

ENV 360

Conserving Biological Diversity

Fall 2004
Tuesday & Thursday 10:00 AM - 11:15 AM
Pfahler 208

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Office hours: Monday 10:00 AM – 3:00 PM *by appointment*

Tuesdays 3:00 PM – 4:30 PM

Wednesdays 10:00 AM – 12:00 PM

Overview and Course Objectives

The conservation of biological diversity is complex and contentious. Although the United States and many other nations have a rich tradition of conservation, conflicts continue to grow about the best means for promoting and implementing conservation. This makes conservation, and particularly recovering endangered species, increasingly difficult. This course is designed to introduce you to some of the facts, myths, theories, and methods you will need to better understand, analyze, and develop recommendations for addressing biodiversity-related problems.

The natural sciences, particularly biology and ecology, are integral to understanding any biodiversity problem. However, in order to understand, define, and solve problems concerning human behavior it is beneficial to have knowledge in other areas as well, including law, values and ethics, and the political and regulatory systems of government. This knowledge includes an understanding of

- The current crisis in biodiversity conservation;
- historical precedents of biodiversity conservation in the United States;
- current domestic biodiversity-related laws and policies;
- the social influences on wildlife policy, including human values and the conflicts that occur between people concerning biodiversity; and
- interdisciplinary methods for analyzing biodiversity policy.

The objectives of this course are to provide you with an introduction to these areas of knowledge and opportunities to develop skills in analyzing and devising solutions to conservation problems.

To address conservation problems it is especially important to understand the conflicts that occur between even those people who share a common interest in conservation. One of the issues that undermines efforts by conservationists is the role and definition of science in society, and its function in the conservation of biological diversity. To better understand the issue, we will read two books, one each by two of the leading minds in the conservation realm: Edward O. Wilson's *Consilience* and Wendell Berry's *Life is a Miracle*. In their respective works, Wilson and Berry

promote contrasting viewpoints. We will discuss and debate their views. Finally, we will have the opportunity to speak in person with Wendell Berry, when he visits Ursinus in late November.

Readings

The following four books are required and are available at the college bookstore:

Michael J. Bean and Melanie J. Rowland. 1997. *The evolution of national wildlife law*. Third edition. Praeger Publishers, Westport, Connecticut.

Wendell Berry. 2000. *Life is a miracle: an essay against modern superstition*. Counterpoint Press, Washington, D.C.

Edward O. Wilson. 1998. *Consilience: the unity of knowledge*. Alfred A. Knopf, Publishers, New York.

Edward O. Wilson. 2002. *The future of life*. Alfred A. Knopf, Publishers, New York.

In the course schedule below I refer to the texts as “Wilson/Consilience,” “Wilson/Future,” “Berry,” and “Bean.”

Supplemental readings will also be required. They will be made available to you in PDF format, via e-mail. These readings are specified in the schedule.

Finally, you are required to buy a copy of the computer simulation game *Zoo Tycoon: The Complete Collection*. This simulation program will be the basis for a major assignment later in the semester. It is available from Best Buy, CompUSA, Target, and Amazon.com, among other places. You should be able to find it for about \$25. If you want to share a single copy between two or more of you, that is fine, BUT you each need to take the time to become adept at the game, so you will need to copy it onto your computer, not share one computer. Please be mindful when shopping for this game – there are multiple versions on the market.

Evaluation

Class participation	15%
Zoo simulation	20%
Berry-Wilson critique	20%
Berry reflections paper	5%
Exam #1	20%
Exam #2 (final)	20%

Class participation is not limited to attendance. I expect you to do all the readings before the class in which they are due, participate in class discussions, ask questions, and contribute substantively and actively to the class dynamic. I will not hesitate to call on you for your input into the discussion or to explain a point from the reading. As well, please feel free to volunteer information or ask questions about things you read in the newspaper, see on television, or otherwise learn about outside of class that concern wildlife policy.

Attendance is mandatory, and if you are absent more than four classes you risk failing the class. Those of you who miss two or fewer classes over the course of the semester will get bumped up in your participation grade when I calculate the final grades. Any time that you know that you will miss a class, please contact me beforehand if at all possible. If there are mitigating circumstances, the only way I can know them is if you tell me. Likewise, if I ever have to miss class, I'll e-mail you and otherwise get the message out.

