

Recognise Plants



Learning Guide

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Student name:.....

Student number:.....

INTRODUCTION

Welcome to *Recognise Plants*. This learning guide covers the process of recognising plants that are commonly seen in conservation and land management situations. For example you might need to be able to identify plants when working for councils, carrying out bush regeneration work, ranger work or when managing your own country.

Training for this learning guide should be completed on the job or out in the field in various habitats such as wetlands, woodlands and mangroves. Whilst it is preferable to focus on native plants, the training is about how to recognise plants, so non-native species can also be used, for example weeds growing in your local area.



EQUIPMENT REQUIRED

To complete this training you will need the following:

1. Appropriate Personal Protective Equipment (PPE).
2. Safety gear for field work including first aid kit, maps and water.
3. A hand lens, sketch pad, pencils, pens, eraser and ruler for recording information about plants in the field.
4. A plant press and materials for collecting and mounting plants.

ASSIGNMENTS

There are three assignments you will need to complete.

Some of these assignments may go towards your final assessment.

Section	Assignment	Competent (C) Not yet competent (NYC)	Date Achieved
Getting Prepared	Assignment 1. Project Risk Assessment		
Recognising Plants	Assignment 2. Plant Information Sheet		
Pressing and Storing Plants	Assignment 3. Plant Collection (Herbarium)		

1A. COLLECTING INFORMATION

Information about recognising and identifying plants can be obtained from many sources. There are a few excellent books available for the NT that will help you (see References on page 26).

There is also a wealth of information available online.

1. For information on local Northern Territory plants go to the Northern Territory Department of Natural Resources, Environment, the Arts and Sport. They are responsible for naming, describing, surveying and storing the flora of the Northern Territory.



www.nretas.nt.gov.au/plants-and-animals

2. For Australia wide information on plant classification, plants names and identification go to the Australian National Botanic Gardens.

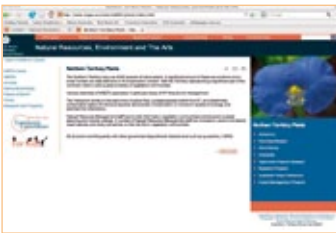


www.anbg.gov.au

3. For plants of the Darwin region this is a great website based on colour of the flower.



www.users.on.net/~bennnez



1B. PERSONAL SAFETY

When collecting plants it is recommended that you use sunscreen, wear a hat, and have sturdy shoes. It is also a good idea to wear a protective long-sleeved shirt and long trousers to keep the sun off. This is called Personal Protective Equipment (PPE).

It will also be essential to carry plenty of water for drinking and also for washing hands, especially if handling poisonous or irritating plants.

Remember some plants are very poisonous or should not be handled for spiritual reasons. Always ask your elders or trainer first before handling any plants. Gloves are also recommended when collecting plants as some sap, fruits, seeds or dust from dried seeds can be toxic and may also cause allergic reactions on the skin. A hard hat may also be useful as there can be dangers from falling branches or fruit.

Make sure that you are familiar with your organisation's occupational health and safety policies and procedures before doing any work. When collecting plants in the field always inform your trainer or supervisor about where you are going and when you expect to return. Ideally you should not go out into the field with less than three people. Always carry a first aid kit and maps with you. Make sure your vehicle is properly maintained. Check all safety equipment such as radios and mobile or satellite phones before you leave to see if they are working properly. Before you set off also check the weather, road and fire reports for your local area.



Before you begin, use these checklists to confirm you have followed good safety procedures and that you have everything you need to start recognising plants.

SAFETY CHECKLIST ACTIVITY



Long trousers, shirt and boots		
Hat (hard hat if necessary) and gloves		
Sunscreen, insect repellent and sunglasses		
Water		
First aid kit		
Notified others and have phone/ 2 way radio		
Checked weather, road and fire reports		
Permits (if required) and maps		

EQUIPMENT CHECKLIST ACTIVITY



Student folder and notebook		
Hand lens for looking at plants		
Sketch pad, pencils, pens, eraser and ruler and books about local plants		
Plant press and collecting materials (see Section 3)		



Cycads are threatened species




1C. PERMITS AND PERMISSION

Before collecting any plant you will need to get permission from the landowner. Most landowners are generally helpful and you can collect plants without too many problems but always ask first. In many communities you may also need permission from local traditional owners before collecting any plants. Some plants may have special significance and should never be touched (e.g. totemic plants, local restrictions, local protocols etc.). Always seek local advice before you start collecting plants – not afterwards.

Various laws protect all plants listed as threatened, and some common plants which are harvested from the wild. The main laws are the Australian Government’s *Environment Protection and Biodiversity Conservation Act 1999* and the NT Government’s *Territory Parks and Wildlife Conservation Act 2006*. These acts conserve biological diversity, and prevent the extinction and promote the recovery of, populations of threatened animals and plants and ecological communities. They also aim to stop processes that destroy or threaten the survival of these threatened plants and animals. Information on threatened plants can be accessed online.

 www.nretas.nt.gov.au/plants-and-animals

The Northern Territory Government has restrictions on what native plants and seeds can be collected and has a permit system for collecting wildlife, including plants. See this website for the latest details.

 www.nt.gov.au/nreta/wildlife/permits

ACTIVITY

Find out who you need to get permission from to collect plants in these areas:

Aboriginal owned land	
Roadsides	
Private land	
Pastoral properties	
National or conservation parks	
Council reserves	

ACTIVITY

In your group talk about why you might need to be able to recognise plants in your own area.

