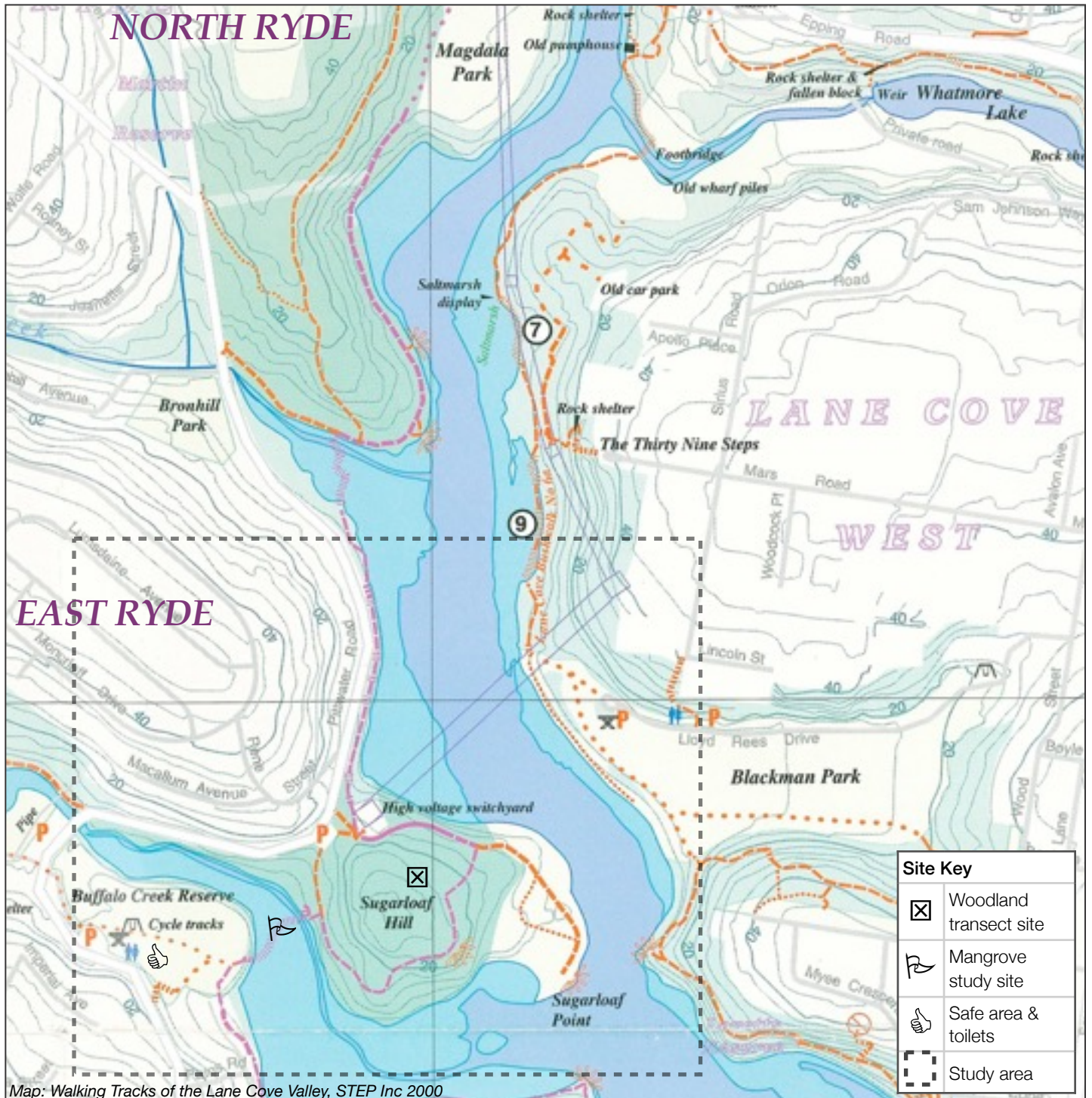


Map of Buffalo Creek Reserve and Sugarloaf Point



Map: Walking Tracks of the Lane Cove Valley, STEP Inc 2000

Key	Vegetation Types	Features	Signature species

## Background information on the study site

Answer these questions before the excursion using the resources available at: <http://fieldofmarseec.nsw.edu.au/resources/secondary/>

You will be studying *remnant bushland*. What does this mean?

