Biodiversity and Conservation of Animals
BIOL 2251
Fall 2012

Instructor: Dr. James H. Kennedy
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Office Hours: M. & W. 3:30 – 4:30 or by appointment

Time and Room: MW 11:00 – 12:20; CURY Hall 103.
Required Text: Cox, C. Barry, and Moore, Peter, D. 2010. Biogeography An Ecological and Evolutionary Approach, Eighth Edition. John Wiley & Sons, Inc., 498 pp.

ANIMAL BIODIVERSITY and Conservation is a foundation course in the biodiversity of animals and conservation of animals. Biodiversity is much more than the numbers of species. Biodiversity can best be described by its three major attributes; composition, structure, and function. Composition the first and most familiar component of biodiversity includes species lists and other measures of species diversity such as genetic diversity. Structure refers to the physical organization, from habitats measured within communities to the mosaic pattern of patches and other elements at a landscape scale. Function involves ecological and evolutionary processes, including gene flow, disturbances, and nutrient cycling. Conservation discussed in this course will focus on human impacts to biodiversity and integrative approaches for the protection and management of biodiversity.

OBJECTIVES:
The course aims to provide students with a range of fundamental concepts, designed to provide: a) basic knowledge about the diversity and distribution of organisms; b) an understanding of the links between biodiversity and ecosystem processes and services; c) information needed to evaluate the cultural and economic value of biodiversity and to use this to develop conservation plans and policy decisions.

Course Outline and Tentative Schedule

TENTATIVE SCHEDULE

Date	Topic	Reference
29 Aug 2012	Class policies; Introduction to the discipline. Relationship of Biogeography and Science of Biodiversity	C&M Preface
03 Sep. 2012	University Holiday No Class	
05 Sep. 2012	History of foundations of Biodiversity	C&M Chap 1 Darwin Intro
The Ecological and Geographical Determinants of BioDiversity		
10 Sep. 2012	The Biological Template The species concept – brief definition Ecological Foundations of distribution of species	C&M Chap 2 & Chap 3; Noss 1990.
12 Sep. 2012	The Biological Template Cont'd	C&M Chap 2 & Chap 3
17 Sep. 2012	The Geographic Template, weather and climate, Global Climates	C&M Chap 2
19 Sep. 2012	Patterns of BioDiversity and Distribution of Modern Species	C&M Chap 4
24 Sep. 2012	Patterns of BioDiversity and Distribution of Modern Species	C&M Chap 4
26 Sep. 2012	**Examination #1**	
01 Oct.. 2012	Distribution of Communities	C&M Chap 5
03 Oct. 2012	Visualization of BioDiversity Patterns, Landsat, GIS	Assigned readings
08 Oct. 2012	Speciation	C&M Chap 6
10 Oct. 2012	Speciation	C&M Chap 6
15 Oct. 2012	Introduction to the influence of space, time and life and the patterns in species richness	C&M Chap 6
The History of Place: Tectonic, Eustasic, Climatic Change and BioDiversity		
17 Oct 2012	Looking at the distribution of life on a Geological time scale, Plate Tectonics Dispersion in deep time. Continental Drift	C&M Chap 5
22 Oct. 2012	Geological time continued	
Dispersal, Island Biogeography; Conservation		
24 Oct. 2012	Glaciation – the Pleistocene.Dynamics; deglaciation and impacts on species ranges.	C&M Chap 12 + readings from Pielou 1991.
29 Oct. 2012	**Examination #2**	
31 Oct. 2012	Island Biogeography, the assemblage and evolution of insular communities.	C&M Chap 1, 8
05 Nov. 2012	Island Biogeography and continued	C&M Chap 8
07 Nov. 2012	Fragmentation, climate change, extinction, Island Biogeography and Conservation	C&M Chap 8 (251-254); Quammen 127
12 Nov. 2012	More Fragmentation, climate change and extinction	
14 Nov. 2012	TBA	
Frontiers of BioDiversity and Conservation		
19 Nov. 2012	**Examination #3**	
21 Nov. 2012	The role of Conservation in BioDiversity	C&M Chap 14
26 Nov. 2012	Endangered and Threatened Species … what does this mean?	C&M Chap 2 (71-78)

28 Nov 2012	Challenge of Global Warming.	Assigned Readings
03 Nov 2012	Invasive species	Assigned Readings
05 Dec. 2012	The Four step cycle approach to solving conservation problems	Assigned Readings
14 Dec. 2012	**FINAL OPPORTUNITY ... 10:30 - 12:30** – we follow the MWF 11:00-12:20 schedule	

Please note that this schedule of topics is approximate and subject to revision. I will make every attempt to cover the materials in the syllabus as outlined but reserve the right to make changes in content and order. Any changes I deem necessary will not be done precipitously. In all cases students will be given reasonable notification concerning changes. Changes, for example, might occur because of important new information that is published during the course or based on discussions and feedback with students enrolled in the course. It is the student's responsibility to know any changes to this syllabus that may have occurred during justified or unjustified absences from this class.

