

MANAGEMENT OF WILD LIVING RESOURCES
EVPP 622 – 001 Fall 2022

Course Syllabus

Instructor: Dr. Tammy R. Wilbert

Class Meets: Tuesdays from 4:30 – 7:10 pm (14 classes)
Van Metre Hall 317, Arlington Campus, GMU

Contact Instructor:

Office Hours: Tuesdays from 1:00 – 4:00 pm in Van Metre Hall 317
or by appointment at other times and places

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Telephone: (202) 670-3699 (cell phone) If you text, please let me know who you are. Please only call for very urgent matters.

Course Website (Blackboard): Go to <http://mymason.gmu.edu>. Log in using your Blackboard (Bb) user ID and password. (NOTE: Although this is the same user ID that you use for accessing your email account, it is not the same password.) Then click on the courses tab near the top, and choose EVPP 622 from the menu on the side. Course content - including the syllabus, many readings, and assignments - can be accessed from the links on the menu to the left of the screen. If you are having trouble accessing files, check to make sure that your pop-up blocker is disabled, or that you have added this site to your list of trusted sites.

Files will be uploaded to Bb for your use (syllabus, readings, etc.) and may be updated during the semester. The schedule for discussion leaders and presentations will be announced in class and posted in Bb. If you are using a PowerPoint for your presentation, please bring a copy to class on a USB drive; you may also email it to yourself as a backup. Please also upload a pdf of your presentation to Bb.

General Policies:

Contract: This Syllabus is in effect a contract between the instructor and the students - read it well – know it well - so you will know what we expect of each other. Failure to follow the instructions in the syllabus will lead to reduced grades.

COVID policy: GMU guidance is updated regularly: <https://www.gmu.edu/safe-return-campus>

In summary, vaccinations and boosters are strongly encouraged and available on GMU Fairfax campus. If you have any symptoms, it can be helpful to use the Mason COVID Health Check to see if your symptoms suggest testing. Testing information is available at the website. Please report any positive results, and isolate/quarantine as guided. Masks are optional, but you are encouraged to do what makes you feel comfortable – use your best judgement. Communication is key to trust in our classroom, and we will discuss this together regularly.

Prerequisites: A minimum of 8 hours of graduate course work with graduate courses in environmental science including ecology, and environmental or public policy. In practice this means a minimum of one year of graduate course work. If you do not have the prerequisites, you must get the instructor's approval.

Attendance: You are expected to attend every class session and to be there on time. If you have a legitimate excuse for missing a class or being late please let me know, in advance if possible. Unexcused absences or lateness will result in a lowered grade.

Cell phones: As a courtesy to your classmates, professor and guest speakers, please mute your cell phone and put it out of sight during class. If you are experiencing a medical or family situation where you need to receive an incoming call, please let us know, mute your phone, keep it in sight, and feel free to exit the class to receive your call.

Submit dates: The date and time for deliverables (topics, preliminary statements, case study paper, tests, etc.) are clearly stated. Unless you have cleared a late submission with me in advance, they will not be accepted. I have built flexibility into the grading so that there should be sufficient wiggle room for a "bad day."

Disabilities: If you are a student with a disability and you need academic accommodations, please see me and contact the Office of Disability Services (ODS) at 703-993-2474. All academic accommodations must be arranged through the ODS office: <https://ds.gmu.edu>

1. Objective of the Course and Overview:

The principal objective is to provide students with a broad overview of the management of wild living resources and an understanding of the scientific and policy issues involved. The course will provide an understanding of what management of wild living resources involves, what is the present status of the resources which are being managed, what are the factors that have led to the present situation, including how and why management has evolved, and what may be required to achieve more effective and sustainable management. This is not a "how to" course on the management of a particular resource.

We will focus on wild living resources that are free-living terrestrial and aquatic animals and plants. They include marine and freshwater fisheries, terrestrial wildlife, forests, and rangelands. These are resources of great economic, ecological, nutritional, social, and scientific value. Yet in the face of expanding human numbers and activities, most such wild living resources have been or are being depleted. This is true both for resources managed for consumptive purposes (such as fisheries, hunting, lumbering), and for non-consumptive purposes (such as national parks, tourist viewing, and protection of endangered species).

