

# Ecosystems at Risk - Mangroves

## Stage 6 Geography



### Program Overview

The focus of the day is to undertake a geographical investigation of the mangrove ecosystem at Bobbin Head. During the full day program, the students will use geographical skills and tools to learn about the mangrove ecosystem, including the biophysical interactions, recognise potential human impacts and discuss traditional and contemporary management practices.

Working collaboratively in small groups the students will rotate through a number of learning activities on the day.

### Learning Experiences

#### Biophysical Interactions - Mangroves

Students will study the two species of mangroves at Bobbin Head to understand their features and adaptations. Using this information, they will be required to predict current future human impacts from issues such as climate change and pollution.

#### Biophysical Interactions - Crabs

Crabs are an integral part of the mangrove ecosystem at Bobbin Head. Using ethical techniques, students will capture and classify crabs and identify their adaptations. Students will then complete a quadrat study to measure crab abundance and relate to the physical factors such as soil pH and air humidity

#### Water Quality Testing

Working collaboratively, the students will conduct a range of tests to assess water quality in the intertidal zone and relate these results to potential human impacts

#### Human Impacts and Management Strategies

Students will have an opportunity to observe past and current human use of the area to understand the effect on the health of the mangrove ecosystem. They will also have an opportunity to discuss current and potential management strategies

### Key Syllabus Outcomes and Content

#### Geography

#### students learn about:

ecosystems and their management and case study of ecosystems

- spatial patterns and dimensions: location, altitude, latitude, size, shape and continuity
- biophysical interactions including:
  - the dynamics of weather and climate
  - geomorphic and hydrologic processes such as earth movements, weathering, erosion, transport and deposition, soil formation
  - biogeographical processes: invasion, succession, modification, resilience
  - adjustments in response to natural stress

- the nature and rate of change which affects ecosystem functioning
- human impacts (both positive and negative)
- traditional and contemporary management practices.

#### Students learn to:

identify geographical methods applicable to, and useful in, the workplace such as:

- the relevance of a geographical understanding of ecosystems at risk to a particular vocation such as: managing a national park, guiding tourist groups, ecological mapping for surveyors, evaluating dune stabilisation programs preserving heritage sites.