

Course Syllabus: **Marine Conservation Biology**  
University of Oregon | Oregon Institute of Marine Biology  
Spring 2016 | BI 457/557, (5 Credits)

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Time/place: Mondays, 08:30-5:00, Location TBD

**Summary:**

Marine Conservation Biology is the applied science behind the maintenance of biodiversity and the management of marine resources. We will examine prevailing dogma from diverse user groups through close examination of applied conservation case studies. Using readings, seminars, debates, writing, and field trips we will think critically and communicate effectively about the consequences of diversity loss at the levels of 'stocks', species, ecosystems, and genetics. We will assess threats to biodiversity (e.g. invasions, diseases, fishing, mineral extraction), and mechanisms for dealing with these risks, with an emphasis on marine reserves.

**Learning Outcomes:**

- 1) Students will gain an understanding of the key terminology, core issues, and science of marine conservation biology via reading, discussion, lectures and activities. [knowledge]
- 2) Comprehension of the topics will be demonstrated through active participation in group activities, debates, and a collaborative term paper, which will be *peer-reviewed and 'published' in an internal course e-journal*. [synthesis, application, evaluation]
- 3) Conservation of marine biodiversity requires an ability to think collectively in broad and creative ways. An emphasis throughout the course will be building skills in collaboration and teamwork, with groups of varying sizes. [collaboration, synthesis]

*Term Paper*

Every student will participate both as a 'lead' author AND as a 'junior' author on a term paper, through the whole science 'publication' process. The papers will be a literature review or synthesis of a particular topic relevant to marine conservation biology. Papers may also conduct novel analyses on existing data relevant to the topic. The paper will be prepared according to the in-class "e-journal" (Oregon Marine Conservation Biology Letters; OMCBL) guidelines (attached).

Term paper topics will be announced by lead authors on 11-April (wk 3), and class time will be devoted at this time to collaboratively agree to junior authors on each paper. Papers will be submitted for consideration in the course journal, and subsequently peer reviewed, revised, and possibly "published". The top ranked ~1/3 of the submitted and revised papers will be published in OMCBL on a secure server and made available to future classes at OIMB. Particularly promising papers may even form the basis for future research or submission to a real peer-reviewed journal.

*Debates*

Several topics covered in the class are fraught with disagreement between and within scientists, managers, and stakeholder groups. A useful approach for deeply understanding such topics is science-based debates. *We will conduct three debates, in weeks 3, 5, and 7.* Students will be randomly assigned to teams for each topic. There will be in-class time in weeks 2, 4, and 6 for research and strategy development prior to the debate on that topic in the following week.

Each debate team will collaboratively prepare a summary document of their key (e.g., 5-10) arguments, with references to published literature supporting those arguments. Valid resources must be peer-reviewed and be available on the web or as pdfs (posted to the class Canvas shared

space), or available as hard copies in the library. Citations of these references must be consistent and conform to the guidelines of Conservation Biology (the guidelines in the OMCBL e-journal).

On the debate day, each team's summary document must be shared with the instructor and the opposing team prior to the start of class. Each team will have prep time to review the opposing team's core summary document and the resources within prior to the start of the debate. The debate itself will be 1 hour in duration. Each team will have 10 initial minutes to present an opening statement (may include visual aids e.g., in a PowerPoint). Then each team will take turns debating the evidence in an orderly fashion with the help of moderators (instructor and TA). Importantly, the science-based debate approach **requires** that all points made in the debate be supported by peer-reviewed primary research or synthesis.

### Lectures

Each week we will have at least one or two lectures (e.g., 30-60 min), presented by the Instructor, and / or guest speakers, on a core topic in marine conservation biology (biodiversity, genetic diversity, biological invasions, mineral extraction, high latitude climate change, Allee effects, marine protected areas, etc.). These lectures and topics will be designed to augment the debates and ongoing research on the term papers. Each week's lecture will also have an associated assigned reading from the course textbook and from peer reviewed literature. (see schedule).

