



BIOL874

Biodiversity Survey and Monitoring

S2 External 2018

Dept of Biological Sciences

Contents

<u>General Information</u>	2
<u>Learning Outcomes</u>	3
<u>General Assessment Information</u>	3
<u>Assessment Tasks</u>	4
<u>Delivery and Resources</u>	7
<u>Policies and Procedures</u>	7
<u>Graduate Capabilities</u>	8

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

Unit convenor and teaching staff

Senior tutor

Nick Harris

nick.harris@mq.edu.au

Contact via 9850 4078

E8A172

8-10 & 1-2 Mon-Fri

Lecturer

Justin Clarke

justin.clarke@mq.edu.au

Contact via 98507758

C5C 317

email only

Lecturer

Ben Pitcher

ben.pitcher@mq.edu.au

Contact via email only

Robert Harcourt

robert.harcourt@mq.edu.au

Caitlin Kordis

caitlin.kordis@mq.edu.au

Credit points

4

Prerequisites

ENVS803 or GSE803 or (admission to MMarScMgt or MConsBiol or GradDipConsBiol or GradCertConsBiol or MPlan or MSc)

Corequisites

Co-badged status

Unit description

This unit provides training in the study of biodiversity survey and monitoring. Skills in observation and interpretation and field experience in taxonomy will be linked to the planning required to conduct safe, ethical and efficient surveys, including design, data entry, storage and analysis. Students gain skills in a wide range of standard survey techniques for a wide range of organisms. On completion, students will be able to design, conduct and report on biodiversity surveys.

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:

Gain experience of the range of specialist methods available to quantify plant and animal communities or populations, field and lab experience in the practice of a range of specialist survey techniques

Gain experience in the skills required to review and evaluate survey data and scientific reports, relevant to biodiversity surveys. Gain experience of skills required in methods of sampling, measurement, analysis and interpretation. Demonstrated understanding of methods used for measuring and assessment of habitat including abiotic variables

Obtain a working knowledge of the planning and implementation of field work necessary for projects utilising biodiversity survey techniques, including an understanding of animal ethics principles and practices and scientific reporting.

Gain experience in using biodiversity survey data through analysis and use of all data collected and application of skills to improve results from biodiversity survey during field components.

Show evidence of discussion and presentation skills enhanced through online discussions and field trip interaction and through planning and presenting written arguments in coherent, well structured and documented form. Gain experience in working as part of a team during the field trip, demonstrating effective communication skills within and between teams and to supervising staff.

General Assessment Information

To pass this unit all components of each assessment must be completed, and students need to achieve an overall minimum grade of 50%. You will be provided with marking schemes.

All requests for extensions must go via ask.mq as per Disruption policy:

http://students.mq.edu.au/student_admin/manage_your_study_program/disruption_to_studies/

Assessment Tasks

Name	Weighting	Hurdle	Due
Selection of a Study Site	20%	No	20 Aug 2018
Field Notebook	20%	No	14 September 2018
Ethics & Scientific Licencing	20%	No	8 Oct 2018
Field Trip Report	40%	No	5 November 2018

Selection of a Study Site

Due: **20 Aug 2018**

Weighting: **20%**

Identify and describe a site for a Hypothetical Biodiversity Survey including target species and the techniques to be used. This assignment will require you to use initiative and learning materials to locate a site suitable for a biodiversity survey. The site can be located in any tenure as long as it meets the objectives of the assignment.

On successful completion you will be able to:

- Gain experience of the range of specialist methods available to quantify plant and animal communities or populations, field and lab experience in the practice of a range of specialist survey techniques
- Obtain a working knowledge of the planning and implementation of field work necessary for projects utilising biodiversity survey techniques, including an understanding of animal ethics principles and practices and scientific reporting.
- Show evidence of discussion and presentation skills enhanced through online discussions and field trip interaction and through planning and presenting written arguments in coherent, well structured and documented form. Gain experience in working as part of a team during the field trip, demonstrating effective communication skills within and between teams and to supervising staff.

Field Notebook

Due: **14 September 2018**

Weighting: **20%**

During the field trip for BIOL874, all students will be required to utilise a field notebook for data collection purposes. The field notebook includes data format, metadata and entry on site. Field notebooks will be assessed during the field trip and handed back to students for their field trip

report.