1D. WHY RECOGNISE PLANTS?


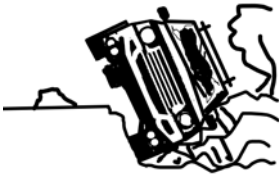



When looking after parks and gardens or larger areas of country, or when you need to grow your own plants, it is very important be able to recognise different plants. Being able to recognise a plant will help with learning more about the plant.

Some plants are used for food or medicine or for making items like baskets and tools. Some plants are weeds and need to be killed. Knowing what the plant is will help with looking after the area and using plants for the right purpose.

PROJECT RISK ASSESSMENT



- Stop and think before starting work.
- What needs to be done so you can work safely?
- Complete the **What to do about it?** column – we have written one thing in each box – try and think of some others.
- Fill in all of the last row by adding a new hazard.

HAZARD and what can happen = the risk	What to do about it?
<p>SUN EXPOSURE </p> <p>Risk of: Heat exhaustion, dehydration and sunburn</p>	<ul style="list-style-type: none"> • Wear a hat • • •
<p>ROAD TRAVEL </p> <p>Risk of: Injury in vehicle accident</p>	<ul style="list-style-type: none"> • Pre-departure vehicle check • • •
<p>POISONOUS AND PRICKLY PLANTS </p> <p>Risk of: Poisoning or skin injury</p>	<ul style="list-style-type: none"> • Wear gloves • • •
<p>TRIP HAZARDS </p> <p>Risk of: Injury from falling over</p>	<ul style="list-style-type: none"> • Look before walking • • •
<p>LOOSE BRANCHES </p> <p>Risk of: Being injured by falling branch</p>	<ul style="list-style-type: none"> • Look above for any loose branches • • •
	<ul style="list-style-type: none"> • • • •

2

RECOGNISING PLANTS

2A. HOW TO IDENTIFY PLANTS

There are four main ways to identify plants:



Ask an expert — this is good if you have local experts, elders or old people in the field to help you identify plants.

Recognise it yourself — based on your own experience, very useful if you have been in one area a long time, however it is not always possible and not practical if going to a new area where you don't know the plants.



Compare with books and pictures — look at books, photos, illustrations or labelled plants, works well if you have a well documented local flora, otherwise it can be very time consuming and it is not always possible for all plants.

Use a plant key — most widely used method, can be difficult at first but once you know the terminology you can identify a plant from anywhere, plant keys are available for most areas.

Experts on western scientific approaches to plant identification can be found in government agencies. One of the best places to visit is the NT Herbarium situated in Palmerston. If you can't identify your plant, try bringing it to your local Herbarium.

The Herbarium houses dried plants from all over Australia and is an invaluable resource for identifying plants.



2B. CLASSIFYING PLANTS

There are many systems we could follow to classify and name plants e.g. Wardaman, Jawoyn, Mayali, etc.

Check in the local area for local experts who can assist in classifying and naming plants according to their own systems.

No one system is any better than the other. However using a standardised system across the world allows us to communicate with anyone no matter what language they speak or country they live in.

It is useful to have some understanding of western systems of classifying and naming plants as they are widely used across the world.

Western taxonomists classify plants according to a system with seven major groupings. This common system is used world wide and groups plants that have common characteristics.

Kingdom — a group of Divisions

Division — a group of Classes (a Division is sometimes called a Phylum)

Class — a group of Orders

Order — a group of Families

Family — a group of Genera

Genus — a group of related species

Species — a group of individuals that are very similar and can freely interbreed to produce fertile offspring

An example of this classification might be

Kingdom Plantae—includes all plants

Division Magnoliophyta—flowering plants

Class Magnoliopsida—dicots

Order Myrtales— the myrtle order

Family MYRTACEAE— the myrtle family

Genus *Corymbia*—includes some of the Eucalypts or gum trees

Species *ptychocarpa*—this bit is called the specific epithet

K D C O F G S

Keep Dogs Close
Or Fat Geese Spit

Kings Divide Classes
in Order to Familiarise
with the Genius of the
Species

ACTIVITY

Try making up a rhyme or pattern of letters or words to help you remember the seven major plant groupings.

Plantae — Magnoliophyta — Magnoliopsida — Myrtales — MYRTACEAE — *Corymbia ptychocarpa*



2 – RECOGNISING PLANTS

ACTIVITY

Find, sketch and name examples

There are four major Divisions below the Kingdom level:

Bryophyta: Bryophytes are small, herbaceous plants that grow closely packed together in mats or cushions on rocks, soil, or as epiphytes on the trunks and leaves of forest trees (for example mosses).



Pteridophyta: Pteridophytes are the non-seed or spore-producing plants such as ferns. They normally reproduce by spores which are often seen as brown spots on the underside of leaves.



Pinophyta: Also known as Gymnosperms, these are plants that bear seeds in cones such as conifers and pine trees.



Magnoliophyta: Also known as Angiosperms, these are flowering plants found all around the world. They produce seed enclosed in a fruit to reproduce.



2C. NAMING PLANTS

FAMILY NAMES

In identifying plants it is often very useful to know the FAMILY name.

Knowing the family can give you a lead to knowing the botanical name.

- The FAMILY NAME e.g. FABACEAE, is usually written in CAPITAL LETTERS.
- The FAMILY NAME always ends in ACEAE.

