

4 February 2016

CONSERVATION BIOLOGY
Spring 2016 BIOLOGY 4803-G/8803-G Syllabus

Instructors

Dr. Joe Mendelson, School of Biology and Zoo Atlanta, joseph.mendelson@biology.gatech.edu. Office hours: By appointment.

Dr. Michael Goodisman, School of Biology, michael.goodisman@biology.gatech.edu, 404-385-6311; Cherry Emerson #A110. Office hours: By appointment.

Dr. Linda Green, School of Biology, linda.green@biology.gatech.edu. 404-385-6517; CULC 474C; Office hours: By appointment.

Class information

Class time and location: MWF 12:05–12:55 pm; Cherry Emerson #320

Prerequisites: BIOL 2335 or 2337 Ecology; Credits: 3.0.

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, 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: *Sodhi & Ehrlich. 2010. Conservation Biology for All. Oxford University Press.*

- <http://www.conbio.org/publications/free-textbook> (no-charge pdf download)
- <https://global.oup.com/academic/product/conservation-biology-for-all-9780199554249?cc=us&lang=en&> (online purchase)
- Hardcopy available at GT bookstore

Additional readings from primary literature will be provided on T-square, as will links to a wide variety of online materials (e.g., blogs, reports, news media, video documentaries, podcasts).

Honor Code and Code of Conduct: All students are expected to abide by the Academic Honor Code, <http://www.honor.gatech.edu> and Code of Conduct, <http://www.deanofstudents.gatech.edu/codeofconduct>. Some specific examples of Honor Code violations that we've encountered include: copying during exams, incorrect citations or lack of citations in writing, 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/>)

Course Format: Class meetings on Mondays and Wednesdays will primarily be instructor-led lectures and discussion; your preparation and willing participation are a key component of a productive and fun environment. On Fridays, we will focus on student-driven discussions based on papers and other resources. You are expected to bring 2-3 questions about the assigned reading that can be used to prompt a classroom discussion. 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 adopt. In some cases, you will be assigned a stakeholder position, in which you will use the substantiation to promote a value that may not necessarily reflect your own views. The point here is that Conservation Biology requires that extraordinary objectivity be invoked in the consideration of evidence and stakeholder opinions.

Literature Review: You will write a review of a primary issue or controversy in conservation biology. A list of suggested topics will be provided, but students may choose their own if approved by one of the instructors. We expect you to include specific examples, but these reviews are to be holistic and not veer into the realm of case studies (e.g., “the story of the California Condor”). Papers should be 8–10 pages, double-spaced, 1” margins. Your synthesis of primary scientific literature, Op-Ed type essays (e.g., magazines or newspapers), letters and other documents from State or Federal registries, or Final Reports from task forces, agencies, or working groups will form the basis for the paper. However, websites (e.g., blogs, NGO conservation organizations) will also provide critical information on stakeholder views and conservation activities. You should have a minimum of 15 citations, plus websites.

“One Plan Approach” Conservation Action Plan: This is a comprehensive approach to species conservation developed by the IUCN Conservation Breeding Specialist Group (<http://www.cbsg.org/our-approach/one-plan-approach-conservation>). A One Plan creates a 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 (primarily outside of class) throughout the semester to gather and analyze the information and develop the One Plan. The group will present a summary of their plan with a visual (e.g., Powerpoint) and oral presentation. Each student will submit their own written version of the Plan.

Final Exam & Quizzes: The final exam will test your ability to assemble evidence to support particular views, traditions, or policies —whether may or may not coincide with your own view. Quizzes will focus on reviewing and synthesizing the biological, social, economic, and political aspects of various conservation challenges discussed in class.

Section 4803 Grading: Your grade will be assessed using the following scale:

<u>Assignment</u>	<u>%</u>
3 unit quizzes (50 pt ea)	35
1 Literature review (5% draft, 10% final)	15
One Plan presentation (group)	10
One Plan paper (individual)	10
Final exam	15
Participation	15
Total	100%

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

Section 8803 grading: Graduate students enrolling in BIOL 8803 will complete one literature review due the same date as the 4803 “draft”. Building from the exploration of this topic, graduate students will produce a manuscript suitable for publication to a conservation or taxonomy-based journal. This manuscript may take the form of a review, meta-analysis, or similar format. The first draft will replace and be due at the same time as the 4803 second literature review, and a final draft of the manuscript will replace and be due at the same time as the One Plan paper. The grading scheme above will be adjusted such that quizzes will be 30% of the final course grade, and each writing piece will be 10%. Thus, your grade will be assessed using the following scale:

<u>Assignment</u>	<u>%</u>
3 unit quizzes (50 pt ea)	30
1 Literature review	10
First draft of manuscript	10
One Plan presentation (group)	10
Final draft of manuscript	10
Final exam	15
Participation	15
Total	100%

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*. S&E = Sodhi & Ehrlich textbook.