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What are the effects on the flora and fauna as a result of the reserve being a remnant?

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Vegetation corridors between reserves are important for their long-term survival. Why?

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List examples of human impact in the reserve. Categorise them into past and recent.

Past (pre 1980)	Recent (1980 - present)

List some of the abiotic factors that affect the ecology of remnant bushland.

Abiotic factor	Instrument	Unit

Measuring distribution at \_\_\_\_\_ on \_\_\_\_\_

**Observation** *Make an observation concerning the distribution of plant species on either side of the track.*

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**Purpose** *What are you going to do in this investigation?*

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**Hypothesis** *What are you trying to prove? Write a statement that describes the variables that you are investigating.*

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**Method** *What are you going to do to test your hypothesis? Include biotic and abiotic factors to be recorded.*

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Total length of transect: \_\_\_\_\_

Length of sampling interval: \_\_\_\_\_

**Measurement and recording**

Use the Personal Results Table on the next page to record:

- The abiotic measurements for your section of the transect
- The position of plants along the transect
- The number of different plant species in your section.

Transfer the abiotic factor results to the class recording sheet for further processing and analysis at school.





# Personal results table

Name \_\_\_\_\_ Date \_\_\_\_\_

Vegetation transect at \_\_\_\_\_ Section \_\_\_\_\_

## 1. Abiotic measurements *Record abiotic measurements at the midpoint of your transect section.*

Aspect:	Gradient:	Air temp:
Relative humidity:  %	Light intensity:	Wind speed: 
Soil temp:	Soil texture:	Soil pH:

## 2. Biotic measurements *Make your way along your transect section, identify every type of living plant and record the code*

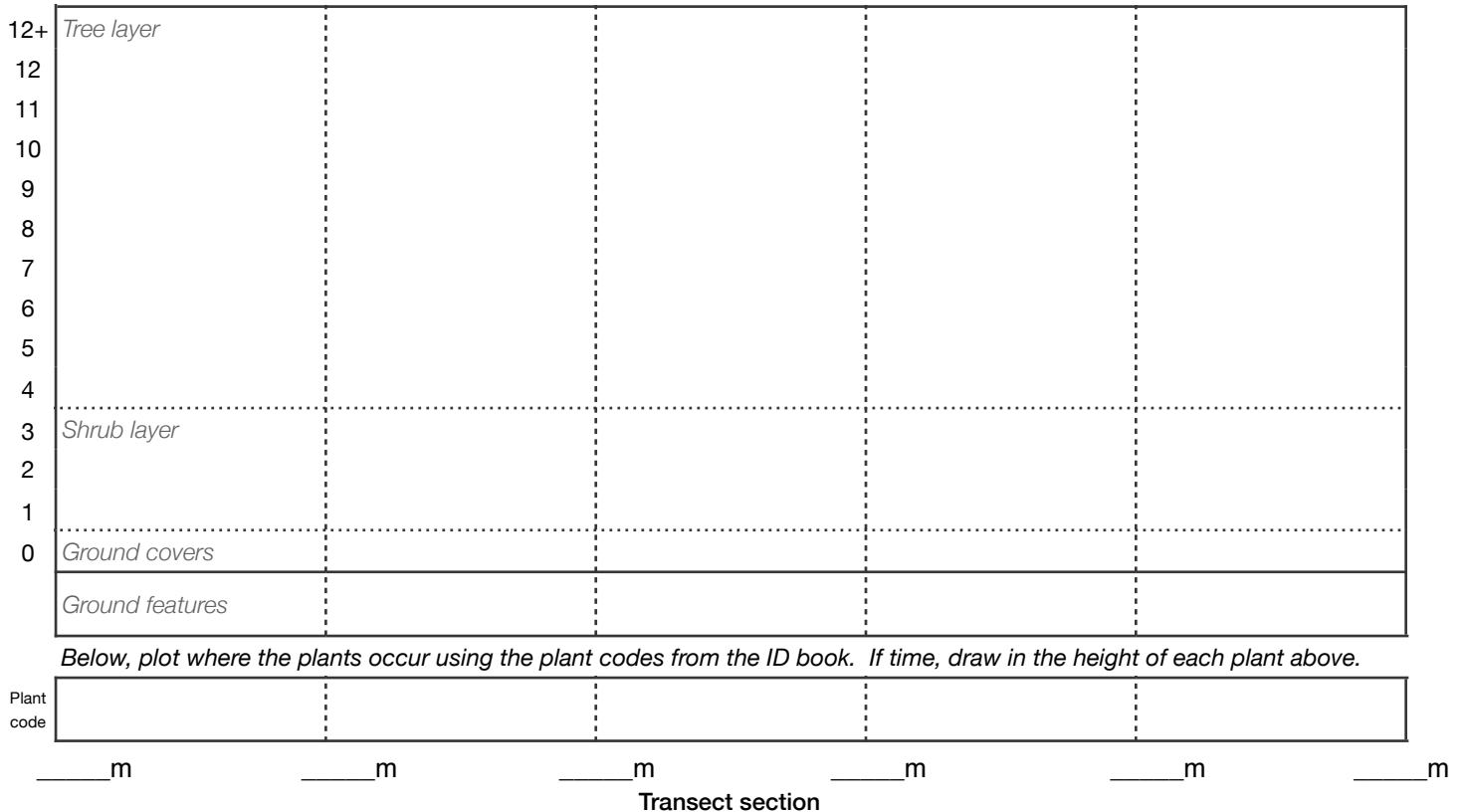
Plant name	Code	Plant name	Code
eg <i>Mat Rush</i>	<i>H3</i>		

