 1) review of species’ biology, and identification of knowledge gaps; 2) evaluation of all threats facing the species as well as identification of their direct and indirect effects and synergisms; 3) establishment of priority conservation goals and actions for in-situ and ex-situ programs, as applicable. Students will work in groups of 3–4 (during class periods and outside of class) to gather and analyze the information and develop their One Plan. The group will present a summary of their plan with a visual (e.g., Powerpoint) and oral presentation. Each group will produce a written action plan document (individuals may request to create their own individual written plan).

**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 up the readings and any resources from the course.

**Attendance:** All class sessions are planned to be in-person. In accordance with campus expectations during the Covid-19 pandemic, facial masks and social distancing are required. We expect all students (and instructors) to participate in regular, weekly Covid-19 testing provided by Georgia Tech. 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 instructors to discuss missed material. In-person class sessions will not be recorded. We will have both virtual and in-person on-campus office hour sessions which you may attend as necessary.

**Assessment for Students in 4803:**

Contributions & Preparedness (Perusall responses, in-class activities) 20%

Biweekly reflections 20%

Position paper (Final exam) 25%

Conservation Action Plan presentation (group) 15%
Conservation Action Plan paper (group or individual) 20%

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

**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) 15%

Biweekly reflections 15%

Class Presentation 20%

Position paper (Final Exam) 15%

Conservation Action Plan presentation (group) 15%
Conservation Action Plan paper (group or individual) 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 will be *updated throughout the semester.*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Class** | **Day** | **Date** |  | **Topic** | **Assigned Readings** |
| 1 | W | 20-Jan | LGJM | Syllabus Review & IntroductionsCase studies: The Cat Killer & Killing Mice**Reflection due Sun 1/24** | Huth 2018; Barcott 2007; <https://www.nytimes.com/2019/04/25/magazine/australia-cat-killing.html?smid=nytcore-ios-share>; Loss et al 2013 |
| 2 | M | 25-Jan | JM | Establishing the field of conservation | Mace 2014, Sher Ch. 1 |
| 3 | W | 27-Jan | JM | History and culture | Overbye 2018; Minteer Ch. 1; Grant 2021 – [link](https://www.smithsonianmag.com/history/lost-history-yellowstone-180976518/?utm_source=pocket-newtab&fbclid=IwAR0ScKz21-G9_xYI4OH1zhN-fH8lXlOGScnie1x9TpAzKVa8aczW4J4OCPc)  |
| 4 | M | 1-Feb | LG | Biodiversity: Enumeration, Location, Identity vs Function | Sher Ch. 2 |
| 5 | W | 3-Feb | JM | Species Concepts, Taxonomy & Conservation**Reflection due Sun 2/7** | Minteer Ch. 2; NAS Red Wolf panel 2020; Mendelson 2011; NY Times tiger taxonomy |
| 6 | M | 8-Feb | LG | The ESA: friend or foe? | Sher p182-187, p234-243. Henson et al. 2018 |
| 7 | W | 10-Feb | JM | IUCN Red-List & Species-Prioritization metrics | Minteer Ch. 3 & 4, Sher p225-233 |
| 8 | M | 15-Feb | LG | Habitats: Pollution & Destruction; Case Study: Oil Palm Industry | Sher p 101-112, 119-126. Strona et al. 2018, Meijaard et al. 2020. IUCN Issues Brief. |
| 9 | W | 17-Feb | JM | De-extinction & Pleistocene rewilding**Reflection due Sun 2/21** | Minteer Ch. 5 & 6; Zimmer 2013; Donlan et al. 2005; **PLUS** video links below this table |
| 10 | M | 22-Feb | — | Protected vs unprotected areas – how do humans fit in?  | Sher Ch 9 (279-290, 311-314), and Ch 10 (317-326, 331-342); Rasheed & Abdulla 2020. |
| 11 | W | 24-Feb | — | Ethics of captive populations | Sher p263-275, Minteer & Collins 2013, review Minteer Ch 3. |
| 12 | M | 1-Mar | — | Valuation of “ecological goods and services” | Sher p62-80, and Power 2010, Brander et al. 2013. |
| 13 | W | 3-Mar | LG | Population Biology and Genetics;Case Study: genetic rescue of panthers**Reflection due Sun 3/7** | Sher p210-222, p187-201. Pimm et al. 2006, Benson et al. 2016. |
| 14 | M | 8-Mar | JM LG | Conservation Action One-Plans | Read one of the examples linked at the bottom of [this page](http://www.cpsg.org/our-approach/one-plan-approach-conservation) |
| 15 | W | 10-Mar | — | Challenges in Marine Conservation *Guest speaker: Dr. Al Dove, Georgia Aquarium* | TBD.  |
| 16 | M | 15-Mar | JM | Virunga Discussion | Watch [Virunga film](https://video-alexanderstreet-com.eu1.proxy.openathens.net/watch/virunga) prior to class  |
| 17 | W | 17-Mar | JM | Case Study: Global Amphibian Declines**Reflection due Sun 3/21** | Fisher et al 2012; Crump 1992; Greenberg & Palen 2019; Scheele et al. 2019 (optional) |
| 18 | M | 22-Mar | — | Challenges in Botanical Conservation *Guest speaker: Dr. Emily Coffey, Atlanta Botanical Garden* | TBD. |
| 19 | W | 24-Mar | — | *Break: no class* |  |
| 20 | M | 29-Mar | — | Conservation Action One-Plans: work in class | Draft of concept map by **start** of class |
| 23 | W | 31-Mar | LG | Introduced & Invasives: WNS in bats**Reflection due Sun 4/4** | Sher p150-163, Hoyt et al. 2016, Frick et al. 2017. |
| 24 | M | 5-Apr | LG | Sustainable Development Goals | Sher p386-394, UN 2030 Agenda for SD |
| 25 | W | 7-Apr | — | Conservation Action One-Plans: work in class | *Storyboard drafted in class* |
| 26 | M | 12-Apr | LG | Global stressor: Climate Change  | Sher p130-141; Hansen & Sato 2016, Davis & Diffenbaugh 2016. |
| 27 | W | 14-Apr | LG | Global stressor: Climate Change**Reflection due Sun 4/18** | TBD. |
| 28 | M | 19-Apr | — | Conservation Plan presentations | *One Plan paper due Apr 20.* |
| 29 | W | 21-Apr | — | Conservation Plan presentations  | *One Plan paper due Apr 22.*  |
| 30 | M | 26-Apr | — | Conservation Plan presentations  | *One Plan paper due Apr 27.*  |
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|  | **Fri** | **30-Apr** |  | **Position Paper** | **2:40–5:30pm** |

VIDEO LINKS FOR 17 Feb:
Stewart Broad: <https://www.ted.com/talks/stewart_brand_the_dawn_of_de_extinction_are_you_ready?language=en>

David Ehrenfeld:  <http://www.youtube.com/watch?v=7HJLEiNeJDY>

Stanley Temple: <http://www.youtube.com/watch?v=DCnhQzwgP-A>

Michael Archer:   <http://www.youtube.com/watch?v=y2xxZ9RKEzM>