



PALM BEACH-CURRUMBIN MANGROVE STUDY 'ANIMALS IN THE MANGROVES'

(This study should be conducted at low tide)

INTRODUCTION

Mangroves are angiosperms that grow where the land meets the sea. They live between the mean sea level and the highest tides on a substrate of mud and sand. The continual rise and fall of the tide means constant change. They have evolved a number of unique adaptations that enable them to overcome the problems of changing tides, changing temperature and salinity. Other problems that are faced by these trees are water-logged soil and lack of oxygen.

The animals such as fish, crabs, snakes and birds living amongst the mangroves have also adapted in special ways to cope with the unusual conditions of this ecosystem. Together they form an intricate food web that is very easily disturbed.

Mangrove forests are among the world's most productive ecosystems but the transfer of energy from producer to consumer depends on the activity of **decomposer** organisms. The organic matter in the soil originated from decomposition of plant litter produced by the mangrove trees themselves. The debris is slowly broken down under slightly acidic conditions by microscopic bacteria and fungi which release sulphuric acid (rotten egg gas). This leads to the unusual smell in the mangrove environment.

Angiosperms – flowering plants



◆ Your task today is to investigate the different types of animals which can be found in the mangroves and how they are adapted to their environment

AIMS

1. To try and identify and classify the animals you find in an estuary
2. To observe the ways in which these animals have adapted to the tough conditions of an estuary
3. To determine the population of a typical mangrove species

EQUIPMENT REQUIRED

Sunscreen and Hat
Mosquito repellent
Water Bottle
Old sandals
Clipboard folder
Notepad, pen and pencil
Magnifying Lens
Species identification books
10 metre string

PROCEDURE

- Sit quietly and record the animals that you can see and those that you find evidence for
- On and around one particular tree record all the animals you see and their adaptations to living in an estuary
- Prepare a food web for the living organisms you found
- Choose one organism, such as the oyster, which has a dense population.
- Determine its population in an area of 10 square metres, using a method you have studied

*All drawings must be completed in a sharp 2B pencil and should be large enough to show detail. Please label each drawing and add an approximate scale (e.g. x3) and a title.



Activity 2

Answer the following questions in the spaces provided

- a) What problems do the animals in the mangroves have to overcome in order to survive?

1. _____

2. _____

3. _____

- b) Look carefully at the animals in your table above. List 4 animals and the adaptations that you can see, that have made it possible for those animals to live in a mangrove environment. The adaptations may be structural, behavioural or functional.

1. _____

2. _____

3. _____

4. _____

- c) Prepare a food web for the community living on the mangrove tree



Activity 3

Population Study

Answer the following in the space provided

1. Name the organism that you are using for your population study.
2. Describe the method you have used to determine the population of your organism; e.g. Quadrats
3. Estimate the population of this organism in 10 square metres

Name: _____

Method: _____

Approximate population numbers: _____