For example: Family FABACEAE or Family PROTEACEAE

Some common local plant family examples include:

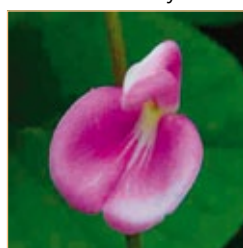
CYCADACEAE
Cycad family



POACEAE
Grass family



FABACEAE
Pea family



PROTEACEAE
Banksia and Grevillea family



COMMON NAMES

Common names might be easy to use and remember but they are often confusing and misleading. It is always preferable to use a botanical name even when a common name is available.

Sometimes there is no choice. Many plants just don't have accepted common names. The major problem is that same common name can refer to several different plants.

Common name	Locality	Botanical name
Black Wattle	NSW	<i>Acacia elata</i>
Black Wattle	NSW	<i>Acacia mearnsii</i>
Black Wattle	NT	<i>Acacia auriculiformis</i>
Black Wattle	SA	<i>Acacia melanoxylon</i>



Acacia auriculiformis
(Black Wattle in the NT)



Acacia elata
(Black Wattle in parts of NSW)

LANGUAGE NAMES

Using Aboriginal language names for plants works very well locally but becomes difficult over wider areas because of the number of different language groups. There are around 250 broad Aboriginal languages in Australia most with completely different names for similar plants. Below are similar plants with Jawoyn/Tiwi names.

Crab's Eye Vine
Kiringkiring/ Kulamuni



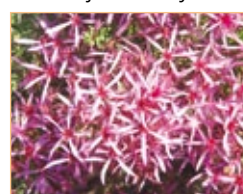
Native Cycad
Pulumara/ Minta



Screw Palm
Kalalajorn/ Miyaringa



Turkey Bush
Wij/ Murinyini



2 – RECOGNISING PLANTS

BOTANICAL NAMES

Western scientists use a bi-nomial (two-name, bi= two and nomial=name) system to name plants.

This system was developed by Swedish botanist Carl Linnaeus in 1753. This binomial system is now in widespread use throughout the world which enables people all over the world to communicate with each other about plants.

The botanical name is made up of a **Genus** and a **species** name e.g. *Eucalyptus tetrodonta*.

Botanical names are always written in a standard way. The rules are:

- The **Genus** name is always capitalised.
- The **species** name is always in lower case.
- Both the **Genus** name and **species** name are in italics.

A properly typed name should always look like this:

Acacia simsii *Grevillea formosa* *Melaleuca leucadendra*

However when handwriting you can underline.

When handwritten they should look like this:

Acacia simsii Grevillea formosa Melaleuca leucadendra

Most of the botanical names are written in Latin or Greek. Many of the names are descriptive and tell you something about the plants' form, habit or characteristics.

Some names are commemorative in reference to famous people. Sometimes knowing how the plant was named can help you remember the name.

Some local examples include:



<i>Acacia mountfordiae</i>	'mountfordiae' in honour of Mrs. Mountford the wife of Charles Percy Mountford an internationally recognised anthropologist, author and photographer.
<i>Banksia dentata</i>	'dentate' means 'toothed' in reference to the toothed leaf margins.
<i>Nauclea orientalis</i>	'orientalis' means 'eastern or oriental' in reference to the original known distribution of the species.
<i>Pandanus spiralis</i>	'spiralis' means 'spiralled' in reference to the way the leaves are arranged around the stem.

2D. RECOGNISING AND DESCRIBING PLANTS

Recognising plants includes looking at the plant and describing what you see. You can always use something you know for comparison e.g. "fruit rough like a pineapple".

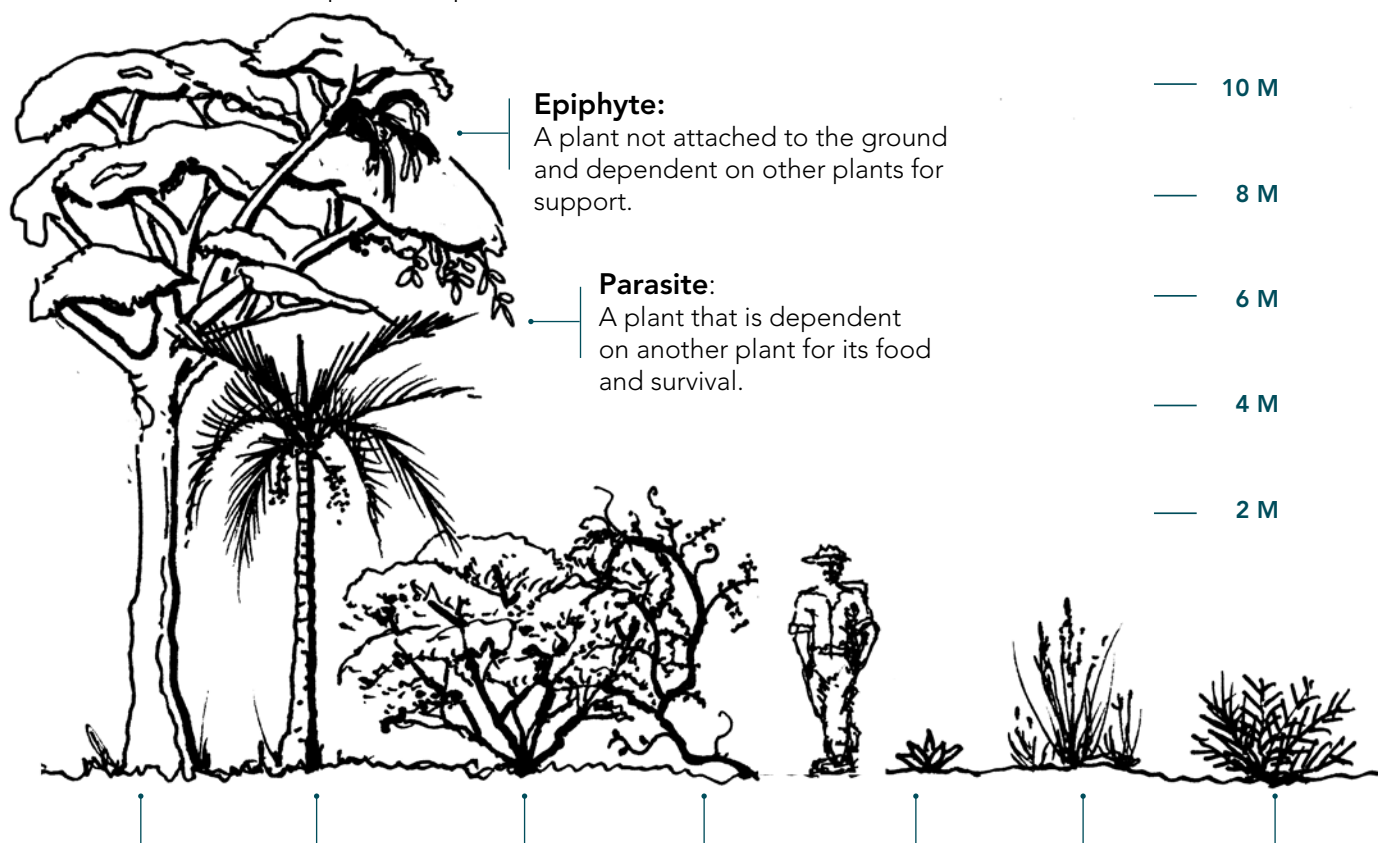
Plants are normally described by their features