There are several reasons for this situation. Some of the past exploitation of wild living resources has not involved *management* in the strict or scientific sense of the word. Where

management has been attempted, a single-species approach usually has been adopted as the basic concept, even though such an approach is widely recognized by scientists as inappropriate, in part because it does not take the ecosystem into account. In almost all cases there is incomplete basic scientific knowledge, yet there appears to be adequate knowledge to provide the basis for substantially more effective management if the knowledge was more effectively applied. In many cases there is insufficient integration of scientific knowledge into management, and in most cases there are insufficient links between existing biological/ecological knowledge and the socio-economic factors that drive the management. To achieve sustainable management of these resources, and where appropriate, to achieve their recovery, is a major worldwide environmental challenge which will require major revision of many present forms of management.

The management of each type of wild living resource – for example, wildlife, range, fisheries, and forests – represents a separate discipline, each of which has its own set of subdisciplines. Each of these disciplines has its own scientific and management literature, policies and institutions, professionals and professional societies, education and training. Each is the subject of many academic courses. This course does not seek to duplicate these or cover the same ground in detail. Instead, the objective of this course is to provide students with a broad overview of the management of wild living resources and an understanding of the scientific and policy issues involved. More broadly, this course will investigate broader management goals, such as the conservation of biodiversity and genetic diversity, and how the management of wild living resource intersects with the challenges of climate change and sustainable development. We will also discuss how a One Health perspective adds another dimension to management of wild living resources. Although this class is focused on management of wild living resources, these management decisions are intricately connected to the global environment and socio-economic systems.

Finally, as we discuss management in the 21st century, we must work in partnership with others around the world. This course will discuss international goals and management strategies, including international agreements, movements, and economic incentives. We will also discuss stakeholder cooperation and governance structures of natural resources, as people are crucial to the implementation of any potential management plan.

Course Inspiration

This course was originally designed by Dr. Lee Talbot. I was lucky enough to have taken one of his classes while I was a graduate student at GMU and I will try to keep the same enthusiasm and vigor for science and policy that he did. He was a remarkable man, truly an inspiration. I encourage you to read his memorials if you have not already:

<https://www.gmu.edu/news/2021-05/memorial-lee-talbot>

<https://www.iucn.org/news/secretariat/202105/a-tribute-lee-merriam-talbot-1930-2021>

2. PROVISIONAL Course Schedule

Date	First Part	Second Part	Readings	Deliverables
August 23	Introductions	Syllabus	--	--
August 30	Sustainability, Conservation, Management Values, Ethics, Goals	Discussion #1	VanDyke - Ch 1 + 10; Jones 2021 (Vox); Petersen Hultgren 2020	Résumé
September 6	Principles for Cons of WLR Forest Resources	Discussion #2	Mangel et al 1996; Rockwood et al - Ch 11	Résumé peer review
September 13	Wildlife harvest - fish & game	Discussion #3	Newman - Ch 5; Fryxell - Ch 18 NOAA/NMFS - Status of Stocks 2020;	Case study topic
September 20	Aquatic & Terrestrial Ecosystem Based Management	Discussion #4	VanDyke - Ch 8 + 9 NOAA - EBM analysis 2021; Briske et al 2019	
September 27	Terrestrial Animals + Habitat Management	Discussion #5	VanDyke - Ch 7; Fryxell - Ch 22 Kremen Merenlender 2018; Maxwell et al 2020; Mair et al 2021	
October 4	Biodiversity Genetic Diversity & Populations	Discussion #6	Newman - Ch 10; VanDyke - Ch 5.6-5.9, Ch 6; post-2020 Biodiversity Framework	Case Study Description & Preliminary References
October 11	<i>NO Class - Monday classes meet</i>			Take-home Midterm due by 11:59pm on Oct 15
October 18	Presentation tips & tricks One Health	Discussion #7	Gruetzmacher et al 2021; McElwee et al 2020	
October 25	Discussion of Midterm	Case Study: San Joaquin kit fox	US FWS - SSA 2020; Cypher et al 2021	
November 1	Management for Climate Change Conservation Economics	Discussion #8	VanDyke - Ch 4 AFWA 2021; Holt 2022; Moore and Schindler 2022	
November 8	Case study presentations			
November 15	Case study presentations			
November 22	International Goals: SDGs, IPCC, IPBES	Discussion #9	Rockwood et al - Ch 21; Brauman et al 2020; Locke et al 2021	
November 29	Stakeholder Cooperation Governance: Public & Private Lands	Guest speaker	ICCA Consortium 2021; USG - America the Beautiful 2021	Quiz due by 11:59 pm on Dec 3
December 6	<i>NO Class - reading day</i>			Case Study papers due by 11:59 pm Dec 6
December 7 - 14	Discussion of quiz results	Course wrap-up		

