

**UNIVERSITY OF MIAMI**  
**MARINE CONSERVATION BIOLOGY: AN ECOSYSTEM-BASED PARADIGM**  
**SYLLABUS**  
MAF 571/671  
FALL 2015 - CREDITS: 3  
TIME: TUESDAY AND THURSDAY (12:00 PM - 1:15 PM)  
CLASS ROOM: MSC 343

**INSTRUCTOR:**

**Neil Hammerschlag,**

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**Campus Office:** EG 214, RSMAS

**Office Hours:** Tuesday 10:00 – 11:30; 1:30-4:30 pm

**COURSE DESCRIPTION AND GOALS:**

Until recently, marine management has used a species-specific approach to conservation, focusing attention on economically important species that people use or consume. To this day, many marine management agencies are concerned mainly with assessing populations of commercially harvested species to maintain biomass production, rather than maintaining and restoring ecosystem integrity: ecosystem structure and function. It is only in recently years that a new biodiversity-focused, ecosystem-based, multidisciplinary scientific approach to marine conservation has emerged. This new paradigm is known as *Marine Conservation Biology*.

Within a semester, students will learn about the science behind the field of marine conservation biology. Students will also develop the skills to understand, analyze, and critique the tools utilized in marine conservation biology. The course will be composed of a series of lectures, guest speakers and student debates and student presentations on scientific advancements in marine conservation covering various topics including: (1) threats to marine ecosystem diversity and function; (2) ecosystem-based marine conservation management; (3) science behind emerging place-based marine ecosystem management; (5) restoring marine ecosystem function; (6) evolutionary impacts of biodiversity removal on marine ecosystem structure and function and (7) an ecosystem based approach to Sea Ethics.

**Class Text Book:**

Marine Conservation Biology: The Science of Maintaining the Sea's Biodiversity  
Norse, E.A. & L.B. Crowder, eds. (2005), Island. **Available online on UM library.**

## **ASSESSMENT & GRADING**

**Students will be evaluated on attendance, class participation, debates and scientific paper presentation.**

- Attendance & Class participation (20 %)
- Paper presentation (20 %)
- Debates x 3 (60 % total, 20 % per debate)

**Assignments that are late will receive a grade deduction of 5% per day.  
Missing a debate will result in a grade of zero for that debate (20%)**

### **Class Attendance & Participation:**

Class participation grade is based on students contributing class discussions as well as attendance. Students are expected to attend all classes. If a student needs to miss a class, students should notify the instructor ahead of time and if missing a class is justifiable (e.g. illness with doctors note), the student will not be deducted class participation marks towards their grade, but it is up to the student to make up for the material covered in the missed class. In the case of class absence, students will be deducted marks towards their grade. Attendance will be taken at the beginning of each class. Students that are late for class more than once will receive a 0.5% reduction on their final grade for each instance they are tardy. Students that miss class without notification to the instructor and approval will receive a 1% reduction in overall course grade. Students can take off class for any religious holiday, but only if the student disclosed her or his specific intentions to the faculty member in writing within the first three days of class meeting. Class participation points will be awarded to students that are engaged in class (e.g. questions, answers, discussions with instructor, guest lecturers and peers).

### **Current scientific paper presentation**

As indicated in the schedule, at the beginning of class, a student will present a summary of a recent scientific paper (of his or her choice) in the field of marine conservation. Scientific papers should be published within 1 year of class to be considered 'recent'.

This presentation should **not** last more than 10 minutes maximum and must include a PowerPoint.

The presentation must include the following elements:

1. Full paper citation
2. Brief background information on the general topic
3. Introduction to the study & objective
4. Study general methods
5. Study general results and conclusions
6. Presentation of some relevant data from the study (e.g. plots, graphs, diagrams)

Grading will depend on (1) demonstrating knowledge/understanding of paper being presented; (2) strict adherence to timing, i.e., not speaking over 10 minutes; (3) effective use of audio-visuals including clarity and aesthetics of slides, which must include presentation of data in some form such as graphs, diagrams, plots; (4) clear explanation of any graphs or data being presented; (5) poise, elocution and clarity of speech. Marks will be deducted if: slides are messy or spelling/grammar mistakes, no data is shown, subject knowledge poor, paper not recent, improper use of audio-visuals, poor diction, poise or elocution, failure to include 6 presentation elements above. See attached rubric.

PowerPoint presentations should be sent to the instructor no later than 1 hr prior to class. If using a Mac computer, please convert powerpoint into a PDF and email to the instructor.