Class	Day	Date	Topic		Due Dates and readings
1	M	11-Jan	First day of class, Case study: The Cat Killer	LG	S&E Intro, http://www.nytimes.com/2007/12/02/magazine/02cats-v--birds-t.html
2	W	13-Jan	Establishing the field of conservation	JM	S&E Ch 1
3	F	15-Jan	History and culture	JM	Discussion paper: Mace 2014
4	M	18-Jan	MLK Day: NO CLASS		
5	W	20-Jan	Biodiversity	JM	S&E Ch 2; Mendelson, 2011
6	F	22-Jan	IUCN lists	JM	Exercise/Discussion: T ² assignment
7	M	25-Jan	Habitat destruction	LG	S&E Ch 4
8	W	27-Jan		LG	Discussion paper:
9	F	29-Jan	Case study: Clearcutting Oaks	LG	Lit Review draft due (final draft for 8803)
10	M	1-Feb	Habitat fragmentation & landscape change	JM	S&E Ch 5
11	W	3-Feb	<i>Guest Speaker: Dr. Greg Rasmussen, Painted Dog Research Trust</i>	JM	http://www.painteddogresearchtrust-usa.org/home.html Discussion paper: Brasheres et al. 2004
12	F	5-Feb	Corridors, Easements, Land Swaps, Cooperatives	JM	Discussion paper:
13	M	8-Feb	Ethics of conservation	MG	S&E Ch 3
14	W	10-Feb		MG	Justus et al. Intrinsic vs Instrumental. 2009.pdf
15	F	12-Feb		MG	Discussion: Renewing the Earth. USC Catholic Bishops.pdf
16	M	15-Feb	Quiz 1 (All content to date)		-
17	W	17-Feb	Overharvesting <i>Guest Speaker: John Jensen, GA Dept. Natural Resources</i>	JM	Discussion paper: Fitzgerald & Painter, 2000
18	F	19-Feb	Policies, quotas, and enforcement	JM	S&E Ch 6
19	M	22-Feb	Extinctions	MG	S&E Ch 10
20	W	24-Feb		MG	
21	F	26-Feb		MG	Discussion paper:
22	M	29-Feb	Invasive Species	JM	S&E Ch 7
23	W	2-Mar		JM	Lit Review final copy due (Manuscript draft for 8803)
24	F	4-Mar	Pollution & Fire	LG	S&E Ch 9
25	M	7-Mar		LG	Discussion paper:
26	W	9-Mar	Constructing Action Plans – Overview <i>Guest Speaker: Dr. Jennifer Mickelberg, Zoo Atlanta</i>	JM	S&E Ch 11
27	F	11-Mar	Quiz 2 (Feb 17-Mar 7)		-

28	M	14-Mar	Wildlife Diseases	JM	
29	W	16-Mar	Zoonotic diseases & One Health concept	JM	
30	F	18-Mar	Host-pathogen ecologies	LG	Discussion paper:
31	M	21-Mar	<i>Spring Break: NO CLASS</i>		
32	W	23-Mar	<i>Spring Break: NO CLASS</i>		
33	F	25-Mar	<i>Spring Break: NO CLASS</i>		
34	M	28-Mar	International & national policies and management	JM	S&E Ch 15
35	W	30-Mar	<i>Guest speaker: Dr. Alistair Dove, GA Aquarium</i>	JM	Dove xxxx
36	F	1-Apr	Constructing Action Plans – class workday		-
37	M	4-Apr	Population Biology Sampling, monitoring populations	LG	
38	W	6-Apr	Commercial & public harvest of native wildlife <i>Guest speaker: John Jensen, GA DNR</i>	MG	
39	F	8-Apr	Small population genetics	MG	Discussion paper:
40	M	11-Apr	Climate Change Impacts	LG	S&E Ch 8
41	W	13-Apr	Pro-active conservation for climate change <i>Guest speaker: Dr. John Maertz, UGA</i>	JM	Maertz xxxx
42	F	15-Apr	Quiz 3 (Mar 11 – Apr 13)		-
43	M	18-Apr	One Plan Group Presentations		-
44	W	20-Apr	Zoo conservation programs <i>Guest speaker: Dr. Tara Stoinski, Zoo Atlanta</i>	JM	
45	F	22-Apr	Frozen zoos, cloning, de-extinction	MG	One Plan Paper due (Manuscript due for 8803)
46	M	25-Apr	Class Debate	JM	
47	W	27-Apr	<i>Reading period: NO CLASS</i>		
48	F	29-Apr	Final exam: 8:00 AM - 10:50 AM		