



# ENVR12002 *Applied Ecology*

## Term 2 - 2022

Profile information current as at 25/04/2024 09:34 pm

All details in this unit profile for ENVR12002 have been officially approved by CQUniversity and represent a learning partnership between the University and you (our student). The information will not be changed unless absolutely necessary and any change will be clearly indicated by an approved correction included in the profile.

## General Information

### Overview

Applied Ecology is the science of understanding and managing natural living resources. Over-harvesting of exploited species, habitat loss, and the spread of invasive species are among the world's most pressing environmental issues. Solutions to these problems are complex, but firmly embedded in the fundamental tenets of ecological knowledge and theory. This unit will provide you with a broad perspective of the field of applied ecology by working across different ecological levels (ecosystem, community, population and species) and issues, in the process you will explore how ecological knowledge and theory is applied to the management of natural living resources.

### Details

Career Level: *Undergraduate*

Unit Level: *Level 2*

Credit Points: 6

Student Contribution Band: 8

Fraction of Full-Time Student Load: 0.125

### Pre-requisites or Co-requisites

Pre-requisites ZOOL11005 Foundation Animal Biology and BOTN11004 Foundation Plant Biology or BIOL11099 Living Systems and BIOL11100 Functional Biology or BIOL11102 and ENVR11014. Anti-requisite BIOL13031 - Ecology: Theory and Application

Important note: Students enrolled in a subsequent unit who failed their pre-requisite unit, should drop the subsequent unit before the census date or within 10 working days of Fail grade notification. Students who do not drop the unit in this timeframe cannot later drop the unit without academic and financial liability. See details in the [Assessment Policy and Procedure \(Higher Education Coursework\)](#).

### Offerings For Term 2 - 2022

- Mixed Mode
- Rockhampton

### Attendance Requirements

All on-campus students are expected to attend scheduled classes - in some units, these classes are identified as a mandatory (pass/fail) component and attendance is compulsory. International students, on a student visa, must maintain a full time study load and meet both attendance and academic progress requirements in each study period (satisfactory attendance for International students is defined as maintaining at least an 80% attendance record).

### Residential Schools

This unit has a Compulsory Residential School for distance mode students and the details are:

Click here to see your [Residential School Timetable](#).

### Website

[This unit has a website, within the Moodle system, which is available two weeks before the start of term. It is important that you visit your Moodle site throughout the term. Please visit Moodle for more information.](#)

## Class and Assessment Overview

### Recommended Student Time Commitment

Each 6-credit Undergraduate unit at CQUniversity requires an overall time commitment of an average of 12.5 hours of study per week, making a total of 150 hours for the unit.

### Class Timetable

#### [Regional Campuses](#)

Bundaberg, Cairns, Emerald, Gladstone, Mackay, Rockhampton, Townsville

#### [Metropolitan Campuses](#)

Adelaide, Brisbane, Melbourne, Perth, Sydney

### Assessment Overview

#### 1. **Online Quiz(zes)**

Weighting: 40%

#### 2. **Practical Assessment**

Weighting: 30%

#### 3. **Practical Assessment**

Weighting: 30%

### Assessment Grading

This is a graded unit: your overall grade will be calculated from the marks or grades for each assessment task, based on the relative weightings shown in the table above. You must obtain an overall mark for the unit of at least 50%, or an overall grade of 'pass' in order to pass the unit. If any 'pass/fail' tasks are shown in the table above they must also be completed successfully ('pass' grade). You must also meet any minimum mark requirements specified for a particular assessment task, as detailed in the 'assessment task' section (note that in some instances, the minimum mark for a task may be greater than 50%). Consult the [University's Grades and Results Policy](#) for more details of interim results and final grades.

## CQUniversity Policies

**All University policies are available on the [CQUniversity Policy site](#).**

You may wish to view these policies:

- Grades and Results Policy
- Assessment Policy and Procedure (Higher Education Coursework)
- Review of Grade Procedure
- Student Academic Integrity Policy and Procedure
- Monitoring Academic Progress (MAP) Policy and Procedure – Domestic Students
- Monitoring Academic Progress (MAP) Policy and Procedure – International Students
- Student Refund and Credit Balance Policy and Procedure
- Student Feedback – Compliments and Complaints Policy and Procedure
- Information and Communications Technology Acceptable Use Policy and Procedure

This list is not an exhaustive list of all University policies. The full list of University policies are available on the [CQUniversity Policy site](#).