Readings: The course outline includes references. These are chapters in the course textbook (abbreviated C&M) that provide background to the topics that I will discuss in class. Often additional material beyond that discussed in the book will be presented in class. **Examples** of outside readings are included in the list below. This list is not complete. These readings will be clearly announced during class.

Darwin, C.R. 1859. *On the origin of species by means of natural selection, or the preservation of favoured races in the struggle for life*. London: John Murray. [1st ed.]. Available [1]

Noss, R. 1990. Indicators for monitoring Biodiversity: A hierarchical approach. Conservation Biology 4(4): 355- 364.

Pielou, E.C. 1991. After the last Ice Age: The return of Life to Glaciated North America. University of Chicago Press.

Quammen, D. 1996. The Song of the Dodo: Island Biogeography in the Age of Extinction. Scribner, New York. 702 pp

Rozzi, R., Anderson, R. B., Pizarro, J. C., Massardo, F., Medina, Y., Mansilla, A., Kennedy, J. H., Ojeda, J., Contador, T., Morales, V., Moses, K., Poole, A., Armesto, J. and Kalin, M.T. 2010. Field environmental philosophy and biocultural conservation at the Omora Ethnobotanical Park: Methodological approaches to broaden the ways of integrating the social component ("S") in Long-Term Socio-Ecological Research (LTSER) Sites. Revista Chilena de Historia Natural 83: 27-68

Rozzi, R., J. Armesto, J. Gutierrez, C. Anderson, F. Massardo, G. Likens, A. Poole, K. Moses, E. Hargrove, A. Mansilla, J. Kennedy, M. Willson, K. Jax, C. Jones, J.B. Callicott & M. Arroyo. Integrating ecology and environmental ethics: Earth stewardship in the southern end of the Americas. BioScience. *Accepted*.

[1]The Complete Works of Charles Darwin On-line
http://darwin-online.org.uk/
http://www.facebook.com/pages/Darwin-Online/143922578989763

Final Opportunity: The final includes information from all areas that was covered during the semester.

Grading: The grade you earn in Biodiversity and Conservation of Animals is based on lecture opportunities (90%) and participation (10%). There are three lecture opportunities and a final opportunity. All opportunities (lecture and final) are equally weighted and will be averaged to determine your grade. Participation points are based on class attendance, and participation in class activities. Grades will be assigned as follows:

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

Although I do not anticipate any reason to modify this grading plan, I reserve the right to do so if circumstances warrant. I will inform the class if modifications to the grading scale are necessary.

Attendance: Attendance is expected. Students are responsible to prepare for class ahead of time, attend lectures and discussion sessions, ask questions, and express themselves creatively and concisely in their work. I will randomly check attendance. If you miss lecture 8 times (= 4 weeks of class), you will receive, at the discretion of the instructor, an incomplete or an "F" for the course. Authorized absences that will be considered on a case-by-case basis include: religious holidays, call to active military duty and a certified sickness by a medical professional. Unauthorized absences will affect participation grade.

Office Hours: If you are having problems, you are encouraged to talk with me as soon as possible. Please feel free to drop by during posted office hours (M. & W. 3:30 – 4:30 or by appointment). My office is in EESAT 310F or you may e-mail me for an appointment at *kennedy@unt.edu.* It is always a good idea to contact me (even for visits during posted office hours) before you visit

Dishonesty: Academic dishonesty in this class is unacceptable and will not be tolerated in any form. Cheating can impact the entire class. All persons involved in academic dishonesty will be disciplined in accordance with University regulations and procedures. Please consult the University of North Texas Center for Student Rights and Responsibilities at http://www.unt.edu/csrr/ including the Code of Student Conduct at http://www.unt.edu/csrr/code_of_student_conduct.htm.

Classroom Behavior: It is expected that student behavior will be courteous of the professor and other students. Students should arrive for class early and leave only at the end of class. If you arrive late or must leave early please select a sit at the back of the classroom (near the door). Please do not disrupt the class during your entrance or exit. **If you missed the hand out the power-point notes for the class you will need to wait until the end of the class to receive them.** During lectures there should be no distracting behavior including the use of headphones or other unauthorized electronic devices. **Cell phones must be turned off during class.** If you receive a phone call I will stop the class and we will wait for you to conclude your call. Lap top computers may only be used for note taking and you must sit in the first row of the lecture room. Students violating these norms will be asked and expected to leave the classroom.

Disability Accommodation:

The Department of Biological Sciences, in cooperation with the Office of Disability Accommodation, complies with the Americans with Disabilities Act in making reasonable accommodations for qualified students with disabilities. Please present your written accommodation request before the 12th class day.

Drop/Add Information:
www.essc.unt.edu/registrar/schedule/scheduleclass.html