

Lecture 01, 25 Aug 2003

Introduction and photos

Conservation Biology

ECOL 406R/506R

University of Arizona

Fall 2003

Kevin Bonine

Conservation Biology 406R/506R

1. Introductions
2. 3x5 cards
3. Syllabus
4. Topics

'3x5' card

Registered? 406R or 506R?

Name (and what you prefer to be called)
-Distinguishing characteristic

Email address

Year in school

Major

Relevant courses taken, or research projects, etc.

Why are you taking this course?

hold until photo

Conservation Biology (ECOL 406R/506R)

aka GEOS 406R/506R, RNR 406R/506R

Syllabus fall 2003 (subject to change)

Introduction

Welcome to Conservation Biology. This course is designed to present principles of conservation biology. Lectures, discussions, and other in-class activities will introduce information that is relevant to the conservation of biological diversity. This information will be derived from the arenas of biology, ecology, policy, economics, and law. Upon completion of this course, students should be able to use knowledge of conservation biology to make informed decisions to guide their personal and professional lives.

Conservation Biology (ECOL 406/ECOL 506) is a senior- and graduate-level course. If you have not completed the catalog pre-requisites for this course, you can expect to have difficulty grasping some concepts and you will likely have to undertake some independent research to "catch up."

Instructor

Kevin E. Bonine, Ph.D.

office: Biological Sciences East (BSE) 1D (in the basement)

Office Hours in BSE 1D Tuesday 9:30-10:30 and Wednesday 13:00-14:00, or by appointment.

Office phone: 626-0092, Home phone: 751-1349 (please call before 9pm or after 6am)

email: kebonine@u.arizona.edu

UA WEBSITE information [note that 406L/506L is not offered this semester]

ECOL 406R -- Conservation Biology (3 units)

Description: Biological principles applied to protection and recovery of threatened and endangered species and the processes which link species in natural ecosystems. Biological basis for conservation laws and regulations. Distribution, valuation and sustainable production of biodiversity benefits for humanity. This is a Mid-Career Writing Assessment (MCWA) or the former upper-division writing proficiency requirement (UDWPE); ECOL 182, ECOL 302; Concurrent registration, ECOL 406L.

Identical to: GEOS 406R, RNR 406R.

May be convened with: ECOL 506R.

Usually offered: Fall.

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Meeting Times

Monday and Wednesday 10:00 - 11:15 am in Forbes 206.

Class meeting suggestions:

Please consider employing these suggestions (borrowed from Guy McPherson) during class discussions:

1. Listen carefully to others before speaking
2. Challenge and refute ideas, not people
3. Focus on the best ideas, not on being the best, or "winning"
4. Before adding your own contribution, practice listening by trying to formulate in your own words the point that the previous speaker made
5. Speak whenever you wish (without interrupting!) even though your ideas may seem incomplete
6. Avoid disrupting the flow of thought by waiting until the present topic reaches its natural end before introducing a new issue
7. If you wish to introduce a new topic, warn the group that what you are about to say will address a new topic and that you are willing to wait to introduce it until people are finished commenting on the current topic
8. Give encouragement and approval to others

Course Materials

Van Dyke, Fred. 2003. *Conservation Biology: Foundations, Concepts, Applications*. McGraw-Hill, New York. 413+xvii pages.

This required text is available in either of two ways:

- (1) In paperback from Scholar's Bookstore (2644 E. Speedway, 326 3115; about \$85),
- (2) As an etext (minus chapter 9 which is on electronic reserve at the UA library) from <http://ebooks.primisonline.com/> for about \$45.

Other required readings will be available as pdf files via the University of Arizona library electronic reserve system, or placed on the course website. I will be adding readings as the course progresses so please ask in class and/or check the course website often for updates.

I have also placed on reserve in the Science Library a copy of the first edition of Meffe, G.K., and Carroll, C.R. 1994. *Principles of Conservation Biology*. Sinauer Associates, Sunderland, Massachusetts. This and other optional readings I will try to make available to you, or point out, during the course of the semester.

