

Biology 128
Field Natural History

Instructor GeneWingert wingerth@dickinson.edu

Library Liaison To be announced

Class meeting time: Monday, Wednesday and Friday 8:30-9:20 Dana 110

Laboratory Monday 1:30-4:30 and Tuesday 1:30-4:30 James 2228

Office: Rector 1310, hours by appointment

Text:

Wildlife of the Northeast by Chuck Fergus

Shell Games by Craig Welch

Field Guide to Birds of North America Edited by Jon L Dunn and Jonathan Alderfer

KAUFMAN Field Guide to Insects of North America Eric R. Eaton & Kenn Kaufman

Naturalist's Sketchbook by Carl Strang

Key to Native and Naturalized Trees of the Harrisburg Area by Gene Wingert

During the past fifty years, people have become nearly isolated from their natural environment. Fewer small farms, urbanization, the expansion of suburbs, air conditioning, mall shopping, posted land, less access to waterways, forgotten victory gardens and a host of other societal changes as created a generation that is suffering from Nature Deficient Disorder. Even the science of Biology has become more concentrated in the cellular and molecular realm than the field sciences. This course will explore the realm of field biology and natural history in the Carlisle area and familiarize students with some of the common forms of life outside the classroom. Being familiar with the organisms that compose ecosystems enables a student to have a better understanding of the principals of ecology everywhere in the world. If we are to sustain our environment, we must begin to manage it more **sustainably** or endure the fate of many island cultures.

Course objectives:

1. learn to use the Dickinson Library and other LIS resources
2. research paper dealing with White Tailed Deer impact in Pennsylvania
3. become familiar with local Natural History
4. Students will participate in community science at Waggoner's Gap Hawk Watch and Owl Banding.
5. Understand environmental **sustainability** and the importance of Place Based education.

- : Goals:
- a. To develop a basic understanding of scientific methods, so that students may begin to analyze and critically evaluate scientific literature, apply laboratory, field and computational methods specific to the discipline, and interpret empirical data.
 - b. To develop a basic ability to communicate effectively as scientists, both in written and oral formats, with other scientists as well as the general public.
 - c. Have the students use the many resources available to them to complete a research paper.
 - d. The students will learn to identify common trees and animals of the northeastern United States.
 - e. The students will participate in several community science endeavors
Northern Saw Whet Owl Banding Project. Kittatinny Ridge Hawk Watch,
 - f. Understand the importance of place based knowledge and develop an environmental ethic of striving toward a **sustainable** future..

COURSE REQUIREMENTS:

1. Text reading should be completed before lecture.
2. It is the students responsibility to make up work missed in lecture.
3. Each student must attend two biology or environmental science related meetings, lectures or activities during this semester. SEE ATTACHMENT.
4. Attendance is REQUIRED for all exams. A medical excuse is required if you miss an exam. The instructor may modify a make-up exam. If your are participating in sports, please clear all conflicts by the second week of classes.
5. Attendance is required for labs. Due to the nature of lab, they cannot be made up at a later date. Both labs are full and “trading” labs is not an option.
6. All reports and other assignments that are NOT turned in on time will be reduced one grade for each regular school day that they are late.
7. If you are planning to become a Biology major,
PLEASE KEEP YOUR TEXTS YOU WILL NEED THEM FOR OTHER COURSES.

THE STUDENT IS EXPECTED TO KEEP A BACKUP COPY OF ANY DOCUMENT PREPARED FOR THIS COURSE. IF FOR ANY REASON YOU TURN IN A DOCUMENT AND IT IS “LOST”, IT IS THE STUDENTS FAULT IF THE STUDENT DOES NOT HAVE A BACKUP COPY. Dickinson College provides every student with storage space on the server. It is the student’s responsibility to learn how to use this storage capacity.

