

# Geography 363 Biogeography

Fall 2011 M, W, F 11:30 am -12:30 pm Sage 1234

**Instructor:** Colin Long; 4457 Sage Hall; 424 2182; longco@uwosh.edu

**Office Hours:** Tuesday 10-1 and Wednesday 2-4

**Text:** *Biogeography* (2005 8<sup>th</sup> edition) by C. B. Cox and P. D. Moore.

**Course purpose:** The distribution and organization of organism on earth is the product of interactions with their environment and each other. We will examine these interactions at a range of spatial and temporal scales as demonstrated by individual species at the present and historically. This course is akin to another piece of the puzzle that is the world we inhabit. Each area that you study such as art, history, sociology, math, biology, etc. provides you with another part of the earth's human or physical landscape. The strength of the liberal arts approach is that it gives you the opportunity to see how all the pieces, although seemingly unrelated, fit together. I want to encourage you to think about the processes that affect living organisms and the organization of plants and animals in terms of their affect on the other subject areas that you are studying. I believe that it will soon be clear that there are significant links and that by looking for those relationships you will see the value of the liberal arts education that you are receiving; and that the world we inhabit really is a very connected place.

**Attendance and Assignments:** All reading assignments should be done before the class meeting. Writing assignments must be in by the scheduled date. Late final papers will be penalized 5 points for each day they are late.

**Assessment:** Students will be grade on three components: exams, participation in a class field trip, and a short research paper. There will be three exams that will consist of short multiple choice/matching questions and essay questions covering the material present in class. Information about the research paper is below. The paper is a group project. Groups will consist of 2 or 3 students. Each group will present their research to the class in the form of an in-class presentation. Presentations should be 10 - 15 minutes in length. Class points will be awarded in the following fashion:

1<sup>st</sup> exam = 20 points

2<sup>nd</sup> exam = 25 points

3<sup>rd</sup> exam = 25 points

Research paper and presentation = 20 points

Field Trip participation = 10 points

TOTAL = 100

**Evaluation:** There will be no curve. Students will strive for mastery rather than competing against each other. A = 100-93.0 points, A- = 92.9-90.0 points, B+ = 89.9-87.0 points, B = 86.9-83.0 points, B- = 82.9 – 80.0, C+ = 79.9 – 77.0 points, C = 76.9 – 72.0 points, C - = 71.9-69.0 points, D+ = 68.9-66.0 points, D = 65.9-63.0 points, D- = 62.9 – 60.0 points, F = less than 60 points. Without acceptable documentation of illness or other emergency, failure take an exam at the appointed times will result in a score of 0 for that exam. Without acceptable documentation of illness or other emergency, failure turn in the final paper at the appointed time will result in a score of 0 for the paper. Class

presentations must be made during the regularly scheduled class period to be considered for credit. There will be NO extra credit opportunities in this class.

**Special Accommodations:** Reasonable accommodations will be made for students with disabilities. Please contact Disability Services (424-3100 (voice) or 424-1319 (TTY)) or visit their web site at <http://www.uwosh.edu/dean/disabilities.htm> for the University's accommodation request form and documentation requirements. Information related to an individual's accommodation request will be kept confidential.

**Academic Integrity:** The University of Wisconsin Oshkosh is committed to a standard of academic integrity of all students. The system guidelines state: "Students are responsible for the honest completion and representation of their work, for the appropriate citation of sources, and for respect of others' academic endeavors. Students are subject to disciplinary action of academic misconduct which is defined in the UWS 14.03 Wisconsin Administrative code. Students are encouraged to review the code, located on the "Dean of Students" web page (see Student Conduct) in order to understand your rights and responsibilities.

#### TENTATIVE SCHEDULE

Week of	Subject	Reading assignment
Sept. 7, 9	Introduction/History of Biogeography	Ch. 1
Sept. 12,14,16	Species distribution ranges	Ch. 2
Sept. 19, 21, 23	Abiotic and biotic controls on species distributions	Ch. 2
Sept. 26, 28, 30	Ecosystems and communities (Field trip Oct. 1)	Ch. 3
Oct. 3, 5, 7	<b>EXAM 1 Oct. 3</b> Patterns of biodiversity	Ch. 4
Oct. 10, 14 Oct 12	Patterns of biodiversity <i>No class</i>	
Oct. 17, 19, 21	Biogeography patterns and plate tectonics (Field trip Oct. 22)	Ch. 5
Oct. 24, 26, 28	Evolution and Speciation	Ch. 6
Oct. 31, Nov. 2, 4	Dispersal, vicariance, and endemism	Ch. 7
Nov. 7, 9, 11	Extinction and Colonization <b>EXAM 2 Nov. 11</b>	Class readings
Nov. 14, 16, 18	Island Biogeography	Ch 8
Nov. 21 Nov 23, 25	Response to the last Ice Age <i>Thanksgiving Break</i>	Ch. 12, 13
Nov.28, 30 Dec. 2	Landscape patterns and Disturbances Natural Reserves	Class readings
Dec. 5, 7, 9	The future	Ch. 14 and class readings
Dec. 12, 14, 16	Class presentations <b>EXAM 3 Dec. 16</b>	

