



# BIOL349

## Biodiversity and Conservation

S2 Day 2017

*Dept of Biological Sciences*

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## General Information

Unit convenor and teaching staff

Unit Convenor

Jane Williamson

[jane.williamson@mq.edu.au](mailto:jane.williamson@mq.edu.au)

Contact via [jane.williamson@mq.edu.au](mailto:jane.williamson@mq.edu.au)

W21B 103

Tutor

Nola Hancock

[nola.hancock@mq.edu.au](mailto:nola.hancock@mq.edu.au)

Contact via [nola.hancock@mq.edu.au](mailto:nola.hancock@mq.edu.au)

E8C 153

Tutor

Louise Tosetto

[louise.tosetto@mq.edu.au](mailto:louise.tosetto@mq.edu.au)

Contact via [louise.tosetto@mq.edu.au](mailto:louise.tosetto@mq.edu.au)

W21B 101

Technician

Muhammad Masood

[muhammad.masood@mq.edu.au](mailto:muhammad.masood@mq.edu.au)

Contact via 98508217

F5A 427

Credit points

3

Prerequisites

(39cp at 100 level or above) including BIOL227 and BIOL235

Corequisites

BIOL313 or BIOL316 or BIOL318 or BIOL334 or BIOL341 or BIOL347 or BIOL362 or BIOL368 or BIOL369 or BIOL372 or BIOL373

Co-badged status

### Unit description

This unit covers the major themes of biodiversity and conservation: patterns of biodiversity, principles of conservation biology, human impacts, and management principles. Topics include global biodiversity, threatening processes, protected area and off-reserve conservation, habitat fragmentation, restoration ecology, climate change impacts, and management. Much of the focus is on Australian examples. Field and laboratory work are an important component of this unit and are conducted in two compulsory on-campus sessions.

## Important Academic Dates

Information about important academic dates including deadlines for withdrawing from units are available at [http://students.mq.edu.au/student\\_admin/enrolmentguide/academicdates/](http://students.mq.edu.au/student_admin/enrolmentguide/academicdates/)

## Learning Outcomes

1. Evaluate the major patterns and services provided by biodiversity globally
2. Identify key threatening processes that lead to the loss of biodiversity, including those experienced through the PACE activity
3. Critically evaluate and synthesise diverse information sources on a current, real-world conservation issue, and communicate that understanding using a variety of techniques
4. Understand conservation management plans for practical application using principles of conservation biology
5. Evaluate the efficacy of new conservation management strategies in a professional context

## General Assessment Information

### ASSESSMENT DETAILS

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

### ASSIGNMENT SUBMISSION

All assignments will be digitally submitted through the appropriate Turnitin submission link on iLearn. All assessments need to be written in the student's own words.

### ACADEMIC HONESTY

All assessments need to be written in the student's 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 will be imposed for each assessment and clearly defined in marking guides. Further penalties

imposed by the Faculty disciplinary committee may range from a loss of all marks and the award of a zero depending on the circumstances.

## EXTENSIONS, PENALTIES AND DISRUPTION 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](mailto: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.

## UNIT COMPLETION

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

## Assessment Tasks

Name	Weighting	Hurdle	Due
<a href="#"><u>Seminar</u></a>	10%	26th August	
<a href="#"><u>Blog</u></a>	5%	26th August / 4th September	
<a href="#"><u>Assessment status of a species</u></a>	20%	3rd October	
<a href="#"><u>PACE Plan of Management</u></a>	25%	16th October	
<a href="#"><u>Final exam</u></a>	40%	Examination period	

## Seminar

Due: **26th August**

Weighting: **10%**

You will prepare a 10-minute talk that summarises and critically appraises a journal article chosen from the recent (last 5 years) conservation biology literature. The article you choose should report and interpret new information, not a review article or opinion piece. The content of the article can be terrestrial, freshwater or marine. Please check your article is suitable with the unit convenor at least one week before the on-campus session. No props other than the PowerPoint presentation are to be used. Students will be assessed on the seminar content and presentation quality, and their ability to answer questions. Students will also be assessed on their contribution during question time of the other student talks. A pdf of your final PowerPoint presentation must be emailed to the unit convenor by 9 am 26 August 2017.

This Assessment Task relates to the following Learning Outcomes:

- Evaluate the major patterns and services provided by biodiversity globally
- Identify key threatening processes that lead to the loss of biodiversity, including those experienced through the PACE activity
- Critically evaluate and synthesise diverse information sources on a current, real-world conservation issue, and communicate that understanding using a variety of techniques
- Evaluate the efficacy of new conservation management strategies in a professional context

## Blog

Due: **26th August / 4th September**

Weighting: **5%**

You will prepare a 500-word post about the article you presented for the oral seminar and post it via the iLearn website onto the unit's 'The Conversation Piece' blog. Follow the non-technical style of articles written in *The Conversation* (<https://theconversation.com/au/environment>) but not their word count. Your blog is due by 9am on 26th August.

