Syllabus

Conservation Biology (BSC – 6936)
Spring 2005, 3 credits

Department of Biological Sciences
Charles E. Schmidt College of Science
Florida Atlantic University

Instructor
Dr. Dale Gawlik, Sanson Science 271, dgawlik@fau.edu, 297-3333

Office hours
Wednesdays 0800-1300, 1600-1700, and other times by appointment. Because an occasional conflict with regular office hours could occur, students may wish to call ahead to confirm their visit.

Class period
Wednesdays 1:00-3:50 pm, General Classroom South, room 107

Online resource
Blackboard for BSC 6936. Students should check the site often to keep current with changes in the course and to obtain course material. The web site contains the syllabus, lecture notes, handouts, and many useful links. It also offers students the opportunity to monitor their grades at any time.

Required text
Principles of Conservation Biology. 1997. G. K. Meffe, C. R. Carroll, and contributors. Second edition. Sinauer Associates, Inc., Sunderland, MA.

Course objectives
Students that have completed the course will possess:

1. An understanding of the difference between conservation biology and other ecological disciplines.
2. The ability to recall patterns of biodiversity including its many hierarchical levels.
3. A solid understanding of the processes driving populations, communities, and ecosystems.
4. The ability to discern the primary threats to biodiversity.
5. The expertise to distinguish among the best approaches for conserving biological diversity and some of the contemporary tools.
6. The ability to describe both successful and unsuccessful case studies of conservation efforts and discern characteristics of each.
7. A clear notion of how society shapes conservation efforts, including the forces of economics, policy, ethics, and institutions.
8. Excitement for at least one aspect of conservation.

Course components and procedures
The course will be taught with mix of active and passive teaching techniques. Passive techniques include traditional textbook material and lectures. The *text* will be the backbone of the course and students should read it thoroughly. Text material will be covered on exams. *Lectures* will focus on selected concepts from the text as well as interesting case studies from the primary literature.

Active teaching elements of the course include student team projects, journal article discussions, a class simulation modeling exercise, a field trip, and guest lectures and discussions from practitioners of conservation biology.

Student team projects: Because of the multidisciplinary nature of conservation biology, it is most often practiced in a team setting, as are other emerging ecological disciplines like ecosystem management and restoration ecology. Students that hone teamwork skills in this course will be more comfortable with that approach later in their careers. Each student will join a team of 3-4 students to complete a major course project. Team members will be assigned by the instructor to maximize the diversity of the collective expertise of the team. The project will consist of some type of final product and an oral presentation to the class (30-45 min) describing it. The form of the final product can vary greatly within the realm of conservation biology. The only restriction is that it must be something that a practitioner of conservation biology would produce. Products could be an educational resource, research paper, research poster, or training workshop. If the product is a research paper, it must follow exactly the format of a scientific journal of the team's choice. Students should use as a guide the "Instructions to authors" for their journal. Projects could incorporate a small field experiment or field sampling project, a survey of public attitudes (either characterizing responses post hoc or doing planned comparisons among groups defined a priori), a Population Viability Analysis based on published data, characterization of trends in published literature, testing hypotheses from a meta-analysis of published data, or using ecological narratives (interviews with local experts) to establish historic baseline data for an ecosystem. Projects could also be an educational video for the public or special target groups, a training workshop aimed at the public or students, or a whole host of other ideas generated by students. Think creatively! Project grades will be based the quality of the final product, the oral presentation, and an assessment by fellow team members. The latter will be the average score assigned by team members.

Journal article discussions: The purpose of the journal article discussions is to get students reading the most current conservation biology literature, to let students hone their reading and critical evaluation skills, and to expose students to a breadth of subjects through the research interests of their class mates. Students working in teams of 5-6 members (of their choice) will lead a class discussion on one new scientific journal article concerning some aspect of conservation biology. A pdf of the article will be distributed by the team one week prior to the class discussion, except in the case of the first discussion. Teams should focus on the scientific approach, major results, significance, and the overall strengths and weaknesses. The articles can come from a variety of scientific journals but they must be from a recent issue (2004-2005).

Simulation Modeling Exercise: As a group, the class will conduct a Population Viability Analysis (PVA) using the simulation model Vortex. The class will sequentially modify

demographic parameters of the model and see how a simulated population responds over time. The power of this model is that the class can run a number of conservation scenarios to test their predictions of how their population should respond. In essence, students will be integrating what they have learned about populations and conservation when making predictions. Some students may choose to include a PVA as part of their team project.