Habit Trunk Bark Roots Flowers Leaves Fruit Seed

Some of these features (habit, bark, flowers and leaves) are described next – but remember to describe all the features when trying to recognise a plant. Please see the Resource on page 24 for help with some of the harder words.

HABIT

Habit refers to the shape of the plant.



Epiphyte:

A plant not attached to the ground and dependent on other plants for support.

Parasite:

A plant that is dependent on another plant for its food and survival.

Tree:

A woody plant greater than 4 metres high with a single stem (tree shapes can be described as rounded, rectangular, like a cone, spreading, weeping or upright).

Palm:

A tree crowned by large leaves shaped like hands with the fingers extended.

Shrub:

A plant that is usually woody and multi-stemmed.

Vine:

A plant that climbs or sprawls.

Herb:

A small plant that is not woody.

Grass:

A plant having slender, strap like leaves (grasses can be described as clumping or spreading).

Fern:

A flowerless, seedless plant with fronds that reproduces by spores.

2 – RECOGNISING PLANTS

BARK



BARK

Barks of trees vary enormously. Some of the more common types are:

Corky bark — the trunk has deeply furrowed bark with thick corky cells, these cork cells tend to have thin-walls and are filled with air.

Cracked bark — as a trunk increases in size, great tension on the bark can cause vertical and/or horizontal cracking.

Fibrous bark — stringy types of bark made from closely held fibres.

Fissured bark — the trunk has a net-like pattern from splitting of the outer and inner bark.

Flaky bark — pieces of bark crack and come away from the surface.

Peeling bark — the bark on the trunk separates like thin wrappers, peeling from where a layer breaks.

Scaly bark — the trunk has small patches of bark that shed giving a scaly appearance.

Smooth bark — the trunk can be smooth and very glossy to dull, generally it has a very thin outer bark.

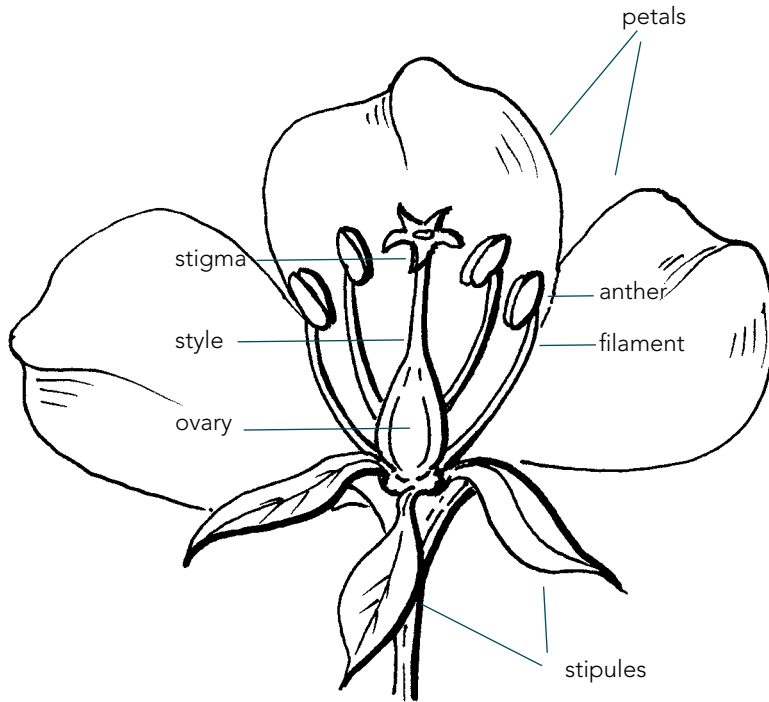
Eucalypts are often grouped by their bark type.

