

Module 4 – Human Impacts

Effects of Introduced Species

This document references the [Earth and Environmental Science Stage 6 Syllabus](#) © 2017 [NSW Education Standards Authority \(NESA\)](#) for and on behalf of the Crown in right of the State of New South Wales.

Outcomes

Inquiry question – How do introduced species affect the Australian environment and ecosystems?

Values and attitudes

- develop positive, informed values and attitudes towards earth and environmental science
- recognise the importance and relevance of earth and environmental science in their lives

Working scientifically

- › EES11/12-3 conducts investigations to collect valid and reliable primary and secondary data and information
- › EES11/12-4 selects and processes appropriate qualitative and quantitative data and information using a range of appropriate media
- › EES11/12-5 analyses and evaluates primary and secondary data and information
- › EES11/12-1 develops and evaluates questions and hypotheses for scientific investigation
- › EES11/12-6 solves scientific problems using primary and secondary data, critical thinking skills and scientific processes
- › EES11/12-7 communicates scientific understanding using suitable language and terminology for a specific audience or purpose

Knowledge and understanding

EES11-11 describes human impact on the Earth in relation to hydrological processes, geological processes and biological changes

Inquiry question: How do introduced species affect the Australian environment and ecosystems?

outline the biotic and abiotic effects of introduced species

- conduct an investigation into a local introduced species, including:
 - reason for introducing the species
 - biotic and abiotic effects of the species
 - area affected by the species
 - human impacts that favour the introduced species
 - control or mitigation methods
 - economic impact of the species
 - different views about the value of and/or harm caused by the introduced species, including the views of Aboriginal and Torres Strait Islander Peoples
- analyse ways in which human activity can upset the balance of ecosystems and favour introduced species (ACSES027)
- describe ways in which introduced species contribute to the decline or extinction of native Australian species (ACSES081)

Learning across the curriculum

Sustainability

General capabilities

Critical and creative thinking ✨

Information and communication technology capability 📄

Literacy 📖

Numeracy

Task outline

To investigate the inquiry question “How do introduced species affect the Australian environment and ecosystems?” through secondary research and a field trip to Brewongle Environmental Education Centre to conduct primary research into the impacts of Foxes.

Task

Part A: Secondary source investigation (10 marks)

- Complete pre-excursion research tasks
- To create a specific inquiry question relating to the effect of foxes at Brewongle EEC
- Predict/hypothesise the outcome of your field study based on your research of fox/quoll population dynamics

Part B: Primary source investigation (10 marks)

- Complete a firsthand investigation as part of a field trip to collect primary data.
- You will be marked on the completion of your field booklet and quality of data.

Part C: Analysis and communication of data from Part B (10 marks)

- Complete the post visit task in the student booklet provided.
- Process and analyse the data to help solve the problem presented by your inquiry question.
- Communicate your scientific findings using a medium of your choice.

Your summary should be written to show a deep understanding of the inquiry question. Your responses should be written in your own words.

Marking guidelines (Part A)

Marks	Marking criteria
8-10	Student able to communicate summary of main ideas using their own language, relevant scientific terminology is included and used accurately. Adequate information provided. Student shows an excellent level of understanding of concepts. Adequately formatted and 3 or more sources used.
5-7	Student able to communicate summary of main ideas using their own language. Student shows a good level of understanding. Inadequately presented in format but a reasonable attempt made to acknowledge 2 sources
2-4	Student summary completed but does not show student understanding in their own words. Student shows a basic level of understanding. Inadequately presented in format, poor attempt made to acknowledge sources.
0-1	Limited communication of ideas and limited use of scientific terminology

Marking guidelines (Part B)

Marks	Marking criteria
8-10	Student data booklet completed with calculation of all means and averages. Data interpretation questions answered showing a high level of understanding. Student shows an excellent level of understanding of concepts.
5-7	Student data booklet mostly completed with some interpretation questions completed Student shows a good level of understanding. Some primary data missing
2-4	Student data booklet not completed fully and majority of interpretation questions not attempted. Student shows a basic level of understanding. Missing significant amounts of primary data
0-1	Limited collection of any data, interpretation questions not attempted, booklet not completed.

Marking guidelines (Part C)

Marks	Marking criteria
8-10	<p>Student has shown evidence of processing and analysing both primary and secondary data collected, relevant scientific terminology is included and used accurately. Adequate information provided.</p> <p>Student shows an excellent level of understanding of concepts.</p> <p>Adequately formatted and 3 or more sources used.</p>
5-7	<p>Student able to communicate summary of main ideas using their own language. Some evidence of processing and analysing data and use of scientific terminology</p> <p>Student shows a good level of understanding.</p> <p>Inadequately presented in format but a reasonable attempt made to acknowledge 2 sources</p>
2-4	<p>Student summary completed but does not show student understanding in their own words.</p> <p>Student shows a basic level of understanding.</p> <p>Inadequately presented in format, poor attempt made to acknowledge sources.</p>
0-1	<p>Limited communication of ideas and limited use of scientific terminology</p>