Field trip: Attendance on the field trip to Everglades National Park is strongly encouraged because the Everglades, like much of South Florida, is rich with ecological problems and applications of conservation biology. Everglades National Park is the country's most endangered National Park and one of its most unique natural areas. The field trip is an opportunity to see conservation biology in practice and have discussions while standing at the site. The date of the field trip will be decided by a student vote on the second day of class. The trip will take a full day, probably on a Saturday or Sunday in March.

Guest Lectures: Three practitioners of conservation biology have agreed to provide the class with a lecture in their areas of expertise as well as some informal discussion afterwards. Dr. Fred Sklar from the South Florida Water Management District will speak about the use of landscape models in conservation. Dr. Sklar is recognized as a leading authority on landscape models. Much of the simulation modeling in South Florida takes a "bottom up" approach where functioning ecosystem processes lead to sustainable populations of sensitive animals.

The second speaker will be Mr. Tylan Dean, from the Ecological Services Office of the U.S. Fish and Wildlife Service in Vero Beach. Mr. Dean will discuss issues surrounding the federally Endangered Cape Sable Seaside Sparrow as it relates to ecosystem management in South Florida. Although the Endangered Species Act is a powerful piece of conservation legislation, it also poses challenges for ecosystem management, which must consider the needs of many species simultaneously.

The third speaker will be Dr. Laura Brandt, from the U.S. Fish and Wildlife Service A.R.M. Loxahatchee National Wildlife Refuge. Dr. Brandt will discuss the integration of research and ecosystem management and what is needed to actually implement large scale conservation projects.

Class participation: Active teaching techniques rely heavily on student participation in discussions and projects. Student participation will be fostered and accounted for in final grades. Participation points can come from participation on the field trip, discussions with speakers, or daily comments in class. Note that these points are not free and must be earned as with any other class component.

Exams
There will be one mid-term exam and one final exam. Both will be essay format. The final exam will not be comprehensive. Make up exams will be given for excused absences as described in the Undergraduate Catalog under Attendance Policy.

Time requirements
Students should expect to spend an average of 3-5 hours per week on this course outside of class plus one full day on a field trip. Students should allocate time each week for reading the text, reviewing articles, and working on their team project.

Grading criteria
Grades will be based on a student's performance on seven course components, with each component accounting for a percentage of the grade as follows:

Course component	Max points	% of Grade
Team project final product	60	15
Team project oral presentation	40	10
Team project member assessment	40	10
Class participation	40	10
Mid-term exam	100	25
Final exam	100	25
Journal article discussion	20	5
Total	400	100

Final percentages will be converted to letter grades as below. Grades may be viewed through Blackboard.

Grade	Final Percentage
A	90-100
A-	89
B+	88
B	80-87
B-	79
C+	78
C	70-77
C-	69
D+	68
D	60-67
D-	59
F	<59

Communication devices
In keeping with University policy, cell phones, beepers, and pagers should be disabled in class.

Students with disabilities
Students who require special accommodations to properly complete the course should register with the Office for Students with Disabilities so their accommodation needs can be met.

Course schedule
The course schedule may evolve as the course gets underway so students should monitor the calendar in Blackboard for a detailed and up-to-date schedule of activities and assignments.

Date	**Course activity**
Jan 12	Introduction, syllabus review, team assignments, lecture
Jan 19	Journal article discussion, vote on field trip date, lecture
Jan 26	Journal article discussion, oral update on Team Project topic, lecture
Feb 2	Journal article discussion, lecture
Feb 9	Journal article discussion, oral progress report on Team Project, lecture
Feb 16	Lecture, guest speaker (Fred Sklar)
Feb 23	Lecture, **mid-term exam**
Mar 2	Oral progress report on Team Project, guest speaker (Tylan Dean)
Mar 9	Spring Break
Mar 16	Lecture, introduction to Vortex model
Mar 23	Vortex PVA exercise
Mar 30	Lecture, guest speaker (Laura Brandt)
Apr 6	Lecture
Apr 13	Lecture, Team Project final product due
Apr 20	Team Project oral presentations
Apr 27	Team Project oral presentations
May 2	**Final exam** 10:30-1:00