1. Rough barks e.g. stringybarks, bloodwoods, boxes, peppermints and ironbarks. e.g. *Eucalyptus phoenicea* Scarlet Gum.

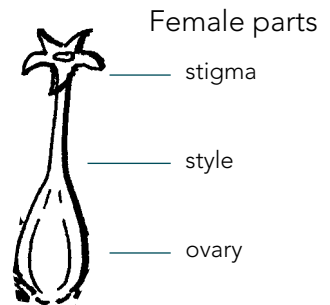
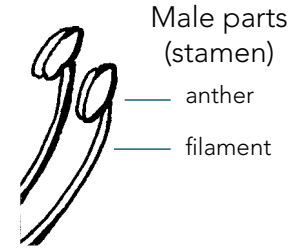
2. Smooth barks e.g. scribbly gums and white gums. e.g. *Eucalyptus alba* White Gum.

FLOWERS

Describing the parts of a typical flower



FLOWERS



Describing how flowers are arranged on the plant

Flowers are normally arranged in an inflorescence which is really a term for a group of flowers. They come in many different types. The most common types are given below.

Solitary — borne singly (a single flower). _____

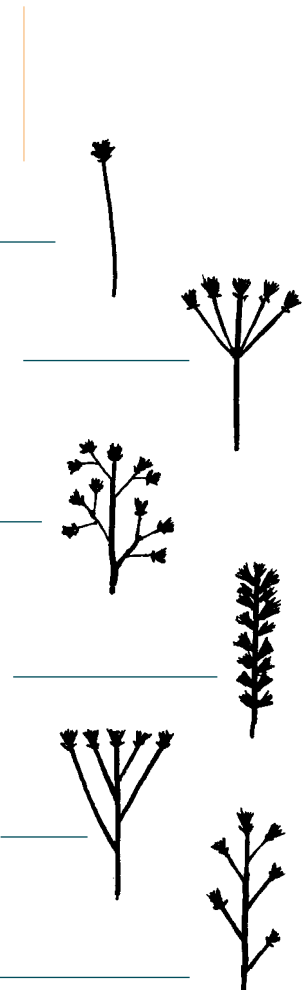
Umbel — a flower cluster with stalks of equal length arising from a common centre to form a flat or curved surface. _____

Raceme — a flower head where stalked flowers are on an unbranched axis, the oldest flowers are at the base and the youngest at the top. _____

Spike — a long unbranched cluster of stalkless flowers produced along a central axis. _____

Corymb — a cluster of flowers with lower stalks proportionally longer so that the flowers form a flat topped head. _____

Panicle — a loose branching cluster of flowers. _____



2 – RECOGNISING PLANTS

LEAVES

LEAVES

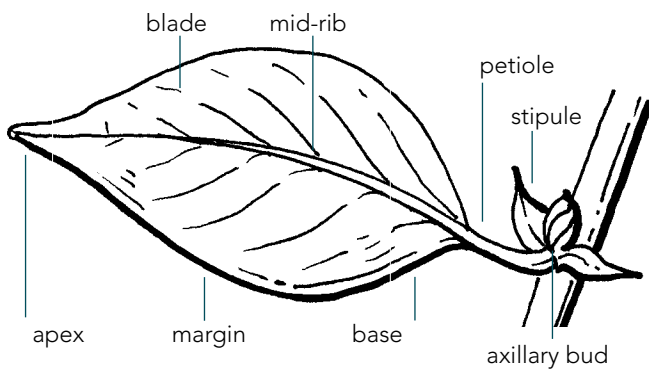
To recognise plants it is often necessary to look closely at these leaf features:

- The leaf type
- The leaf arrangement
- The leaf shape
- The leaf veins
- Other features like colour, hairiness, texture etc.

LEAF TYPE

There are two major leaf types Simple and Compound.

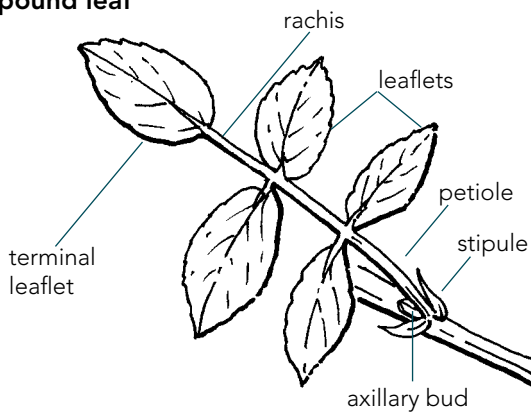
Simple leaf



SIMPLE – A simple leaf has three main parts:

- The **blade** which is the broad part of the leaf where food is made.
- The **petiole** which is the stem-like part that holds the blade.
- The **stipules** which are mostly small, leaf like structures found in pairs at the base of the petiole where it joins the stem, these protect the **axillary bud**.