There will be one field trip, date and time to be worked out among us. It will be a behind-the-scenes tour of the Elmwood Park Zoo with the zoo's curator. This trip will be tied in to both readings and discussions in class and the *Zoo Tycoon* simulation.

All assignments must be handed in at the beginning of the class in which they are due. I generally grant extensions without penalty only in the case of a medical or family emergency. However, if for any reason you can't make a deadline, please let me know ahead of time.

Finally, all writing assignments must be word processed, double-spaced, and in 12 point type with one-inch margins. All writing assignments are to be handed in electronically, as MS Word documents, by e-mail.

What I expect you will get out of this class is a combination of knowledge and the opportunity to reflect on weighty issues while further developing your critical thinking skills. You should be able to demonstrate to me over the course of the semester – verbally and in writing – that your intellectual engagement with the subject matter is developing beyond the point at which it now stands. By the end of the semester, you should be conversant in some of the most significant conflicts impeding the conservation of biological diversity, and able to provide insight into strategies to address them.

Course Schedule

Date	Subject	Assignment
T 8/31	Introduction – Welcome to Conserving Biological Diversity	
TH 9/2	Biodiversity and human values	Meffe, “Biodiversity and base values” (Begin reading Wilson)
T 9/7	An overview of the biodiversity crisis	Wilson/ <i>Future</i> , chapters 1-3
TH 9/9	Extinction; valuing biodiversity	Wilson/ <i>Future</i> , chapters 4-5
T 9/14	Biophilia and the conservation ethic; Addressing the biodiversity crisis	Wilson/ <i>Future</i> , chapters 6-7
TH 9/16	The wildlife policy process; Researching wildlife policy (papers and case studies)	Kellert and Clark, “The theory and application of a wildlife policy framework”
T 9/21	The development of federal wildlife law	Bean, chapters 1 & 2
TH 9/23	Wild birds	Bean, chapter 4
T 9/28	Ocean fish	Bean, chapter 6
TH 9/30	Marine mammals	Bean, chapter 5
T 10/5	Introduction to the Endangered Species Act	Bean, chapter 7

TH 10/7	International wildlife law	Bean, chapter 14
T 10/12	Exotic species	Jenkins, “Harmful exotics in the United States”
TH 10/14	Zoos and Aquariums Exam review	Miller et al., “Evaluating the conservation mission of zoos, aquariums, botanical gardens, and natural history museums” Zoo Tycoon introduction and Q&A
T 10/19	<i>EXAM #1</i>	
TH 10/21	<i>No class (I’m away)</i>	Work on Zoo Tycoon!!!!
T 10/26	<i>No class (fall break)</i>	Work on Zoo Tycoon!!!!
TH 10/28	Presentations: Are you a zoo tycoon?	<i>Zoo Tycoon simulation due</i>
T 11/2	Presentations: Are you a zoo tycoon? (Part two)	
TBD	Field trip: Elmwood Park Zoo, Norristown	
TH 11/4	Wildlife policy in practice: an introduction	Clark et al., “Conserving biodiversity in the real world: professional practice using a policy orientation”
T 11/9	Evaluating the Endangered Species Act	Clark and Harvey, “Implementing recovery policy: learning as we go?” Yaffee, “Dimensions of prohibitive policy” Kleiman et al., “Improving the evaluation of conservation programs”
TH 11/11	Endangered species protection, private lands, and ecosystem management	Turner and Rylander, “The private lands challenge: integrating biodiversity conservation and private property” Grumbine, “What is ecosystem management?” Salwasser, “In search of an ecosystem approach to endangered species conservation”
T 11/16	Science, Spirituality, and Society Preparation for Debate	Berry Wilson/ <i>Consilience</i> <i>Berry/Wilson critique paper due</i>
TH 11/18	Consilience/Miracle Debate	
T 11/23	Video: “The God Squad and the Case of the Northern Spotted Owl”	TBA
TH 11/25	<i>No class (Happy Thanksgiving!)</i>	
M 11/29	Informal discussion with Wendell Berry, 4:30pm, location TBA. <i>Attendance required.</i>	Revisit Berry, Wilson/ <i>Consilience</i>
T 11/30	No class at regular class time. Wendell Berry lecture in Olin Auditorium, 8:00pm. <i>Attendance required.</i>	Berry, “In distrust of movements.”
TH 12/2	Berry follow-up discussion	<i>Thought paper due on Berry’s visit</i>

T 12/7	Synthesis: doing wildlife policy	TBA
TH 12/9	Wrap up (in Berman Museum Main Gallery)	
12/14	EXAM #2, 1:00pm	

Zoo Tycoon Simulation

This assignment is due on October 28th. You will work in pairs, and both members of the team must master the program *Zoo Tycoon*. Once you have found a partner, the two of you are assigned to develop written criteria for a successful zoo and then design and implement a zoo that meets all your criteria of success. Two things will be helpful in completing this assignment: The Miller et al. reading assigned for October 14th and your complete mastery of the simulation.

