



Stage 6 – Earth & Environmental Science

Human Impacts

Strickland State Forest

Program Overview

Students will use an inquiry leaning model to investigate how introduced species affect the rainforest environment at Strickland State Forest. They will view a variety of human impacts with the main case studies focussing on Lantana, Mosquito Fish and Bell Birds. The management options for this ecosystem will also be discussed.

Key Questions

1. How do introduced species affect the environment?
2. How do introduced species contribute to the decline of native species?
3. How does water quality affect local species?
4. What are the different ways this environment can be managed?

Learning Experiences & Content

Working Scientifically

Students will discuss appropriate equipment for the investigation, discuss variables and ensure a valid procedure is followed. They will have the opportunity to analyse data and make conclusions from the available evidence.

Field work activities include:

- use of quadrats to measure distribution & abundance of plants
- use of field guides and apps to identify species
- measurement of physical and chemical abiotic influences
- water quality analysis
- dip netting survey for introduced species

Impact of Lantana on Rainforest

Students will assess the impact of lantana on the environment by comparing quadrats in a lantana infested area and an undisturbed rainforest area. They will measure abiotic factors such as soil pH, temp, light and humidity to account for the impacts of lantana.

Water quality and Gambusia

Strickland forest is adjacent to the Narara Eco Village dam. The site contains the introduced 'Mosquito Fish' and a variety of frogs. Students will conduct a dip netting survey of the dam and discuss human impacts such as the threat of the mosquito fish on frog



populations. Water quality will also be tested and compared with the creek in Strickland Forest.

Impact of Bell Birds on Blue Gums

The dam site is also heavily impacted by lantana and as a consequence a Bell Bird population has moved in and caused a 'die back' problem on the Blue Gums. Students will examine the relationship between Bell Birds and Blue Gums and discuss the control of introduced species at Strickland Forest.



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Outcomes

Earth & Environmental - Stage 6

A Student:

- ✿ **EES11/12-1** develops and evaluates questions and hypotheses for scientific investigation.
- ✿ **EES11/12-2** designs and evaluates investigations in order to obtain primary and secondary data and information.
- ✿ **EES11/12-3** conducts investigations to collect valid and reliable primary and secondary data and information.
- ✿ **EES11-11** describes human impact on the Earth in relation to hydrological processes, geological processes and biological changes.

Content

Effects of Introduced Species

Students:

- ✿ 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**).