On successful completion you will be able to:

- Gain experience of the range of specialist methods available to quantify plant and animal communities or populations, field and lab experience in the practice of a range of specialist survey techniques
- Obtain a working knowledge of the planning and implementation of field work necessary for projects utilising biodiversity survey techniques, including an understanding of animal ethics principles and practices and scientific reporting.
- Show evidence of discussion and presentation skills enhanced through online discussions and field trip interaction and through planning and presenting written arguments in coherent, well structured and documented form. Gain experience in working as part of a team during the field trip, demonstrating effective communication skills within and between teams and to supervising staff.

Ethics & Scientific Licencing

Due: **8 Oct 2018**

Weighting: **20%**

Animal Ethics Authorisations and Scientific Permits are an essential component of all biodiversity surveys. Obtaining permission is not a simple process and it involves a deep understanding of the ecology, the biology and the rationale for the undertaking, as well as of the political implications for the landowners and management authorities. In this assignment you will apply for an ARA and a Scientific Licence for your Biodiversity Survey in Assignment One.

On successful completion you will be able to:

- Gain experience of the range of specialist methods available to quantify plant and animal communities or populations, field and lab experience in the practice of a range of specialist survey techniques
- Gain experience in the skills required to review and evaluate survey data and scientific reports, relevant to biodiversity surveys. Gain experience of skills required in methods of sampling, measurement, analysis and interpretation. Demonstrated understanding of methods used for measuring and assessment of habitat including abiotic variables
- Obtain a working knowledge of the planning and implementation of field work necessary for projects utilising biodiversity survey techniques, including an understanding of animal ethics principles and practices and scientific reporting.
- Gain experience in using biodiversity survey data through analysis and use of all data collected and application of skills to improve results from biodiversity survey during field

components.

- Show evidence of discussion and presentation skills enhanced through online discussions and field trip interaction and through planning and presenting written arguments in coherent, well structured and documented form. Gain experience in working as part of a team during the field trip, demonstrating effective communication skills within and between teams and to supervising staff.

Field Trip Report

Due: **5 November 2018**

Weighting: **40%**

Participate in a team survey of the study site on the field trip and provide a report on the results of the field trip surveys. Carry out flora and fauna surveys as per the Field Trip Agenda and Field Trip Outline. This assignment provides you with the opportunity to report on the activities conducted during the field trip, to synthesis, analyse and integrate your findings into a scientific format. The Report should be in the form of a Scientific Publication.

On successful completion you will be able to:

- Gain experience of the range of specialist methods available to quantify plant and animal communities or populations, field and lab experience in the practice of a range of specialist survey techniques
- Gain experience in the skills required to review and evaluate survey data and scientific reports, relevant to biodiversity surveys. Gain experience of skills required in methods of sampling, measurement, analysis and interpretation. Demonstrated understanding of methods used for measuring and assessment of habitat including abiotic variables
- Obtain a working knowledge of the planning and implementation of field work necessary for projects utilising biodiversity survey techniques, including an understanding of animal ethics principles and practices and scientific reporting.
- Gain experience in using biodiversity survey data through analysis and use of all data collected and application of skills to improve results from biodiversity survey during field components.
- Show evidence of discussion and presentation skills enhanced through online discussions and field trip interaction and through planning and presenting written arguments in coherent, well structured and documented form. Gain experience in working as part of a team during the field trip, demonstrating effective communication skills within and between teams and to supervising staff.

Delivery and Resources

Technology Used and Required

Students are required to have access to a computer and the internet to access the teaching website and lecture materials. Students will also be required to have access to a word processor, spreadsheet manager and database programs to be able to complete set assessment tasks.

For field work students will require access to some field equipment, a complete list of which will be supplied within the teaching website on activation.

Unit Web Page

To access the unit and associated resources, please login to iLearn (<http://ilearn.mq.edu.au/>)
Guides for assist students with on-line websites and resources can be found at

Student iLearn guides: https://www.mq.edu.au/iLearn/student_info/guides.htm

Student Echo guides: https://www.mq.edu.au/iLearn/student_info/lecture_recordings.htm

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/p) (<https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/p>

olicy-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.

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 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

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.

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 outcomes

- Gain experience of the range of specialist methods available to quantify plant and animal communities or populations, field and lab experience in the practice of a range of specialist survey techniques
- Gain experience in the skills required to review and evaluate survey data and scientific reports, relevant to biodiversity surveys. Gain experience of skills required in methods of sampling, measurement, analysis and interpretation. Demonstrated understanding of methods used for measuring and assessment of habitat including abiotic variables
- Obtain a working knowledge of the planning and implementation of field work necessary for projects utilising biodiversity survey techniques, including an understanding of animal ethics principles and practices and scientific reporting.
- Show evidence of discussion and presentation skills enhanced through online discussions and field trip interaction and through planning and presenting written arguments in coherent, well structured and documented form. Gain experience in working as part of a team during the field trip, demonstrating effective communication skills within and between teams and to supervising staff.

