Program Overview

Biological Investigation

Years 11-12
Full day program
9 am – 2.30pm

Big Idea
Students gather information to help them make recommendations about the health of their local creek.

Curriculum Links
Australian Curriculum
Senior Biology Unit 1: Biodiversity and the interconnectedness of life

Biology
Principle of Biology
At every level of organisation in the living world, structure and function are interrelated. Each level of organisation in the living world has its own unique aspects and there is continual interaction of structure and function between these levels

Key Concept
3. Organisms live an interdependent existence in environments to which they are adapted.
4. A variety of mechanisms results in continual change at all levels of the natural world.
5. There are processes that maintain dynamic equilibrium at all organisational levels.

Key Ideas
18. Abiotic and biotic factors in an environment influence the size of populations and the composition of communities.
19. Energy and matter move within ecosystems.
20. Human actions have significant impacts on interactions within an environment.
21. Different organisms perform different interdependent roles in an ecosystem.
22. An organism has adaptations specific to its environment.

Overview
Students gather data in order to be able to make recommendations about the biological health of a waterway.

The data collected comprises of the following:

1. Fish species
   Using a dichotomous key, students identify native and exotic fish netted
Program Overview

in a freshwater ecosystem.

2. Water quality

Students gather data about the physical and chemical parameters of the water using Neu loggers and Waterwatch techniques.

3. Macroinvertebrates

All macroinvertebrates collected while undertaking fish netting are identified and assigned a sensitivity score.

4. Riparian conditions

Students complete a riparian assessment of the waterway to build a more complete picture of the ecological resilience of the creek system.

This program can also include a second day’s field trip during which students undertake a ‘catchment crawl’ of their local creek. Students can visit sites starting at the headwaters of a creek, and finish in the lower floodplain; gathering data relating to the four categories listed above.