## Previous Student Feedback

### Feedback, Recommendations and Responses

Every unit is reviewed for enhancement each year. At the most recent review, the following staff and student feedback items were identified and recommendations were made.

#### Feedback from Student Unit and Teaching Evaluation (SUTE)

**Feedback**

The best aspects of this unit were the diverse range of topics and case studies - in addition the guest lecturers were beneficial to overall scope of the unit.

**Recommendation**

The unit will continue to use a Team Teaching approach to present a diverse range of engaging and current topics/case studies within the discipline.

#### Feedback from Student Unit and Teaching Evaluation (SUTE)

**Feedback**

Maybe add a little demo on the tree calculations for the residential school report. As someone who struggles with math this would have been a great help.

**Recommendation**

A video demonstrating calculation of species diversity indices will be added to residential school resources. Calculations will be covered further during the residential school.

#### Feedback from Student Unit and Teaching Evaluation (SUTE)

**Feedback**

The unit was fantastic and highly applicable to environmental science.

**Recommendation**

The unit will continue to focus on real world applications and developing skill-sets required in Environmental Science research/industry

#### Feedback from Student Unit and Teaching Evaluation (SUTE)

**Feedback**

Everything was communicated clearly and expectations on the assessments were extremely clear with a very extensive marking rubric provided. The assessment pieces were engaging and formatted well.

**Recommendation**

The approach to assessment will continue.

#### Feedback from Student Unit and Teaching Evaluation (SUTE)

**Feedback**

The tutorials and residential school were both integral and ensured a solid foundation of knowledge was set.

**Recommendation**

Weekly drop-in tutorials and a three-day residential school will remain integral components of the unit.

## Unit Learning Outcomes

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

1. Describe how ecological principles are applied to the protection, management, and restoration of terrestrial and aquatic living resources and ecosystems
2. Discuss the elements, concepts, and theories of population and community structure and dynamics
3. Apply integrated knowledge of population, community and ecosystem ecology to real world situations using industry standard methods
4. Develop and utilise the skills necessary to undertake ecological fieldwork successfully and to analyse ecological data/models.

## Alignment of Learning Outcomes, Assessment and Graduate Attributes



### Alignment of Assessment Tasks to Learning Outcomes

| Assessment Tasks               | Learning Outcomes |   |   |   |
|--------------------------------|-------------------|---|---|---|
|                                | 1                 | 2 | 3 | 4 |
| 1 - Online Quiz(zes) - 40%     | •                 | • |   |   |
| 2 - Practical Assessment - 30% |                   | • | • | • |
| 3 - Practical Assessment - 30% |                   | • | • | • |

### Alignment of Graduate Attributes to Learning Outcomes

| Graduate Attributes                                 | Learning Outcomes |   |   |   |
|---|-------------------|---|---|---|
|   | 1                 | 2 | 3 | 4 |
| 1 - Communication                                   | •                 | • |   | • |
| 2 - Problem Solving                                 | •                 | • | • | • |
| 3 - Critical Thinking                               | •                 | • |   | • |
| 4 - Information Literacy                            |                   |   | • | • |
| 5 - Team Work                                       |                   | • |   | • |
| 6 - Information Technology Competence               |                   |   | • |   |
| 7 - Cross Cultural Competence                       |                   |   |   |   |
| 8 - Ethical practice                                |                   |   | • |   |
| 9 - Social Innovation                               |                   |   |   |   |
| 10 - Aboriginal and Torres Strait Islander Cultures |                   |   |   |   |

### Alignment of Assessment Tasks to Graduate Attributes

| Assessment Tasks               | Graduate Attributes |   |   |   |   |   |   |   |   |    |
|--------------------------------|---------------------|---|---|---|---|---|---|---|---|----|
|                                | 1                   | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 1 - Online Quiz(zes) - 40%     | •                   |   | • | • |   |   |   |   |   |    |
| 2 - Practical Assessment - 30% |                     | • | • |   | • | • |   | • |   |    |

| Assessment Tasks                      | Graduate Attributes |   |   |   |   |   |   |   |   |    |
|---------------------------------------|---------------------|---|---|---|---|---|---|---|---|----|
|                                       | 1                   | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| <b>3 - Practical Assessment - 30%</b> |                     | • | • |   | • | • |   | • |   |    |

