CONSERVATION BIOLOGY

GEORGE MASON UNIVERSITY, SPRING 2023

BIOL / EVPP 318
Course Syllabus

Orphaned baby elephant rescued by the David Sheldricke Wildlife Trust, Kenya. Many such rescues are successfully reintroduced to wild elephant herds.

INSTRUCTOR:

Ryan Valdez, Ph.D.
rvaldez@gmu.edu

Adjunct Faculty, ESP, George Mason University
Faculty Director, GMU Kenya Study Abroad

CLASS LOCATION / TIME:

On-line course:	TUE and THR 5:55 - 7:10 pm, Blackboard and ZOOM
Office Hours:	By appointment only. TUE, THU (7:15 – 8 pm); and FRI (12 – 3 pm).
Office:	Remote, ZOOM appointments only

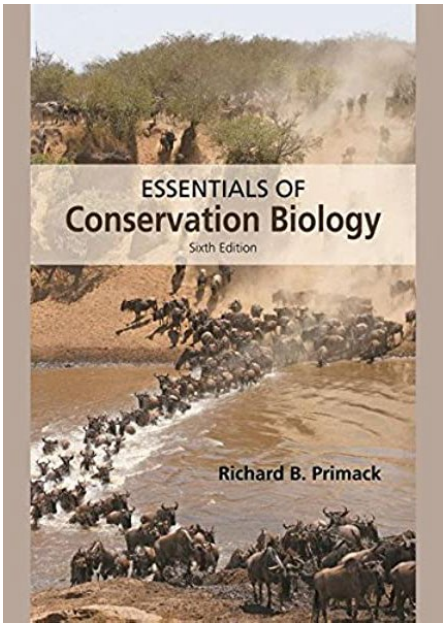
COURSE OVERVIEW / DESCRIPTION:

The field of Conservation Biology continues to rapidly expand in response to the need to study, protect, and manage Earth's natural resources – with a strong focus on the protection of species. Conservation biology is multidisciplinary, drawing upon diverse fields including the life and physical sciences, as well as human activity that stems from business, policy, sociology, law, and economics. In many ways, *Conservation* Biology is understanding the connection between humans and the state of the environment.

Learning Objectives:

1. To understand the multidisciplinary nature of conservation biology.
2. To gain an appreciation and respect for the state of global biodiversity.
3. To understand causes, threats, and implications of species loss and extinction.
4. To become aware of science-based methods and tools available that help mitigate threats to species loss and their habitats – the action of conservation biology.
5. To become familiar with current science literature in conservation biology.
6. To have a better understanding of the types of organizations that work primarily in conservation biology and to explore careers in this field.

TEXT BOOK: The Essentials of Conservation Biology, 6th Edition (Required)



Course Reading, Required textbook:

The Essentials of Conservation Biology, 6th Edition by Richard B. Primack.
Sinauer Associates. ISBN-13: 978-1605352893

This is an excellent textbook and will provide an important foundation for much of the material we cover in lecture. You can find the digital and print versions from the GMU bookstore but explore all options – it seems that Amazon has semester rentals that are less expensive. Let the instructor know if you have any trouble finding a version that works for you.

Peer-reviewed, science journal articles will supplement the text book and will be provided to you via BlackBoard.

You are expected to read each chapter listed in the course schedule – and as a helpful note, reading the chapter *before* coming to class is always best. Exam questions will be generated from content in the textbook, lectures, journal articles, as well as all other supporting material provided.

BLACKBOARD: As a required tool for this program, you should be fully registered and knowledgeable of the BlackBoard system at GMU via https://mymasonportal.gmu.edu/.

GRADING:

Quizzes	25%	100 points	(10, unannounced)
Exam 1:	12.5%	50 points	
Exam 2:	12.5%	50 points	
Paper Assignment:	25%	100 points	
Final Exam	25%	100 points	
Total:		**400 points**	

Final grades will be based on the following percentages: *Grades below a 0.5 value will be rounded down (i.e. 89.4 is a B+) and those above are rounded up (89.5 is an A-).*

A+	98%-100%
A	90% - 97%
B+	88% - 89%
B	80% - 87%
C+	78% - 79%
C	70% - 77%
D	60% - 69%
F	59% or below

Quizzes: There will be 10 brief and unannounced 10-point quizzes. They can happen at any time. Quizzes will be specific to that day's lecture material and are designed to reward students for attending class and to encourage reading of the chapters before attending lecture.

Exams: The exams will consist of various short answer, fill in the blank, short essay, multiple choice, etc.. and will be based on the text, discussions in lecture, and any additional reading material. The final exam will be comprehensive but will only cover content already addressed in Exams 1 and 2 (the topics, not the questions) plus any material from remaining chapters. There are no example tests to review, and we will not have exam reviews as part of any lecture.