3. Texts & Readings:

The principal texts will be:

- A. Mangel, Marc, et al. "Principles for the conservation of wild living resources." *Ecological applications* 6.2 (1996): 338-362. [GMU blackboard]
- B. Van Dyke, Fred, and Rachel L. Lamb. 2020. *Conservation Biology: Foundations, Concepts, Applications*. 3rd Ed. Springer Nature. ISBN: 978-3-030-39534-6. [GMU online]
- C. Fryxell, John M., Anthony R.E. Sinclair, and Graeme Caughley. 2014. *Wildlife Ecology, Conservation and Management*. 3rd Ed. Wiley Blackwell. ISBN: 978-1-1182-9107-6 [GMU online]
- D. Newman, Edward I. 2000. *Applied ecology and environmental management*. 2nd Ed. John Wiley & Sons. ISBN: 978-0-4706-9872-6 [GMU online]
- E. Rockwood, Larry, Ronald Stewart, and Thomas Dietz, eds. *Foundations of environmental sustainability: The coevolution of science and policy*. Oxford University Press, 2008. [GMU blackboard]

I have tried to list most of the other content (journal articles, blog posts, podcasts) above, but it may change. All these additional materials will be posted or linked to on Blackboard.

4. The Approach to Learning in this Course; Instructional Methods:

This course approaches its objectives through:

1. Providing students with **substantive information and understanding** about Management of Wild Living Resources;
2. Fostering **critical thinking**; and
3. Promoting **effective oral and written communication**.

Critical thinking implies independent analysis of the issues. Students are expected to ask themselves (or the class or professor as appropriate) questions such as “is this statement or analysis true?” “How do I know it is true?” “Are there other factors involved?” “Given the facts, do I reach the same conclusion?” “Is this statement based on scientific research, personal opinion, advocacy, hearsay, faith, or what?” Simply accepting and repeating what someone else has written or said is not critical thinking, and it can lead to repeating past mistakes.

Effective oral and written communication: A person's success in almost any career is determined very largely by that person's ability to communicate. This principal applies especially to environmental, policy, scientific and other academic careers. Consequently, there will be strong emphasis in this class on effective **oral and written communication**. To be successful in this class students must -- or must quickly learn to -- communicate effectively.

While this is a course, not a seminar, lectures will only be a part of the course process. The subject of the course will be explored and developed through active class discussions as well as through the case studies and peer feedback. The only way students can contribute to the class discussions is to discuss, i.e., participate. Consequently, there will be very strong emphasis on active and effective **participation** in class discussions. Over 20 per cent of your grade is based on participation, so the message is, don't sit quietly.

At the same time, talking for the sake of talking also is counter-productive. What students say shows what they know and how they are thinking, and especially whether or not they are applying critical thinking to the subject. Lots of talk with little substance is not the way to contribute to class discussions or to improve grades. All students must have the chance to speak if they wish to; consequently students who have spoken once will not be called upon until all others who wish to speak have been called upon.

I recognize that many people do not feel that they are born communicators. Many of us feel that we are not naturally articulate and find it difficult to speak in front of class. If a student has trouble or needs assistance, I will be happy to try to help. Let me know; we can meet and discuss it and see what we can do. But don't just sit quietly.

Finally, good communication often involves discussion of uncomfortable subjects. We must focus on the subject at hand, being careful to word our statements respectfully without anything personal, and inquire about the other person's perspective. Additionally, when we are giving feedback on someone's work, we must provide comments in the spirit of lifting the other person up – ideas for improvement, asking questions when something is confusing, or suggesting they expand upon something further. In being able to communicate well, *all* of us we can improve our knowledge, analytical thinking, and communication skills. For this reason, we will be co-creating classroom ground rules to create an inclusive space.

6. Assignments & Grading

Attendance & Class Participation	14%
Résumés	6%
Journaling	5%
Discussion Lead	10%
Case study	40%
Midterm	15%
Quiz	10%

Grading Scale

A	100 - 90
B	89 - 80
C	79 - 70
D	69 - 60
F	< 60

A. Attendance & Class Participation (14%):

As discussed above, a major purpose of this course is to explore the different dimensions of the subject by class discussions. Therefore, attendance and participation is crucial to the learning and success of the class. We have 14 classes throughout the semester. If you know ahead of time that you will need to miss class, please email me with justification. If something happens the day of, please email or text me (I will respond if possible) to let me know you will miss, and we will set up a time to discuss the next day. I understand that we can all have an “off day” so I will drop the lowest score. Additionally, please talk to me if you have any concerns.

