



# BIOL349

## Biodiversity and Conservation

S2 Day 2018

*Dept of Biological Sciences*

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#### Disclaimer

Macquarie University has taken all reasonable measures to ensure the information in this publication is accurate and up-to-date. However, the information may change or become out-dated as a result of change in University policies, procedures or rules. The University reserves the right to make changes to any information in this publication without notice. Users of this publication are advised to check the website version of this publication [or the relevant faculty or department] before acting on any information in this publication.

## General Information

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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 <https://www.mq.edu.au/study/calendar-of-dates>

## Learning Outcomes

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

- 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

## General Assessment Information

### ASSESSMENT DETAILS

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

### ASSESSMENT SUBMISSION

Digital copies of all written tasks will be required. Assessments will be submitted through the appropriate Turnitin portal on iLearn.

### ACADEMIC HONESTY

Plagiarism is the presentation of thoughts and work of another as one's own.

Examples include:

- Copying thoughts or work of another without appropriate acknowledgement
- Paraphrasing another person's work with very minor changes
- Piecing together sections of the work of others into a new document.

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 grades. Further penalties imposed by the Faculty disciplinary committee may range from a loss of all marks and the award of 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 -5% of the mark allocated for the assignment will be deducted per day (i.e. 6 days late = -30% of marks available). Submission must occur within one week (7 days) of the due date or the assignment will not be marked.

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 healthcare professional. If you anticipate a potentially serious and unavoidable disruption (e.g., upcoming surgery) speak to the unit staff 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%. You must attend the compulsory sessions on 25-26<sup>th</sup> August and 24-26<sup>th</sup> September.

## **SUPPLEMENTARY EXAMS**

If you receive special consideration for the final exam, a supplementary exam will be scheduled in the interval between the regular exam period and the start of the next session. By making a special consideration application for the final exam you are declaring yourself available for a resit during the supplementary examination period and will not be eligible for a second special consideration approval based on pre-existing commitments. Please ensure you are familiar with the policy prior to submitting an application. You can check the supplementary examination information page on FSE101 in iLearn ([bit.ly/FSESupp](https://unitguides.mq.edu.au/unit_offerings/82367/unit_guide/print)) for dates, and approved applicants will receive an individual notification one week prior to the exam with the exact date and time of their supplementary examination.

## Assessment Tasks

Name	Weighting	Hurdle	Due
<a href="#">Seminar</a>	10%	No	25th August
<a href="#">Blog</a>	10%	No	25th August / 3rd September
<a href="#">Species Assessment</a>	20%	No	14th September
<a href="#">Group Research Project</a>	25%	No	19th October
<a href="#">Participation</a>	5%	No	All Session
<a href="#">Final Exam</a>	30%	No	Examination Period

### Seminar

Due: **25th August**

Weighting: **10%**

You will prepare and give a 10-minute talk that summarises and critically appraises a scientific journal article chosen from the recent (last 5 years) conservation biology literature. The content of the article can be terrestrial, freshwater or marine. No props other than the PowerPoint presentation are to be used. You will present your talk to unit participants in a compulsory conference-style day on 25th August 2018. Specifics of the marking scheme and guidelines will be available in iLearn. A pdf of your final PowerPoint presentation must be uploaded to iLearn by 9 am on 25th August.

On successful completion you will be able to:

- 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: **25th August / 3rd September**

Weighting: **10%**

You will prepare a blog (word limit 500 words, excluding title and references) on the article you

presented for your oral seminar. The article will be written in the style of an online publication in *The Conversation*. Blogs will be posted live on iLearn and you will have the opportunity to read and comment on other people's blogs via this website. Specifics of the marking scheme and guidelines will be available via iLearn.

Formal assessment for this task occurs in two sections:

- (1) Your uploaded blog, worth 6% (uploaded by 9 am on 25th August)
- (2) Constructive comments on two other uploaded blogs, worth 4% (portal closes at 9 am on 3rd September)

On successful completion you will be able to:

- 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

## Species Assessment

Due: **14th September**

Weighting: **20%**

You will write a document (word limit 1,500 words excluding abstract, acknowledgements and references) on the status of an animal or plant species occurring in NSW. The species cannot be already listed by either the NSW Scientific Committee or the Fisheries Scientific Committee or already earmarked by a fellow student. The species can be terrestrial, freshwater or marine but cannot be closely related to the species or habitat that you gave your seminar on. From the literature (published and grey) 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. Try to pick species that are not extremely common or the task will be more difficult for you due to the mountain of literature you will need to sift through. Specifics of the marking scheme and guidelines can be found in iLearn. Your document must be submitted by 9 am on 14th September.