Paper assignment: See last page of course syllabus.

Attendance and participation: It is expected that you will come to class prepared (complete assigned readings before class) and actively participate where possible. It's a bit challenging with ZOOM, but we'll do the best we can. Please realize that should you miss class, you risk missing unannounced quizzes and vital information pertinent to your exams. As a synchronous lecture, there will be no recordings of these class sessions.

PPTs and Journal articles: Will be provided via Blackboard.

Academic Integrity: This course adopts the expectation of high academic integrity and will follow the GMU Honor Code. Please see the University Catalog for a full description of the code and the honor committee process. https://oai.gmu.edu/full-honor-code-document/. Plagiarism software will be in use for the paper assignment.

GMU Email Accounts: Students must use their Mason email accounts to receive important University information, including messages related to this class.

Internet interruptions: Should a ZOOM session be interrupted by internet issues, the instructor will immediately attempt to notify the group (as the instructor will still be on audio – by call in) as to the next step. Please wait at least 10 minutes for ZOOM to reactivate from the outage. If ZOOM cannot be successfully reconnected, the instructor will email the group – and a recording of that lecture will be proposed depending on the time of the outage.

HELPFUL GMU SERVICES:

- Writing Center: Johnson Center, Room 227E; http://writingcenter.gmu.edu

- University Libraries: https://library.gmu.edu/

- University Policies: The University Catalog, https://catalog.gmu.edu/, is the central resource for university policies affecting student, faculty, and staff conduct in university academic affairs. Additional policies are available at https://catalog.gmu.edu/policies/. All members of the university community are responsible for knowing and following established policies.

- Student Services: Should you need support, there are numerous student services available to you at GMU - including academic advising, managing stress, etc. – please reach out to these services as needed. Asking for help is such a great decision to make, as the result will invariably be a new way of thinking of any obstacle in front of you. Getting help is being smart! https://catalog.gmu.edu/student-services/

The endangered Grevy's zebra (*Equus grevyi*), Mpala Research Center, Kenya. https://mpala.org/

General Course Structure

This course will be delivered entirely online, synchronous for the lecture. You will use your GMU account to login to the course from the Blackboard Login Page. To access this course on Blackboard you will need access to the internet and a supported web browser (Internet Explorer, Chrome, Firefox, Safari). If you have not activated your GMU account, please visit the Login Instructions for MasonLive page to do so. We grade documents through Blackboard as well, which is why we **require** Microsoft Word documents.

Technical Assistance

If you need technical assistance at any time during the course or to report a problem with Blackboard you can visit with the ITS Support Center or seek assistance from the Help tab.

Late Work Policy

All work will have a specific due date listed on Blackboard. **No late work will be accepted in lecture.** Some assignments are based on attendance. If you are **not present**, you may **not complete** that assignment. If you **miss an exam or a quiz**, you will need to provide medical documentation, and expect me to call the doctor's office to excuse your absence. You also need to notify me in advance of the exam time. You are expected to take notes! Videos will be provided on Blackboard.

Viewing Grades in BLACKBOARD

Points you receive for graded activities will be posted to the Blackboard Grade Book. Click on the **My Grades** link to view your points. I will do my best to keep this updated weekly.

Exams and Assignments

Exams will be a mixture of multiple choice, short answer, calculation, and graphs. You will have 1 try at the exams. You MUST have a computer with a working camera or an external camera. I may deploy **Respondus Lockdown Browser** when you take the first exam. You must finish the exam by the deadline and in the time allotted. Quizzes will be through Zoom in lecture. If you are not present, you will not be able to take the quiz.

Complete Assignments

All assignments for this course will be submitted electronically through BLACKBOARD unless otherwise instructed. Assignments must be submitted by the given deadline or special permission must be requested from instructor *before the due date*. Extensions will not be given beyond the next assignment except under extreme circumstances and with the submission of an acceptable written excuse.

Netiquette Guidelines

Netiquette is a set of rules for behaving properly online. Everyone in the course needs a safe online learning environment. All opinions and experiences, no matter how different or controversial from your own, must be respected in the tolerant spirit of academic discourse. You

are encouraged to comment, question, or critique an idea but you are **not** to attack an individual. Working as a community of learners, we can build a polite and respectful course community.

The following netiquette tips will enhance the learning experience for everyone in the course:

- Give other students the opportunity to join in the discussion.
- Do not use offensive language. Present ideas appropriately.
- Popular emoticons, such as ☺, can be helpful to convey your tone but do not overuse.
- Keep an open mind and be willing to express even your minority opinion. Minority opinions must be respected.
- Using humor is acceptable but using sarcasm is difficult to detect in the written word.