The Department of Biology is committed to making reasonable academic accommodations for students with disabilities. In compliance with Dickinson College policy and equal access laws, every professor is available to discuss the implementation of academic accommodations for students with documented disabilities. Students requesting

accommodations are required to first register with Disability Services to verify their eligibility for reasonable and appropriate accommodations. Once documentation has been reviewed by Marni Jones, the Director of Learning Skills and Disability Services, she will provide eligible students with signed accommodation letters for their professors. Students are to obtain a new letter every semester and to schedule an accommodations discussion meeting with each relevant professor prior to any accommodations being implemented. To ensure adequate time for any necessary arrangements to be made, accommodation discussion meetings should be scheduled during the first three weeks of the semester (except for unusual circumstances), and one week before any needed testing accommodations. The Office of Disability Services is a part of Academic Advising, located on first floor of Biddle House. Appointments with Marni Jones can be made by calling Jennifer Minnich at 717-245-1080. For more information, go to the Disability Services website at <http://www.dickinson.edu/student-life/resources/disability-services/> or email disabilityservices@dickinson.edu .

This is the first time this course has been offered and the lecture schedule of very tentative and flexible.

Grades are based on total accumulated points. Thus, everything counts.

A=92.5-100

A-=89.5-92.5

B+=87.5-89.5

B=82.5-87.5

B-=79.5-82.5

C+=77.5-79.5

C=72.5-77.5

C-=69.5-72.5

D+=67.5-69.5

D=62.5-67.5

D-=59.5-62.5

F=less than 59 percent

COCURRICULAR REPORTS

(slightly modified from documents written by Prof. Brian Pedersen)

Effective students, professionals, and citizens continually seek out new information and ideas. Reading newspapers, journals, and books; taking courses; and talking with colleagues and faculty are all excellent ways to learn something new, to stay current on a topic you already know something about, and to get ideas that may lead you to creative

solutions to challenging problems. Dickinson College provides another opportunity to acquire new information and ideas: the numerous cocurricular events that take place throughout the semester. These events include seminar series (e.g., Earth Issues, Common Hour, Public Affairs Symposium), special guest speakers, and conferences. To encourage your participation in these cocurricular events, you'll receive credit in this course for attending and reporting on two events that are related to environmental issues. (Of course, you're encouraged to attend more than two events.) By now you are well aware that environmental issues involve the natural sciences, social sciences, and humanities. So be creative in seeking out events that may contribute to your deeper or broader understanding of environmental issues. Watch campus bulletin boards and your e-mail for information about potentially suitable cocurricular events.

The **cocurricular events** that you report on for this course will most commonly be scheduled events open to the Dickinson College community. If you choose to attend a community event outside of Dickinson College that is open to the public (e.g. Audubon Society presentation, conference sponsored by the Pennsylvanians for Sustainable Agriculture, Harrisburg Canoe club talk) please check with me first to make sure that it is suitable. There will be some such events this semester that will be attended by ES majors and for which transportation will be available. You are welcome to participate as long as you check with me first.

The events that you report on cannot be events that you are required to attend for this course or for another course.

For two of the cocurricular events that you attend, prepare a three paragraph report.

These reports are due within one week of the event. **The first report is due before 5:00 P.M. October 18. The second report is due before 5:00 P.M. November 25, 2013**

Format and submit your reports as follows.

In the first paragraph provide the important identification information for the event. This will normally include the event's title; the name of the series or sponsor (e.g., Biology Department Seminar); the name(s) and organization(s) of the presenter(s); and the date, time, and location of the event. Take care to correctly spell the presenter's name(s).

In the second paragraph provide a concise summary of the event. Preparing an effective summary is a significant challenge. A summary is not just a list of paraphrases or details. Rather, the summary should explain the event's content and use carefully chosen details to enhance that explanation. Consider this metaphor: The goal in preparing a summary is not to describe individual trees, but to describe a forest. A good approach to preparing a summary is to start by writing a single sentence that explains the event's content. Then add sentences to develop that explanation.

In the third paragraph briefly indicate the event's relevance to environmental issues and provide your thoughtful response to the event's content. This response may include a new idea or a question stimulated by the event, and/or a criticism of the event's content. Criticisms that are not related to the event's content (e.g., a speaker's presentation style) are not appropriate. Do not try to provide a detailed response; focus on one or two significant points.

Your reports should be concise and dense with information and ideas.

Submit your report by e-mail to *wingerth@dickinson.edu*. The subject line of your e-mail must be "Cocurricular report #" where # will be a "1" for your first report and a "2"

for your second. Put the text of the report in the body of the e-mail. **Do not send your report as an attachment.**

If you have questions about this assignment, including whether a particular event is suitable, please contact me.

