



BIOL8760

Climate Change Biology: Impacts and Adaptation

Session 2, Infrequent attendance, North Ryde 2020

Department of Biological Sciences

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Disclaimer

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Notice

As part of [Phase 3 of our return to campus plan](#), most units will now run tutorials, seminars and other small group learning activities on campus for the second half-year, while keeping an online version available for those students unable to return or those who choose to continue their studies online.

To check the availability of face-to-face and online activities for your unit, please go to [timetable viewer](#). To check detailed information on unit assessments visit your unit's iLearn space or consult your unit convenor.

General Information

Unit convenor and teaching staff

Convenor

Jessica Boomer

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Linda Beaumont

linda.beaumont@mq.edu.au

Credit points

10

Prerequisites

Admission to MConsBiol or GradDipConsBiol or GradCertConsBiol or MEnv or MEnvPlan or GradDipEnv or MMarScMgt or MSusDev or GradDipSusDev or MSc or MPlan or MSocEntre or GradCertSusDev or GradDipSIA or MScInnovationBioConsMgmt or BBioConsMConsBiol

Corequisites

Co-badged status

Unit description

This unit explores the impacts of climate change on the biosphere, and adaptation options. Topics include biodiversity and conservation, invasive species and their management, impacts on agriculture and urban ecosystems, and the consequences for human health and well-being in both developed and developing countries. Students will explore what is projected to happen if the international target of restricting global temperature rise to no more than 2 degree Celcius is not met, and why even this target will have critical impacts. Students will meet guest scientists and government and industry experts who are at the forefront of solving the immense challenge that climate change brings to the biosphere.

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: Analyse, critique and synthesise knowledge about the impacts of climate change on a broad range of sectors, drawing connections across fields of knowledge

ULO2: Utilise research skills to identify impacts of climate change on a given sector, and

interpret the likely consequences of these for the selected sector.

ULO3: Demonstrate creative problem solving skills to develop adaptation strategies that increase resilience to climate change

ULO4: Evaluate areas of scientific uncertainty and complexity in different sectors, and account for this in adaptation strategies

ULO5: Identify barriers and challenges to implementing adaptation responses, and communicate creative approaches to bridge these barriers.

ULO6: Transfer knowledge and skills regarding adaptation planning to industries/sectors beyond your personal experience

General Assessment Information

Note that although the presentation is group-based, 90% of the mark a student attains will be independent of the remainder of the group.

Assessment Tasks

| Name | Weighting | Hurdle | Due |
|--|-----------|--------|-------------------------|
| Quiz | 21% | No | Week 4; Week 8; Week 12 |
| Group-based presentation | 15% | No | Throughout semester |
| Impacts and adaptation | 24% | Yes | September 25 (Recess) |
| Adaptation Plan | 40% | Yes | November 6, Week 13 |

Quiz

Assessment Type ¹: Quiz/Test

Indicative Time on Task ²: 10 hours

Due: **Week 4; Week 8; Week 12**

Weighting: **21%**

Three quizzes throughout the semester will test your knowledge on climate change theory, impacts and interactions with the biosphere, and adaptation actions. These will be open book quizzes undertaken via iLearn.

On successful completion you will be able to:

- Analyse, critique and synthesise knowledge about the impacts of climate change on a broad range of sectors, drawing connections across fields of knowledge

- Evaluate areas of scientific uncertainty and complexity in different sectors, and account for this in adaptation strategies
- Identify barriers and challenges to implementing adaptation responses, and communicate creative approaches to bridge these barriers.
- Transfer knowledge and skills regarding adaptation planning to industries/sectors beyond your personal experience

Group-based presentation

Assessment Type **1**: Presentation

Indicative Time on Task **2**: 10 hours

Due: **Throughout semester**

Weighting: **15%**

Through a group-based powerpoint presentation, you will be assessed on your ability to research, summarise and communicate scientifically rigorous information on climate change impacts and adaptation, on a sector of your choice.