Build Rapport

If you find that you have any trouble keeping up with assignments or other aspects of the course, make sure you let me know as early as possible. Make sure that you are proactive in informing me when difficulties arise during the semester so that we can help you find a solution.

Understand When You May Drop This Course

It is the student's responsibility to understand when they need to consider unenrolling from a course. Refer to the GMU Academic Calendar for dates and deadlines for registration. After this, a serious and compelling reason is required to drop from the course. Serious and compelling reasons include: (1) documented/significant change in work hours, leaving student unable to attend class, or (2) documented and severe physical/mental illness/injury to the student or student's family.

Incomplete Policy

Under emergency/special circumstances, students may petition for an incomplete grade. An incomplete will only be assigned if you do not complete and turn in the paper. All incomplete course assignments must be completed within the University deadline.

Inform Your Instructor of Any Accommodations Needed

If you have a documented learning disability or other condition that may affect academic performance you should: make sure this documentation is on file with *Disability Services* (SUB I, Rm. 4205; 993-2474) to determine the accommodations you need; and talk with me to discuss your accommodation needs.

Commit to Integrity

The integrity of the University community is affected by the individual choices made by each of us. Mason has an *Honor Code* with clear guidelines regarding academic integrity. The fundamental and simple principles to follow are that:

(1) all work submitted be your own and no work from previous semesters is accepted, either your own or someone else's.
(2) when using the work or ideas of others give full credit through accurate citations;
(3) when you are unsure, cite rather than not, extra citations can be removed, and
(4) if you are uncertain about the rules on an assignment, ask for clarification.

No grade is important enough to justify academic misconduct. Plagiarism means using the exact words, opinions, or information from another person without giving the person credit. Writers give credit through accepted documentation styles, such as parenthetical citation. Paraphrased material must also be cited, using the journal Ecology format. A simple listing of books or articles is not enough. Plagiarism is the equivalent of intellectual robbery and cannot be tolerated in the academic setting. If you have any doubts about what constitutes plagiarism, please ask. Please keep in mind that the regulations state that we must report all instances of plagiarism to the Honor Committee, no matter how small.

Mason is an Honor Code university; please see the Office for Academic Integrity for a full description of the code and the honor committee process. The principle of academic integrity is taken very seriously, and violations are treated gravely. According to the Honor Code:

Cheating and attempted cheating, plagiarism, lying, and stealing in academic matters constitute Honor Code violations. **To maintain an academic community according to these standards, students and faculty members must report all alleged violations to the Honor Committee** (https://catalog.gmu.edu/policies/honor-code-system/#text).

All course material, including but not limited to slides developed by the instructor(s), the syllabus, assignments, course notes, course recordings (whether audio or video) and examinations or quizzes are the property of the University or of myself. Students are free to use this material for study and learning, and for discussion with others. Republishing or redistributing this material, including uploading it to web sites or linking to it through services like iTunes, Course Hero or Chegg, violates the rights of the copyright holder and is prohibited. There are civil and criminal penalties for copyright violation. **Publishing or redistributing this material in a way that might give others an unfair advantage in this or future courses may subject you to penalties for academic misconduct.**

Privacy

Students must use their MasonLive email account to receive important University information, including communications related to this class. I will not respond to messages sent from or send messages to a non-Mason email address.

Course Materials and Student Privacy

All course materials posted to Blackboard or other course site are private. By federal law, any materials that identify specific students (via their name, voice, or image) cannot be shared with anyone not enrolled in this class. You have been trained in the procedures associated with FERPA, so be sure not to share any class materials with anyone, especially future students due to the possible copywrite violations or presence of privileged student information.

NO Course Recordings

Our synchronous meetings in this class will NOT be recorded. Do your best to attend class. Materials for each week will be posted on Blackboard.

LECTURE and READING SCHEDULE: (subject to revision when necessary)

JAN **WEEK 1**	24: Introduction to the course. What is Conservation Biology? 26: What is biodiversity?	Chapter 1 Chapter 2
FEB **WEEK 2**	31: Where is the world's biodiversity? 2: Case Study: mapping biodiversity. The World Database on Protected Areas	Chapter 3
WEEK 3	7: Valuing biodiversity Case Study: The US Department of the Interior (DOI): culture, history, ecology, natural resource management 9: Valuing biodiversity	Chapter 4, 5 Chapter 6
WEEK 4	14: Case study: Kemp's Ridley Sea Turtle The Endangered Species Act: ESA 16: EXAM I	 Chapters 1 - 6
WEEK 5	21: Extinction 23: Vulnerability to extinction Case Study: The American Bison	Chapter 7 Chapter 8
MAR **WEEK 6**	28 : Habitat impacts Case study: The Amazon 2 : Overexploitation, invasive species, disease	Chapter 9 Chapter 10
WEEK 7	7: Population Biology Case study: The golden lion tamarin 9: In situ conservation	Chapter 11, 12 Chapter 13
WEEK 8	**SPRING BREAK**	
WEEK 9	21: Case study: Top predators as conservation tools / The rise of the mesopredator 23: Ex-situ conservation Case study: zoos/aquariums, wildlife refugia	 Chapter 14

