



# BIOL6410

## Ecology

Session 2, Special circumstances, North Ryde 2021

*Archive (Pre-2022) - Department 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.

### Session 2 Learning and Teaching Update

The decision has been made to conduct study online for the remainder of Session 2 for all units WITHOUT mandatory on-campus learning activities. Exams for Session 2 will also be online where possible to do so.

This is due to the extension of the lockdown orders and to provide certainty around arrangements for the remainder of Session 2. We hope to return to campus beyond Session 2 as soon as it is safe and appropriate to do so.

Some classes/teaching activities cannot be moved online and must be taught on campus. You should already know if you are in one of these classes/teaching activities and your unit convenor will provide you with more information via iLearn. If you want to confirm, see the list of [units with mandatory on-campus classes/teaching activities](#).

Visit the [MQ COVID-19 information page](#) for more detail.

## General Information

Unit convenor and teaching staff

Convenor

Larissa Trompf

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Larissa Trompf

[larissa.trompf@mq.edu.au](mailto:larissa.trompf@mq.edu.au)

Credit points

10

Prerequisites

Admission to MConsBiol or GradDipConsBiol or GradCertConsBiol or MSc or MScInnovationBioConsMgmt or MScInnovationEnvSc or MScInnovationGeologyGeophys or MEnv or GradDipEnv or GradCertEnv or MSusDev

Corequisites

Co-badged status

BIOL2410

Unit description

Ecology is the study of the distribution and abundance of organisms and of the processes that generate these patterns. This unit covers basic ecological concepts at the level of organisms, populations, communities, and ecosystems. We study how interactions among organisms - and between organisms and their physical environment - shape the natural world. This unit also addresses how ecological concepts can be applied to current issues such as climate change, conservation, fisheries and agriculture. An understanding of basic statistics is assumed knowledge, and students will be required to use both descriptive statistics and statistical tests to investigate community structure, population dynamics and how organisms interact with the environment. Many students find that the skills they gain taking BIOL2610/BIOL235 complements the skills needed in this Ecology unit.

## 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:** Describe and analyse how interactions between organisms, and between organisms and the environment, influence population, community and ecosystem patterns

**ULO2:** Critically evaluate and compare ecological concepts and principles, and apply these to find solutions to contemporary environmental issues

**ULO3:** Carry out and correctly interpret a range of equations and statistical tests to measure characteristics of populations and communities

**ULO4:** Develop testable hypotheses to assess ecological patterns and processes, and design comparative experiments to test these

**ULO5:** Demonstrate knowledge of professional responsibility and safe working practices whilst undertaking field work

**ULO6:** Develop a scientific report to communicate a study you have undertaken, demonstrating appropriate linkages to scientific literature and ecological theory

## General Assessment Information

**NB: This unit cannot be completed online. All students must attend some face to face classes.**

**To pass this unit you must:**

- Achieve at least 40% in the final exam, and attain an overall grade of 50% or more.
- Attend the compulsory fieldtrip.

### Assessment Task Descriptions

#### *Mid-semester test (25%)*

There will be a mid-semester test held in Week 7. This will be 50 minutes in length, and will be an open book, online quiz that may cover all work from Weeks 1-6, including lectures, practicals and reading material. **For internal students, this will run during the scheduled lecture session and will be invigilated in zoom. For externals the test will be open on the Wednesday evening of Week 7, i.e. 8 September, from 7-9pm.** External students who cannot make this time are required to the convenor at email [biol2410@mq.edu.au](mailto:biol2410@mq.edu.au) to arrange to undertake the test during one of the internal practical classes. The tests will be multiple choice and will include numerical exercises similar to those taught in lectures. Questions will be randomly allocated to students. Note that if you are unwell and cannot undertake the test during your scheduled time, a special consideration will need to be submitted to organise a new time to sit the test.

#### *Fieldtrip Practical Report (25%)*

At the Stanwell Tops fieldtrip, you will undertake a group-based project. This is to be written up in the form of a scientific paper for submission to the journal *Austral Ecology*. The word length for

this report is 1500 words (excluding Abstract, Acknowledgement and References). A margin of +/- 150 words will be accepted. Any text beyond 1650 words will not be read by the markers. Further details can be found in the Field Trip practical notes (which will be posted on iLearn). A marking rubric will be provided on iLearn, as well as examples of previous studies. This task is designed to assess your understanding of ecological concepts, limitations associated with fieldwork, how to source and utilise appropriate scientific literature to craft an argument, and scientific communication conventions.

### *Presentation (15%)*

You are required to develop and record a 6 minute (+/- 30 sec) presentation on one of a number of papers on Ecology in the Anthropocene. The purpose of this is to demonstrate your understanding of how ecological concepts can be applied to understand and solve real-world problems, and your ability to communicate scientific issues to a lay audience. A marking rubric will be provided on iLearn.