You will look at other student's posts and comment (intelligently and constructively) on at least three on the website by 9am on 4th September

This Assessment Task relates to the following Learning Outcomes:

- Evaluate the major patterns and services provided by biodiversity globally
- Identify key threatening processes that lead to the loss of biodiversity, including those experienced through the PACE activity
- Critically evaluate and synthesise diverse information sources on a current, real-world conservation issue, and communicate that understanding using a variety of techniques
- Evaluate the efficacy of new conservation management strategies in a professional context

## Assessment status of a species

Due: **3rd October**

Weighting: **20%**

You will write a 1,000-word essay on the threatened status of an animal or plant species that interests you, that occurs in NSW, and that is not already listed by either the NSW Scientific Committee or the Fisheries Scientific Committee. The species can be terrestrial, freshwater or marine but must be from a different habitat grouping from the one you did your seminar on. From the literature you will identify the history of the species in NSW, threats challenging the species' persistence, and nominate a level of threat to the species in NSW following the IUCN Red List of categories and criteria (<http://s3.amazonaws.com/iucnredlist-newcms/staging/public/>)

attachments/3097/redlist\_cats\_crit\_en.pdf). Try to pick species that are not extremely common or the task will be more difficult for you. Your work must be well referenced. Your essay is due by 9am on 3rd October.

This Assessment Task relates to the following Learning Outcomes:

- Evaluate the major patterns and services provided by biodiversity globally
- Identify key threatening processes that lead to the loss of biodiversity, including those experienced through the PACE activity
- Critically evaluate and synthesise diverse information sources on a current, real-world conservation issue, and communicate that understanding using a variety of techniques
- Evaluate the efficacy of new conservation management strategies in a professional context

## PACE Plan of Management

Due: **16th October**

Weighting: **25%**

Macquarie University is negotiating a Voluntary Conservation Agreement for an area of bushland between Talavera Road and the Lane Cove River, known as the Ecology Reserve. We will assess the area for its biodiversity values, threats (e.g., weeds and feral animals), fire management and public access and amenity. All data will be collected, presented and distributed during the second on-campus session (18-20th September). Using these data you will write a plan of management (PoM) for the area. An example PoM will be provided on the iLearn website. Your PoM is due by 9am 16th October

This Assessment Task relates to the following Learning Outcomes:

- Identify key threatening processes that lead to the loss of biodiversity, including those experienced through the PACE activity
- Critically evaluate and synthesise diverse information sources on a current, real-world conservation issue, and communicate that understanding using a variety of techniques
- Understand conservation management plans for practical application using principles of conservation biology
- Evaluate the efficacy of new conservation management strategies in a professional context

## Final exam

Due: **Examination period**

Weighting: **40%**

The final examination is worth 40% of the unit's assessment. It will be 2-hours plus 10-minutes reading time and is a closed book examination. The examination will consist of a mixture of multiple choice, short answer and essay questions. All aspects of the unit are examinable in the final examination. There will be an emphasis placed on integration of material from lectures and practicals rather than rote learning of facts and figures.

This Assessment Task relates to the following Learning Outcomes:

- Evaluate the major patterns and services provided by biodiversity globally
- Identify key threatening processes that lead to the loss of biodiversity, including those experienced through the PACE activity
- Critically evaluate and synthesise diverse information sources on a current, real-world conservation issue, and communicate that understanding using a variety of techniques
- Evaluate the efficacy of new conservation management strategies in a professional context

## **Delivery and Resources**

### **UNIT WEBSITE**

The unit web page can be accessed via the student portal (log in at <https://ilearn.mq.edu.au/login/MQ/>). There you will find unit information, resource material, links to interesting websites including career information, ECHO (formerly iLectures), announcements, forum and dialogue facilities, as well as links to Turnitin for submitting assessment tasks. You are encouraged to use the discussion & email facilities for communication among staff and students. Please also check the unit website regularly for announcements and additional resource material.

### **RECOMMENDED TEXTS**

There is no single text that covers the whole unit. Several general texts are recommended and are in the library or available free on-line:

Primack RB. 2010. *Essentials of Conservation Biology* 6th edition. Sinauer Associates.

Groom MJ, Meffe GK, Carroll CK. 2005. *Principles of Conservation Biology*, 3rd edition, Sinauer Associates.

