

# BIOS 3023 VERTEBRATE BIODIVERSITY

**Credit Points** 10

**Legacy Code** 300861

**Coordinator** Christopher Turbill ([https://directory.westernsydney.edu.au/search/name/Christopher Turbill/](https://directory.westernsydney.edu.au/search/name/Christopher%20Turbill/))

**Description** This subject examines the functional ecology and diversity of vertebrate animals (fish, amphibians, reptiles, birds and mammals). It takes an integrative approach, combining anatomy, physiology, ecology and behaviour, to explain how vertebrates survive and reproduce in relation to their environment. We will uncover the evolutionary relationships among vertebrate groups, and examine their adaptations to different environmental challenges. The subject also explores patterns in vertebrate diversity, with a focus on Australian ecosystems. Students will apply their knowledge of the scientific method to design and conduct their own research project to investigate how environmental factors influence vertebrate animal abundance and diversity.

**School** Science

**Discipline** Ecology and Evolution

**Student Contribution Band** HECS Band 2 10cp

Check your fees via the Fees ([https://www.westernsydney.edu.au/currentstudents/current\\_students/fees/](https://www.westernsydney.edu.au/currentstudents/current_students/fees/)) page.

**Level** Undergraduate Level 3 subject

**Pre-requisite(s)** BIOS 1001

**Equivalent Subjects** LGYA 5856 - Animal Form Function BIOS 3024 - Vertebrate Biodiversity

## Learning Outcomes

On successful completion of this subject, students should be able to:

1. Identify the morphological and physiological characteristics that define vertebrate animals
2. Understand the processes and explain patterns in the phylogenetic (evolutionary) history and current diversity of vertebrate animals
3. Compare and contrast the structure and function of major body systems in vertebrate animals to understand their evolution in response to different environmental challenges
4. Critically interpret the ecological function of variation in morphological, physiological and behavioural traits among vertebrate animals in relation to their environment, especially from an Australian perspective
5. Review broad patterns in the diversity of vertebrate animal species and evaluate how human-induced environmental changes threaten the viability of their populations
6. Apply the scientific method and work collaboratively to design, conduct and analyse a research project addressing the environmental factors that determine the diversity and abundance of vertebrate animal species

## Subject Content

1. Structure and function of major vertebrate animal groups
2. Evolutionary relationships among vertebrate animal groups
3. Diversity of vertebrates, around the world and in Australia

4. Functional ecology of vertebrates in Australian ecosystems
5. Application of scientific method to study vertebrates in relation to their environment

## Assessment

The following table summarises the standard assessment tasks for this subject. Please note this is a guide only. Assessment tasks are regularly updated, where there is a difference your Learning Guide takes precedence.

| Type                   | Length      | Percent | Threshold | Individual/ Group Task | Mandatory |
|------------------------|-------------|---------|-----------|------------------------|-----------|
| Quiz 1                 | 35 minutes  | 15      | N         | Individual             |           |
| Quiz 2                 | 35 minutes  | 15      | N         | Individual             |           |
| Quiz 3                 | 35 minutes  | 15      | N         | Individual             |           |
| Practical class report | N/A         | 20      | N         | Individual             |           |
| Scientific Essay       | 3,000 words | 35      | N         | Individual             |           |

Prescribed Texts

- Pough, FH 2019, Vertebrate life, 10th edn, Oxford University Press, New York