Web Site

I will maintain a course website (<http://eebweb.arizona.edu/Links/Classes.html>) with announcements etc. Appropriate powerpoint lectures will likely be posted to the website the day after they are given. This site is still under construction as of 25 August 2003 but should be up and running soon.

406R Course Work

Lecture Exams (three midterms @ 75 pts each, final 125 pts)	350
Semester Project	150
Participation in Role-Playing Exercises and Student-led Discussions (~4x25 pts)	100
Critical Article/Seminar Write-Ups (2 x 50 pts)	<u>100</u>
Total Points	700

Graduate Student 506R Course Work

Same as 406R with the addition of 15 more points on each exam (4x15) and an additional written research project (150 pts) for a grand total of 910 points (=700+60+150).

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Grading

Assignments are due *no later than the beginning of lecture* on the due date. Late assignments will be penalized at least 10% for each day they are late. There will be no 'make up' exams or 'extra credit'. We realize that you have lives (cars do break down, people die, stuff happens). In exceptional cases, and if arrangements are made in advance, we will consider your unique situation.

Grades will generally be distributed as follows (any curving will not be "against you"):

≥ 90%	A
80-89%	B
70-79%	C
60-69%	D
≤ 59%	F

Any student with a documented disability who feels they may need academic adjustments or accommodation is requested to speak with the instructor by the 2nd week of class. All related discussions will remain confidential. Students should contact the S.A.L.T. Center for Learning Disabilities (Old Main,

Room 135; 621-1242) or the Center for Disability Related Resources (2nd and Cherry; 621-3268) prior to discussions with the instructor. These offices will verify the need for special services.

Attendance

You are expected to attend each lecture ready to contribute, having read the appropriate material.

Course Work Details

Lecture Exams

There will be three midterm examinations and a fourth, final examination. The final will be cumulative. Topics covered in the lecture period, by guest speakers, and in the assigned readings will be fair game. Format will be mixed and may include: matching, fill-in, multiple choice, short answer, and essay. We may occasionally have some portion of an exam as a short take-home essay. Be prepared to synthesize ideas, rather than just regurgitate information. There will be no make-up exams.

Exams will be administered in a modified cooperative manner. First, each student will complete the exam as an individual and will submit this test for grading -- the resulting score will be the base score. Then, students will complete a new copy of the exam in small groups. Bonus points will be added to each individual's base score, and the number of bonus points will depend on the score of the group, as shown below (for final exam, multiply all scores by a factor of 1.67).

Group score and bonus points added to each base score:

>72	add	9
69.01-72	add	7.5
66.01-69	add	6
63.01-66	add	4.5
60.01-63	add	3
54.01-60	add	1.5

I expect strict adherence to the UA Code of Academic Integrity during all exams. Exams will be closed book and closed note.

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Critical Article/Seminar Write-Ups (2 x 50 points)

You should read two scientific articles pertinent to conservation biology. Write up a two page (typed and double spaced) summary of each article. One short write-up is due no later than 15 October, the other is due no later than 03 December. Please contact the instructor if you have questions about the appropriateness of a specific article you are considering reading.

In your write-up please be sure to address the following: What was the hypothesis (or hypotheses) being tested? Are there biases evident in the article? Can you describe any errors in the author's logic or methods? What was the conclusion of the article with respect to the hypothesis? Do you agree with the author's findings? In an ideal world (e.g., unlimited funding and time) how would you suggest improvements to the research reported in this article? Please turn in a copy of the abstract of the article with your write-up.

Attending an appropriately scientific research seminar is also an appropriate way to fulfill one of these assignments. Be sure to answer the same questions in your write-up. Ask the instructor if you are unsure about the appropriateness of a given seminar. I will attempt to announce relevant seminars as I become aware of them.