Sodhi N and Ehrlich PR. (Eds.). 2010. *Conservation Biology for All*. Oxford University Press. (Available online at:<http://www.mongabay.com/conservation-biology-for-all.html>).

Lindenmayer D & Burgman M. 2005. *Practical Conservation Biology*. CSIRO.

Attiwill P. & Wilson B. (2006). *Ecology. An Australian Perspective*. 2nd edition, Oxford University Press.

Stow, A, Maclean, N., Holwell, G.I (Eds.). 2015. *Austral Ark : The State of Wildlife in Australia and New Zealand*. Cambridge University Press.

## TECHNOLOGY USED AND REQUIRED

Students are expected to access all unit material through the iLearn unit website. Basic multimedia software (eg. Windows Media Player, Quicktime) will be needed to listen to recorded lectures. Students will be required to use internet resources for sourcing information and to use appropriate software, particularly Excel, for data analysis. A prior knowledge of data storage and analysis is assumed as these skills are not taught in this unit.

## Learning and Teaching Activities

### Lectures

Lectures on theory and principles of conservation biology

### Practicals

Practicals include exercises in an assessment of threat status of species, population viability analysis, collecting data for conservation planning and management.

## 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](http://mq.edu.au/policy/docs/academic_honesty/policy.html)

Assessment Policy [http://mq.edu.au/policy/docs/assessment/policy\\_2016.html](http://mq.edu.au/policy/docs/assessment/policy_2016.html)

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

Complaint Management Procedure for Students and Members of the Public [http://www.mq.edu.au/policy/docs/complaint\\_management/procedure.html](http://www.mq.edu.au/policy/docs/complaint_management/procedure.html)

Disruption to Studies Policy (in effect until Dec 4th, 2017): [http://www.mq.edu.au/policy/docs/disruption\\_studies/policy.html](http://www.mq.edu.au/policy/docs/disruption_studies/policy.html)

Special Consideration Policy (in effect from Dec 4th, 2017): <https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policies/special-consideration>

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/](https://students.mq.edu.au/support/student_conduct/)

## Results

Results shown in *iLearn*, 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](http://ask.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](http://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 Enquiry Service

For all student enquiries, visit Student Connect at [ask.mq.edu.au](http://ask.mq.edu.au)

## Equity 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.

## 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

### Discipline Specific Knowledge and Skills

Our graduates will take with them the intellectual development, depth and breadth of knowledge, scholarly understanding, and specific subject content in their chosen fields to make them competent and confident in their subject or profession. They will be able to demonstrate, where relevant, professional technical competence and meet professional standards. They will be able to articulate the structure of knowledge of their discipline, be able to adapt discipline-specific knowledge to novel situations, and be able to contribute from their discipline to inter-disciplinary solutions to problems.

This graduate capability is supported by:

## Learning outcomes

- Evaluate the major patterns and services provided by biodiversity globally
- Identify key threatening processes that lead to the loss of biodiversity, including those experienced through the PACE activity
- Critically evaluate and synthesise diverse information sources on a current, real-world conservation issue, and communicate that understanding using a variety of techniques
- Understand conservation management plans for practical application using principles of conservation biology
- Evaluate the efficacy of new conservation management strategies in a professional context

## Assessment tasks

- Seminar
- Blog
- Assessment status of a species
- PACE Plan of Management
- Final exam

## Problem Solving and Research Capability

Our graduates should be capable of researching; of analysing, and interpreting and assessing data and information in various forms; of drawing connections across fields of knowledge; and they should be able to relate their knowledge to complex situations at work or in the world, in order to diagnose and solve problems. We want them to have the confidence to take the initiative in doing so, within an awareness of their own limitations.

This graduate capability is supported by:

## Learning outcomes

- Critically evaluate and synthesise diverse information sources on a current, real-world conservation issue, and communicate that understanding using a variety of techniques
- Understand conservation management plans for practical application using principles of conservation biology
- Evaluate the efficacy of new conservation management strategies in a professional context

## Assessment tasks

- Assessment status of a species
- PACE Plan of Management
- Final exam

## Effective Communication

We want to develop in our students the ability to communicate and convey their views in forms effective with different audiences. We want our graduates to take with them the capability to read, listen, question, gather and evaluate information resources in a variety of formats, assess, write clearly, speak effectively, and to use visual communication and communication technologies as appropriate.

