

## ENVS6001: Biodiversity, Conservation Science and Management

Online

Trimester 2 - 2024



THE UNIVERSITY OF  
NEWCASTLE  
AUSTRALIA

## OVERVIEW

### Course Description

"Modern biology has produced a genuinely new way of looking at the world...to the degree that [when] we come to understand other organisms, we will place greater value on them, and on ourselves." (E.O. Wilson, 1984). Our concerns about the conservation of biodiversity are intrinsically related to the conservation of genetic diversity and the natural evolutionary system that shapes this diversity. Conservation biology focuses on understanding the biology of endangerment and the processes that influence this, while conservation science and management consider the regulatory environment and habitat management tools for mitigating such impacts.

This course explores the principles of nature conservation and the paradigm of global biodiversity against the backdrop of the processes affecting them in the Anthropocene, such as climate change, global mobility, and habitat degradation. Major patterns of biodiversity change and decline are investigated using case studies from around the world including the spread of wildlife disease, removal of apex predators and community knock-on effects and species loss due to habitat degradation. A major component of the course is a critique of the range of policy and practice initiatives designed to ameliorate anthropogenic impacts to biodiversity, including analysis of the statutory environment for impact assessment and consent conditions in developed and developing countries as well as recent advances in scientific and management methods including habitat manipulations and reintroductions.

### Contact Hours

#### Online

#### Self-Directed Learning

Self-Directed

10 hour(s) per week(s) for 13 week(s) starting Week 1

Students are required to spend on average, 10 - 12 hours per week (non-contact) on self-directed learning.

#### Tutorial

Online

1 hour(s) per week(s) for 12 week(s) starting Week 1

### Unit Weighting

10

### Workload

Students are required to spend on average 120-140 hours of effort (contact and non-contact) including assessments per 10-unit course.

# COURSE OUTLINE

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# CONTACTS

<b>Course Coordinator</b>	Dr John Gould <a href="mailto:John.Gould@newcastle.edu.au">John.Gould@newcastle.edu.au</a> Consultation: By Appointment.
<b>Teaching Staff</b>	Other teaching staff will be advised on the course Canvas site.
<b>School Office</b>	<b>School of Environmental and Life Sciences</b> Room C228 Chemistry Building Callaghan <a href="mailto:Science-SELS@newcastle.edu.au">Science-SELS@newcastle.edu.au</a> +61 2 4921 5080 9am-5pm (Mon-Fri)

# SYLLABUS

<b>Course Content</b>	<ol style="list-style-type: none"><li>1. The foundation and development of conservation biology:<ul style="list-style-type: none"><li>• origins of conservation biology and the principles of nature conservation</li><li>• the paradigm of global biodiversity</li><li>• the global history of conservation planning</li></ul></li><li>2. Understanding global biodiversity:<ul style="list-style-type: none"><li>• valuing and measuring biodiversity</li><li>• global biodiversity hotspots</li></ul></li><li>3. The biology of endangerment:<ul style="list-style-type: none"><li>• population dynamics, viability, and extinction</li><li>• protecting genetic diversity</li><li>• key threats to biodiversity</li></ul></li><li>4. Conservation biology in action:<ul style="list-style-type: none"><li>• legislative frameworks for biodiversity conservation (global, national, local)</li><li>• reproduction, reintroduction, restoration, replacement, and resilience</li><li>• the data deficient environment of decision making in conservation management</li></ul></li></ol>
<b>Course Learning Outcomes</b>	<p><b>On successful completion of this course, students will be able to:</b></p> <ol style="list-style-type: none"><li>1. Connect skills and theoretical knowledge to generate, analyse and interpret results relating to conservation science and management.</li><li>2. Investigate conservation biology problems and biological process (biology of endangerment) using computer simulations.</li><li>3. Reconstruct and communicate information from scholarly and grey literature in an engaging manner for a non-scientific audience.</li><li>4. Critically evaluate solutions including consideration of the history of the problem, logic around the problem, as well as feasibility and impact.</li><li>5. Conduct an independent research project that deals with a major issue in biodiversity, conservation science and management at the local, regional, national, or international scale.</li></ol>