Grading: each class you will be rated on this scale

0 = did not attend

1 = attended but did not participate

2 = attended and participated a little (without new ideas)

3 = attended and showed critical thinking in comments

B. Résumés (6%):

Since a major purpose of this course is to explore the different dimensions of the subject by class discussions, the experiences and (where appropriate) professional knowledge of the members of the class can contribute significantly. Through blackboard, please share a brief (two-page or so) résumé with the class. The résumé can be one that already exists or it can be prepared for the class. Then you will need to provide feedback on the résumé of 4 other students in the class.

Grading: 2 points for your résumé

4 points for peer-review

C. Journaling (5%):

In addition to book chapters, we will have various content to read or listen to that may broaden our perspectives on the subject. You will need to read these items prior to class our discussion session on Tuesday, and provide a brief (3 – 6 sentence) reflection on the ideas of these materials on Blackboard by **Monday at 5pm**. These reflections will ensure that you have read the materials with enough time for it to “marinate” before Tuesday’s discussion. Additionally, they may provide some items for the person leading the discussion to include in their plans.

Grading:

- You have 1 free pass to skip a journal entry, but you are still expected to read the materials and be prepared to discuss them in class.
- You also have 1 late pass for a journal entry during the semester.

D. Discussion Lead (10%):

There are numerous discussion sessions throughout the semester. Students will serve as leaders for a class discussion of the assigned readings. In addition to your own analysis of the material, you will also have the reflections of your classmates from their journal entries.

From the assigned reading, discussion leaders will identify key issues and subjects which they believe should be considered by the class, and they will lead the class discussion on that part of the text material. The discussion leader may highlight some key points, but most of their time should be spent in prompting discussion by all class members through thoughtful questions or points of consideration. Although an assigned student leads the discussion, every student is responsible for having read and being able to discuss the reading assignment.

Grading:

- Identifying and understanding key issues
- Critical thinking
- Communication skills including presentation style, time management, and how effectively the class is brought into the discussion

E. Case Study (40% total):

There are multiple components to this assignment and your grade, which are indicated below in chronological order...

During the semester each student will prepare a case study. A large portion of a student’s grade – and a particularly important part of the learning from this course – comes from the case studies and associated presentation. For their case studies each student is expected to choose an example of management of wild living resources, illustrating the central themes of this course, and to prepare a paper and oral presentation and defense of it. The topic should be one which

allows the student to address both the scientific and the policy perspectives of management of wild living resources.

The purpose of case studies is to explore in detail the different dimensions of the management of wild living resources, and through this, gain in-depth understanding of one part which then provides perspective on the whole subject.

Subject and Content of the Case Study:

The case study should involve one species or a group of species of wild living resources which has been (or is being) managed for consumptive or non-consumptive purposes. The study should be based on review of the relevant literature and, where practical, also on consultations with key individuals and organizations. The study should: (1) describe the resource and management involved; (2) describe the present status of the species or group involved; (3) provide relevant history or background; (4) analyze the management activities and other factors which have led to the present status; (5) assess the success of the management to date, especially from the standpoints of the original management objectives and the sustainability of the management; and (6) where the results of the management have been less than successful, describe what could have been done to achieve success and make recommendations on how to better assure success in such management in the future; where the results of the management have been successful, discuss the key elements which contributed to that success and make recommendations, if appropriate, for ways to improve the process.

The studies must explicitly address how the subject illustrates or relates to the central themes of the course. There should also be consideration of whether or not the case history applies to other types of management and other types or groups of living resources. The subject and content of the papers will be discussed in further detail in class. If a student has questions about what is relevant for a case study subject, I will be happy to discuss with them.

1. Topic Approval: (-1 if you miss the deadline)

Students should obtain the instructor's approval for the subject of their case history by email, telephone or in person.

2. Description & Preliminary References = 5%

A brief statement of the approved subject with a preliminary list of references should include one or more paragraphs, not more than two pages double-spaced, and the references are initial or preliminary, not the final bibliography, since, hopefully, additional references will be found as the student proceeds with the study. The references should be in the form specified by Part II of this Syllabus.

