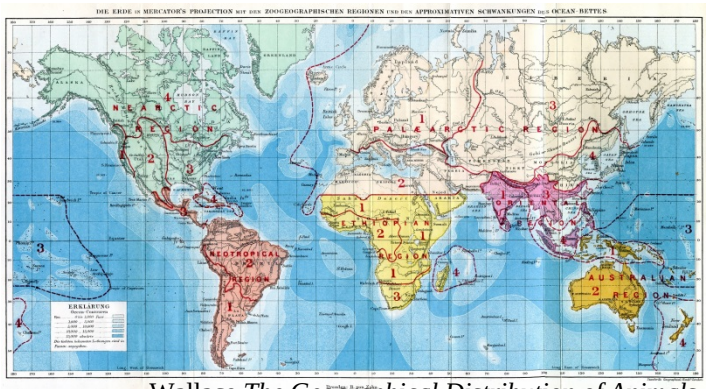
Course Syllabus
NR 642: Biogeography
Spring 2015



Wallace *The Geographical Distribution of Animals*

Instructor
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Office hours: W: 12-2, or by appointment

Time and Place Monday/Wednesday 11:10-12:00 James 140
Friday 11:10 -1:00 James 140

Course Credits 4

Course Description
Biogeography is the study of the present and past distribution of biodiversity. It is inherently multidisciplinary, integrating data and approaches across many fields within the physical and natural sciences. In this course, you will learn about the abiotic (geological and climatological) and biotic (ecological and evolutionary) factors that govern the assembly of species diversity across space and through time. Understanding these biogeographic principles is central for studies of biodiversity, global change, and conservation in today's rapidly changing world. The course format will consist of lecture, discussion, and computer-based activities.

Objectives
By the end of the course you should be able to:
1. Relate biogeographic distributions of plants and animals to abiotic and biotic drivers across spatial and temporal scales
2. Discriminate among hypotheses regarding dispersal, vicariance, endemism, and provincialism
3. Discuss the nature of insular faunas with respect to immigration, extinction, area, and evolutionary history
4. Apply biogeographic principles to conservation
5. Manipulate and visualize data in Excel using biogeographical methods and analytical techniques

Prerequisites
One introductory-level ecology course (e.g., BIOL 541 General Ecology or NR 527 Forest Ecology) or permission of the instructor.

Required Text (available at the UNH bookstore and on reserve at the library).
- Lomolino, M.V., B.R. Riddle, R.J. Whittaker and J.H. Brown. 2010. *Biogeography, 4th edition*. Sinauer Associates.
- Additional readings will be posted on the blackboard site.

Course Structure & Expectations
My goal is to facilitate your learning of Biogeography. To do so I will combine lecture, computer-based activities, and discussions to expose you to the diverse questions and techniques that define biogeography. Most discussions and activities will be held on Fridays when we have a longer class period. Learning is not a passive process. You are expected to (1) attend all class sessions, (2) actively participate by asking questions in class/office hours (3) come prepared - read assignments prior to class, and (4) communicate and work cooperatively and respectfully with your peers.

Slides from class lectures will be posted to the course blackboard site *after* class. Slides often have a limited amount of text and I do not post my lecture notes. I therefore suggest you take notes during class and review your notes and the lecture slides after class.

Exams
There will be a total of three exams, including the final exam. The final exam will be comprehensive regarding the concepts covered in the course but will focus largely on the material covered during the last section of the course. Exam questions will be based on lectures, readings, and the concepts covered in the computer-based activities. Exams will primarily include short-answer questions and when appropriate will assess your ability to interpret graphs. The best study guide for the exams will be your own class notes.

It is my general policy to <u>not</u> offer make-up exams. If an emergency (serious illness of family matter) arises and you miss an exam, it is your responsibility to contact me regarding the possibility of a make-up; these will be addressed on a case-by-case basis.

Discussion & Exercises
Our discussions and computer-based exercises will reinforce and expand on key concepts introduced during lecture. These sessions are intended to provide you with the opportunity to think critically, to formulate questions and explanations, and to communicate these effectively to their peers. Assignments turned in late will be discounted 5% per day for up to 3 days (the weekend counts as 1 day). After the 3rd day, late assignments will no longer be accepted. Extensions on assignments can be considered with advance notice and due cause. If you miss a discussion/exercise it is your responsibility to contact me regarding the possibility and policy of making-up the assignment.

Academic Honesty
The University of New Hampshire operates on the assumption that all academic work is the honest product of each student's own endeavors. The faculty and staff expect such integrity from all students, and violations are cause for disciplinary action. Violations of academic honesty in this course may result in a grade of zero on an assignment, quiz, or exam, or failure (F) for the course as a whole; at the discretion of the instructor. Further ramifications at the University level (e.g., suspension, probation, or expulsion) also may occur. Academic dishonesty includes, but is not limited to, cheating and plagiarism. For a full definition refer to your Student Rights, Rules, and Responsibilities Handbook (http://www.unh.edu/student/rights/srrr0708.pdf), or ask if you have questions or concerns.