### *Examination (35%)*

The final exam will be held during the Semester 2 Exam Period and will be 2 hr (plus 10 min reading time). This will be an in-person, invigilated exam. Please consult the University Handbook to determine the commencement and finishing dates of the compulsory exam period. You will be permitted to take a non-programmable calculator and/or English language dictionary into the exam. Notes will not be permitted. While most of the material will focus on Weeks 7-13, some questions will also require knowledge of subject matter from Weeks 1-6.

Note that there are also three non-assessed practical quizzes that must be done before undertaking field work. These are to ensure that students are properly prepared for the field-based practicals.

## **Extensions, penalties and disruptions to studies**

Late assignments will attract a penalty of **10%** of the total marks allocated to the exercise per day. You may hand in your work after the due date and escape penalty only if you have an acceptable reason (usually a medical certificate). Discuss your problem with the Lecturer as early as possible before the due date.

Information about the Disruptions to Studies policy and procedure is online at Policy Central: [http://www.mq.edu.au/policy/docs/disruption\\_studies/procedure.html](http://www.mq.edu.au/policy/docs/disruption_studies/procedure.html).

Information on managing your Disruptions to Studies: [http://students.mq.edu.au/student\\_admin/manage\\_your\\_study\\_program/disruption\\_to\\_studies/](http://students.mq.edu.au/student_admin/manage_your_study_program/disruption_to_studies/)

All Disruptions to Studies notifications should be submitted using the online form: [ask.mq.edu.au](http://ask.mq.edu.au)

Note that plagiarism cases may result in zero marks being awarded for the assessment or failure of the unit.

## Assessment Tasks

Name	Weighting	Hurdle	Due
<a href="#">Mid-semester quiz</a>	25%	Yes	Internal: During Lecture Week 7. External: 8 September
<a href="#">Practical Report</a>	25%	No	Week 9, 10 October, 11:59pm
<a href="#">Oral-based presentation</a>	15%	No	Week 12, 31 October, 11:59pm
<a href="#">Final Exam</a>	35%	Yes	TBA

### Mid-semester quiz

Assessment Type <sup>1</sup>: Quiz/Test

Indicative Time on Task <sup>2</sup>: 15 hours

Due: **Internal: During Lecture Week 7. External: 8 September**

Weighting: **25%**

**This is a hurdle assessment task (see [assessment policy](#) for more information on hurdle assessment tasks)**

There will be an online quiz. The questions may be based on lectures, reading materials and practicals and will test your knowledge of ecological concepts and your understanding of equations used in different subfields of ecology.

On successful completion you will be able to:

- Describe and analyse how interactions between organisms, and between organisms and the environment, influence population, community and ecosystem patterns
- Carry out and correctly interpret a range of equations and statistical tests to measure characteristics of populations and communities
- Demonstrate knowledge of professional responsibility and safe working practices whilst undertaking field work

### Practical Report

Assessment Type <sup>1</sup>: Practice-based task

Indicative Time on Task <sup>2</sup>: 15 hours

Due: **Week 9, 10 October, 11:59pm**

Weighting: **25%**

You will write a scientific report, in the format of a paper for the journal *Austral Ecology*, describing one of the practical experiments, and discussing principles of fieldwork. It will be uploaded to Turnitin.

On successful completion you will be able to:

- Describe and analyse how interactions between organisms, and between organisms and the environment, influence population, community and ecosystem patterns
- Carry out and correctly interpret a range of equations and statistical tests to measure characteristics of populations and communities
- Develop testable hypotheses to assess ecological patterns and processes, and design comparative experiments to test these
- Demonstrate knowledge of professional responsibility and safe working practices whilst undertaking field work
- Develop a scientific report to communicate a study you have undertaken, demonstrating appropriate linkages to scientific literature and ecological theory

## Oral-based presentation

Assessment Type <sup>1</sup>: Presentation

Indicative Time on Task <sup>2</sup>: 10 hours

Due: **Week 12, 31 October, 11:59pm**

Weighting: **15%**

You will give a short presentation on a key topic in ecology

On successful completion you will be able to:

- Describe and analyse how interactions between organisms, and between organisms and the environment, influence population, community and ecosystem patterns
- Critically evaluate and compare ecological concepts and principles, and apply these to find solutions to contemporary environmental issues

## Final Exam

Assessment Type <sup>1</sup>: Examination

Indicative Time on Task <sup>2</sup>: 25 hours

Due: **TBA**

Weighting: **35%**

**This is a hurdle assessment task (see [assessment policy](#) for more information on hurdle assessment tasks)**

The final exam will be held during the Semester 2 Exam Period. Please consult the University Handbook to determine the commencement and finishing dates of the compulsory exam period. This exam will assess your understanding and interpretation of ecological patterns, processes and concepts, and your ability to use these to suggest solutions to contemporary environmental issues

On successful completion you will be able to:

- Describe and analyse how interactions between organisms, and between organisms and the environment, influence population, community and ecosystem patterns
- Critically evaluate and compare ecological concepts and principles, and apply these to find solutions to contemporary environmental issues
- Carry out and correctly interpret a range of equations and statistical tests to measure characteristics of populations and communities
- Develop testable hypotheses to assess ecological patterns and processes, and design comparative experiments to test these
- Demonstrate knowledge of professional responsibility and safe working practices whilst undertaking field work
- Develop a scientific report to communicate a study you have undertaken, demonstrating appropriate linkages to scientific literature and ecological theory

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<sup>1</sup> 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.

