

GENERAL INSTRUCTIONS AND INFORMATION FOR BIOL 3395-01: MAMMALOLOGY Lab.

Fall 2005, Class meets W 3:00-5:50 in SC 124, Prerequisites: Biology 3110 Evolution. The **\$25 course fee** will be used for instructional material and travel costs.

Instructor: Dr. Kate Grandison: Office: SC184A, **scheduled office hours:** M WF Open Door, T 10-1130, 4-6pm, R 10-1130am, **open door** or by appointment. Contact through message on office door whiteboard, telephone: 865-8345, mailbox SC105, or e-mail: grandison@suu.edu

Text: Required

Martin, R.E., Pine, R.H. and DeBlase, A.F. A Manual of Mammalogy with Keys to Families of the World
Kays, R.W., Wilson, D.E.. Mammals of North America (Princeton Field Guides) (Paperback)

Recommended Resources: There will be resources and web-sites posted online. Please use these for further information and course updates.

GOALS FOR THIS CLASS: You will have the opportunity to:

- 1) Learn field ID and investigation skills to increase the pleasures in your life and improve your job skills as well as to find out what you can do for mammals -making you a more useful citizen of the world.
- 2) Enjoy the wonders of southwestern Utah outside cool places!

Objectives: Upon successful completion of this course you will be able to:

1. Appreciate mammalian diversity, and identify the general traits of major groups of mammals.
2. Identify many of the species of mammals native to Utah (and the western U.S.)
3. Use wildlife survey techniques for identifying sign, evaluating biodiversity, assessing habitat associations, and estimating population densities of mammal species at selected study sites.
4. Conduct very basic quantitative analyses of ecological data.
5. Write a research paper that reports the results of a study in a format of a scientific journal.

GRADING: Class participation, tests, written assignments, and project write-up.

1. *Written assignments:*

1) Field Notes 100 points

2) Lab Quizzes 100 points

2. **Tests:** two 100 point lab tests (midterm and final)..... **200 points**

3. **Research project**..... **100 points**

4. **Final grade** based on 600 total points possible: 93-100% = A; 90-92% = A-; 87-89% = B+; 83-86% = B; 80-82% = B-; 77-79% = C+; 73-76% = C; 70-72% = C-; 67-69% = D+; 63-66% = D; 60-62% = D-; Below 60% = F. If at any time you wish to learn your grade from me, please visit me in my office or contact me via e-mail.

MAKE UP POLICY There will be NO make-ups for missed laboratory exams. It takes a significant amount of time to set up a lab practical and we are only willing to do it one time per exam. You will receive a zero for any additional missed exams. In the case of crises and emergencies (that you can document and that are considered a valid excuse by your instructor), talk to me (or phone me) before the exam and more flexible arrangements can be scheduled.

Academic dishonesty includes giving, receiving, or using unauthorized aid on any academic work. This includes a person who has taken a test discussing what was on a test with a person who has not taken the test. Any student guilty of cheating or plagiarism will receive a grade of F.

Sexual misconduct : Sexual harassment of students and employers at Southern Utah University is unacceptable and will not be tolerated. Any member of the university community violating this policy will be subject to disciplinary action.

Course Activities: Investigations and Field Trips will include the following: (subject to change)

Mammalian skull structure, dentition and skeletal anatomy; Use of a dichotomous key

Mammal classification

Field techniques: Observations, species identification, field notes, and GPS

Measuring and assessing species diversity I: Observations of diurnal animals

Measuring and assessing species diversity II: Trapping small terrestrial mammals

Measuring and assessing species diversity III: Identifying mammals by their sign

Transect methods for estimating the abundance of mammal populations

Abundance indices: Burrows and rabbit pellets

LAB SCHEDULE (subject to change)

2005 LAB TOPIC SCHEDULE:

Date

WEEK 1: <u>Mammalian Characteristics</u> <i>Skulls, Teeth Identification (Chapt 1,2,3)</i>	<u>August 31</u>
WEEK 2: <u>Bones, Orders and Zoogeography (Chap 1-9)</u>	<u>September 7</u>
WEEK 3: <u>Lab3: Monotremes and Marsupials</u> <i>Non eutherian mammals: the early radiations.</i> <i>Film: Life on Earth #18. The rise of mammals</i> <u>Lab 4. The Insect Eaters</u> <i>Film: Life on Earth #21. Theme and variations</i>	<u>September 14</u>
WEEK 4: <u>Lab 5. Small herbivores.</u> <i>Film: Life on Earth #24. Life in the trees</i>	<u>September 21</u>
WEEK 5: <u>Recording Data and Field Notes</u> <i>Chapt 29:</i> <i>Small Mammal trapping, Brian Head</i>	<u>September 28-30</u>
WEEK 6: <u>Specimen Preparation?</u> <i>Chapt 31</i> <i>Review for Mid-Term</i>	<u>September 21</u>
WEEK 7: LAB MIDTERM EXAM	October 19
WEEK 15: LAB FINAL -----	December 7

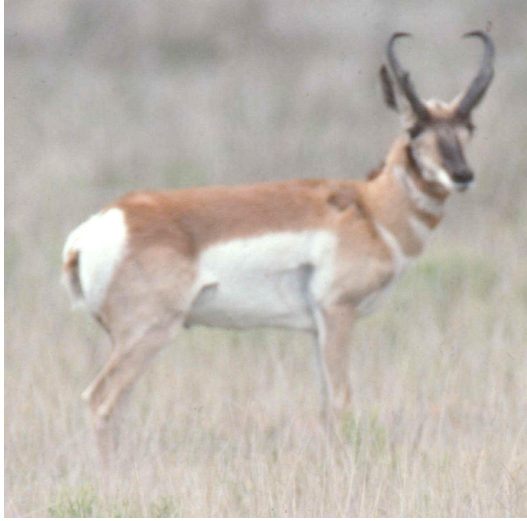
WEEK 8-14: Remaining labs will be a combination of field and laboratory identification of Mammal Orders and Utah species. Laboratory identification weeks will focusing on one of these eutherian mammal groups:

