



# BIOL761

## Conservation and Management of Wild Populations

S1 External 2019

*Dept of Biological Sciences*

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#### Disclaimer

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## General Information

Unit convenor and teaching staff

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Credit points

4

Prerequisites

Admission to MRes

Corequisites

Co-badged status

Biol761 Internal

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 be 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:

Demonstrate knowledge of the concepts, principles and methods of conservation biology as practiced at the scale of species and populations, including: 1) the processes influencing the demography and genetic structure of wild populations; 2) the mechanisms by which wild populations become locally and globally extinct; 3) procedures for prioritising species and populations for conservation; and 4) theory and practice 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.

## General Assessment Information

### Assessment details

Details of assessments will be provided on iLearn and in class.

All assessments must be correctly cited and referenced using the same format at the journal. See here for details <https://esajournals.onlinelibrary.wiley.com/journal/19399170/>

### Assignment submission

All assignments will be digitally submitted through the appropriate Turnitin submission link on iLearn. **No hardcopy / paper submissions are needed.** All assessments need to be written in the students own words.

### Academic honesty

**All assessments need to be written in the students own words.** The penalties imposed by the University for plagiarism are serious and may include expulsion from the University. **ANY evidence of plagiarism WILL be dealt with following University policy.** Penalties for plagiarism range from a loss of marks to awarding of a zero depending on the level of plagiarism and reporting to Faculty disciplinary committee.

### Extensions, penalties and Disruptions to Studies

The deadlines for assignments are not negotiable. If an assignment is submitted late a penalty of -10% of the mark allocated for the assignment will be deducted per day that any work is submitted late (i.e. 5 days late = -50% of marks available).

**If you experience a serious and unavoidable disruption to your studies and require an extension for an assessment please submit a Disruptions to Studies notification via [ask.mq.edu.au](https://ask.mq.edu.au) with supporting documentation, and a Professional Authority Form completed**

**by your health care professional. If you anticipate a potentially serious and unavoidable disruption (e.g. upcoming surgery) speak to the unit convenor early and apply for an extension before the due date.**

Please note the extensions are not available directly via the convenor, **all request must be made via AskMq as detailed above.**

### Unit completion

To pass this unit, students need to achieve an overall minimum grade of 50%.

### Assessment submission

Submissions of all assessments for this unit will be electronic.

## Assessment Tasks

Name	Weighting	Hurdle	Due
<a href="#">Short Test</a>	20%	No	Every 3rd week
<a href="#">Species Assessment</a>	25%	No	Week 4
<a href="#">Project Outline</a>	25%	No	Week 8
<a href="#">Project Proposa</a>	30%	No	Week 13

## Short Test

Due: **Every 3rd week**

Weighting: **20%**

There will be a total of 4 open book tests (worth 5 marks each) to be completed in your own time. Each test will consist of a single short-answer question and will be based on any lecture or tutorial material given up to that point. The question will normally involve interpretation of a graph or some data. You will have one week in which to prepare and submit an answer to the question. Marks and feedback will become available after the test has been closed.

On successful completion you will be able to:

- Demonstrate knowledge of the concepts, principles and methods of conservation biology as practiced at the scale of species and populations, including: 1) the processes influencing the demography and genetic structure of wild populations; 2) the mechanisms by which wild populations become locally and globally extinct; 3)

procedures for prioritising species and populations for conservation; and 4) theory and practice of managing wild populations for conservation purposes.

## Species Assessment

Due: **Week 4**

Weighting: **25%**

Prepare a concise report (of no more than 2 pages) 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](#)). This presentation must address three points:

- **Risk Assessment:** What is the current conservation status of the species? What criteria and evidence were used to make this assessment? What are the most important threats or other problems for this species?
- **Conservation Action:** Propose one (1) potential conservation action that could lessen the extinction risk of the species. What problem or threat does this action address?
- **Knowledge Gap:** Propose one (1) critical knowledge gap that must be addressed to better manage or assess this species. Why do we need to address this knowledge gap?

On successful completion you will be able to:

- Demonstrate knowledge of the concepts, principles and methods of conservation biology as practiced at the scale of species and populations, including: 1) the processes influencing the demography and genetic structure of wild populations; 2) the mechanisms by which wild populations become locally and globally extinct; 3) procedures for prioritising species and populations for conservation; and 4) theory and practice 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.

## Project Outline

Due: **Week 8**

Weighting: **25%**

Prepare a concise outline for a project that involves monitoring and/or experimental manipulation of your chosen Australasian species (the same as for your Species Assessment) 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. This project will be the same as you use for your Project Proposal. The outline should be no more than three pages, including figures and references.

On successful completion you will be able to:

- Demonstrate knowledge of the concepts, principles and methods of conservation biology as practiced at the scale of species and populations, including: 1) the processes influencing the demography and genetic structure of wild populations; 2) the mechanisms by which wild populations become locally and globally extinct; 3) procedures for prioritising species and populations for conservation; and 4) theory and practice of managing wild populations for conservation purposes.
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- 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 Proposa

Due: **Week 13**

Weighting: **30%**

You will make a Project Proposal, including essential background, research question, study design, ethical concerns, appropriate timelines, realistic budget and expected outcomes, that expands upon your Project Outline assignment. This proposal will be in the form of an application for a grant for funding over a 3-year period.