STUDENT PROJECTS (Adapted from Guy McPherson, 2002)

You are responsible for developing a substantial, original piece of art or literature that incorporates at least one major theme of conservation biology. Examples include painted, sketched, quilted, or sculpted art, photography, poems, songs, plays, and short stories. Performance art is encouraged, but make sure you clear this in advance (so we budget time for it during class). You may work in a group of up to 3 students if your project requires a high level of effort. Bear in mind that each person in the group is responsible for understanding each component of the project; therefore, the group must work together and plan well enough in advance to give each member an opportunity to thoroughly review the final project. Characteristics of effective teams will be described on the course website.

Because assessment of art and literature is inherently subjective, projects will be co-graded by students and the instructor.

Among the authors who effectively incorporate natural history into literature are Edward Abbey, William Bartram, Wendell Berry, Charles Bowden, John Burroughs, Rachel Carson, Annie Dillard, Marjory Stoneham Douglas, Robinson Jeffers, Joseph Wood Krutch, Aldo Leopold, Barry Lopez, Peter Matthiessen, Simon Ortiz, John McPhee, William Least Heat Moon, Gary Paul Nabhan, Gary Snyder, Henry David Thoreau, David Rains Wallace, Opal Stanley Whiteley, Terry Tempest Williams, and Ann Zwinger. Particularly if you are working on a "literature" project, I encourage you to read several of the works of these authors, and potentially to model your writing efforts after them.

If you complete a project that involves written materials, I will expect you to demonstrate excellent writing skills. Guides to technical writing, and a guide to citing Internet resources can be found on the course website. Written projects must be typewritten and double-spaced. Please use no binders, folders, or fasteners except a staple in the upper left-hand corner.

Each project can be reviewed as many times as you would like before final submission. You must allow 2 weeks for each review (i.e., it will take me 2 weeks to return your submission); therefore, no projects will be reviewed less than 2 weeks before the due date. I will review draft projects for content, but I will not provide editorial reviews of drafts. I encourage you to seek editorial reviews from peers.

You will propose the criteria and the weights that will be used to evaluate your project. For example, you may want to employ the following criteria, and associated weights: link to conservation (30%), creativity (30%), effort (30%), artistry (i.e., is it evocative, aesthetic? 10%). I encourage you to propose alternative criteria and associated weights. Please submit these during the class period (03 Dec) before projects are due. Everyone, including you, will grade your project based on your criteria. Note that projects will be displayed in class.

If you complete a project that involves written materials, I will expect you to demonstrate excellent writing skills. Guides to technical writing , and a guide to citing Internet resources can be found on the course website. Written projects must be typewritten and double-spaced. Please use no binders, folders, or fasteners except a staple in the upper left-hand corner.

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Projects will not be blind-graded, but they will be co-graded: the grade you and your peers assign your project will have equal or greater weight than the grade assigned by the instructor. Projects are due at the beginning of the lecture on 08 December. Late projects, or those that do not follow the prescribed format, will not be graded.

Graduate Student 506R Written Research Project

This paper will be your opportunity to research a topic of interest to you that is appropriate for a conservation biology class. You will be expected to synthesize relevant information from the primary literature (containing original research results) in a well-written paper. Collecting and adding additional new data would be welcomed, but is not required. You will be graded in two stages: topic and annotated references (01 October; 25 pts.), and final submission (10 November; 125 pts.). This paper should be written in the format of articles in

Conservation Biology and should be 10+ double-spaced pages in length. Please discuss topics of interest with the instructor.

