



BIOL8610

Conservation and Management of Wild Populations

Session 1, Weekday attendance, North Ryde 2021

Archive (Pre-2022) - Department of Biological Sciences

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Notice

As part of [Phase 3 of our return to campus plan](#), most units will now run tutorials, seminars and other small group activities on campus, and most will keep an online version available to those students unable to return or those who choose to continue their studies online.

To check the availability of face-to-face activities for your unit, please go to [timetable viewer](#). To check detailed information on unit assessments visit your unit's iLearn space or consult your unit convenor.

General Information

Unit convenor and teaching staff

Linda Beaumont

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Credit points

10

Prerequisites

GSE804 or (BIOL8750 or BIOL875) or admission to MMarScMgt or MConsBiol or GradDipConsBiol or GradCertConsBiol or MSc or MScInnovationBioConsMgmt

Corequisites

Co-badged status

BIOL7610

Unit description

This unit deals with the theory and practice of the conservation and management of wild populations of animals and plants. Lectures and tutorials concentrate on the application of population biology to problems in wildlife conservation, including demographics, risk assessment, conservation genetics and monitoring protocols. Case studies will drawn from Australia and the rest of the world.

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:

ULO1: Demonstrate knowledge of the processes influencing the demography and genetic structure of wild populations, and of the theory, principles, and methods of managing wild populations for conservation purposes

ULO2: Gather, critically evaluate and synthesise diverse information sources to make an assessment of extinction risk, potential conservation actions, and critical knowledge gaps, for particular species and populations

ULO3: Describe methods used to monitor wild populations, including the particular population-level parameters being measured, the potential sampling biases of these methods, ethical considerations, and their application to conservation

ULO4: Design a scientific study that implements population monitoring protocols to critically assess a conservation action, or addresses a critical knowledge gap, for a particular species or population

ULO5: Review, critically evaluate and synthesise diverse scientific literature in the area of conservation biology and communicate an understanding of this in a written form

General Assessment Information

Academic Honesty – please read, as this is very important

Presenting the work of another person as one's own is a serious breach of the University's rules and carries significant penalties. The University's Academic Honesty Policy can be found at http://www.mq.edu.au/policy/docs/academic_honesty/policy.html

In this unit, we will be checking written work for plagiarism using TURNITIN. Penalties for plagiarism may include a zero mark for the assignment or in more extreme cases, failure of the unit. Plagiarism WILL be noted on your academic record. Full details of penalties can be found at http://www.mq.edu.au/policy/docs/academic_honesty/schedule_penalties.html

Extensions, penalties and disruptions to studies

Late assignments will attract a penalty of **10%** of the total marks allocated to the exercise per day. You may hand in your work after the due date and escape penalty only if you have an acceptable reason (usually a medical certificate). Discuss your problem with the Lecturer as early as possible before the due date, however note that all requests for extensions MUST be submitted using the online form: ask.mq.edu.au.

Information about the Disruptions to Studies policy and procedure is online at Policy Central: http://www.mq.edu.au/policy/docs/disruption_studies/procedure.html.

Information on managing your Disruptions to Studies: http://students.mq.edu.au/student_admin/manage_your_study_program/disruption_to_studies/

Assessment Tasks

| Name | Weighting | Hurdle | Due |
|--|-----------|--------|-----------------|
| Developing a grant application | 40% | No | Week 13, 6 June |
| Project Outline: Conservation of an Australasian species | 20% | No | Week 8, 2 May |

| Name | Weighting | Hurdle | Due |
|---------------------------|-----------|--------|-----------------------|
| <u>Species Assessment</u> | 20% | No | Week 5, 28 March |
| <u>Short Test</u> | 20% | No | 14 March and 11 April |

Developing a grant application

Assessment Type ¹: Report

Indicative Time on Task ²: 29 hours

Due: **Week 13, 6 June**

Weighting: **40%**

You will develop a grant application to undertake research on a species or ecological community of conservation interest. The application will include essential background, research question, study design, ethical concerns, appropriate timelines, realistic budget and expected outcomes.