## SCHEDULE

Week	Week Begins	Topic	Learning Activity	Assessment Due
1	13 May	Settling In	Introductory Discussion Forum/Tutorial Select Tutorial Week	Contribute to tutorial discussion
2	20 May	The foundation & development of conservation biology and planning	Peer-led presentation in Discussion Forum/Tutorial	Contribute to tutorial discussion
3	27 May	Valuing and measuring biodiversity	Peer-led presentation in Discussion Forum/Tutorial	Contribute to tutorial discussion
4	3 Jun	Global biodiversity hotspots	Peer-led presentation in Discussion Forum/Tutorial	Contribute to tutorial discussion
5	10 Jun	Population dynamics, viability & extinction	Population simulation exercise & report	Contribute to tutorial discussion
6	17 Jun	Key threats to biodiversity	Peer-led presentation in Discussion Forum/Tutorial	Population simulation exercise & report
7	24 Jun	Legislative frameworks for biodiversity conservation	Peer-led presentation in Discussion Forum/Tutorial	Contribute to tutorial discussion
8	1 Jul	Reproduction and reintroduction	Peer-led presentation in Discussion Forum/Tutorial	Contribute to tutorial discussion
9	8 Jul	Development of major project	Give and receive constructive feedback on major project mind-map	Submit mind-map for major project for peer feedback
10	15 Jul	The data-deficient environment of decision making in conservation management	Peer-led presentation in Discussion Forum/Tutorial	Contribute to tutorial discussion
11	22 Jul	Dollars and sense – the complex issue of placing a monetary value on biodiversity & investing in the future	Peer-led presentation in Discussion Forum/Tutorial	Contribute to tutorial discussion
12	29 Jul	Complete major project	Major Research Project Completion	Major Research Project Completion
<b>Exams</b>				

# ASSESSMENTS

This course has 3 assessments. Each assessment is described in more detail in the sections below.

	Assessment Name	Due Date	Involvement	Weighting	Learning Outcomes
1	Learning activity	Various throughout the Trimester	Individual	30%	1, 2, 3
2	Population simulation exercise and report	Week 6	Individual	30%	3, 4, 5
3	Major research project	Mind map - Week 9 Report - Week 12	Individual	40%	1, 2, 4, 5

## Late Submissions

The mark for an assessment item submitted after the designated time on the due date, without an approved extension of time, will be reduced by 10% of the possible maximum mark for that assessment item for each day or part day that the assessment item is late. Note: this applies equally to week and weekend days.

## Assessment 1 - Learning activity

<b>Assessment Type</b>	Online Learning Activity
<b>Purpose</b>	Online Learning Activity – Multimedia and multiple perspectives tutorials
<b>Description</b>	The Online Learning Activity will be in the form of a 2-minute multimedia presentation. The objective is to train students to synthesise information based on key topics related to biodiversity, conservation science and management and to present this information in a succinct and engaging manner to a non-scientific audience. The topic will be presented through the lens of a specific stakeholder (eg – indigenous community, developer etc) and multiple perspectives discussed in the tutorial period (recorded). Scripts will be uploaded to Canvas for marking. The presentation is selected in week 1 from a list of topics. Presenting students will lead the tutorial discussion. This assessment also includes the mark for weekly contribution to tutorial discussions.
<b>Weighting</b>	30%
<b>Length</b>	2 minutes
<b>Due Date</b>	Various throughout the trimester
<b>Submission Method</b>	Online
<b>Assessment Criteria</b>	Rubric in Canvas
<b>Return Method</b>	Online
<b>Feedback Provided</b>	Online - Within three weeks of submission date.
<b>Opportunity to Reattempt</b>	Students WILL NOT be given the opportunity to reattempt this assessment.

## Assessment 2 - Population simulation exercise and report

<b>Assessment Type</b>	Report
<b>Purpose</b>	Analysis and Report
<b>Description</b>	This simulation enhances student understanding of the concept of population viability and the factors that affect it. A functional understanding of population viability is critical to the implementation of successful management actions for biodiversity conservation.
<b>Weighting</b>	30%
<b>Length</b>	No more than 4 pages
<b>Due Date</b>	Week 6
<b>Submission Method</b>	Online
<b>Assessment Criteria</b>	Assessment Rubric on Canvas
<b>Return Method</b>	Online
<b>Feedback Provided</b>	Online - Within three weeks of submission date.
<b>Opportunity to Reattempt</b>	Students WILL NOT be given the opportunity to reattempt this assessment.

## Assessment 3 - Major research project

<b>Assessment Type</b>	Project
<b>Purpose</b>	Project
<b>Description</b>	This Project (report) is based on a case study in Biodiversity, Conservation Science and Management. It has two components - development of a mind map which will be peer-reviewed with feedback provided to assist in report planning; and a final report including a visual abstract that must show incorporation of feedback.
<b>Weighting</b>	40%
<b>Length</b>	2500 words
<b>Due Date</b>	Mind map - Week 9 Report - Week 12
<b>Submission Method</b>	Online
<b>Assessment Criteria</b>	Rubric on Canvas
<b>Return Method</b>	Online
<b>Feedback Provided</b>	Online - Within three weeks of date of submission.
<b>Opportunity to Reattempt</b>	Students WILL NOT be given the opportunity to reattempt this assessment.