Tentative Class Schedule

Date	Topic (Reading: please complete before class; other readings will be added)
Aug 25	Introductions and photos
Aug 27	What is conservation biology? (Van Dyke CH1; Noss 1999 on course website)(optional: Meffe and Carroll 1997, Chap 1, electronic reserve)
Sep 1	Labor Day (no class)
Sep 3	Conservation Ethics and Rationale (Van Dyke CH3; Callicott, Chap 2 of Meffe and Carroll 1997 electronic reserve)
Sep 8	Conservation Ethics and Rationale (Van Dyke CH3; Callicott, Chap 2 of Meffe and Carroll electronic reserve; and TBA)
Sep 10	Legislation (Van Dyke CH2; and TBA)
Sep 15	Legislation (Van Dyke CH2; and TBA)
Sep 17	Role playing exercise
Sep 22	Scientific Tools (Van Dyke CH4; and TBA)
Sep 24	Exam 1 (through ~17 Sep)
Sep 29	Scientific Tools and Foundations (Van Dyke CH4, 5; and TBA)
Oct 1	Paradigms and Foundations (Van Dyke CH5; and TBA); 506R topic and annotated refs due
Oct 6	Conservation Genetics (Van Dyke CH6; and TBA), Rob Robichaux
Oct 8	Conservation Genetics (Van Dyke CH6; and TBA), Melanie Culver
Oct 13	PVA (Van Dyke CH7; and TBA)
Oct 15	PVA (Van Dyke CH7; and TBA), Margaret Evans?; First article/summary write-up due
Oct 20	Conservation Planning (Van Dyke CH8; Groves et al. 2002 on course website)
Oct 22	Exam 2 (through ~15 Oct)
Oct 27	Reserve Design (Van Dyke CH8; and TBA), Bill Mannan
Oct 29	Conservation Practices (Van Dyke CH9; and TBA)
Nov 3	Conservation Practices (Van Dyke CH10; and TBA); student-led discussion
Nov 5	Sonoran Desert Conservation Plan -- Maeveen Behan (Van Dyke CH7,8,10 and TBA)
Nov 10	Sonoran Desert Conservation Plan -- Bob Steidl (Van Dyke CH7,8,10 and TBA); 506R Written Research Project due

- Oct 8 Conservation Genetics (Van Dyke CH6; and TBA), Melanie Culver
- Oct 13 PVA (Van Dyke CH7; and TBA)
- Oct 15 PVA (Van Dyke CH7; and TBA), Margaret Evans?; First **article/summary write-up due**
- Oct 20 Conservation Planning (Van Dyke CH8; Groves et al. 2002 on course website)
- Oct 22 **Exam 2** (through ~15 Oct)
- Oct 27 Reserve Design (Van Dyke CH8; and TBA), Bill Mannan
- Oct 29 Conservation Practices (Van Dyke CH9; and TBA)
- Nov 3 Conservation Practices (Van Dyke CH10; and TBA); **student-led discussion**
- Nov 5 Sonoran Desert Conservation Plan -- Maeveen Behan (Van Dyke CH7,8,10 and TBA)
- Nov 10 Sonoran Desert Conservation Plan -- Bob Steidl (Van Dyke CH7,8,10 and TBA); **506R Written Research Project due**
- Nov 12 Global Change (Walther et al. 2002 on course website; others TBA); **student-led discussion**
- Nov 17 Global Change and the Kyoto initiative (reading TBA)
- Nov 19 **Exam 3** (through ~17 Nov) This **exam may be changed to 24 November** with the professional panel on 19 November instead. Stay tuned.
- Nov 24 Professional Panel -- Margi Brooks, Mima Falk, Dave Gori (Van Dyke CH13)
- Nov 26 Restoration Ecology (Van Dyke CH11; and TBA); **Role playing exercise**
- Dec 1 Economics and Sustainable Development (Van Dyke CH12; and TBA)
- Dec 3 Practicing Conservation Biology -- Rosenzweig (Van Dyke CH5 p120-124; Van Dyke CH13; Rosenzweig 2003 reading on electronic reserve); Second **article/summary write-up due. Exhibit criteria due.**
- Dec 8 **EXHIBIT** - art/literature project due today, Guy McPherson (reading TBA?)
- Dec 10 Sustainability, Footprint, Course evaluations (reading TBA)

- Dec 19 **Final Exam:** 11:00 - 13:00, Friday

Optional Overnight Field Trip scheduled for the weekend of **25-26 October**. Details will be forthcoming.

END