

Overview

Freshwater Ecology: Years 11-12

SIP

Science in Practice



Overview

Freshwater Ecology is a whole day Science in Practice program that describes the **concepts** of: interactions and relationships between abiotic and biotic factors, feeding relationships, impacts of introduced species plus the importance of water quality and monitoring strategies.

During the program students will **analyse and interpret** abiotic and biotic information gathered from Mimosa Creek (Bulimba Creek Catchment). Monitoring strategies will include dip netting for macro-invertebrates, identifying macro-invertebrates and introduced species with microscopes, sensitivity scores, utilising a horiba data logger (pH, conductivity, turbidity, dissolved oxygen, water temperature) plus chemical testing strips to detect phosphates and nitrates. Students will then compare this data to a sample of water collected from Stable Swamp Creek (Oxley Creek Catchment).

In concluding, students will **evaluate** the information collected throughout the day, including the feeding relationships and impact of introduced species, before justifying their water quality score and the overall health of both waterways.

This content maps to a provided sample assessment which may be used by teachers at your discretion.

Freshwater Ecosystems has been assessed as medium risk. A Curriculum Activity Risk Assessment is available on request.

Science in Practice 2024

Unit option B: Ecology

Concepts

Describe:

- Interaction and relationship between abiotic and biotic factors
- Feeding relationships
- Reasons for species being introduced and the scope of impacts on native species and environments
- The importance of water quality
- Examples of monitoring strategies and physical, chemical and biological indicators

Information

Analyse and Interpret:

- Food pyramids and food webs
- Information from investigations

Procedures and skills

Execute, Evaluate and Plan

- Measurement of materials and variables e.g. pH, turbidity, salinity
- Completion of food chains and food webs
- Identification and classification of common local organisms
- Evaluate water quality monitoring data from different sites and potential benefits for the community, environment and economy