### Field trips

In weeks 2, 4, and 6 (coinciding with the debate prep weeks), we will make local field trips related to our studies. This will likely include visits to the intertidal area of a local marine protected area and to Newport to visit the Oregon Coast Aquarium and meet with staff from the Oregon Marine Reserves Program.

### Grading and (projected) Deadlines:

Grading will be based on following: [100 points total] Grading rubrics will be shared with students.

- 1) 10% - **General Participation** (lectures, field trips, punctuality, civility) [10 pts]
- 2) 50% - **Term Paper** [50 total pts]
  - a. *Contribution as junior author* [10 pts] (based on interview with individuals from the authorship team in wk 10)
  - b. *Contribution as lead author:* [40 total pts]
    - i. Term paper topic must be announced on 11-April (wk 3) [3 pts]
    - ii. 1st draft (at least intro, methods) submitted on 2-May (wk 6) [7 pts]
    - iii. Complete draft submitted on 16-May (wk 8) [20 pts]
    - iv. The anonymous reviews will be returned to authors on 23-May (wk 9)
    - v. Revisions and response to peer review 30-May (wk 10) [5 pts]
    - vi. Final submission, meeting journal guidelines 30-May (wk 10) [5 pts]
- 3) 10% - **Peer Review** [10 pts] – Complete drafts of term papers are due on 16-May (wk 8). Each student will review 1 paper (an instructor will serve as the 2nd reviewer). Peer reviews will be anonymous, *will maintain a civil and helpful tone*, and will be handled by the course Instructors (journal editors). Reviews must be submitted to the instructors by 12:00 pm on the 22-May (Sunday). Editors will return the reviews to authors on 23-May (wk 9).
- 4) 30% - **Debates** [30 total pts] – all members of each team get the same score any given week.
  - a. Topic 1 – debate prep document and participation [10 pts] on 11-April (wk 3)
  - b. Topic 2 – debate prep document and participation [10 pts] on 25-April (wk 5)
  - c. Topic 3 – debate prep document and participation [10 pts] on 9-May (wk 7)
- 5) **"Bonus credit"**: papers accepted for publication in OMCBL will confer 5 bonus points to the lead author and 2 bonus points to the junior author.
- 6) Note: there is no mid-term or final exam in this course.

**Course Text(s):**

The primary text for this course is: **Marine Conservation Biology: The Science of Maintaining the Sea's Biodiversity** (Ed. Norse and Crowder), Island Press, 2005. The University of Oregon Library system has an e-book subscription to the content of this book, which means that students do not have to buy this as a hard-copy book. For example, students can download and save individual chapters as PDFs. It is not an expensive book, and for those that prefer a hard-copy, it is available online and used for as little as ~\$25.

Most of the reading in this class will be based on sources students find during extensive research for debate preparation or the term papers. A couple of hardcopies of the course textbook and a few copies of other useful books relevant to our class will be on reserve from the library and available in our classroom all quarter for students. One of the books on reserve will be **Marine Community Ecology and Conservation** (Ed. Bertness et al), Sinauer & Assoc., 2014.

Finally, a good general conservation biology text (i.e., not specific to marine issues) that is also *TOTALLY FREE* as an e-book (thanks to the Society for Conservation Biology) is **Conservation Biology for All** (Eds. Sodhi and Ehrlich), Oxford University Press, 2010. It is available for download: [[https://conbio.org/images/content\\_publications/ConservationBiologyforAll\\_reducedsize.pdf](https://conbio.org/images/content_publications/ConservationBiologyforAll_reducedsize.pdf)]

**Student Conduct Code:**

All University of Oregon students are expected to follow the rules of the Student Conduct Code. These can be found at (<http://policies.uoregon.edu/vol-3-administration-student-affairs/ch-1-conduct/student-conduct-code>). Cheating or plagiarism by students is subject to the disciplinary process outlined in the code. Students are expected to be honest and ethical in their academic work. For example, you are all surely aware by now that there are many resources available to professors for passing writing through plagiarism filters.