

### 9. Risk Assessment

The Occupational Health and Safety Act requires Risk Assessments are done to minimise the risk of injury to a worker. Now that you have visited the study site and done the fieldwork, list the hazards and you would manage them.

Hazard	Management

### 10. Terms

**Biodiversity:** the number of different species of plants and animals living in an area.

**Structure:** the vertical layering of plants in an area.

**Habitat tree:** old trees with hollows, usually over 150 years old

**Adaptation:** something an organism has or does which helps it survive.

**Food chain:** the flow of energy from plant to herbivore to carnivore.

**Quadrat:** when an area is too large to count all of the organisms, sample a number of smaller areas called quadrats. Can be any shape or size. Must do a number of quadrats and must be randomly selected to remove bias.

**Transect:** similar to a quadrat but along a line so differences can be studied e.g. top to bottom of hill

**Soil texture:** proportion of sand, silt and clay in soil.

**Soil pH:** acidity on a scale of 1-14. 1-6 is acid, 7 neutral, 8-14 alkaline

## Bushland Survey

### Field Notes

Geographer: \_\_\_\_\_



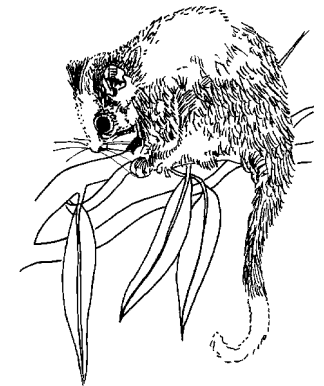
Wagga City Council has received a development application for this area of bush. A new highway is being built and the old quarry will be reopened to supply the road base. The quarry owners have applied to extend it and must submit an Environmental Impact Statement (E.I.S.). It is also mandatory in New South Wales that a biodiversity survey be carried out for threatened species of plants or animals and threatened ecosystems. You have been contracted by the quarry owners to do the biodiversity survey.

Notes: There are very few patches of bushland remaining in this area. They are important habitats for many species of plants and animals.

Student study guide:

[www.reec.nsw.edu.au](http://www.reec.nsw.edu.au)

Go to “Students 7-12” then click on “Bushland”.



30  
20  
10  
0  
Height (m)

### 1. Vegetation Structure

Structure is the vertical layering of plants in an area e.g. tall trees, shorter trees, shrubs, grasses, herbs, mosses and lichens. The more layers, the greater the number of animals that can be supported in the food chain. Method: random sample vegetation along a line called a **transect**. Record plant location and height. Use clinometer to estimate height.

**Vegetation Key**  
**Notes:**

### 7. Issues

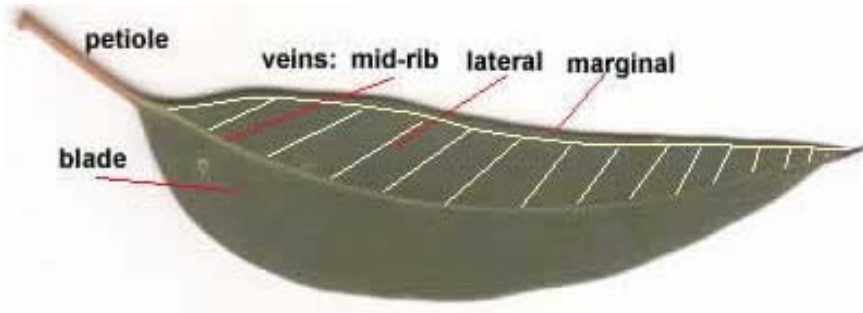
Human Impact	Management

### 8. Fieldwork methods and their weaknesses

Method	Weakness
Quadrat: used to survey a large area by investigating a number of small sample areas.	
Transect: used to detect change over a long distance by taking a number of small sample areas.	
Soil tests such as pH and texture	

## 6. Plant Adaptations

Plants and animals have evolved over millions of years to live in their environment. Adaptations may include small leaves to reduce transpiration in dry climates. Draw two leaves and indicate how they are different to a typical gum leaf.



## 2. Biodiversity

Biodiversity is the number of different species of plants and animals living in an area. The more species, the better it is and the more important it be protected e.g. it may be a valuable seed source for future plant regeneration projects. Take a random sample of a small area, **quadrat**, identify the plants and record the number of each in the data base below.

- Trees:** red gum  white/grey box  iron bark   
yellow box  casuarina  cypress pine
- Shrubs:** golden wattle  Deanne's wattle  decora wattle   
parrot pea  hairy leaf pea
- Other:** rock fern  grasses

Record the name and location of trees and shrubs in the quadrat. Indicate the area of their foliage (shadow).

Percentage area:

Leaf litter

Bare

### 3. Physical Environment

#### Soils

Plants require nutrients and water from soils so soil characteristics have a big impact on where plants grow. Important soil characteristics are:

Property	Result	Method
Colour		Moist sample rubbed on page
Slaking (erosivity)		Sample placed in water, observe if unstable (falls apart) or stable
pH (acidity)		Crush soil, add 3 drops indicator, sprinkle Barium Sulphate, observe colour change
Texture (sand, loam, clay)		Crush soil, mix with water until just sticky then role into ribbon.

#### Landform

Circle: flat hilly mountainous

Slope: Aspect (direction)

#### Weather

Air temperature (°C): Humidity (RH%):

Light (lux)

### 4. Food Chains

Look at ten gum leaves. Estimate the percentage of each leaf damaged by herbivores then calculate the average. This indicates the amount of energy passing into the traditional food chain.

     Average

### 5. Habitat Trees

Big old trees with hollows are called habitat trees. It takes approximately 150 years for tree hollows to form. The following Australian animal species use tree hollows: 114 birds, 83 mammals, 70 reptiles and 27 amphibians.

Randomly select 20 trees in the area and record how many have hollows.

Trees with hollows