On successful completion you will be able to:

- Analyse, critique and synthesise knowledge about the impacts of climate change on a broad range of sectors, drawing connections across fields of knowledge
- Utilise research skills to identify impacts of climate change on a given sector, and interpret the likely consequences of these for the selected sector.
- Demonstrate creative problem solving skills to develop adaptation strategies that increase resilience to climate change
- Evaluate areas of scientific uncertainty and complexity in different sectors, and account for this in adaptation strategies
- Identify barriers and challenges to implementing adaptation responses, and communicate creative approaches to bridge these barriers.
- Transfer knowledge and skills regarding adaptation planning to industries/sectors beyond your personal experience

Impacts and adaptation

Assessment Type **1**: Report

Indicative Time on Task **2**: 20 hours

Due: **September 25 (Recess)**

Weighting: **24%**

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

assessment tasks)

Through an essay and infographic, you will be assessed on your ability to identify the impacts of climate change on a given sector, and communicate knowledge gaps, appropriate adaptation actions and barriers to adaptation to a non-science audience

On successful completion you will be able to:

- Analyse, critique and synthesise knowledge about the impacts of climate change on a broad range of sectors, drawing connections across fields of knowledge
- Utilise research skills to identify impacts of climate change on a given sector, and interpret the likely consequences of these for the selected sector.
- Demonstrate creative problem solving skills to develop adaptation strategies that increase resilience to climate change
- Evaluate areas of scientific uncertainty and complexity in different sectors, and account for this in adaptation strategies
- Identify barriers and challenges to implementing adaptation responses, and communicate creative approaches to bridge these barriers.
- Transfer knowledge and skills regarding adaptation planning to industries/sectors beyond your personal experience

Adaptation Plan

Assessment Type ¹: Practice-based task

Indicative Time on Task ²: 35 hours

Due: **November 6, Week 13**

Weighting: **40%**

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

This written report will assess your understanding of the breadth of climate impacts on a sector you have not previously explored, and your ability to research solutions and develop a logical adaptation plan for that sector that accounts for uncertainty and knowledge gaps.

On successful completion you will be able to:

- Analyse, critique and synthesise knowledge about the impacts of climate change on a broad range of sectors, drawing connections across fields of knowledge

- Utilise research skills to identify impacts of climate change on a given sector, and interpret the likely consequences of these for the selected sector.
- Demonstrate creative problem solving skills to develop adaptation strategies that increase resilience to climate change
- Evaluate areas of scientific uncertainty and complexity in different sectors, and account for this in adaptation strategies
- Identify barriers and challenges to implementing adaptation responses, and communicate creative approaches to bridge these barriers.
- Transfer knowledge and skills regarding adaptation planning to industries/sectors beyond your personal experience

¹ If you need help with your assignment, please contact:

- the academic teaching staff in your unit for guidance in understanding or completing this type of assessment
- the [Writing Centre](#) for academic skills support.

² Indicative time-on-task is an estimate of the time required for completion of the assessment task and is subject to individual variation

Delivery and Resources

In 2020, this unit will be delivered entirely via zoom. While all internal students are expected to attend the lecture in Week 1, from Week 2 onwards internal students should view lecture material prior 2pm Monday, and only need be online from 2-3pm. Attendance at these zooms by external students is not expected. An evening zoom will be established in Week 1 to help externals maintain continuity and to be able to discuss issues around that week's material.

Unit Schedule

Lecture topics include:

Introduction to climate change, and understanding climate scenarios

The history of climate action

Interactions between the biosphere and climate

Impacts across diverse systems, including:

- Marine Ecosystems
- Coral Reefs
- Agriculture
- Urban Biodiversity

- Human Health
- Forests

The role of governments in driving adaptation.

The unit brings together some of the country's, and the world's, foremost experts on climate change impacts on biodiversity and adaptation. Guest speakers span researchers as well as those working for government and industry.

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.*)

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 or if you are a Global MBA student contact globalmba.support@mq.edu.au

Academic Honesty

Presenting the work of another person as one's own is a serious breach of the University's rules and carries significant penalties. The University's Academic Honesty Policy can be found at: http://www.mq.edu.au/policy/docs/academic_honesty/policy.html

In this unit, we will be checking written work for plagiarism using TURNITIN. Penalties for plagiarism may include a zero mark for the assignment or in more extreme cases, failure of the unit. Plagiarism WILL be noted on your academic record. Full details of penalties can be found at: http://www.mq.edu.au/policy/docs/academic_honesty/schedule_penalties.html

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

Information on managing your Disruptions 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

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) 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](#)

Pastoral Care: Please keep an open dialogue with the convenor. We are here to help. Should unforeseen matters impact your ability to meet deadlines of this unit, please

contact us to discuss options.

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

If you are a Global MBA student contact 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/.

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.

Students need to have access to Microsoft PowerPoint. If this is uninstalled on your computer, it can be accessed through iLab (<https://students.mq.edu.au/support/technology/software-downloads>). Speak with IT help for guidance, or the unit convenor.

Changes from Previous Offering

This unit has been altered from previous offerings. For 2020, it will run entirely remotely.