Compound leaf



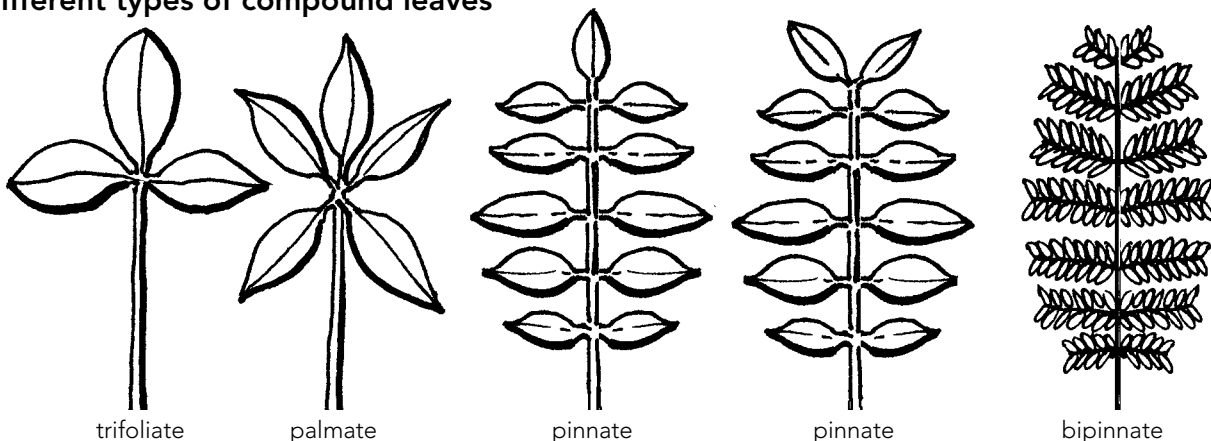
COMPOUND – A leaf that consists of a number of distinct **leaflets**.

It is important to be able to tell the difference between a simple and a compound leaf.

An **axillary bud** will be present at the junction of the leaf and the stem.

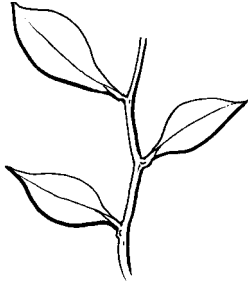
Leaflets will never have axillary buds (leaflets don't have stipules either, sometimes the stipules fall off and leave a scar which is another hint that it is not a leaflet).

Different types of compound leaves

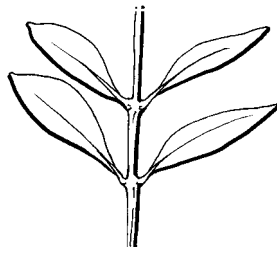


LEAF ARRANGEMENT

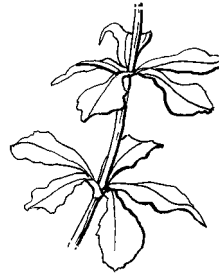
Leaves of all types can be arranged in various ways.



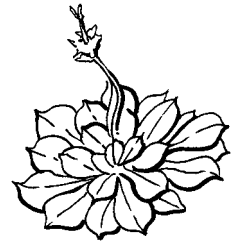
alternate



opposite



whorled



radical

LEAF SHAPE



acicular



linear



lanceolate



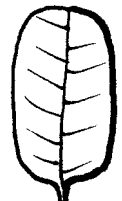
oblanceolate



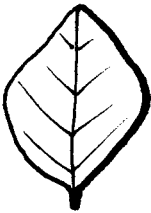
falcate



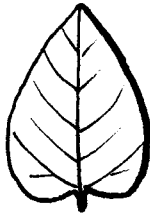
spatulate



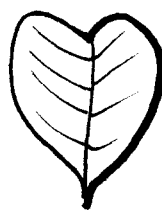
oblong



rhomboid



cordate



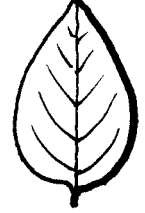
obcordate



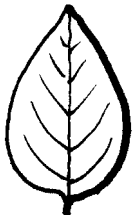
oval



elliptic



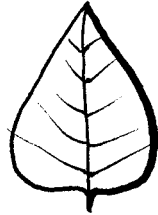
ovate



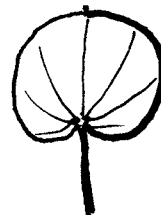
obovate



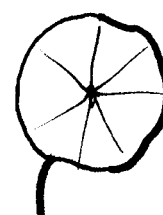
lyrate



deltoid



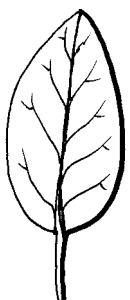
reniform



orbicular

LEAF VEINS

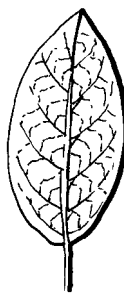
Leaf venation refers to the types of veins in the leaf.



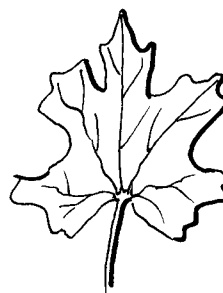
pinnate



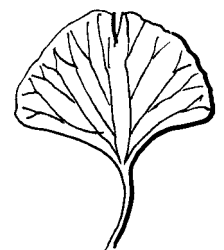
parallel



reticulate



palmate



dichotomous

2 – RECOGNISING PLANTS

2E. HABITATS

Often it is important to describe the habitat or the place the plant grows in. In the Top End there are seven main habitats.



Woodland: The most widespread habitat in the Top End, woodland has an overstorey dominated by eucalypts and an understorey mostly of tall grasses. It also contains many other trees, shrubs, cycads, grasses and herbs.



Sandstone escarpment: An escarpment occurs at the edge of a sandstone plateau. It is a rocky cliff-face that supports hardy woodland in the better-soiled areas, and spinifex in the drier, rockier parts. The plateau behind is covered by woodland vegetation, while waterfalls and gorges at the escarpment base support monsoon forests.