## Textbooks and Resources

### Textbooks

ENVR12002

#### Supplementary

#### **Applied Ecology Monitoring, Managing, and Conserving**

Edition: 1 (2017)

Authors: Anne Goodenough, Adam G. Hart

OUP Oxford

Oxford University Press , United Kingdom

ISBN: 9780198723288

Binding: Paperback

### IT Resources

#### **You will need access to the following IT resources:**

- CQUniversity Student Email
- Internet
- Unit Website (Moodle)

## Referencing Style

All submissions for this unit must use the referencing style: [Harvard \(author-date\)](#)

For further information, see the Assessment Tasks.

## Teaching Contacts

**Guy Carton** Unit Coordinator

[a.carton@cqu.edu.au](mailto:a.carton@cqu.edu.au)

## Schedule

### **Week 1 - 11 Jul 2022**

| Module/Topic                            | Chapter | Events and Submissions/Topic |
|---|---------|------------------------------|
| WEEK 1: INTRODUCTION TO APPLIED ECOLOGY |         |                              |

### **Week 2 - 18 Jul 2022**

| Module/Topic                     | Chapter | Events and Submissions/Topic |
|----------------------------------|---------|------------------------------|
| WEEK 2: SURVEYING AND MONITORING |         |                              |

### **Week 3 - 25 Jul 2022**

| Module/Topic                                  | Chapter | Events and Submissions/Topic                    |
|---|---------|---|
| WEEK 3: BEFORE, AFTER, CONTROL, IMPACT (BACI) |         | Theory Quiz 1 will open 07:00 Friday of Week 3. |

**Week 4 - 01 Aug 2022**

| Module/Topic                  | Chapter | Events and Submissions/Topic  |
|-------------------------------|---------|---|
| WEEK 4: ECOLOGICAL INDICATORS |         | Theory Quiz 1 will close 23:55 Friday of Week 4.<br>Theory Quiz 2 will open 07:00 Friday of Week 4. |

**Week 5 - 08 Aug 2022**

| Module/Topic           | Chapter | Events and Submissions/Topic                     |
|------------------------|---------|--|
| WEEK 5: REMOTE SENSING |         | Theory Quiz 2 will close 23:55 Friday of Week 5. |

**Vacation Week - 15 Aug 2022**

| Module/Topic | Chapter | Events and Submissions/Topic |
|--------------|---------|------------------------------|
|--------------|---------|------------------------------|

**Week 6 - 22 Aug 2022**

| Module/Topic                                       | Chapter | Events and Submissions/Topic |
|--|---------|------------------------------|
| WEEK 6: EXPLOITED SPECIES - WILD CAPTURE FISHERIES |         |                              |

**Week 7 - 29 Aug 2022**

| Module/Topic                                       | Chapter | Events and Submissions/Topic                    |
|--|---------|---|
| WEEK 7: EXPLOITED SPECIES - WILD CAPTURE FISHERIES |         | Theory Quiz 3 will open 07:00 Friday of Week 7. |

**Week 8 - 05 Sep 2022**

| Module/Topic               | Chapter | Events and Submissions/Topic  |
|----------------------------|---------|---|
| WEEK 8: RESIDENTIAL SCHOOL |         | Theory Quiz 3 will close 23:55 Friday of Week 8.<br>Residential School, North ROK Campus, (ROK 09/G.14). 0900-17:00, Monday to Wednesday (inclusive) of Week 8. |

**Week 9 - 12 Sep 2022**

| Module/Topic                  | Chapter | Events and Submissions/Topic |
|-------------------------------|---------|------------------------------|
| WEEK 9: WILDLIFE INTERACTIONS |         |                              |

**Week 10 - 19 Sep 2022**

| Module/Topic                              | Chapter | Events and Submissions/Topic |
|---|---------|------------------------------|
| WEEK 10: LANDSCAPE ECOLOGY AND MANAGEMENT |         |                              |

**Week 11 - 26 Sep 2022**

| Module/Topic                       | Chapter | Events and Submissions/Topic                     |
|------------------------------------|---------|--|
| WEEK 11: ENVIRONMENTAL RESTORATION |         | Theory Quiz 4 will open 07:00 Friday of Week 11. |