<sup>2</sup> 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

### Lectures

Lectures will be pre-recorded. A 1-hour Q&A will be held on Mondays from 12-1pm, where we will summarise the key points from the lectures and provide opportunities for students to ask

questions. We strongly encourage students to attend these, as they greatly facilitate the learning experience. Moreover, in the first week, the Q&A is vital for understanding how the unit works.

## Practicals

*Internal students* will attend four practicals (one online and three on-campus) in Weeks 4, 6, 7 and 9. Classes will be held Tuesday 2-5pm, Wednesday 10-1pm and 2-5pm.

*For external students*, there will be an on-campus weekend on 14-15 August where all four practicals will be undertaken.

All students will also attend the 2.5-day fieldtrip, staying for two nights at The Tops Conference Centre (more information below). **The fieldtrip is compulsory. Students who cannot attend the fieldtrip cannot enrol in this unit. Students who miss the fieldtrip due to unforeseen factors will need to withdraw from the unit. Practical classes are also compulsory.**

## Fieldtrip

All students are required to attend the unit field trip at The Tops Conference Centre, Stanwell Tops. Students can elect to attend EITHER the trip on 13-15 September OR the trip on 15-17 September. Note that if you are enrolled in BIOL2210, you must attend the second trip. The cost of the fieldtrip will be approximately \$220 (to be confirmed). This covers the cost of food and accommodation. This amount will be due by **5pm Friday 20 August** (end of Week 4).

Instructions on how to pay will be placed on iLearn. Accommodation is in lockable dorm rooms. More information on the fieldtrip will be made available on iLearn.

## Unit Schedule

Week	Lecture	Topic	Lecturer	Practicals	Assessments
1	1	Ecology	LB	No prac	
	2	It's a niche concept: Conditions, resources and niches	LB		
2	3	Moving through space and time: Distributions	MB	No prac	
	6	Not all is equal: Global patterns of productivity	LB		
3	7	Me and Mine: Life history	LB	No prac	
	8	Population growth and intraspecific competition	LB	External On-campus session 14-15 August	
4	9	Having the leading edge: Interspecific competition	LB	No prac	
	10	Every predator is somebody else's prey: Predation	LB		
5	11	What takes but never gives? A Parasite	MP	Internal: Population Ecology (Online)	
	12	Helping hands: Facilitation	MB		
6	13	Ecological Techniques, aka How to do things	LFW	Internal: Herbivory (On-campus)	



	14	Hanging out: Describing community structure	LB		
7	15	Mid-Semester Test		Internal: Plant richness (On-campus)	Mid-Semester Test
	16	The more the merrier: Why biodiversity matters	LFW		
		MID SEMESTER RECESS		Fieldtrip: Trip A 14-16 Sept Trip B 16-18 Sept	
8	17	When patterns are broken, new worlds emerge: Disturbance and succession	LB		
	18	My island home: island biogeography	LFW		
9	4	The flux of energy through ecosystems i	MB	Internal: Carbon Accounting (On-campus)	Practical Report
	5	The flux of energy through ecosystems ii	MB		
10	19	Spatial subsidies: another time, another place	MB	No prac	
	24	Greed or need? Human alteration of biogeochemicals	LB		
11	20	It's getting hot in here! Global climate change	LB	No prac	
	21	Fixed! Ecological impact assessment and Restoration Ecology	ML		
12	22	Not your friendly neighbour: Invasive species and their management	LB	No prac	Presentation
	23	Managed ecosystems: agriculture, fisheries and forestry	MB		
13	25	Absolutely vital information for the Exam!	LB	No prac	
	26	A break! Yippee			

## Policies and Procedures

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

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

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

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

## Student Code of Conduct

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

## Results

Results published on platform other than [eStudent](#), (eg. iLearn, Coursera etc.) or released directly by your Unit Convenor, are not confirmed as they are subject to final approval by the University. Once approved, final results will be sent to your student email address and will be made available in [eStudent](#). For more information visit [ask.mq.edu.au](http://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](http://mq.edu.au/learningskills)) provides academic writing resources and study strategies to help you improve your marks and take control of your study.

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

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

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

## Student Services and Support

Students with a disability are encouraged to contact the [Disability Service](#) who can provide appropriate help with any issues that arise during their studies.

## Student Enquiries

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

## Changes since First Published

Date	Description
16/07/2021	Dates of fieldtrip have changed