Coastal: Beaches and sand dunes line parts of the coast not fringed by mangroves and mudflats, and support a distinct coastal group of plants.



Mangroves: These plant communities form belts along the coast including tidal creeks and rivers. They are subjected to periodic inundation by seawater. Typically the mangroves grow in zones or belts of the same species, often parallel to the coast depending on the amounts of tidal inundation they receive. There are over 30 different species recorded from the Northern Territory.



Monsoon forest: These forests are dark green in appearance. Located in fire-protected areas around springs, water bodies, waterways, escarpment valleys, coastal areas and rocky outcrops, they typically cover small areas. They generally have a closed canopy with a sparse understorey including ground ferns, palms and saplings. Sometimes they are referred to as vine-forests and when found in gorges at the edge of escarpments are called gallery forests. Their structure varies considerably depending on water availability and soil type, those around permanent water on the deep-soiled lowlands (wet monsoon forest) being taller and more diverse than those found in coastal areas and on rocky outcrops (dry monsoon forest) where they may be thicket like in appearance.



Riverine: The Top End's rivers support corridors lined with a narrow belt of plants referred to as riparian vegetation. While some species are specific to this riparian habitat, many also occur in monsoon forests.



Wetland: The Top End's high rainfall produces large wetlands including floodplains and billabongs. The floodplains are extensive, flat and usually treeless. As the dry season sets in, water gradually recedes to the permanent billabongs. The edges of these permanent wetlands are fringed with trees.

PLANT INFORMATION SHEET

Collect 3 local plants and complete the following table, noting or drawing the features of each plant. Use local experts, your own knowledge, books and/or keys to help work out the plant name.

Plant Feature	Plant 1	Plant 2	Plant 3
Common name			
Language name			
Botanical name			
Habit			
Bark type			
Flower colour			
Flower arrangement			
Leaf type			
Leaf arrangement			
Leaf shape			
Leaf veins			
Habitat			
Draw or note any other features of importance			

3

PRESSING AND STORING PLANTS

To correctly identify plants it is often necessary to collect, dry and preserve plants for further identification. A collection of dried plants is called a HERBARIUM.



USEFUL RESOURCES

Collecting and pressing

- Secateurs
- Plastic bag
- Envelopes
- Tags for attaching to plants
- Note book for writing down information
- Pencil (or pen)
- Camera
- GPS unit
- Field plant press and newspaper

Mounting and storing

- Herbarium paper or blank stiff white paper
- Labels
- PVA glue (white craft glue that dries clear) or sticky tape
- Cardboard box and manila folders for storing specimens
- Plastic wallets, contact or laminator
- Insecticide such as "pest strip"

3A. HOW TO PRESS AND STORE PLANTS

A collection of dried plant specimens, properly named, is a valuable aid in the identification of plant species. Land managers, rangers and horticulturalists can use herbarium specimens for the identification of useful and weed plants. Specimens properly dried, mounted and stored can be kept indefinitely. When you collect your plant specimen, remember to cut it so it fits the herbarium sheet after it has been dried.

PRESSING AND DRYING

The successful preservation of colour in the specimen is dependent upon careful drying. Specimens should be dried between sheets of absorbent paper such as blotting paper or clean, dry, flat newspaper.

It is essential when drying specimens that good contact is made between the specimen and the newspaper. This can be achieved using a properly constructed plant press.

Adequate drying can also be achieved by placing newspapers containing specimens in a pile on a flat surface such as a floor or table. A piece of plywood or other flat object should be placed on top of the pile and a small weight such as 6 books placed on top.

Do not use excessive weight. It is not necessary and may damage specimens.

Change paper at least three times during the first week. More regular changing may be necessary in periods of high humidity.

Put only dry paper in the press. If you do not have enough fresh newspaper then you will have to spread the damp papers out to dry.

Pressing tips

- Delicate flowers can be placed between sheets of tissue paper for protection.
- Small delicate plants can be stored in alcohol rather than drying.
- All soil should be removed from the roots by brushing or washing.
- Long specimens such as grasses can be bent or folded so that they fit in between the newspaper.
- Large bulky fruits can be cut in half to save space.
- Spiny plants can be placed between extra cardboard and be flattened by standing on prior to pressing.



3 – PRESSING AND STORING PLANTS

MOUNTING



Each specimen should ideally be arranged in the characteristic form of the plant and laid out neatly on a sheet of white herbarium paper or stiff cardboard to prevent bending.

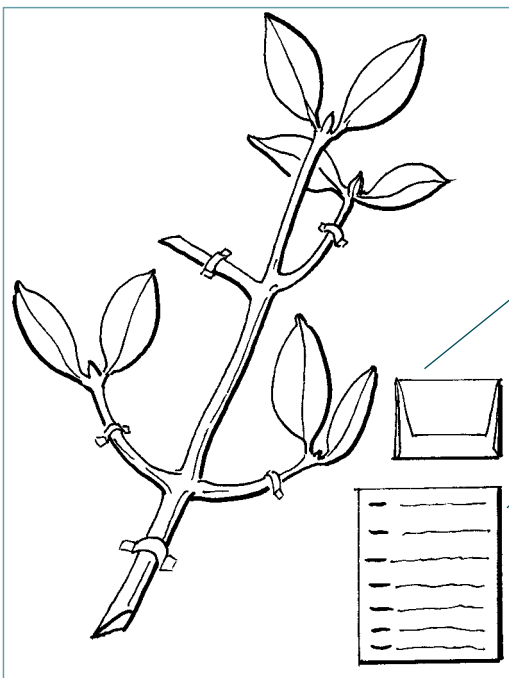
Herbarium paper is normally 42 cm X 28 cm wide.