**Week 12 - 03 Oct 2022**

| Module/Topic  | Chapter | Events and Submissions/Topic                      |
|---|---------|---|
| WEEK 12: ENVIRONMENTAL REHABILITATION OF IMPACTED SITES |         | Theory Quiz 4 will close 23:55 Friday of Week 12. |

## Assessment Tasks

### 1 Online Quiz(zes) / Short Answer Questions

**Assessment Type**

Online Quiz(zes)

**Task Description**

Online Quiz(zes)/Short Answer Questions will test knowledge across several key areas:

1. Ecological surveying and monitoring / BACI (Topics Week 2 & 3).
2. Ecological indicators (Topic Week 4).
3. Exploited Species: Wild capture fisheries (Topic Week 6 & 7).
4. Wildlife interactions / Landscape ecology and management / Environmental restoration (Topic Week 9, 10, 11).

**Number of Quizzes**

4

**Frequency of Quizzes**

Other

**Assessment Due Date**

Quiz 1 due 23:55 Friday Week 4, Quiz 2 23:55 Friday Week 5, Quiz 3 23:55 Friday Week 8, Quiz 4 23:55 Friday Week 12

**Return Date to Students****Weighting**

40%

**Assessment Criteria**

Periodic online quizzes/short answers are based on lecture and study material from the previous week(s).

For ALL students, online quizzes will open on the Friday (07:00) of the week of the topic (e.g. Quiz 1 covers Week 2 and 3, so opens 07:00 Friday of Week 3) and is open for 7 days (e.g. Quiz 1 closes on 23:55 Friday of Week 4). Students will have one attempt per quiz. Questions can be a mix of true/false, multiple choice, mix-and-match, short answers, and other formats.

Do not share your questions or answers with other students as this may disadvantage other students, and such behaviour will be considered a breach of academic integrity and may result in academic misconduct.

**Referencing Style**

- [Harvard \(author-date\)](#)

**Submission**

Online

**Learning Outcomes Assessed**

- Describe how ecological principles are applied to the protection, management, and restoration of terrestrial and aquatic living resources and ecosystems
- Discuss the elements, concepts, and theories of population and community structure and dynamics

**Graduate Attributes**

- Communication
- Critical Thinking
- Information Literacy

## 2 Practical Report 1: Growth Modelling Assessment of Marine Fish

**Assessment Type**

Practical Assessment

**Task Description**

During your ENVR12002 Residential School you will undertake activities that require the application of scientific and industry standard monitoring, assessment and surveying methodologies and technologies. These activities will be primarily across two areas; 1) Growth Modelling Assessment of Marine Fish (Practical Report 1), and 2) Ecological Surveying Methods (Practical Report 2). Following the Residential School you will use the data collected during each activity to write up and present the results and conclusions in the format of a scientific/industry standard report.

To assist you with the task of writing up the reports, general assistance with the interpretation and analysis of data will be provided at the conclusion of each activity during the Residential School.

**Assessment Due Date****Return Date to Students****Weighting**

30%

## Assessment Criteria

Practical Report will be assessed on:

1. Completeness (relevant observations, methods and results relating to growth assessment and modelling of teleost fish).
2. Discussion of the results in context with current and relevant fisheries methods for assessment and predictive modelling of fish growth.
3. Appropriate application and discussion of teleost fish growth and modelling assessment(s) and applications/limitations in the management of exploited stocks.
4. Clarity, grammar, punctuation and organisation.
5. Presentation of figures, tables and diagrams (to publication standard).
6. Correct inline referencing of figures/tables/diagrams.
7. Appropriate and correctly-cited references with appropriate author-date citation (Harvard referencing).
8. Word limit of 2000 words.

Further details of the assessment criteria and rubric will be available on unit Moodle (Week 8: Residential School) and discussed with students at the conclusion of the Residential School.

## Referencing Style

- [Harvard \(author-date\)](#)

## Submission

Online

## Learning Outcomes Assessed

- Discuss the elements, concepts, and theories of population and community structure and dynamics
- Apply integrated knowledge of population, community and ecosystem ecology to real world situations using industry standard methods
- Develop and utilise the skills necessary to undertake ecological fieldwork successfully and to analyse ecological data/models.