**Biogeography Paper and Presentation:** In groups of three or less, I would like you to investigate the biogeography of some of the world's most interesting organisms and present your findings in both a technical report and an entertaining and informative 10 to 15-minute presentation.

**Draft paper due Nov. 9** (5 points)

**Final paper due Dec. 12**(7 points)

**Presentations: Dec. 12 and 14** (8 points)

**Papers should include the following three sections:**

**Modern or most recent distribution and life history:** include a species distribution map with a caption and reference. Include a description of the range with an explanation of why the limits exist where they do (e.g., temperature, topography). Life history: Discuss its habitat and niche during different life phases (where does it live, what does it do during different parts of its life, what does it eat, when does it reproduce, how long does it live, what other species is it closely associated with, etc.?)

**Biogeographic history:** where and when does it first appear in the geologic record, what are its evolutionary ancestors, how was its range affected by plate tectonics and the ice ages? Where are the fossil sites (give geologic formation, age, and location as well as name of ancestral species). To get enough information, you may have to answer this question on a higher taxonomic level than species. For example, you may have to examine the evolutionary history of butterflies in general, rather than monarch butterflies.

**Human impact on its distribution:** Is it threatened, thriving, extinct? What is the current status of the organism & how many are there? What efforts are being made in terms of conservation for endangered species or removal/eradication of invasive or exotic species?

Your paper should be 5-6 pages, double-spaced, and include a bibliography. Each team turns in one copy, and all members will receive the same grade. Distribution map and all figures require a caption in your own words and a reference to the bibliographic source. The bibliography should be in the style of the *Journal of Biogeography* or *Ecology*. Be sure to include proper scientific citations for any ideas that you paraphrase; do not use direct quotes or footnotes. URL (web page) references are acceptable only if you include reference to the peer-review publication from which the information was taken. (If you can't get this information DO NOT USE THE WEB PAGE). *Have questions on style? Ask!*

Here is the list of organisms to choose from:

Douglas fir ( <i>Pseudotsuga menziesii</i> )	tumbleweed or Russian thistle ( <i>Salsola kali</i> )	coastal cutthroat trout ( <i>Oncorhynchus clarki clarki</i> )
Death Valley pupfish ( <i>Cyprinodon nevadensis</i> )	marbled murrelet ( <i>Barchyramphus marmoratus</i> )	white rhinoceros ( <i>Cerathotherium simum</i> )
marine iguana ( <i>Amblyrhynchus cristatus</i> )	spiny ant-eater ( <i>Tachyglossus aculeatus</i> )	flying fox bat ( <i>Pteropus</i> )
lemurs ( <i>Lemur</i> spp.)	pythons (Pythoninae)	California condor ( <i>Gymnogyps californianus</i> )
muskox ( <i>Ovibos moschatus</i> )	bobcat ( <i>Lynx rufus</i> )	koala ( <i>Phascolarctos cinereus</i> )
prairie dogs ( <i>Cynomys</i> spp.)	walrus ( <i>Odobenus rosmarus</i> )	Water hyacinth ( <i>Eichornia crassipes</i> )
Komodo dragon ( <i>Varanus komodoensis</i> )	emu ( <i>Dromaius novaehollandiae</i> )	
spotted hyaena ( <i>Crocuta crocuta</i> )	mosquito ( <i>Culex pipiens</i> )	
bristlecone pine ( <i>Pinus longaeva</i> )	mongoose ( <i>Herpestes auropunctatus</i> )	
lungfish ( <i>Neoceratodus forsteri</i> )	monarch butterfly ( <i>Danaus plexipus</i> )	
kangaroo rat ( <i>Dipodomys merriami</i> )	brown tree snake ( <i>Boiga irregularis</i> )	
albatross ( <i>Diomedidae</i> )	striped skunk ( <i>Mephitis mephitis</i> )	