Grading Scale

A	95-100	B-	80-82	D+	67-69
A-	90-94	C+	77-79	D	63-66
B+	87-89	C	73-76		
B	83-86	C-	70-72		

Weight of Assignments

Attendance and participation	5%
Discussion assignments	15%
Activities	30%
Exams	50%

University or Major Requirements

This course will NOT satisfy a DISCOVERY requirement, including INQUIRY, and will NOT fulfill any Writing Intensive requirement. The course will fulfill requirement #23 in the Wildlife and Conservation Biology program, meets a specialization requirement in Environmental Conservation Studies, and can be used as an elective in the Environmental Science program. Please check with you advisor to see if this course is an approved elective in another major.

UNH Policy on Use of Electronic Devices in the Classroom

"Students may not use cell phones, PDAs, pager, digital music players, laptops and other electronic devices during class unless designated by the course instructor. If use of any of these items is permitted by the course instructor, these items are not allowed to be used for non-class activities. If you have a learning disability that requires the use of one of these items, you must provide evidence from the Disability Services for Student office (DSS), to inform the course instructor of this situation so that he or she can accommodate your use. Also, if you need to leave a cell phone on for an emergency situation, you should inform the course instructor at the beginning of the class session as well as keep the phone on in a silent mode, so as not to disrupt the course."

Persons with Disabilities

The University is committed to providing students with documented disabilities equal access to all university programs and facilities. If you think you have a disability requiring accommodations, you must register with Disability Services for Students (DSS). Contact DSS at (603) 862-2607 or disability.office@unh.edu. If you have received Accommodation Letters for this course from DSS, please provide me with that information privately in my office early in the term (***within the first two weeks***) so that we can review those accommodations.

Emotional or Mental Health Distress

Your academic success in this course is very important to me. If, during the semester, you find emotional or mental health issues are affecting that success, please contact the University's Counseling Center **(3rd fl, Smith Hall; 603 862-2090/TTY: 7-1-1)** which provides counseling appointments and other mental health services.

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Week		Topic	Reading
One – 1/19	M	Martin Luther King Day – **UNH Closed**	
	W	Course Overview & Scope and History of Biogeography	Chapter 1
	F	Physical Template I: Global Controls	Chapter 3
Two – 1/26	M	Physical Template II: Regional Controls	Chapter 3
	W	Discussion I: History of Biogeography	Quammen; Ch2 (optional)
	F	Activity I: Global Climate Drivers	*Read activity in advance*
Three – 2/2	M	Ecological Foundations I: Niches	Chapter 4
	W	Ecological Foundations II: The Geographic Range	Chapter 4
	F*	***Class canceled***	
** Last day to add a course or honors designation*			
Four – 2/9	M	Plate Tectonics & Origin of Biogeographic Regions	Chapter 8
	W	Glaciation and Pleistocene dynamics	Chapter 9
	F	Discussion II: Wallace's Line	Quammen; Knapp 2013
Five – 2/16	M	Tree Thinking & History of Biotas Overview	Chapter 11 (pgs 423-436)
	W	Vicariance & Dispersal Overview	Chapter 12
	F*	Activity II – Vicariance Biogeography	Ch 12; *read activity in advance*
** Last day to drop course (with fee) or honors designation*			
Six – 2/23	M	**Exam I**	
	W	Speciation & Extinction	Chapter 7
	F	Endemism & Provincialism	Chapter 10 (pgs 362-403)
Seven – 3/2	M	Dispersal and Biotic Interchange	Ch 6; Ch 10 (pgs 404-421)
	W	Phylogeography	Chapter 11 (pgs 436-456)
	F	Discussion III: The GABI	TBD
Eight – 3/9	M	Island Biogeography I: Species-Area Relationship & ETIB	Chapter 13
	W	Island Biogeography II: Insular Faunas	Chapter 14 (pgs 559-585)
	F	Activity III: IBT in the Sea of Cortez	
		SPRING RECESS	
Ten – 3/23	M	Island Biogeography III: Community Assembly & Taxon Cycle	Chapter 14 (pgs 586-619)
	W	Continents vs. Islands	Laurance 2008
	F	Discussion IV: IBT & Conservation	Quammen 1994; Newmark 1987or1995
Eleven – 3/30	M	Life History Traits and Body Size	Chapter 15 (pgs 622-640)
	W	Ecogeographic Rules & Ranges Revisited	Chapter 15 (pgs 641-656)
	F	**Exam II**	
Twelve – 4/6	M	Activity IV: Ranges	*Read activity in advance*
	W	Diversity Gradients	Ch 15 (pgs 657-693)
	F	Out of the Tropics	Jablonski et al. 2006
Thirteen – 4/13	M	Conservation Biogeography I: Climate Change & Anthropogenic Biomes	Ch 16 (pgs 734-739, 753-759)
	W	Conservation Biogeography II: Extinction & Range Collapse	Ch16 (pgs 697-734)
	F	Activity V: Climate change and Phenology	*Read activity in advance*
Fourteen – 4/20	M	Conservation Biogeography III: Marine Biogeog. & Modern Threats	Lotze et al. 2006, Worm et al. 2006
	W	Human Biogeography I: Dispersal & Range Expansion	Chapter 16 (pgs 740-753)
	F	Human Biogeography II: Guns, Germs & Steel (PBS series)	
Fifteen – 4/27	M	Discussion V: The Rise/Fall of Human Societies	Diamond 1997
	W	Human Biogeography III: Conservation	McMichael et al. 2007
	F	Activity VI: Gapminder	*Read activity in advance*
Sixteen – 5/4	M	Synthesis and review	
5/7	Th	**FINAL EXAM** 1:00-3:00 pm	

This syllabus is subject to change.