This graduate capability is supported by:

### Learning outcomes

- Critically evaluate and synthesise diverse information sources on a current, real-world conservation issue, and communicate that understanding using a variety of techniques
- Understand conservation management plans for practical application using principles of conservation biology
- Evaluate the efficacy of new conservation management strategies in a professional context

### Assessment tasks

- Seminar
- Blog
- Final exam

## Capable of Professional and Personal Judgement and Initiative

We want our graduates to have emotional intelligence and sound interpersonal skills and to demonstrate discernment and common sense in their professional and personal judgement. They will exercise initiative as needed. They will be capable of risk assessment, and be able to handle ambiguity and complexity, enabling them to be adaptable in diverse and changing environments.

This graduate capability is supported by:

### Learning outcomes

- Identify key threatening processes that lead to the loss of biodiversity, including those experienced through the PACE activity
- Critically evaluate and synthesise diverse information sources on a current, real-world conservation issue, and communicate that understanding using a variety of techniques
- Understand conservation management plans for practical application using principles of conservation biology
- Evaluate the efficacy of new conservation management strategies in a professional context

## Assessment task

- PACE Plan of Management

## Critical, Analytical and Integrative Thinking

We want our graduates to be capable of reasoning, questioning and analysing, and to integrate and synthesise learning and knowledge from a range of sources and environments; to be able to critique constraints, assumptions and limitations; to be able to think independently and systemically in relation to scholarly activity, in the workplace, and in the world. We want them to have a level of scientific and information technology literacy.

This graduate capability is supported by:

## Learning outcomes

- Evaluate the major patterns and services provided by biodiversity globally
- Identify key threatening processes that lead to the loss of biodiversity, including those experienced through the PACE activity
- Critically evaluate and synthesise diverse information sources on a current, real-world conservation issue, and communicate that understanding using a variety of techniques
- Understand conservation management plans for practical application using principles of conservation biology
- Evaluate the efficacy of new conservation management strategies in a professional context

## Assessment tasks

- Seminar
- Blog
- Assessment status of a species
- PACE Plan of Management
- Final exam

## Creative and Innovative

Our graduates will also be capable of creative thinking and of creating knowledge. They will be imaginative and open to experience and capable of innovation at work and in the community. We want them to be engaged in applying their critical, creative thinking.

This graduate capability is supported by:

## Learning outcomes

- Understand conservation management plans for practical application using principles of conservation biology

- Evaluate the efficacy of new conservation management strategies in a professional context

## **Assessment tasks**

- Blog
- PACE Plan of Management
- Final exam

## **Engaged and Ethical Local and Global citizens**

As local citizens our graduates will be aware of indigenous perspectives and of the nation's historical context. They will be engaged with the challenges of contemporary society and with knowledge and ideas. We want our graduates to have respect for diversity, to be open-minded, sensitive to others and inclusive, and to be open to other cultures and perspectives: they should have a level of cultural literacy. Our graduates should be aware of disadvantage and social justice, and be willing to participate to help create a wiser and better society.

This graduate capability is supported by:

## **Learning outcomes**

- Evaluate the major patterns and services provided by biodiversity globally
- Identify key threatening processes that lead to the loss of biodiversity, including those experienced through the PACE activity
- Critically evaluate and synthesise diverse information sources on a current, real-world conservation issue, and communicate that understanding using a variety of techniques
- Understand conservation management plans for practical application using principles of conservation biology
- Evaluate the efficacy of new conservation management strategies in a professional context

## **Assessment tasks**

- Seminar
- Blog
- Assessment status of a species
- PACE Plan of Management

## **Socially and Environmentally Active and Responsible**

We want our graduates to be aware of and have respect for self and others; to be able to work with others as a leader and a team player; to have a sense of connectedness with others and country; and to have a sense of mutual obligation. Our graduates should be informed and active participants in moving society towards sustainability.

This graduate capability is supported by:

## **Learning outcomes**

- Evaluate the major patterns and services provided by biodiversity globally
- Identify key threatening processes that lead to the loss of biodiversity, including those experienced through the PACE activity
- Critically evaluate and synthesise diverse information sources on a current, real-world conservation issue, and communicate that understanding using a variety of techniques
- Understand conservation management plans for practical application using principles of conservation biology
- Evaluate the efficacy of new conservation management strategies in a professional context

## **Assessment tasks**

- Seminar
- Blog
- Assessment status of a species
- PACE Plan of Management

## **Commitment to Continuous Learning**

Our graduates will have enquiring minds and a literate curiosity which will lead them to pursue knowledge for its own sake. They will continue to pursue learning in their careers and as they participate in the world. They will be capable of reflecting on their experiences and relationships with others and the environment, learning from them, and growing - personally, professionally and socially.

This graduate capability is supported by:

## **Learning outcome**

- Evaluate the efficacy of new conservation management strategies in a professional context

## **Assessment tasks**

- Seminar
- Blog
- Assessment status of a species