On successful completion you will be able to:

- Demonstrate knowledge of the concepts, principles and methods of conservation biology as practiced at the scale of species and populations, including: 1) the processes influencing the demography and genetic structure of wild populations; 2) the mechanisms by which wild populations become locally and globally extinct; 3) procedures for prioritising species and populations for conservation; and 4) theory and

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## Delivery and Resources

### 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

Weekly lectures will be available online through the unit website. Tutorials can either be completed remotely or by attendance at the two weekend on-campus sessions. Dates for the on-campus sessions can be found in the university timetable and will be also provided in Lecture 1. **Attendance at on-campus sessions is highly recommended** but not compulsory.

### Textbook

There is no required textbook for this unit, although the following is a recommended reference:

- Mills (2013) *Conservation of Wildlife Populations: Demography, Genetics and Management*. Wiley-Blackwell.

### Computing requirements

Access to a computer with basic office software and an internet connection is required for assignments. Some tutorials require software that runs on Windows. A computer lab with PCs running Windows 8 will be used during tutorials and is also available at other times to postgraduate coursework students.

## Unit Schedule

### Tutorials for external students.

On two separate weekends a tutorial class will be run on campus. Previously these have been run on a Saturday (9 am to 5 pm). The following Sunday will be made available if any additional time is required.

The classes will cover all the tutorials and provide an opportunity to ensure that all students are familiar with the materials covered in the unit; discuss assignments with Dr Chariton; and to interact with other external students.

All external students are expected to attend these classes.

External tutorials will be held on:

**Saturday 24<sup>th</sup> March (Sunday 25<sup>th</sup> March if required) and**

**Saturday 19<sup>th</sup> May (Sunday 20<sup>th</sup> May if required).**

## Learning and Teaching Activities

Review, critically evaluate and synthesise diverse scientific literature in the area of conservation biology.

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

## Policies and Procedures

Macquarie University policies and procedures are accessible from [Policy Central \(https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central\)](https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central). 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](#) (**Note:** *The Special Consideration Policy is effective from 4 December 2017 and replaces the Disruption to Studies Policy.*)

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

If you would like to see all the policies relevant to Learning and Teaching visit [Policy Central](https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central) (<https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/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/study/getting-started/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](https://ask.mq.edu.au) or if you are a Global MBA student contact [globalmba.support@mq.edu.au](mailto:globalmba.support@mq.edu.au)

## 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](https://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](https://ask.mq.edu.au)

If you are a Global MBA student contact [globalmba.support@mq.edu.au](mailto: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/](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.

## Graduate Capabilities

### PG - Capable of Professional and Personal Judgment and Initiative

Our postgraduates will demonstrate a high standard of discernment and common sense in their professional and personal judgment. They will have the ability to make informed choices and decisions that reflect both the nature of their professional work and their personal perspectives.

This graduate capability is supported by:

#### Learning outcome

- 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.

#### Assessment tasks

- Project Outline
- Project Proposa

### PG - Discipline Knowledge and Skills

Our postgraduates will be able to demonstrate a significantly enhanced depth and breadth of knowledge, scholarly understanding, and specific subject content knowledge in their chosen fields.

This graduate capability is supported by:

#### Learning outcomes

- Demonstrate knowledge of the concepts, principles and methods of conservation biology as practiced at the scale of species and populations, including: 1) the processes influencing the demography and genetic structure of wild populations; 2) the mechanisms by which wild populations become locally and globally extinct; 3) procedures for prioritising species and populations for conservation; and 4) theory and practice of managing wild populations for conservation purposes.
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- Review, critically evaluate and synthesise diverse scientific literature in the area of conservation biology and communicate an understanding of this in a written form.

## **Assessment tasks**

- Short Test
- Species Assessment
- Project Outline
- Project Proposa

## **PG - Critical, Analytical and Integrative Thinking**

Our postgraduates will be capable of utilising and reflecting on prior knowledge and experience, of applying higher level critical thinking skills, and of integrating and synthesising learning and knowledge from a range of sources and environments. A characteristic of this form of thinking is the generation of new, professionally oriented knowledge through personal or group-based critique of practice and theory.

This graduate capability is supported by:

## **Learning outcomes**

- 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.

## **Assessment tasks**

- Species Assessment
- Project Outline
- Project Proposa

## PG - Research and Problem Solving Capability

Our postgraduates will be capable of systematic enquiry; able to use research skills to create new knowledge that can be applied to real world issues, or contribute to a field of study or practice to enhance society. They will be capable of creative questioning, problem finding and problem solving.

This graduate capability is supported by:

### Learning outcomes

- 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.

### Assessment tasks

- Species Assessment
- Project Outline
- Project Proposa

## PG - Effective Communication

Our postgraduates will be able to communicate effectively and convey their views to different social, cultural, and professional audiences. They will be able to use a variety of technologically supported media to communicate with empathy using a range of written, spoken or visual formats.

This graduate capability is supported by:

### Learning outcomes

- 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.

## **Assessment tasks**

- Species Assessment
- Project Outline
- Project Proposa

## **PG - Engaged and Responsible, Active and Ethical Citizens**

Our postgraduates will be ethically aware and capable of confident transformative action in relation to their professional responsibilities and the wider community. They will have a sense of connectedness with others and country and have a sense of mutual obligation. They will be able to appreciate the impact of their professional roles for social justice and inclusion related to national and global issues

This graduate capability is supported by:

## **Learning outcomes**

- 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.

## **Assessment tasks**

- Project Outline
- Project Proposa