- Lab 6. Large herbivores. *Film: Life on Earth #22. The leaf-eaters.*
- Lab 7. Fruit eaters. *Film: Life on Earth #25. The primates.*
- Lab 8. Carnivores. *Film: Life on Earth #23. The hunters and the hunted.*
- Lab 9. Marine Carnivores. *Film: Life on Earth #20. Mammals of the seas.*

Field Trips: Chapter 30 is your reference for field survey techniques

- Small Mammal trapping, Brian Head Sept 28-30
- Small Mammal trapping, Beaver Dam Slope Oct 12-14?
- Bat survey techniques
- Diurnal and Camera Surveys of pygmy Rabbits: tracks and other evidence
- Radiotelemetry tracking
- Museum of Natural History/Zoo ?

Exact schedule dependent on weather and resource specialist availability.



Pygmy rabbit (*Brachylagus idahoensis*)

Antilocapra americana the totem of the American Society of Mammalogists
 photograph © 2000 by Dr. Allan H. Chaney

Week starting:	Topics	Assignment
August 31	W <u>Mammalian Characteristics</u> <u>Skulls, Teeth Identification</u>	Chapt 1,2,3
September 7	W <u>Bones, Orders and Zoogeography</u> <u>Monotremes and Marsupials</u> Non eutherian mammals: the early radiations. Library Film: Life on Earth #18. The rise of mammals.	Chap 1-9 Chapt 10,11
September 14	W <u>Chiroptera: Bats, Insectivores and their relatives</u>	Chap 14
September 21	W <u>Specimen Preparation?</u> Recording Data	Chapt 31 Chapt 29
September 28	W Data Analysis and Lit Research	Chapt 33-37
October 5	W <u>Carnivores</u> <u>Xenarthra, Pholidota, and Tubulidentata</u>	Chapt 15 Chapt 17,18,24
October 12	W <u>Primates</u> Mammal trapping, Beaver Dam Slope Oct 12-14	Chapt 16
October 19	W Lab Midterm? <u>Cetacea</u>	Chapt 20
October 26	W <u>Rodentia</u>	Chapt 23
November 2	W <u>Lagomorpha</u> Camera Survey of pygmy Rabbits	Chapt 22
November 9	W <u>Perissodactyla and Arteriodactyla</u>	Chapt 26,27
November 16	W Social Behavior/ Evolution of Mammals Field Trip: Museum of Natural History/Zoo ??	
November 23	W Thanksgiving Holiday	
November 30	W Project Presentation	
December 7	W LAB FINAL Mammals	

FIELD TRIPS: Date TBA
Shake/Bake woodrat tracking _____ Camera Survey of pygmy rabbits _____
Sm. Mammal trapping _____ SUU Farm Reproduction _____
UPD count/behavior _____ Silver Reef: Bats _____

Periodicals related to Mammalogy in the SUU Library

Journal of Wildlife Management

Wildlife Monographs

Wildlife Review

Animal Behavior

Bioscience

Journal of Mammalogy

Ecology

Western North American /Great Basin Naturalist

Conservation Biology

Nature

Science

LAB #1-2 (Jan. 13/14, 20/21): Introduction to Mammalian Orders and use of key.

LAB #3 (Jan. 27/28): Non eutherian mammals: the early radiations. SHORT TEST on laboratory #1 (5%). Film: Life on Earth #18. The rise of mammals.

LAB #4 (Feb. 3/4): Eutherian mammals I. The insectivores. Film: Life on Earth #21. Theme and variations.

LAB #5 (Feb. 10/11): Eutherian mammals II. The herbivores I. Rodentia. Film: Life on Earth #24. Life in the trees.

LAB #6 (Feb. 17/18): Eutherian mammals III. The herbivores II. Film: Life on Earth #22. The leaf-eaters.

IT'S WINTER BREAK - Feb. 21-25

LAB MIDTERM TEST (MARCH 3/4, 2005)

LAB #7 (Mar. 10/11): Eutherian mammals IV. The herbivores III. Film: Life on Earth #25. The primates.

LAB #8 (Mar. 17/18): Eutherian mammals V. The carnivores. Film: Life on Earth #23. The hunters and the hunted.

LAB# 9 (Mar. 24): Review laboratory. Film: Life on Earth #20. Mammals of the seas.

FINAL LAB EXAM (MARCH 31/APRIL 1, 2005)

Last lecture day (April 8, 2005)

Lab #1 - Teeth ([Prelab #1](#)) ([Lab Talk #1](#)) ([Tooth Terms](#))

Lab #2 - Bones and Zoogeography ([Lab Talk #2](#)) ([Prelab #2](#))

Lab #3 - Monotremes and Marsupials ([Prelab #3](#)) ([Lab Talk #3](#)) ([Specimen #3](#))

Lab #4 - Insectivores ([Prelab #4](#)) ([Lab Talk #4](#)) ([Specimen #4](#))

Lab #5 - Small Herbivores ([Prelab #5](#)) ([Lab Talk #5](#)) ([Specimen #5](#))

Lab #6 - Large Herbivores ([Prelab #6](#)) ([Lab Talk #6](#)) ([Specimen #6](#))

Lab #7 - The Fruit-eaters ([Prelab #7](#)) ([Lab Talk #7](#)) ([Specimen #7](#))

Lab #8 - Carnivores ([Prelab #8](#)) ([Lab Talk #8](#)) ([Specimen #8](#))

Lab #9 - **Marine Carnivores** ([Prelab](#))

