BIOL 220 syllabus
Fall 2013

Meetings: W, F, 1:10-2:30 pm, Shanklin 201

Office hours: Prof. Michael Singer (Hall-Atwater 259) T, Th, 2-3 pm; T.A. Emily Johnson (Shanklin 203) M, 10-noon.

Readings:

Required text: Groom, M.J., Meffe, G.K., and Carroll, C.R. 2005. Principles of Conservation Biology, 3rd edition. Sinauer. ISBN 0-87893-518-5

Other readings will be articles from the primary literature and excerpts from books (please see class Moodle site).

Description:

The course will have three major sections, largely following the sequence of topics in the textbook (which is excellent although a bit dated now). Each section will be followed by an exam. The third exam will take the place of the final exam and will not be cumulative. The first section of the course will introduce the scope, aims, and values of Conservation Biology as well as its conceptual background and global, ecological patterns of concern. Section two will focus, in turn, on the major types of threats to biodiversity and ecosystems. In each of the first two sections, there will be additional readings from books and the primary literature on some of which you will write brief reports. The final section will deal with the complex, interdisciplinary solutions to these threats (which usually act in combination). Each section will also contain a significant assignment: field exercises/lab reports in the first two sections, and a group research project in the third section.

Exams and assignments (300 points total):

1. Three Exams: in-class (50 points each)
2. Lab 1 report (30 points)
3. Lab 2 report (30 points)
4. Group project (40 points total)
    a. Individual participation in group (5 points)
    b. Group project proposal (5 points)
    c. Group oral presentation (30 points)
5. Eight brief written reports on select readings indicated by * (5 points each).
6. General participation, including attendance (10 points).

Fall 2013 course calendar	
Date Topic	**Readings (read by given date)**
Sep. 4 (W) Introduction; conservation biology history, definition	Text ch. 1 (read by Sep. 6)
Sep. 6 (F) Paul Spitzer '68 seminar: "Ospreys Explained"	Spitzer et al. 1978, Spitzer manuscript
Sep. 7 (Sat) Optional field trip to Old Lyme with Paul Spitzer	
Sep. 11 (W) Conservation biology goals, values, ethics	Text ch. 4, Leopold 1949, Minteer and Collins 2005
Sep. 13 (F) Lab 1: plant survey of Ravine Park	
Sep. 18 (W) Biodiversity: phylogenetic and geographic distribution	Text ch. 2, Kier et al. 2009*, Tittensor et al. 2010*
Sep. 20 (F) Ecosystem function: global patterns and problems	Vitousek et al. 1997, Worm et al. 2006*
Sep. 25 (W) Relationship between biodiversity and ecosystem function	Cardinale et al. 2012, Bell et al. 2005*, Wardle and Zackrisson 2005*
Sep. 27 (F) Relationship between biodiversity and disease transmission	LoGiudice et al. 2003*, Johnson et al. 2013*
Oct. 2 (W) Exam I	
Oct. 4 (F) Specific threats: habitat degradation and loss	Text ch. 6, Brook et al. 2003*, Kuussaari et al. 2009
Oct. 9 (W) Specific threats: habitat fragmentation	Text ch. 7, Cordeiro and Howe 2003*, Ferraz et al. 2007*
Oct. 11 (F) Specific threats: overexploitation	Text ch. 8, Jackson et al. 2001, Brashares et al. 2004*
Oct. 16 (W) Specific threats: species invasions	Text ch. 9, Stinson et al. 2006*, Cheng et al. 2011*
Oct. 18 (F) Specific threats: Extinction of top predators	Estes et al. 2011, Terborgh et al. 2001*
Oct. 23 (W) Specific threats: climate change	Text ch. 10, Root et al. 2005*, Suttle et al. 2007*
Oct. 25 (F) Specific threats: loss of genetic variation	Text ch. 11, Saccheri et al. 1998*
Oct. 30 (W) Lab 2: vegetation survey of forest fragments	
Nov. 1 (F) Exam 2	
Nov. 6 (W) Complex solutions: species and landscape level conservation	Text ch. 12, Kremen et al. 2008*
Nov. 8 (F) Complex solutions: ecosystem level conservation	Text ch. 13, Jones and Schmitz 2009*
Nov. 13 (W) Complex solutions: nature reserves	Text ch. 14, Wright et al. 2007*
Nov. 15 (F) Complex solutions: climate change	IPCC 2007 report, Coral reef future 2013

Nov. 20 (W) Complex solutions: ecological restoration	Text ch. 15, Palmer and Filoso 2009, Schulte et al. 2009*
Nov. 22 (F) Complex solutions: sustainable development	Text ch. 16, Janzen 1997, Bateman et al. 2013*
Dec. 4 (W) Presentations (conservation organization assignment)	
Dec. 6 (F) Presentations continued	
Dec. 11 (W) Exam 3, 9 am – noon in **Exley 137**	**Note room change**