Tentative Lecture/Lab Schedule for Biology 128
Field Natural History

August 26 Monday: Introduction to Science and the Philosophy of Science

Lab Mon/Tues August 26 & 27 Capture and preparation

August 28 Wednesday: Ways of Knowing, Good, Bad and Junk Science and the “Two Equal Sides Phenomena”.

August 30: Friday: Finish Technology Introduce the concept of **Sustainability**
Introduction to Insects. Read pages 7-13 in Kaufman.

September 2 Monday: Continue Insects

**Lab Monday Tuesday Sept 2 & 3 Turtle Trapping at Wildwood and Measurement.
A population experiment in sustainability.**

September 4 Wednesday: **EXAM I-Science**

September 6 Friday: Continue Insects. Read pages 14-21 in Kaufman

September 9 Monday: Aquatic Insects video lecture.

Lab Monday Tuesday Sept 9 & 10 Turtle measurement. Error analysis

September 11 Wednesday : Continue Insects

September 13 Friday: Insects

September 16 Monday: **Exam II-Insects**

Lab: Monday Tuesday Sept 16 & 17 Insect collecting and preparation

September 18 Wednesday: Discuss Shell Game chapters 1-7 This text reading is a graphic illustration of how we are not managing our environment **sustainably**.

September 20: Friday: introduction to bird watching Bring National Geographic Field Guide to Birds to class. Read pages 6-19 in Field Guide

September 23 Monday: Birds and turbines. Read pages 161-184 in Fergus

Lab: Monday Tuesday Sept 23 & 24 Key to Trees and Insect Collection

September 23 Wednesday. Pennsylvania Forest

September 27 Friday: White-tail deer, fire suppression and the changing of Pennsylvania Forests

September 30 Monday: Continue Forest Ecology, global warming and the effects on local wildlife.

Lab: Monday Tuesday Sept 30 & Oct 1 Transects at State Game Lands 170

October 2 Wednesday: Continue discussion of forest issues

October 4 Friday: **Exam III**

October 7 Monday: Second discussion of Shell Games Chapters 8-12

Lab: Monday Tuesday Oct 7 & 8 Transects at Rieneman Wildlife Sanctuary

October 9 Wednesday: Lecture Catch-up

October 11 Friday Discussion of Transects and Introduction of Mammals

October 14 Monday

Lab: Monday Tuesday Oct 14 & 15-Transects at Rt 233 and Ridge Road Cumberland County

October 16 Wednesday: Continue Mammals Read pages 9-30 in Fergus

October 18 Friday Mammals Read pages 37-76 in Fergus

October 21 Monday: **FALL PAUSE**

October 23 Wednesday: Mammals Read pages 76-111 in Fergus

October 25 Friday: Mammals Read pages 30-37 and 114-119 in Fergus

October 28 Monday Wrap up mammals:

Lab Monday Tuesday Oct 28 & 29 Hawkwatch with Dave Grove

October 30 Wednesday: **Exam IV**

November 1 Friday: Introduction to Waterfowl Read pages 125-160 in Fergus

November 4 Monday: Continue Waterfowl

Lab: Monday Tuesday Library Research and Transect Analysis

November 6 Wednesday: Hardy Disney

November 8 Friday: The Biology of Wildlife Management

November 11 Monday: Introduction to Amphibians

Lab Sunday Monday and Tuesday Build Mammal Traps

November 13: Wednesday Continue amphibians

November 15 Friday The Pennsylvania Black Bear with Gary Alt

November 18 Monday : **Paper Due** Introduction of River Otter/Osprey

LAB Sun Mon/Tues Nov 18 & 19 Set Mammal Traps

November 20 Wednesday

November 22 Friday

November 25, Monday

LAB Monday Tuesday Nov 25 & 26 Trip to Vernal Pond

November 27 Wednesday **Thanksgiving** Loss of Biodiversity

November 29 Friday **Thanksgiving**: Small population dynamics

December 2 Monday Operation Migration

Lab: Monday Tuesday December 2 & 3 Oral Presentations

December 4 Wednesday: Loss of Biodiversity A lesson in what must be changed if we expect a **sustainable** future.

December 6 Friday Wrap-up lecture

Finals