## Graduate Attributes

- Problem Solving
- Critical Thinking
- Team Work
- Information Technology Competence
- Ethical practice

# 3 Practical Report 2: Ecological Surveying Methods

## Assessment Type

Practical Assessment

## Task Description

During your ENVR12002 Residential School you will undertake activities that require the application of scientific and industry standard monitoring, assessment and surveying methodologies and technologies. These activities will be primarily across two areas; 1) Growth Modelling Assessment of Marine Fish (Practical Report 1), and 2) Ecological Surveying Methods (Practical Report 2). Following the Residential School you will use the data collected during each activity to write up and present the results and conclusions in the format of a scientific/industry standard report. To assist you with the task of writing up the reports, general assistance with the interpretation and analysis of data will be provided at the conclusion of each activity during the Residential School.

## Assessment Due Date

## Return Date to Students

## Weighting

30%

## Assessment Criteria

Practical Report will be assessed on:

1. Completeness (relevant observations, methods and results relating to assessment of species diversity through application of different sampling techniques).
2. Discussion of the results in context with current and relevant ecological sampling techniques that seek to measure and quantify species diversity.
3. Appropriate application and discussion of sampling and assessment of species diversity and consideration of

- habitat classification for ecological management.
4. Clarity, grammar, punctuation and organisation.
  5. Presentation of figures, tables and diagrams (to publication standard).
  6. Correct inline referencing of figures/tables/diagrams.
  7. Appropriate and correctly-cited references with appropriate author-date citation (Harvard referencing).
  8. Word limit of 2000 words.

Further details of the assessment criteria and rubric will be available on unit Moodle (Week 8: Residential School) and discussed with students at the conclusion of the Residential School.

### **Referencing Style**

- [Harvard \(author-date\)](#)

### **Submission**

Online

### **Learning Outcomes Assessed**

- Discuss the elements, concepts, and theories of population and community structure and dynamics
- Apply integrated knowledge of population, community and ecosystem ecology to real world situations using industry standard methods
- Develop and utilise the skills necessary to undertake ecological fieldwork successfully and to analyse ecological data/models.

### **Graduate Attributes**

- Problem Solving
- Critical Thinking
- Team Work
- Information Technology Competence
- Ethical practice

## Academic Integrity Statement

As a CQUniversity student you are expected to act honestly in all aspects of your academic work.

Any assessable work undertaken or submitted for review or assessment must be your own work. Assessable work is any type of work you do to meet the assessment requirements in the unit, including draft work submitted for review and feedback and final work to be assessed.

When you use the ideas, words or data of others in your assessment, you must thoroughly and clearly acknowledge the source of this information by using the correct referencing style for your unit. Using others' work without proper acknowledgement may be considered a form of intellectual dishonesty.

Participating honestly, respectfully, responsibly, and fairly in your university study ensures the CQUniversity qualification you earn will be valued as a true indication of your individual academic achievement and will continue to receive the respect and recognition it deserves.

As a student, you are responsible for reading and following CQUniversity's policies, including the [Student Academic Integrity Policy and Procedure](#). This policy sets out CQUniversity's expectations of you to act with integrity, examples of academic integrity breaches to avoid, the processes used to address alleged breaches of academic integrity, and potential penalties.

### What is a breach of academic integrity?

A breach of academic integrity includes but is not limited to plagiarism, self-plagiarism, collusion, cheating, contract cheating, and academic misconduct. The Student Academic Integrity Policy and Procedure defines what these terms mean and gives examples.

### Why is academic integrity important?

A breach of academic integrity may result in one or more penalties, including suspension or even expulsion from the University. It can also have negative implications for student visas and future enrolment at CQUniversity or elsewhere. Students who engage in contract cheating also risk being blackmailed by contract cheating services.

### Where can I get assistance?

For academic advice and guidance, the [Academic Learning Centre \(ALC\)](#) can support you in becoming confident in completing assessments with integrity and of high standard.

### What can you do to act with integrity?



#### Be Honest

If your assessment task is done by someone else, it would be dishonest of you to claim it as your own



#### Seek Help

If you are not sure about how to cite or reference in essays, reports etc, then seek help from your lecturer, the library or the Academic Learning Centre (ALC)



#### Produce Original Work

Originality comes from your ability to read widely, think critically, and apply your gained knowledge to address a question or problem