## ADDITIONAL INFORMATION

### Grading Scheme

This course is graded as follows:

Range of Marks	Grade	Description
85-100	High Distinction (HD)	Outstanding standard indicating comprehensive knowledge and understanding of the relevant materials; demonstration of an outstanding level of academic achievement; mastery of skills*; and achievement of all assessment objectives.
75-84	Distinction (D)	Excellent standard indicating a very high level of knowledge and understanding of the relevant materials; demonstration of a very high level of academic ability; sound development of skills*; and achievement of all assessment objectives.
65-74	Credit (C)	Good standard indicating a high level of knowledge and understanding of the relevant materials; demonstration of a high level of academic achievement; reasonable development of skills*; and achievement of all learning outcomes.
50-64	Pass (P)	Satisfactory standard indicating an adequate knowledge and understanding of the relevant materials; demonstration of an adequate level of academic achievement; satisfactory development of skills*; and achievement of all learning outcomes.
0-49	Fail (FF)	Failure to satisfactorily achieve learning outcomes. If all compulsory course components are not completed the mark will be zero. A fail grade may also be awarded following disciplinary action.

\*Skills are those identified for the purposes of assessment task(s).

### Attendance

Attendance/participation will be recorded in the following components:

- Tutorial (Method of recording: attendance on zoom tutorial)

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<b>WH&amp;S Requirements</b>	<b>Work Checklist Set Up:</b> <a href="http://www.newcastle.edu.au/data/assets/pdf_file/0020/200846/Ergonomics-advice.pdf">http://www.newcastle.edu.au/data/assets/pdf_file/0020/200846/Ergonomics-advice.pdf</a>  <b>Ergonomic Tips:</b> <a href="http://www.newcastle.edu.au/current-staff/working-here/work-health-and-safety/safety-at-work">http://www.newcastle.edu.au/current-staff/working-here/work-health-and-safety/safety-at-work</a>  <b>Take a Break Every 30 Minutes:</b> <a href="http://www.newcastle.edu.au/current-students/support/health-counselling-and-wellbeing/your-physical-health/study-safely">http://www.newcastle.edu.au/current-students/support/health-counselling-and-wellbeing/your-physical-health/study-safely</a>  <b>Manage Your Eyes:</b> <a href="https://www.usc.edu.au/media/1000574/Exercises-for-Computer-Users-and-Office-Workers.pdf">https://www.usc.edu.au/media/1000574/Exercises-for-Computer-Users-and-Office-Workers.pdf</a>
<b>Communication Methods</b>	Communication methods used in this course include: <ul style="list-style-type: none"><li>- Canvas Course Site: Students will receive communications via the posting of content or announcements on the Canvas course site.</li></ul>
<b>Course Evaluation</b>	Each year feedback is sought from students and other stakeholders about the courses offered in the University for the purposes of identifying areas of excellence and potential improvement.  As a result of student feedback, the following changes have been made to this offering of the course: <ul style="list-style-type: none"><li>- Inclusion of 1hr weekly online tutorial to facilitate synchronous as well as asynchronous learning.</li></ul>
<b>Oral Interviews (Vivas)</b>	As part of the evaluation process of any assessment item in this course an oral examination (viva) may be conducted. The purpose of the oral examination is to verify the authorship of the material submitted in response to the assessment task. The oral examination will be conducted in accordance with the principles set out in the <a href="#">Oral Examination (viva) Procedure</a> . In cases where the oral examination reveals the assessment item may not be the student's own work the case will be dealt with under the <a href="#">Student Conduct Rule</a> .
<b>Academic Misconduct</b>	All students are required to meet the academic integrity standards of the University. These standards reinforce the importance of integrity and honesty in an academic environment. Academic Integrity policies apply to all students of the University in all modes of study and in all locations. For the Student Academic Integrity Policy, refer to <a href="https://policies.newcastle.edu.au/document/view-current.php?id=35">https://policies.newcastle.edu.au/document/view-current.php?id=35</a> .
<b>Adverse Circumstances</b>	The University acknowledges the right of students to seek consideration for the impact of allowable adverse circumstances that may affect their performance in assessment item(s). Applications for special consideration due to adverse circumstances will be made using the online Adverse Circumstances system where: <ol style="list-style-type: none"><li>1. the assessment item is a major assessment item; or</li><li>2. the assessment item is a minor assessment item, and the Course Co-ordinator has specified in the Course Outline that students may apply the online Adverse Circumstances system;</li><li>3. you are requesting a change of placement; or</li><li>4. the course has a compulsory attendance requirement.</li></ol> Before applying you must refer to the Adverse Circumstance Affecting Assessment Items Procedure available at:  <a href="https://policies.newcastle.edu.au/document/view-current.php?id=236">https://policies.newcastle.edu.au/document/view-current.php?id=236</a>

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**Important Policy  
Information**

The Help button in the Canvas Navigation menu contains helpful information for using the Learning Management System. Students should familiarise themselves with the policies and procedures at <https://www.newcastle.edu.au/current-students/respect-at-uni/policies-and-procedures> that support a safe and respectful environment at the University.

*This course outline was approved by the Head of School. No alteration of this course outline is permitted without Head of School approval. If a change is approved, students will be notified and an amended course outline will be provided in the same manner as the original.*

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