3. Oral Presentation and Q&A = 10%

All students will give an oral presentation of their case study, followed by a class discussion/question and answer period. The oral presentation will be a maximum of 20 minutes, followed by up to 10 minutes of class questions and discussion. The presentation can

be illustrated with slides but the slides can not simply be text that is read aloud. Each presentation should be accompanied by a handout – a written outline with bibliography. The presentations should be of the type and quality for submission at a professional, scientific, or academic conference or symposium. Following their presentation of the case study the students will chair a question and answer period. They should be sure to call on everyone who wishes to speak, who has not spoken before, prior to calling on someone who already has spoken.

Criteria for grading the oral presentations include the same factors plus oral presentation effectiveness, visuals and handout, time management, and handling of the question and answer period following the presentation. Among other things, the question and answer periods provide further indication of the students' knowledge and understanding of the subject and ability to communicate.

4. Peer review of case studies = 5%

In the real world, there is *lots* of feedback on everything you do. We typically do not work in isolation. In light of this, I would like you to provide feedback on each other's case study presentations in the form of a short note in Blackboard following their presentation. This must be constructive in nature. The goal here is to ask questions that were left unanswered in the presentation, provide ideas for improvement.

5. Written Paper = 20%

All students will also prepare a written paper on their case study. This should be a minimum of 12 pages, maximum 15 pages, single sided, double spaced, Times New Roman 12 pt. font, plus references. The style should be guided by appropriate journals. Number the pages at the bottom, and put your name on each page. All papers must have an abstract as part of the text, and a proper bibliography with all references correctly cited in the text. Be consistent in your citation style. APA style is most commonly used but I do not mind what you choose as long as you cite everything appropriately. See the APA style quick-guide here:

<https://writingcenter.gmu.edu/writing-resources/citing-sources/apa-style-quick-guide-2020>

The most important part of the citations and bibliography is that someone else can find what you are referencing. The bibliography documents where a student found the information and cites the authority for opinions or hard data in the text; it indicates how thorough the student has been in his or her research; and it shows that the student knows how to use and cite sources – which is absolutely basic for professional research and writing. The paper should be the type and quality for submission to a professional or scientific journal. Each student should submit their paper to Blackboard (in document format) so that it can be submitted to the available plagiarism software.

Note that while some references from the internet are scientifically valid, the vast majority are not and many web references are ephemeral. Consequently, no more than 30 percent of the references cited for a term paper should be from the internet. Electronic copies of peer reviewed journal articles and federal and state legislation accessed via the internet are not counted in the 30% guideline. If in doubt, ask me.

The case study must be submitted to Blackboard by **11:59 pm on December 6**. Earlier submissions are accepted and welcome! Papers will be returned during the course wrap up (finals week).

The major criteria for grading the include content, i.e., the substance including adequacy of references; responsiveness to the instructions in this syllabus; knowledge and understanding of the subject; quality of analysis and critical thinking applied; organization and presentation, including use of English; writing style, and treatment of references.

7. Midterm Examination (15%) and Final Quiz (10%):

There will be a comprehensive take-home examination given near the middle of the term, and a shorter take-home quiz near the end of the term. Both will have a specific time limit that starts when you open the exam on Blackboard (at a time of your choosing). We will discuss the question format during the last class before they are due.

8. GMU Policies

GMU Email Accounts

Students must use their Mason email accounts to receive important University information, including messages related to this class. See <http://masonlive.gmu.edu> for more information. GMU requires students to utilize the GMU email system. You can set up this email to forward to a different email address. Your GMU email address, along with Blackboard, will be used for all contact regarding this course.

Academic Integrity: GMU is an Honor Code university; please see the University Catalog 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. What does academic integrity mean in this course? Essentially this: when you are responsible for a task, you will perform that task. When you rely on someone else's work in an aspect of the performance of that task, you will give full credit in the proper, accepted form. Another aspect of academic integrity is the free play of ideas. Vigorous discussion and debate are encouraged in this course, with the firm expectation that all aspects of the class will be conducted with civility and respect for differing ideas, perspectives, and traditions. When in doubt (of any kind) please ask for guidance and clarification. For information on Plagiarism please visit: <https://writingcenter.gmu.edu/writing-resources/citing-sources/plagiarism>

Other Useful Campus Resources:

Writing Center: Robinson Hall B 213; (703) 993-1200; <https://learningservices.gmu.edu>

University Libraries “Ask a Librarian”: <http://library.gmu.edu/ask>
Counseling and Psychological Services (Caps): (703) 993-2380; <https://caps.gmu.edu>

University Policies

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