

NRM/BIOL 277: INTRODUCTION TO CONSERVATION BIOLOGY
Spring Semester 2017

Meeting Time: Tuesday and Thursday 11:30 AM -1:00 PM

Classroom: Arctic Health Research Building (AHRB) Room 183 on the UAF Fairbanks campus.

Instructor Gino Graziano, Instructor of Invasive Plants and Forest Health

Office: Gino Graziano, Office located in Anchorage, call or e-mail 786-6315, email = gagraziano@alaska.edu.

Office Hours - (arrange in advance to confirm) Tuesday & Thursday 9:00-11:00 am; Monday, Wednesday, Friday by appointment (9:00 to noon preferred). Gino is available via phone, or video call.

Graduate Teaching Assistant Lori Beraha.

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Course Text

Conservation Biology For All, by Navjot S. Sodhi and Paul R. Ehrlich can be downloaded for free at: <https://www.mongabay.com/conservation-biology-for-all.html>
Chapter readings are also posted to Blackboard.

Conservation Biology Issue report

Each student will choose a conservation biology issue to develop a comprehensive report that students will build on throughout the semester. Reports will use the course topics as a general outline, with required elements to address in the report provided by the instructor as learning objectives. Approximately every other week students will turn in written versions of the report and present to the class their topic as it pertains to the associated learning objectives. Topics selected may be either, conservation of a specific area (e.g. watershed, National Park, Wildlife Reserve), species, habitat type, or natural resource. Topics will be approved by the instructor to ensure that it is of proper complexity to complete the project. Students are encouraged to pursue their own interests in choosing a report.

Supplemental Readings (to be posted on the course Blackboard site)

Current scientific journals, resource management articles, and news/analysis articles

Course Description

This course will provide an overview of:

- (1) the principles of the science of conservation biology and the contributions of several different integrative levels (molecular, physiology, genetic, population, ecology, earth system, and social science) of interdisciplinary science to problems in conservation biology

(2) the framework of organizations, laws, programs, and land management systems that are specifically focused on identifying, protecting, and maintaining natural diversity in the U.S., selected other nations, and international programs

(3) current topics in conservation biology including climate change, invasive species, human modified landscapes, and changing fire regimes

(4) the role of people in conservation including outreach and education in generating support, Traditional Ecological Knowledge, and how conservation goals are framed and achieved

Course Structure

(A) The course consists of class discussions of readings to cover the scientific principles of conservation biology and the value-based rationales that drive conservation biology. Early in the course students will choose a conservation topic that they will address in their class discussions and reports. The chosen topic must be approved by the instructor.

(B) Students will turn in a written report approximately every two weeks that summarizes their chosen conservation topic in the context of the previous course topics. Students will present key parts of their report to the class filling approximately 5 minutes or more if time allows. Student presentations will include visual aids. Time for questions and comments will be allowed and included in the participation grade.

TOPIC OUTLINE (Spring Semester 2017)

Topic I Principles and drivers of change

- A. Conservation Biology as a changing science
- B. Biodiversity
- C. Ecosystem function and services
- D. Habitat destruction
- E. Habitat fragmentation
- F. Overharvesting
- G. Invasive Species
- H. Climate change
- I. Fire and biodiversity

Topic II Conservation into practice

- A. Conservation planning and priorities
- B. Preventing extinctions
- C. Endangered species management
- D. Conservation in human modified landscapes
- E. Role of people in conservation
- F. Conservation theory to practice
- G. Conservation biologist tools

Grading Policy

I. Writing assignments (first 6) - 20% of Course Grade

Students will be expected to write a 1-2 page summary of their conservation topic as it pertains to outlined learning objectives that address the previous chapter lessons and assigned readings. Writing assignments will be graded on turning in the assignment on time, clarity of writing, punctuation and grammar, citation of appropriate scientific literature and reports related to the conservation topic, and covering each learning objective with an appropriate level of depth to a) demonstrate student understanding of the learning objective, and b) is appropriate for the chosen conservation topic. The Fourth writing assignment, due before spring break must address the prior comments from the instructor provided on the previous writing assignments.

The goals are to:

1. Provide students the opportunity to pursue a conservation biology topic they are most interested in.
2. Build technical writing skills.
3. Provide the opportunity to demonstrate understanding of learning objectives in a written form.
4. Build skills in searching for, understanding, and citing scientific literature.