## 3. Biotic measurements *Describe the features found along your transect section, eg "rocky eroded track with many weeds"*

Description of your section: \_\_\_\_\_

Number of different plant species:

## 4. Represent results graphically



# Interactions between species

No organism can exist independent of others. Some of these interactions are beneficial to both organisms whilst others are detrimental to one or both organisms. List fieldwork examples you observe.

## Beneficial relationships

**Mutualism** *Interaction between two organisms from which both benefit. A symbiotic relationship.*

Example:

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**Commensalism** *A relationship that benefits one and does not harm the other and where both could survive without the other.*

Example:

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## Detrimental relationships

**Competition** *Occurs when organisms in the same community which both require the same resources.*

Example:

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**Parasitism** *An interaction where one species feeds directly on another, living on or in its host, and often harming the host.*

Example:

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**Allelopathy** *The production of chemicals by a plant that can harm or benefit another plant.*

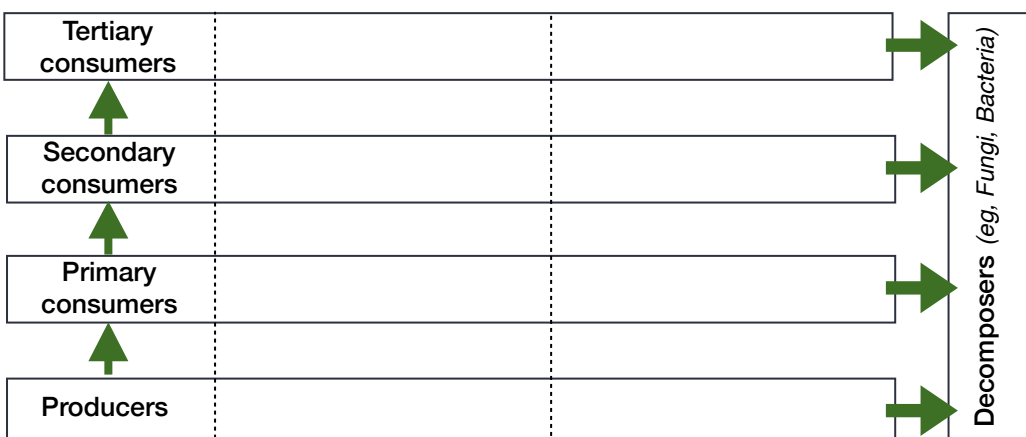
Example:

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## Trophic interactions in an ecosystem *(Indicate predator/prey relationships)*



# Measuring distribution and abundance of crabs using a belt transect at

\_\_\_\_\_ on \_\_\_\_\_ (date) at \_\_\_\_\_ (time)

In this investigation you will be using the scientific method to investigate the relationship between crab abundance and position in the high tide end of the intertidal zone adjacent to the Buffalo Creek boardwalk.