On the due date you will need to hand in the following items:

- your written criteria for a successful zoo, with a clear justification of why you believe your criteria translate into a successful zoo. This part of the assignment will be graded on clarity, comprehensiveness, and cohesiveness; and
- your *Zoo Tycoon* simulation (as a computer file). This part of the assignment will be graded on how well you mastered the simulation and how well your zoo represents your criteria for success.

On either October 28th or November 2nd, your team will be required to present your successful zoo to the class. In these presentations, you will take us on a tour of your zoo, projected on-screen, and describe your criteria for success, and *explain why your criteria for success are the best possible criteria and why your zoo is the best and most perfect zoo, based on your criteria*. Think of it as a competition for the Best Zoo in America Award..... This part of the assignment will be graded on the basis of how polished your presentation is and the content of your presentation (which will have a lot to do with how good your zoo is and how well you present it). In these presentations, each team member must participate.

Team members will be required to formally evaluate each other's contributions to the teamwork process and the overall assignment. I will consider these evaluations in assigning individual grades for the assignment.

Each team will have half a class session for their presentation and two groups will present on each date. The presentations should be no more than 25 minutes long, to allow for questions.

You should form your teams now and get an early start on mastering the *Zoo Tycoon* software (it's complicated). You should meet as many times as possible to work on your zoo as a team. The amount that you have worked on this assignment will be readily apparent when you present your zoo. Presentations that are cohesive and coordinated by the team beforehand are easy to spot and a pleasure to watch and listen to. Presentations that are not coordinated beforehand are even easier to spot and are often disjointed, disorganized, repetitive, and boring. The cohesiveness of your presentation is an important part of this assignment, so please be sure to focus on your teamwork!

Berry/Wilson Analytical Paper

This paper is due on November 16th. For this assignment you are required to read in their entirety E.O. Wilson's *Consilience* and Wendell Berry's *Life is a Miracle*. Then construct an argument, in writing, about which author's views you find more compelling, and why. This is an essay that will require you to think deeply and critically about the views put forth and bring your own analytic abilities to bear on the subject. The paper must be no longer than 12 pages and must include the following:

- a summary of each author's arguments;
- a discussion, with justification, of what you believe are the strengths and weaknesses of each argument;
- your own view on the arguments put forth; and
- a literature cited section. I expect that in writing this essay you will need to quote (judiciously) from each book and use supplementary material. Be sure you cite and reference everything appropriately. This is an analytical essay and you will be expected to do the appropriate research in preparation for writing it and you must use proper citation method! *There is absolutely no excuse for poor citation methods, and failing to cite your sources is plagiarism.* If you do not cite your sources properly or provide accurate references, your paper will receive a failing grade.

On November 18th we will hold a formal debate of the differing views expressed, respectively, by Berry and Wilson. You will be expected to speak your mind cogently and forcefully and present your considered view of the material and greater theoretical and practical arguments. I will submit questions to you for your consideration in preparation for the debate, and we will prepare for it in detail on the 16th.

Berry Reflections Paper

This paper is due on December 2nd. For this assignment, you must write as many pages as you feel moved to (at least three) commenting and reflecting on Wendell Berry's visit to Ursinus (the discussion, the talk). A tip: His contributions to our understanding of society are profound; try to think deep thoughts while he's here.

I see that the life of this place is always emerging beyond expectation or prediction or typicality, that it is unique, given to the world minute by minute, only once, never to be repeated. And then is when I see that this life is a miracle, absolutely worth having, absolutely worth saving.

Wendell Berry, *Life is a Miracle*

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Science is religion liberated and writ large.... Preferring a search for objective reality over revelation is another way of satisfying religious hunger. It is an endeavor almost as old as civilization and intertwined with traditional religion, but it follows a very different course. It aims to save the spirit, not by surrender but by liberation of the human mind.

Edward O. Wilson, *Consilience*