II. Student Presentations (first 6) - 20% of Course Grade

When writing assignments are due students will give an oral presentation that highlights the key points from the writing assignment. Presentations will include visual aids as appropriate. Students will be graded on the organization and clarity of the presentation, appropriate use of visual aids, covering the topics in enough depth to provide a basic understanding of the topic, and response to questions and comments. Students will also be graded on their engagement with presenters by asking questions and making constructive comments. The length of presentation will be approximately 5 minutes with extra time for questions.

The goals are to:

1. Provide an opportunity for all students to understand the variety of conservation topics chosen.
2. Give students experience in summarizing a specific topic within a strictly limited time for presentation, making sense of it, and identifying the most relevant points to reach conclusions.
3. Give students experience in speaking before their peers, with special emphasis on speaking cogently and fluently.
4. Develop critical thinking skills resulting in questions and constructive comments that improve our understanding of a subject.

III. Class Response - 20% of Course Grade

Students will be expected to participate in discussions of course reading topics, and respond to questions asked by the instructor and peers. Students will come to class prepared to discuss which learning objectives are highly relevant to their chosen conservation topic, and they intend to research in greater detail. Students are encouraged to bring smartphones or tablets to class to participate in electronic response systems. If a student does not have a smartphone or tablet inform the instructor so a solution is determined. Attendance is an obvious requirement of achieving this course grade, and absences will be made up with a written assignment. Students will be graded on providing appropriate responses to questions and constructive comments that help develop deeper understanding of the subject.

Rationale:

1. Higher concepts are developed when students discuss assigned readings as it pertains to broad conservation biology concepts and their conservation biology topic.
2. Interaction with the instructor and peers allows students to demonstrate knowledge and

understanding for concepts.

3. Discussing readings as they pertain to the student chosen conservation topic will improve written and oral assignments, and the process of developing ideas for those assignments.
4. Attendance is a tangible demonstration of the seriousness of the student toward the course.

IV. Final paper - 20% of Course Grade

Students will be expected to write a 10-12 page summary of their conservation topic as it pertains to outlined learning objectives that address the previous chapter lessons and assigned readings, and all comments made by the instructor. Final papers will be graded on turning in the assignment on time, clarity of writing, punctuation and grammar, citation of appropriate scientific literature and reports related to the conservation topic, organization of larger technical report, and covering each learning objective with an appropriate level of depth to a) demonstrate student understanding of the learning objective, and b) is appropriate for the chosen conservation topic. The final paper will build on the most pertinent concepts and provide final summary recommendations for appropriate conservation goals and actions pertaining to the topic. The final paper must address the prior comments from the instructor provided on all the previous writing assignments and the final class presentation.

The goals are to:

1. Provide students the opportunity to pursue a conservation biology topic they are most interested in.
2. Build technical writing skills.
3. Provide the opportunity to demonstrate understanding of learning objectives in a written form.
4. Build skills in searching for, understanding, and citing scientific literature.
5. Build skills in compiling and organizing a large report.
6. Build skills in responding to comments provided by reviewers, in this case the instructor.

V. Final Presentations - 20% of Course Grade

The last three class periods will be set aside for students to present their final reports. Each student will give a presentation lasting approximately 20 minutes with an additional 10 minutes allowed for questions and discussion. The student's oral presentation will highlight the key points from the final paper. Presentations will include visual aids as appropriate. Students will be graded on the organization and clarity of the presentation, appropriate use of visual aids, covering the topics in enough depth to provide a basic understanding of the topic, and response to questions and comments. The final presentation will build on the most pertinent concepts and provide final summary recommendations for appropriate conservation goals and actions pertaining to the topic.

The goals are to:

1. Provide students an opportunity to orally present their summaries, and recommendations for conservation goals and actions that pertain to the chosen topic.
2. Provide an opportunity for all students to understand the variety of conservation topics chosen.
3. Give students experience in summarizing a large report within a strictly limited time for presentation, making sense of it, and identifying the most relevant points to reach conclusions.
4. Give students experience in speaking before their peers, with special emphasis on speaking cogently and fluently.
5. Develop critical thinking skills resulting in questions and constructive comments that improve our understanding of a subject.

FINAL EXAM - 10:15 a.m. - 12:15 p.m., Wed, May 4