**Observation** *Make an observation concerning the number of crab holes as you walk towards the creek.*

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**Purpose** *What are you going to do in this investigation? What are the two variables you are going to investigate?*

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**Hypothesis** *What are you trying to prove? Write a statement that describes the variables that you are investigating.*

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**Method** *What are you going to do to test your hypothesis? List assumptions you need to make.*

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**Equipment** \_\_\_\_\_

## Results table

Quadrat	Position	Count	Class Mean	Description
eg Q11	35m	7	6	<i>Many fallen logs on ground</i>
Q1	40m			
Q2	45m			
Q3	50m			
Q4	55m			
Q5	60m			
Q6	65m			
Q7	70m			
Q8	75m			
Q9	80m			
Q10	85m			

Optional: Tide data for the Lane Cove River	
<i>Use the the BOM tide chart for Fort Denison &amp; add 15mins for the time lag. (During Daylight Saving also add 1 hr.)</i>	
<b>Date:</b>	
<b>Time</b>	<b>Height</b>

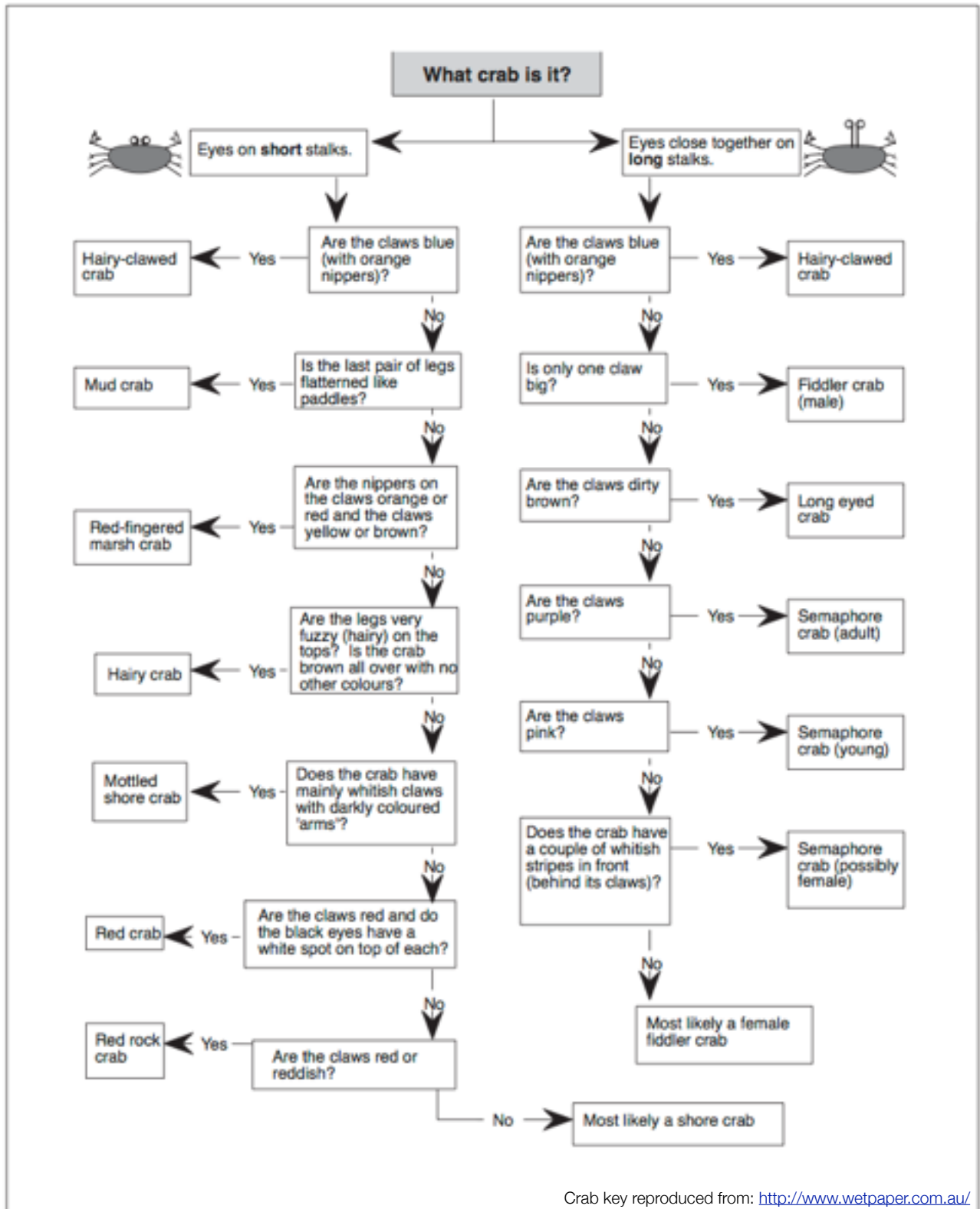
**Conclusions/Discussion** *Is distribution consistent along the transect? Can you prove your hypothesis?*

