

Biology 346 - Vertebrate Natural History

Instructor: Dr. Gregory Pregill

Office: ST 363

Office Hours: MWF 10:30-12:00; Tue 9:30-11:00; also by appointment

Text: *Vertebrate Life*, (2009, 8th, Ed.). By F. H. Pough et al.

Field Guide: *Birds of North America* (2006, 5th Ed.). National Geographic Society, Washington, D.C.

Optional: *A Field Guide to Western Amphibians and Reptiles* (2003, 3rd Ed.). By Robert Stebbins. Peterson Field Guide Series, Houghton Mifflin Co.

Course Requirements:

1. Vertebrate Natural History is a field course. Monday Lecture and Laboratory are spent outdoors observing vertebrates in various habitats around San Diego County. One of these field trips is a Saturday excursion to the Anza Borrego Desert. Many of the class discussions (and examinations) are based on our weekly field observations. Therefore, **all field trips are mandatory**.
2. An **independent field project** is required of each student. The project will include a formal write-up and an in-class presentation.
4. **Two mid-term examinations, and a final**, comprehensive examination.
5. An essay on the distribution of species.
6. Your active **participation**, both in class and in the field. Be prepared to share your own observations, questions, and ideas.

LEARNING OUTCOMES

- Understand how the principles of phylogenetics are used to explore vertebrate diversity and adaptations
- Know basic biological and physical parameters that determine the distribution of vertebrate species and populations in time and space
- Understand how phylogeny, morphology, distribution, and abundance affect survivorship,

feeding, foraging, and reproductive success

- Develop basic observation and knowledge skills that lead to confident identification of vertebrates in a field setting, including the proper use of field guides and checklists
- Develop competent knowledge of regional habitats and associated biotas
- Be able to apply fundamental concepts of natural history in order to interpret vertebrate behavior in the field
- Apply the above outcomes to the development of an independent field study including formulation of an hypothesis, the collection, analysis and interpretation of data, and the production of a written report in proper scientific format

Grades:

Lecture Exams (3)	300 pts	495 - 550 pts = A
Independent Project	150 pts	440 - 494 pts = B
Biogeog. Assign.	50 pts	385 - 339 pts = C
Participation	50 pts	330 - 384 pts = D

<u>Week</u>	<u>Topic</u>	<u>Chapter</u>
Jan 24	Introduction to the study of natural history Overview of vertebrate diversity	1
Jan 31	Basic structure of vertebrates Distribution and Biogeography	2;(part); 3(part)
Feb 8	Distribution and Biogeography	
Feb 14	Origin and diversity of Birds Avian structure, senses, and flight	16:426-36 17:439-66
Feb 21	Avian reproduction	17:466-478
Feb 25	1ST MIDTERM EXAM	
Feb 28	Analysis of Behavior Feeding and Foraging	
Mar 7	Amphibian Diversity Amphibian reproduction	10 10
Mar 14	<i>Spring Break</i>	
Mar 21	Introduction to Lepidosaur Squamate feeding and foraging	13 13
Mar 28	Squamate social behavior Ectothermy	13 14
Apr 6	2ND MIDTERM EXAM	
Apr 11	Introduction to Mammals Mammalian social systems	20; 23 23
Apr 18	Migration	17:479-83; 22:588-90
April 22&25	<i>Easter</i>	
Apr 27	Extinction	19:515-18; 25:663-70
May 2	Project Presentations	
May 13	Final Exam (2:00)	

VNH Laboratory & Field Trip Schedule, Spring 2011

Jan 24	Using field guides and checklists; field notes; independent project: ST227
Jan 31	Identifying birds in the field: Campus natural history walk
Feb 7	Designing a field project: Tecolote Canyon
Feb 14	Laboratory on bird adaptations and behavior: ST-227
Feb 21	Shorebirds and waterfowl: Mission Bay Flood Channel
Feb 28	Mixed coastal scrub, and aquatic habitat: Lake Murray
Mar 7	Laboratory on Amphibians & Reptiles ST-227
Mar 14	<i>Spring Break</i>
Mar 21	Land and Sea: Los Peñosquitos Lagoon and Torrey Pines Reserve
Mar 28	Riparian, aquatic: Chaparral and riparian - lower foothill zone: Mission Trails Regional Park
Apr 4	Chaparral -Oak woodland: Flinn Springs County Park
Apr 11	Open
Apr 16	Desert life zones: Anza Borrego Desert - Saturday
Apr 25	<i>Easter Monday</i>
May 2	Project presentations