



BIOL787

Biodiversity Conservation

S1 External 2014

Dept of Biological Sciences

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General Information

Unit convenor and teaching staff

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Unit Convenor

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E8B105

Credit points

4

Prerequisites

Admission to MRes

Corequisites

Co-badged status

Biol887

Unit description

This unit deals with the problem of conserving biodiversity as a whole rather than concentrating on individual species or populations. The unit is applied and multidisciplinary, drawing on such areas as ecology, evolutionary biology, biogeography, informatics and statistics. We will explore the concept of biodiversity in both the scientific and legislative arenas. The problem of measuring biodiversity is considered in detail, including the conceptual and practical impediments to measurement. Current and emerging threats to biodiversity are reviewed on a global scale, along with the practical and ethical arguments for conservation. An emphasis is given to analysing and interpreting patterns in biodiversity in space and time as a means of informing conservation decisions. Teaching will be via lectures and tutorials.

Important Academic Dates

Information about important academic dates including deadlines for withdrawing from units are available at <https://www.mq.edu.au/study/calendar-of-dates>

Learning Outcomes

On successful completion of this unit, you will be able to:

Knowledge of conservation biology: demonstrate knowledge of the concepts, principles and methods of conservation biology as practiced at the scale of ecological communities and above

Analysis and interpretation of biodiversity patterns: acquire, compile and analyse biodiversity data and interpret observed pattern in a conservation context

Conservation monitoring and planning: formulate a plan for the conservation of biodiversity for a specified region, making use of both available data, and additional data collected using a targeted monitoring procedure.

Scientific literacy and communication: Review, critically evaluate and synthesize diverse scientific literature in the area of conservation biology and communicate an understanding of this in a written form.

Assessment Tasks

Name	Weighting	Due
<u>Reading assignment</u>	15%	Weeks 4, 8 & 12
<u>Short Essay</u>	25%	Week 6
<u>Online test</u>	30%	Week 10
<u>Conservation Plan</u>	30%	Week 13

Reading assignment

Due: **Weeks 4, 8 & 12**

Weighting: **15%**

The unit is organised into 12 weekly topics (see unit schedule). Each week, you are to find a scientific paper (in a peer-reviewed journal) relevant to the topic, read it, and write a 300-500 word commentary. Every 4 weeks (on weeks 4, 8 and 12), you are to submit your work in the form of an annotated bibliography. Each submission is worth 5% of the assessment (adding up to 15%). Students are encouraged to submit early and feedback will be given on a rolling basis. Marks will be allocated on the basis of the choice of paper (relevance to topic), reflection (not just repeating the article) and writing quality.

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Short Essay

Due: **Week 6**

Weighting: **25%**

You will write a short essay addressing *one* question from the following list:

- 1.How many species are there on earth?
- 2.Why are there more species in the tropics than elsewhere?
- 3.Are some species more worthy of conservation efforts than others?
- 4.Why do we need biodiversity?
- 5.What is the single biggest threat to biodiversity in the 21st century?

If you have a different question you wish to research, please discuss your option with the convenor.

This essay needs to very focussed on answering the question because ***the maximum length is 1500 words!*** This total does not include references. Do not waffle. Be as concise as possible while making extensive use of the peer-reviewed literature to support your case. Don't review each paper in turn but rather determine what are the key points/issues/problems and address these. Importantly, ***provide an answer to the question!*** In other words, come to a decision and state it clearly.

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Online test

Due: **Week 10**

Weighting: **30%**

Instead of a final exam, there will be an online test to be completed in your own time. The test will be a combination of multiple-choice and short-answer questions and will be based on all lectures and tutorials given up to that point. The test will be available for a period of one week on the iLearn site. Once you begin a test, you will need to complete it within the time limit. Marks and feedback will become available after the test has been closed.

On successful completion you will be able to:

- Knowledge of conservation biology: demonstrate knowledge of the concepts, principles and methods of conservation biology as practiced at the scale of ecological communities and above
- Analysis and interpretation of biodiversity patterns: acquire, compile and analyse biodiversity data and interpret observed pattern in a conservation context
- Scientific literacy and communication: Review, critically evaluate and synthesize diverse scientific literature in the area of conservation biology and communicate an understanding of this in a written form.

Conservation Plan

Due: **Week 13**

Weighting: **30%**

You will prepare a conservation plan for prioritising land management and acquisition for conservation purposes in an Australian bioregion (to be determined). We will use existing data on species distributions sourced from the Atlas of Living Australia. From these data, you will interpret biodiversity pattern in order to make decisions about conservation prioritisation. Analyses for this assignment will be conducted during tutorials. Students can collaborate on making a conservation plan but write and submit their assignments individually. The plan is expected to be well illustrated with maps and graphs, have an extensive bibliography, and be **no more than 2000 words** (not including bibliography).