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# What crab is it?



Crab key reproduced from: <http://www.wetpaper.com.au/>



Identify the two main species of crab that live near the Buffalo Creek boardwalk

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# Plant adaptations

**Grey Mangrove** *Avicennia marina*

Growth habit: *Tree Shrub Grass Other*

Average height:

Leaf colour above:

Leaf colour below:

Leaf arrangement: *Opposite Alternate*

Habitat description:

Species interactions:

Human influences:

Status: *Rare Vulnerable/Threatened Locally significant Common Abundant*

Adaptations relating to:

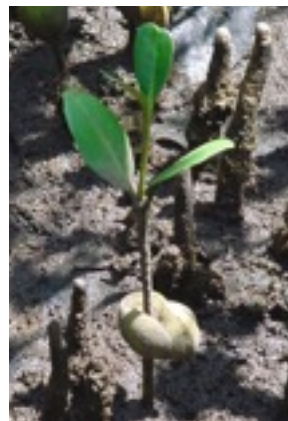
Salt:

Anaerobic soil:

Reproduction:

Wind:

Nutrients:



Mangrove description and habitat



Mangrove adaptations I



Mangrove adaptations II



# Animal adaptations

**Common Ringtail Possum** *Pseudocheirus peregrinus*

Size:

Colour:

Diet:

Competitors:

Predators:

Habitat description:

Species interactions:

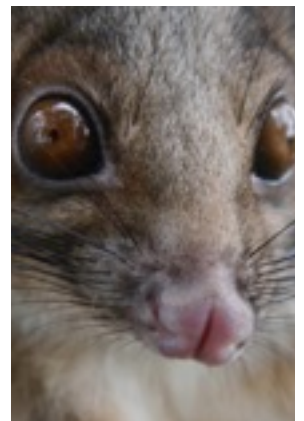
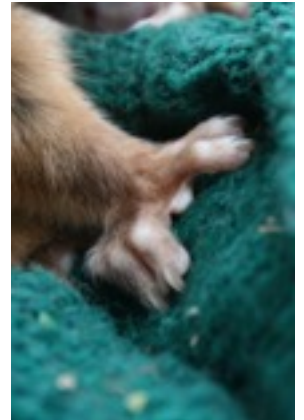
Human influences:

Status: *Rare* *Vulnerable/Threatened* *Locally significant* *Common* *Abundant*

**Adaptations:**

Structural:

Behavioural:



**Word bank:** folivore, prehensile, syndactyly, opposable, protuberant, drey, Kunzea, faeces, coprophagy, camouflage

