BIOL8610

Conservation and Management of Wild Populations

Session 1, In person-scheduled-weekday, North Ryde 2022

School of Natural Sciences

Contents

General Information

Unit convenor and teaching staff
Convenor
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Lecturer/Tutor
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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

Late assessments will be accepted, but please note the following conditions:

General Faculty Policy on assessment submission deadlines and late submissions:

All assessments must be submitted by **5:00 pm on their due date**.

Should these assessments be missed due to illness or misadventure, students should apply for Special Consideration. Otherwise, the following penalty will apply for late submissions:

A 12-hour grace period will be given after which the following deductions will be applied to the awarded assessment mark: 12 to 24 hours late = 10% deduction; for each day thereafter, an additional 10% per day or part thereof will be applied until five days beyond the due date. After this time, a mark of zero (0) will be given. For example, an assessment worth 20% is due 5 pm on 1 January. Student A submits the assessment at 1 pm, 3 January. The assessment received a mark of 15/20. A 20% deduction is then applied to the mark of 15, resulting in the loss of three (3) marks. Student A is then awarded a final mark of 12/20.

Assessment Tasks

Name	Weighting	Hurdle	Due
Species Assessment	20%	No	20 March, 5pm
Short Test	20%	No	3 April and 17 April, 5pm
Project Outline: Conservation of an Australasian species	20%	No	8 May, 5pm
Developing a grant application	40%	No	5 June, 5pm

Species Assessment

Assessment Type [1]: Report
Indicative Time on Task [2]: 15 hours
Due: **20 March, 5pm**
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: **3 April and 17 April, 5pm**
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

Project Outline: Conservation of an Australasian species

Assessment Type [1]: Report
Indicative Time on Task [2]: 15 hours
Due: **8 May, 5pm**
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

Developing a grant application

Assessment Type [1]: Report
Indicative Time on Task [2]: 29 hours
Due: **5 June, 5pm**
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
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[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

Timetable

Lectures will be delivered live online on **Tuesdays, 5-7pm**. The zoom link for lectures will be placed on iLearn. The iLearn link for this unit will open on 18 February, 2021.

Tutorials can be undertaken either in person or online (of these, in person is preferred as it provides for a richer experience). Tutorials will be run on Fridays from **2-4pm, in 11 Wallys Walk room 270**. The zoom link will also be placed on iLearn.

There is no formal text book, although links to recommended reading will be placed in iLearn.

COVID Information and on-campus classes

On-campus teaching continues to be scheduled for Session 1, 2022. Masks are compulsory for all classes in indoor spaces and social distancing will be implemented wherever possible. Students will also be required to sanitise surfaces before and after use.

Students are requested to minimise the risk of spreading COVID to themselves and others in accordance with the university and NSW Health guidelines: https://www.mq.edu.au/about/coronavirus-faqs and https://www.nsw.gov.au/covid-19/stay-safe.

Any further requirements or changes to units in relation to COVID will be communicated to students via iLearn.

Unit Schedule

Week	Date (Tuesdays)	Lecture	Tutorial (Fridays)	Assessments
1	22-Feb	What is Conservation Biology?	No tutorial	
		Australian Biodiversity		
2	1-Mar	Extinction Events and Conservation Issues	SPRAT and IUCN	
3	8-Mar	Species Concepts in Conservation;	Exploring Species Distributions	
		Conservation Law in Australia		
4	15-Mar	Predation;	Population Declines	Species Assessment due Sunday, 20 March, 5pm
		Invasive Species		
5	22-Mar	Designing of Wildlife Experiments;	TBA	
		Monitoring Wildlife Populations		
6	29-Mar	Population Dynamics	Life Table Analysis	Test 1 due Sunday, 3 April, 5pm
7	5-Apr	Risk of Extinction Conservation approaches	Population Viability Analysis	
RECESS	11-Apr	MID SEMESTER BREAK		Test 2 due Sunday, 17 April, 5pm
RECESS	18-Apr	MID SEMESTER BREAK		
8	26-Apr	Populaton Genetics;	crispr	
		eDNA		
9	3-May	Conservation Genetics	Landscape Genetics (Rachael Dudaniec)	Project Outline due Sunday 8 May, 5pm
10	10-May	Climate Change and Wild Populations; Reintroductions and Translocations	Translocation tutorial	
11	17-May	Ethics;	TBA	
		Species Distribution Models		

12	24-May	Indigenous Engagement; Sustainable Harvesting	TBA	
13	31-May	De-extinction	De-extinction debate	Grant Proposal due Sunday, 5 June, 5pm

Policies and Procedures

Macquarie University policies and procedures are accessible from Policy Central (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
- Assessment Procedure
- Complaints Resolution 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). 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) 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

Academic Integrity

At Macquarie, we believe academic integrity – honesty, respect, trust, responsibility, fairness and courage – is at the core of learning, teaching and research. We recognise that meeting the expectations required to complete your assessments can be challenging. So, we offer you a range of resources and services to help you reach your potential, including free online writing and maths support, academic skills development and wellbeing consultations.

Student Support

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

The Writing Centre

The Writing Centre provides resources to develop your English language proficiency, academic writing, and communication skills.

- Workshops
- Chat with a WriteWISE peer writing leader
- Access StudyWISE
- Upload an assignment to Studiosity
- Complete the 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

Macquarie University offers a range of Student Support Services including:

- IT Support
- Accessibility and disability support with study
- Mental health support
- Safety support to respond to bullying, harassment, sexual harassment and sexual assault
- Social support including information about finances, tenancy and legal issues

Student Enquiries

Got a question? Ask us via AskMQ, or contact Service Connect.

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.