WEEK 10	28: Case study: Human-wildlife conflict and Conservation Tools (use of camera trapping) 30: Exam II	Chapters 7 - 14
APR **WEEK 11**	4: Establishing Protected Areas (PAs) 6: Case study: BDFFP The legacy of Dr.Thomas Lovejoy	Chapter 15 SLOSS debates; https://stri.si.edu/; STRI/BDFFP
WEEK 12	11: Designing Protected areas 13: Managing protected areas	Chapter 16 Chapter 17
WEEK 13	18: Conservation outside protected areas; Case study: US National Park landscapes and a changing climate 20: Restoration Ecology Case Study: The Greater Everglades Landscape and Channel Islands NP!	Chapter 18 Chapter 19
WEEK 14	25: The challenge: sustainable development Case Study: IUCN Sustainability Goals 27: International Conservation Case Study: Conservation NGOs	Chapter 20 Chapter 21
MAY **WEEK 15**	2: Careers in Conservation MS and PhD path in conservation 4: **FINAL Exam**	Optional lecture Exams I and II, plus Chapters 16-21

Critical Thinking Assignment (5-page paper, single spaced, 2500-3,000 word count):

This assignment is designed to exercise your critical thinking skills specific to a current issue or threat documented in the field of conservation biology. This could be one of many things – it could focus on a species, on habitat, on an active conservation program, or on specific human activity impacting nature. The objective is to choose a topic that is of interest to you and to use critical thinking skills to identify, articulate, and provide scientific evidence for evaluating it - as well as proposing solutions.

As we will discuss in class, you should follow the standard process of critical thinking in conservation to develop your 5-page paper. Use section headings. Maps, diagrams, figures, and tables are in addition to the 5 pages of text. The paper should contain the following sections.

1. **Identifying the threat.** This is similar to an introduction. Your first task here is identifying a conservation biology issue or threat to focus on. Some threats are big and unmistakable, such as the immediate collapse of an entire population of a species.

Other threats may be chronic issues such as human encroachment on a protected area. Being able to identify a threat and propose a solution requires that you clearly articulate *why* this is a problem. There are many ways to approach this first step. That a species is listed as "endangered" – for example – is not the problem or the threat. Status is not a problem, it's a label to a problem – find out what the root cause is of the issue you intend to focus on …. that's the threat.

2. **Peer-reviewed science.** Learn more about the problem – do the research. Look for metrics (studies) and possible causes and solutions in the literature.

3. **Evaluating the evidence.** Where did the information come from? What is its point of view? What biases could be expected from each source? Who else is using this information?

4. **A Conservation Solution.** Draw conclusions from gathered evidence and propose a brief conservation solution (or support an existing one) to a particular audience. Was this for a local community? A research institution? An NGO? Was this designed to raise conservation funding? The audience matters as to how you direct your paper. Then, weigh the advantages and disadvantages of each alternative. What are the costs, benefits, and consequences? What are the obstacles, and how can they be approached? Here's where your creativity is especially important – match the solution to the audience!

5. **The elevator pitch**. In one small paragraph – at the top of your paper (i.e. similar to an abstract in a science journal article) submit this one paragraph that highlights 1-4 above. Make sure this pitch is the very last thing you write after writing all 5 pages.

   The instructor will provide a **grading rubric**, so you can see exactly how this will be graded.

Acknowledgement of Syllabus Terms and Agreements
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I, _____, have read and agree to the terms of the BIOL / EVPP 318 syllabus outlined above.

I am aware that I will be required to spend hours outside of class to complete this 3-credit course. I agree to notify my instructor within the first week of class if I require disability accommodations. I agree to submit all assignments via Blackboard unless otherwise indicated by my instructor. I agree to send all email communications using my GMU email address only and no external email addresses.

I agree to abide by the George Mason University Honor Code and agree not to plagiarize at any time during this semester. I will ask my instructor if I have any questions about what constitutes plagiarism. I understand that even a first offence of plagiarism requires submission to the Honor Committee. I am aware that my instructors recommend the use of the Writing Center if I need additional writing support this semester. I understand that late work or missing a quiz (via lack of attendance) cannot be made up without a verified and signed doctor's statement.

_____

Print Name

_____

Signature *Date*

Spotted hyena cub (*Crocuta crocuta*), Ol Pejeta Conservancy, Kenya. https://www.olpejetaconservancy.org/