Assessment tasks

- Field Notebook
- Ethics & Scientific Licencing
- Field Trip Report

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

- Gain experience of the range of specialist methods available to quantify plant and animal communities or populations, field and lab experience in the practice of a range of specialist survey techniques
- Gain experience in the skills required to review and evaluate survey data and scientific reports, relevant to biodiversity surveys. Gain experience of skills required in methods of

sampling, measurement, analysis and interpretation. Demonstrated understanding of methods used for measuring and assessment of habitat including abiotic variables

- Obtain a working knowledge of the planning and implementation of field work necessary for projects utilising biodiversity survey techniques, including an understanding of animal ethics principles and practices and scientific reporting.
- Gain experience in using biodiversity survey data through analysis and use of all data collected and application of skills to improve results from biodiversity survey during field components.
- Show evidence of discussion and presentation skills enhanced through online discussions and field trip interaction and through planning and presenting written arguments in coherent, well structured and documented form. Gain experience in working as part of a team during the field trip, demonstrating effective communication skills within and between teams and to supervising staff.

Assessment tasks

- Selection of a Study Site
- Field Notebook
- Ethics & Scientific Licencing
- Field Trip Report

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

- Gain experience in using biodiversity survey data through analysis and use of all data collected and application of skills to improve results from biodiversity survey during field components.
- Show evidence of discussion and presentation skills enhanced through online discussions and field trip interaction and through planning and presenting written arguments in coherent, well structured and documented form. Gain experience in working as part of a team during the field trip, demonstrating effective communication skills within and between teams and to supervising staff.

Assessment tasks

- Selection of a Study Site
- Ethics & Scientific Licencing
- Field Trip Report

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

- Gain experience of the range of specialist methods available to quantify plant and animal communities or populations, field and lab experience in the practice of a range of specialist survey techniques
- Gain experience in the skills required to review and evaluate survey data and scientific reports, relevant to biodiversity surveys. Gain experience of skills required in methods of sampling, measurement, analysis and interpretation. Demonstrated understanding of methods used for measuring and assessment of habitat including abiotic variables
- Obtain a working knowledge of the planning and implementation of field work necessary for projects utilising biodiversity survey techniques, including an understanding of animal ethics principles and practices and scientific reporting.
- Gain experience in using biodiversity survey data through analysis and use of all data collected and application of skills to improve results from biodiversity survey during field components.
- Show evidence of discussion and presentation skills enhanced through online discussions and field trip interaction and through planning and presenting written arguments in coherent, well structured and documented form. Gain experience in working as part of a team during the field trip, demonstrating effective communication skills within and between teams and to supervising staff.

Assessment tasks

- Selection of a Study Site
- Field Notebook
- Ethics & Scientific Licencing
- Field Trip Report

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

- Gain experience of the range of specialist methods available to quantify plant and animal communities or populations, field and lab experience in the practice of a range of specialist survey techniques
- Obtain a working knowledge of the planning and implementation of field work necessary for projects utilising biodiversity survey techniques, including an understanding of animal ethics principles and practices and scientific reporting.
- Gain experience in using biodiversity survey data through analysis and use of all data collected and application of skills to improve results from biodiversity survey during field components.
- Show evidence of discussion and presentation skills enhanced through online discussions and field trip interaction and through planning and presenting written arguments in coherent, well structured and documented form. Gain experience in working as part of a team during the field trip, demonstrating effective communication skills within and between teams and to supervising staff.

Assessment tasks

- Selection of a Study Site
- Field Notebook
- Ethics & Scientific Licencing
- Field Trip Report

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

- Gain experience of the range of specialist methods available to quantify plant and animal communities or populations, field and lab experience in the practice of a range of specialist survey techniques
- Gain experience in the skills required to review and evaluate survey data and scientific reports, relevant to biodiversity surveys. Gain experience of skills required in methods of sampling, measurement, analysis and interpretation. Demonstrated understanding of methods used for measuring and assessment of habitat including abiotic variables
- Obtain a working knowledge of the planning and implementation of field work necessary for projects utilising biodiversity survey techniques, including an understanding of animal ethics principles and practices and scientific reporting.
- Show evidence of discussion and presentation skills enhanced through online discussions and field trip interaction and through planning and presenting written arguments in coherent, well structured and documented form. Gain experience in working as part of a team during the field trip, demonstrating effective communication skills within and between teams and to supervising staff.

Assessment task

- Ethics & Scientific Licencing