### **Debates:**

- During the semester, we will have 9 debates on timely and controversial issues in marine conservation biology. Each student will debate 3 times in the semester.
- There will be 1 debate prep period in the semester for groups to coordinate in class, but the debates will require outside of class preparation and practice.
- The class will be split in 6 debate teams of 4-5 people each team.
- Debate periods:
  - During debate periods, 2 teams will face off against each other, while the remainder of the classes observes.
  - Debate teams will be assigned randomly to 'Pro' or 'Con' side of topic.
  - Students are expected to come already prepared to debate which means groups need to meet and prepare outside of class. Remember debate is worth 60% of the grade so be sure to prepare adequately. It is key that students demonstrate that they have done their research when speaking.
- The debate structure and logistics
  - On the day of the debate, each team will get a chance to provide statements/arguments on their topic, followed by a rebuttal period.
  - The Pro side will present first followed by the con side.
  - Each team member from a given side will provide a statement/argument in support of their side. This can include different aspect of the issue (e.g. economic, social, biological, moral). This should not last more than 20 minutes total
  - After this, the other side of the issue will present their statements lasting no more than 20 minutes.
  - There will then be 6 minute preparation for a rebuttal
  - There will be a rebuttal one from each side (5 minutes)
  - There will be rebuttal two from each site (5 minutes)

Time Duration (Minutes)	Activity
20	Team 1 Statement
20	Team 2 Statement
6	Rebuttal Prep
5	Rebuttal Team 1
5	Rebuttal Team 2
5	Rebuttal Team 1
5	Rebuttal Team 2

- **Notes:**
  - *Each statement must be supported by a publication, article or data set referred to by the speaker.*
  - *Don't just read your notes – use your notes as a guide, but present the material*
  - *While speaking, vary your tone and pitch – speak as if you are excited to challenge your opposition and share your arguments.*
  - *Use of audio visual material is not necessary, but if this is required then please make sure that the instructor is sent this material (as a PDF) no later than 1 hr prior to the debate period*

**Debates will be evaluated on the enclosed rubric which will include:**

- Appropriate knowledge and use of information
- Equal participation among debate team
- Poise and elocution
- Content/knowledge of the subject
- References used to support comments
- Adherence to time constraints
- Clarity of speech

Points will be deducted if:

- You do not participate in the statement and at least 1 rebuttal
- You do not show clear evidence of research and in depth knowledge of topic based on scientific data
- Information presented is trivial or irrelevant
- You do not cite a source for statement provided
- Poor clarity of speech, poise or elocution
- Go over time constraint

**It is important that as a team you leave enough time for everyone to speak and say something worthwhile! It is better for the team to go over the time limit to ensure that everyone makes a full statement, but points will be deducted from the team for going over time limits.**

### **Debate topics will include:**

- Is trying to eradicate invasive fishes an effective solution to stopping this problem? (Debate 1 - Sept 22)
- Is eco-tourism a good conservation solution for threatened marine species (e.g. whale watching or shark diving) (Debate 2 – Sept 24)?
- Is fishing down the food web real? (Debate 3 – Sept 29)
- Is climate change negatively affecting corals now (i.e. it may be a problem in the future, but is it one now?) (Debate 4 – Nov 3)
- Is listing threatened fishes on the Endangered Species Act worthwhile or effective? (Debate 5 – Nov 5)
- Are Marine Protected Areas effective for highly migratory species? (Debate 6 – Nov 10)
- Is lethal sampling of threatened species to obtain data that may help with conservation ethically acceptable (Debate 7 – Dec 1)?
- Is it better for marine conservationists to advocate for people to eat sustainable seafood or to eat no seafood at all? (Debate 8 – Dec 3)
- Can fishes adapt to climate change? (Debate 9 – Dec 8)

### **Tips for finding papers:**

- Google Scholar <<http://scholar.google.com/>>),
- SeaWeb's "Ocean Citations" <<http://www.seaweb.org/resources/citations/index.php>>.
- Web of Science (Accessed online via RSMAS library)
- E-Journals (Accessed online via RSMAS Library <http://www.library.miami.edu/rsmaslib/>)
- Use template papers and high impact review papers from the literature as jumping off points. Take advantage of the cited reference search function on Web of Science to find papers which have cited these articles.
- Use a wide variety of search terms. For example, don't just search "coral reefs + recovery," search for "coral reefs" and a specific threat or management strategy. Keep a record of your past searches to stay efficient.
- Web of science/Web of knowledge is your friend. There will be a lot of information out there and much of it will focus solely on the threats. Perseverance is key.

### **Plagiarism:**

Plagiarism of any kind will not be tolerated and will automatically result in a failing grade.

Plagiarism.org writes:

*"All of the following are considered plagiarism:*

- *turning in someone else's work as your own*
- *copying words or ideas from someone else without giving credit*

- *failing to put a quotation in quotation marks*
- *giving incorrect information about the source of a quotation*
- *changing words but copying the sentence structure of a source without giving credit*
- *copying so many words or ideas from a source that it makes up the majority of your work, whether you give credit or not (see our section on "fair use" rules)*

*Most cases of plagiarism can be avoided, however, by citing sources. Simply acknowledging that certain material has been borrowed, and providing your audience with the information necessary to find that source, is usually enough to prevent plagiarism"*  
([http://www.plagiarism.org/plag\\_article\\_what\\_is\\_plagiarism.html](http://www.plagiarism.org/plag_article_what_is_plagiarism.html))