On successful completion you will be able to:

- Demonstrate knowledge of the processes influencing the demography and genetic structure of wild populations, and of the theory, principles, and methods of managing wild populations for conservation purposes
- Gather, critically evaluate and synthesise diverse information sources to make an assessment of extinction risk, potential conservation actions, and critical knowledge gaps, for particular species and populations
- Describe methods used to monitor wild populations, including the particular population-level parameters being measured, the potential sampling biases of these methods, ethical considerations, and their application to conservation
- Design a scientific study that implements population monitoring protocols to critically assess a conservation action, or addresses a critical knowledge gap, for a particular species or population
- Review, critically evaluate and synthesise diverse scientific literature in the area of conservation biology and communicate an understanding of this in a written form

Project Outline: Conservation of an Australasian species

Assessment Type ¹: Report

Indicative Time on Task ²: 15 hours

Due: **Week 8, 2 May**

Weighting: **20%**

Prepare a concise outline for a project that involves monitoring and/or experimental manipulation of your chosen Australasian species that assesses a conservation action or addresses a critical knowledge gap. This proposal will include a clear research question(s), a description of the data to be collected and a brief description of the experimental or sampling design.

On successful completion you will be able to:

- Demonstrate knowledge of the processes influencing the demography and genetic structure of wild populations, and of the theory, principles, and methods of managing wild populations for conservation purposes
- Gather, critically evaluate and synthesise diverse information sources to make an assessment of extinction risk, potential conservation actions, and critical knowledge gaps, for particular species and populations
- Describe methods used to monitor wild populations, including the particular population-level parameters being measured, the potential sampling biases of these methods, ethical considerations, and their application to conservation
- Design a scientific study that implements population monitoring protocols to critically assess a conservation action, or addresses a critical knowledge gap, for a particular species or population
- Review, critically evaluate and synthesise diverse scientific literature in the area of conservation biology and communicate an understanding of this in a written form

Species Assessment

Assessment Type ¹: Report

Indicative Time on Task ²: 15 hours

Due: **Week 5, 28 March**

Weighting: **20%**

Prepare a concise report on a threatened native Australasian species. The species must be listed on a national list of threatened species (such as the EPBC List of Threatened Fauna) or on the IUCN Red List).

On successful completion you will be able to:

- Demonstrate knowledge of the processes influencing the demography and genetic

structure of wild populations, and of the theory, principles, and methods of managing wild populations for conservation purposes

- Gather, critically evaluate and synthesise diverse information sources to make an assessment of extinction risk, potential conservation actions, and critical knowledge gaps, for particular species and populations
- Review, critically evaluate and synthesise diverse scientific literature in the area of conservation biology and communicate an understanding of this in a written form

Short Test

Assessment Type ¹: Quiz/Test

Indicative Time on Task ²: 15 hours

Due: **14 March and 11 April**

Weighting: **20%**

There will be several short tests to be completed in your own time. Each test will be based on any lecture or tutorial material given up to that point. The questions may involve interpretation of a graph or some data, or may be numerical.

On successful completion you will be able to:

- Demonstrate knowledge of the processes influencing the demography and genetic structure of wild populations, and of the theory, principles, and methods of managing wild populations for conservation purposes

¹ If you need help with your assignment, please contact:

- the academic teaching staff in your unit for guidance in understanding or completing this type of assessment
- the [Writing Centre](#) for academic skills support.

² Indicative time-on-task is an estimate of the time required for completion of the assessment task and is subject to individual variation

Delivery and Resources

This unit is about the conservation and management of species and populations, with an emphasis on the Australasian context. The unit is designed for students in the Master of Research or students undertaking a coursework Master. An undergraduate background in science, with a significant biological - particularly ecological - component, is assumed. It is also assumed that students have a working knowledge of Excel or a related program and a basic

understanding of statistics.

Lectures will be pre-recorded, and students are required to listen to them prior to attending the tutorial. There will be no tutorial in the first week, to provide students with sufficient time to listen to the lectures for weeks 1 and 2 prior to the first tutorial, which will be in week 2. Each week, lectures and tutorials will be supplemented with readings or activities to increase the depth of students' learning. As a 10 credit point unit, it is expected that students will spend ~ 10 hours per week (including during the two-week recess) on this unit.