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- Conservation monitoring and planning: formulate a plan for the conservation of

biodiversity for a specified region, making use of both available data, and additional data collected using a targeted monitoring procedure.

- Scientific literacy and communication: Review, critically evaluate and synthesize diverse scientific literature in the area of conservation biology and communicate an understanding of this in a written form.

Delivery and Resources

Technology

This unit requires access to a computer and a reliable internet connection to complete tutorials and assignments. Both weekly tutorials (internal students) and on-campus sessions (external students) will be held in computer labs with the relevant software installed. Students attempting tutorials on their own will need to install particular software packages (details in tutorial notes). *Some of these packages are only available for Windows OS.*

Delivery for internal students

Internal students are expected to attend weekly lectures and tutorials. Times and venues can be found in the university timetable. If unable to make the scheduled times, please discuss options with the convenor.

Delivery for external students

Lectures are recorded and lectures are made available on the unit website. For tutorials, external students are expected to attend two weekend sessions. The dates for these sessions are: 22-23 March and 17-18 May. **Attendance at the on-campus sessions is strongly recommended** but not compulsory.

Unit website

Teaching materials and online communications will be via the unit website (ilearn.mq.edu.au).

Changes since last offering

There have been some minor changes since the last offering (2013) of this unit. The reading assignment is now spread over the semester, rather than being due at the end. The online tests have been consolidated into a single test and is a lower percentage of the total marks for the unit (with consequent increases in weightings for other assignments).

Unit Schedule

Activities are organised into weekly topics. Please note that the current schedule is provisional and is subject to minor changes.

Week	Topic	Lecture	Tutorial
1	Biodiversity and conservation	Biodiversity and conservation	Orientation
2	Measuring biodiversity	Measuring biodiversity	What is biodiversity?
3	Loss of biodiversity	Extinction and threatening processes	Threatened species
4	Habitat loss and fragmentation	Habitat loss and fragmentation	Island biogeography

5	Biodiversity informatics	Biodiversity informatics	Atlas of Living Australia
6	Biodiversity survey	Inventory and monitoring	Surveying biodiversity
7	Valuing biodiversity	Conservation ethics and valuing biodiversity	Biodiversity data analysis
8	Ecological communities	Communities and meta-communities	Mapping and estimating biodiversity
9	Global biodiversity patterns	Global biodiversity patterns	Prioritisation for conservation
10	Conservation biogeography	Conservation biogeography	Online test
11	Conservation planning	Conservation planning	Conservation planning
12	Ecological management and restoration	Ecological management and restoration	Drop-in session
13		No lecture	No tutorial

Policies and Procedures

Macquarie University policies and procedures are accessible from [Policy Central](#). Students should be aware of the following policies in particular with regard to Learning and Teaching:

Academic Honesty Policy http://mq.edu.au/policy/docs/academic_honesty/policy.html

Assessment Policy <http://mq.edu.au/policy/docs/assessment/policy.html>

Grading Policy <http://mq.edu.au/policy/docs/grading/policy.html>

Grade Appeal Policy <http://mq.edu.au/policy/docs/gradeappeal/policy.html>

Grievance Management Policy http://mq.edu.au/policy/docs/grievance_management/policy.html

Disruption to Studies Policy http://www.mq.edu.au/policy/docs/disruption_studies/policy.html *The Disruption to Studies Policy is effective from March 3 2014 and replaces the Special Consideration Policy.*

In addition, a number of other policies can be found in the [Learning and Teaching Category](#) of Policy Central.

Student Code of Conduct

Macquarie University students have a responsibility to be familiar with the Student Code of Conduct: https://students.mq.edu.au/support/student_conduct/

Student Support

Macquarie University provides a range of support services for students. For details, visit <http://students.mq.edu.au/support/>

Learning Skills

Learning Skills (mq.edu.au/learningskills) provides academic writing resources and study

strategies to improve your marks and take control of your study.

- [Workshops](#)
- [StudyWise](#)
- [Academic Integrity Module for Students](#)
- [Ask a Learning Adviser](#)

Student Services and Support

Students with a disability are encouraged to contact the [Disability Service](#) who can provide appropriate help with any issues that arise during their studies.

Student Enquiries

For all student enquiries, visit Student Connect at ask.mq.edu.au

IT Help

For help with University computer systems and technology, visit <http://informatics.mq.edu.au/help/>.

When using the University's IT, you must adhere to the [Acceptable Use Policy](#). The policy applies to all who connect to the MQ network including students.