On successful completion you will be able to:

- 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

## Group Research Project

Due: **19th October**

Weighting: **25%**

As a small group, you will research an allocated project on an aspect of conservation and/or biodiversity associated with Balls Head Reserve and the Coal Loader Centre for Sustainability in Sydney. Your research (word limit 1,500 words excluding abstract, acknowledgements and references) is to be communicated orally and in writing. Specifics of the marking scheme and guidelines can be found in iLearn.

Formal assessment for this task occurs in two sections:

- (1) A group talk at the end of the on-campus session in week 39, worth 5%
- (2) A group document in the style of a research manuscript for the journal *Austral Ecology*, worth 20%

Your group research project is due by 9 am on 19th October.

On successful completion you will be able to:

- 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

## Participation

Due: **All Session**

Weighting: **5%**

Five percent of your overall mark is for “attendance and participation” in this PACE unit. It is a requirement that you attend and enthusiastically participate in the various activities associated with the unit. These include attending and listening to other student’s seminars, participating in activities associated with the zoo visit, participation in your group research at Balls Head, and the following group analyses and write-up.

On successful completion you will be able to:

- 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: **30%**

You will sit a final examination during the examination period at the end of the unit. The exam will be 2 hours plus 10 minutes reading time, and notes are not permitted. The format of the exam will include multiple choice, short answer and small essays. All aspects of the unit are examinable. Emphasis will be placed on the integration of material from lectures and practicals rather than rote learning of facts.

Please consult the University Handbook to determine the commencement and finishing dates of the compulsory examination. More information on the exam will be given towards the end of the unit.

On successful completion you will be able to:

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

## Delivery and Resources

### LECTURES

Tuesdays, 12-1 pm at 9 Wally's Walk R133

Wednesdays, 1-2 pm at 10 Hadenfeld Avenue 212 Tutorial Room

If you are an internal (day) student you are strongly advised to attend the lectures.

### PRACTICALS



25<sup>th</sup> August – Seminar series in 14 Eastern Road, ground floor. 9 am to 5 pm

26<sup>th</sup> August – Taronga Zoo, 9 am to 5 pm

24-26<sup>th</sup> September – Coal Loader Centre of Sustainability, Waverton. 9 am to 5 pm (times flexible depending on your research project)

Students must attend all practicals for the entire days.

## 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 and/or for sale at the Co-op Bookshop. Some are available free online:

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. Knowledge of data storage and analysis equivalent to that taught in BIOL235 is assumed as these skills are not taught in this unit.

Students will need access to a portable computer for the practical sessions. These are not

supplied in this unit.

## 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 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 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](http://ask.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

### 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
- Group Research Project
- Participation
- 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 tasks

- Group Research Project
- Participation

## 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
- Species Assessment

## 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
- Species Assessment
- Group Research Project
- Final Exam

## 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
- Species Assessment
- Group Research Project
- 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**

- Species Assessment
- Group Research Project
- 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
- Participation
- 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
- Species Assessment
- Group Research Project
- Participation

## 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
- Species Assessment
- Group Research Project
- Participation

## Changes from Previous Offering

In response to student comments from previous years, the Group Research Project (GRP) replaces the previous Plan of Management (PoM) in this unit in 2018. Assessment submission times have also been altered to accommodate submission dates from other concurrent units.



## BIOL349 as a PACE unit

BIOL349 is a PACE unit within the Department of Biological Sciences. This unit provides an opportunity for students to engage directly with the community by working on 'real-world' problems alongside industry. Students visit Taronga Zoo and discuss conservation efforts and threatened species planning with zoo researchers. Students also visit Balls Head Reserve and the Coal Loader Centre for Sustainability where they collect data that will be utilised by the local community and industry as part of a longitudinal study.

Biodiversity and conservation researchers and industry partners give guest lectures within the unit thus giving students direct exposure to transitional links to the workplace. Partners benefit by interacting with enthusiastic discipline-specific students on the cusp of entering the workforce, and through exposure to new advances in the field of biodiversity and conservation. BIOL349 gives back to the community through the sharing of scientific data and viewpoints. More information on the role of PACE in BIOL349 will be given in the first lecture.

## Changes since First Published

Date	Description
27/08/2018	Added Patrick Burke and Laura Fernandez as Tutors for BIOL349. No other changes. Jane