Students are expected to attend the tutorials at the allocated time.

Unit Schedule

| Week | Date (Mondays) | Lecture | Tutorial | Assessments |
|--------|----------------|---|---------------------------------|--------------------------|
| 1 | 22 Feb | Overview of Australian Biodiversity; Ethics | No tutorial | |
| 2 | 1 Mar | Extinction Events and Conservation Issues | SPRAT and IUCN | |
| 3 | 8 Mar | Species Concepts in Conservation; Conservation of Populations | Exploring Species Distributions | Test 1: 14 March |
| 4 | 15 Mar | Predation; Invasive Species | Population Declines | |
| 5 | 22 Mar | Designing of Wildlife Experiments; Monitoring Wildlife Populations | Mark-Recapture data | Species Assess: 28 March |
| 6 | 29 Mar | Population Dynamics | Life Table Analysis | |
| Recess | 5 Apr | MID SEMESTER BREAK | | Test 2: 11 April |
| Recess | 12 Apr | MID SEMESTER BREAK | | |
| 7 | 19 Apr | Risk of Extinction | Population Viability Analysis | |
| 8 | 26 Apr | Conservation Genetics; eDNA | Bioinformatics | Project Outline: 2 May |
| 9 | 3 May | Conservation Genetics | Landscape Genetics | |
| 10 | 10 May | Climate Change and Wild Populations; Reintroductions and Translocations | Tutorial | |

| | | | | |
|----|--------|---|-------------|--------------------------|
| 11 | 17 May | Sustainable Harvesting; Role of Government | Tutorial | |
| 12 | 24 May | Indigenous Engagement | Tutorial | |
| 13 | 31 May | Guests speakers | No tutorial | Project Proposal: 6 June |

Policies and Procedures

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

- [Academic Appeals Policy](#)
- [Academic Integrity Policy](#)
- [Academic Progression Policy](#)
- [Assessment Policy](#)
- [Fitness to Practice Procedure](#)
- [Grade Appeal Policy](#)
- [Complaint Management Procedure for Students and Members of the Public](#)
- [Special Consideration Policy](#)

Students seeking more policy resources can visit [Student Policies \(https://students.mq.edu.au/support/study/policies\)](https://students.mq.edu.au/support/study/policies). It is your one-stop-shop for the key policies you need to know about throughout your undergraduate student journey.

To find other policies relating to Teaching and Learning, visit [Policy Central \(https://policies.mq.edu.au\)](https://policies.mq.edu.au) and use the [search tool](#).

Student Code of Conduct

Macquarie University students have a responsibility to be familiar with the Student Code of Conduct: <https://students.mq.edu.au/admin/other-resources/student-conduct>

Results

Results published on platform other than [eStudent](#), (eg. iLearn, Coursera etc.) or released directly by your Unit Convenor, are not confirmed as they are subject to final approval by the University. Once approved, final results will be sent to your student email address and will be made available in [eStudent](#). For more information visit ask.mq.edu.au or if you are a Global MBA student contact globalmba.support@mq.edu.au

Student Support

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

dents.mq.edu.au/support/

Learning Skills

Learning Skills (mq.edu.au/learningskills) provides academic writing resources and study strategies to help you improve your marks and take control of your study.

- [Getting help with your assignment](#)
- [Workshops](#)
- [StudyWise](#)
- [Academic Integrity Module](#)

The Library provides online and face to face support to help you find and use relevant information resources.

- [Subject and Research Guides](#)
- [Ask a Librarian](#)

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

If you are a Global MBA student contact globalmba.support@mq.edu.au

IT Help

For help with University computer systems and technology, visit http://www.mq.edu.au/about_us/offices_and_units/information_technology/help/.

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

Changes from Previous Offering

The one-day on-campus workshop is no longer running, although an online version can run if external student require it.

Changes since First Published

| Date | Description |
|------------|---|
| 04/02/2021 | On campus workshop has been removed. |
| 02/02/2021 | Special Circumstance offerings joined to this unit guide. |