
BIO 325 MARINE FIELD ECOLOGY & CONSERVATION

7-18 JANUARY 2004

THE SCHOOL FOR FIELD STUDIES CENTER FOR MARINE RESOURCE STUDIES, SOUTH CAICOS, TURKS & CAICOS ISLANDS, BWI

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Prerequisites: BIO 234 (Ecology), or BIO 221 (Marine Biology)

Course Description: Marine Field Ecology and Conservation is an intensive, field-based course that is taught at The School for Field Studies Center for Marine Resource Studies (South Caicos, Turks & Caicos Islands, BWI). This course has several objectives: (1) to teach students basic research methods that are utilized during marine field studies, (2) to do a comparative biodiversity study of tropical ecosystems, including coral reefs, sea grass beds, and mangroves, and (3) to conduct a marine conservation research project. Snorkeling is required. The course is offered during the Winter term.

Course Objectives: Through lectures, field studies, and a directed marine conservation research project, students will be able, upon completion of this course, to:

1. evaluate and use basic marine ecological research techniques.
2. understand basic oceanographic and ecological principles and how they related to tropical marine ecosystems, including coral reefs, sea grass beds, and mangrove forests.
3. identify fish, invertebrate and coral species common to the habitats of South Caicos.
4. analyze and interpret ecological data.
5. understand how overharvesting affects the population of the targeted species, especially tropical reef fish and the queen conch (*Strombus gigas*).
6. understand the ecological principles that underpin the principles of Marine Protected Areas and how MPAs can be used to protect and replenish overharvested stocks
7. appreciate the culture and history of the Turks & Caicos Islands..

Learning Outcomes/Assessment: The following is a list of the learning outcomes for this course and how each will be assessed:

1. **Outcome:** Students will develop critical thinking, scientific reasoning, and quantitative reasoning skills in the design, analysis, and interpretation of marine conservation research studies. **Assessment:** Students will report the findings of their research in a scientific paper.
2. **Outcome:** Students will develop the ability to communicate clearly and effectively through the written word by reporting the results of their research. **Assessment:** Scientific research reports.
3. **Outcome:** Students will develop the ability to understand and respond to issues of local, national, and global significance through conservation-related research. **Assessment:** Scientific research reports.

Required Text: None. Readings and field guides will be available at CMRS.

Other Required Equipment: Most of the course work will be done while snorkeling so you will need a mask, fins (and booties), and snorkel. I recommend you bring a snorkeling vest if you are inexperienced in snorkeling. Other required equipment include underwater writing slate (large) and a field notebook and pencil or waterproof pen. A wetsuit or dive skin is highly recommended. See the handout from the CMRS for other items to bring.

Class Attendance: Because most classes will be held on coral reefs, sea grass beds, and in mangroves, this should not be a problem. HOWEVER, you are expected to show up ON TIME to all scheduled meetings and field trips. You are also required to be on time and to attend to all assigned tasks, such as meal preps and clean-ups.

Class participation/attitude: We will be at a small research station working in close quarters and as a research team. A good, respectful attitude is essential. Moreover, since we will be functioning as a research team, full and collaborative effort is required, every one must contribute. REMEMBER. THIS IS A FIELD COURSE AND NOT A VACATION. Believe me, you will completely enjoy this experience but do not lose sight of why we are going.

Readings/Assignments: It is expected that students will read the assigned material prior to attending class. The grades for assignments turned in late will be lowered by 10% of the original value for each day the assignments are late.

Extra-credit: There will be **NO** extra-credit assignments given. All students are expected to put maximum effort into scheduled assignments. If you are having difficulty, see me and we will schedule one-on-one sessions to help you better understand the material.

Assignments:

1. **CLASS ATTENDANCE/ATTITUDE AND PARTICIPATION** in discussion, research and all assigned tasks (**50 pts**).
2. (For students taking it as a 3 cr. course) **RESEARCH PAPER:** 10-15 page (double-spaced, 2.5 cm margins) research paper on the *Effect of a marine reserve on reef fish, coral, and algae density and diversity* study. A minimum of 8 references from *primary literature* is required. The paper will be done in the format of the journal *Conservation Biology* and will be due on 31 January (**100 pts**).
3. (For students taking it as a 2 cr. course) **RESEARCH PAPER:** 5-10 page (double-spaced, 2.5 cm margins) research paper on the *Will the TCI regulations on the harvesting of queen conch be effective in sustaining queen conch populations?* study. A minimum of 4 references from *primary literature* is required. The paper will be done in the format of the journal *Conservation Biology* and will be due on 31 January (**100 pts**).
4. **FIELD NOTEBOOK:** graded for format, clarity, and completeness. It is expected that lecture notes and notes from readings, as well as the usual entries for fieldwork, will be included. Due on 31 January (**50 pts**).

Final Grade: Final grades will be calculated as follows:

Points	186	180	174	166	160	154	146	140	134	126	<126
Grade	A	A-	B+	B	B-	C+	C	C-	D+	D-	F

The above are minimum points needed for each grade. Grades are calculated as a range, e.g., a B=166-173.9. Grades will not be curved or rounded up.