Use a clear glue or sticky tape to stick the plant down.

Flowers should not be attached to the paper in a way that prevents their removal or examination of parts.

Do not mount plants until they are thoroughly dry or they will go mouldy.

Here are some examples:



Secure larger items well

Packet for seeds

label



spread leaves flat



fold long stems

LABELLING

Herbarium labels should be attached to the bottom right corner of the sheet. As much information as possible should be included on the label.

Example:

Family: MIMOSACEAE
Genus: <i>Acacia</i>
Species: <i>auriculiformis</i>
Language or Common Name: Black Wattle
Identification: Brock, J. (1990) Top End Native Plants p.57
Collector: Don Duggan
Date: 7 July 2006
Locality: Casuarina NT
Habit: Large spreading tree to 10 metres high
Habitat: Rear sand dunes on coastal foreshore
Comments: Should make an attractive shade tree for the home garden

Family: Always written in CAPITALS.

Genus: Always type in italics or underlined if handwritten.

Species: Always type in italics or underlined if handwritten.

Language or Common Name: Use the name most used locally.

Identification: The reference source you used to identify the specimen. It could be a book, herbarium specimen or a person.

Collector: The person that actually collected the specimen.

Date: Date the plant was collected (date, month and year).

Locality: The precise place the plant was collected from. Include a GPS reference if you have one.

Habit: The growth form of the plant e.g. tree, shrub, vine, herb, fern, grass, parasite or epiphyte.

Habitat: The environment in which the plant is growing e.g. woodland, sandstone escarpment, coastal, mangroves, monsoon forest, riverine, wetland (if it is from a developed landscape describe it, e.g. cultivated field, parkland).

Comments: Any point you may feel is important or unique.

3 – PRESSING AND STORING PLANTS

STORAGE

Mounted specimens can be stored in any cardboard box however a Bx4 mailing box (43 cm X 30.5 cm X 14 cm), which is available from your local post office, is very suitable.

Individual herbarium sheets can be protected in the following ways:

- In clear plastic wallets.
- Sealed in contact.
- Laminated.
- In manila folders.

The specimens should be stored in alphabetical order by botanical name.

Keep the box in a cool dry place.

To prevent insect attack the specimen may be frozen for 3 days every six months or so. Chemical insect deterrents are also available e.g. pest strips. These will need to be replaced according to the manufacturer's instructions.

3B. DISPOSING OF UNWANTED PLANT MATERIAL

Unwanted plant material can be a health hazard, specially in relation to mouldy plants.

It is also important to remember that moving plant material can accidentally spread weeds. To stop this all unwanted material should be destroyed by burning or composting.

Some government agencies will accept unwanted weeds for incineration. These weeds need to be securely contained in thick plastic bags so they can be safely collected and transported.

Contact:

Weeds Branch, NRETAS

www.nretas.nt.gov.au/natural-resource-management/weeds

Darwin and the Top End T: 8999 4567

Katherine T: 8973 8857

Alice Springs T: 8951 9210

NOTE

If you enjoyed this unit you may want to move on to Collect, Prepare and Preserve Plant Specimens next. This builds on the information you have learnt in Recognise Plants.

PLANT COLLECTION (HERBARIUM)

Collect and present a plant collection (also known as a herbarium) for 5 local plants.

Follow all instructions given by your trainer and the notes given on the previous pages.

Example herbarium label:

Family:

Genus:

Species:

Language or Common Name:

Identification:

Collector:

Date:

Locality:

Habit:

Habitat:

Comments:

RESOURCE AND REFERENCES

RESOURCE: GLOSSARY OF BOTANICAL TERMS



— **Alternate:** Leaf arrangement - leaves arising one by one along a stem.

Annual: A plant that germinates, grows, flowers and dies all in the one year.



— **Anther:** Flower part - the part of the stamen in which the pollen is produced.

Aril: The material surrounding some seeds.



— **Axillary bud:** Leaf part - a leaf bud that develops where the petiole meets the stem.

Berry: A simple pulpy or fleshy fruit with many seeds.

Capsule: A dry fruit that splits apart at maturity to release seeds.

Conical: Cone-shaped.

Crown: The live branches of a tree.

Deciduous: A plant with leaves that fall seasonally.

Erect: Upright or upwards habit.

Evergreen: A plant that keeps its leaves all year long.

Family: A group of related genera.



— **Filament:** Flower part - the stalk in the stamen that holds the anther.

Genus: A group of related species (the plural is genera).

Inflorescence: The group or arrangement of flowers on the plant.



— **Leaflet:** Leaf part - portion of a compound leaf.

Lobe: Leaf part - a divided portion of a leaf.



Node: Leaf part - the place on a plant stem where a leaf is attached



Opposite: Leaf arrangement - leaves borne in pairs on opposite sides of the stem.



Ovary: Flower part - female reproductive part of a flower.



Perennial: A plant that lives for more than two years.

Petal: Flower part - often the largest and most colourful single part of the flower.

Petiole: Leaf part - the stem-like part that holds the leaf blade.



Phyllodes: A flat structure that performs the same function as a leaf especially in Acacias.



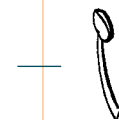
Pod: Flat or cylindrical dry fruit that splits open on two sides when mature to release seeds e.g. like a pea or bean.

Prostrate: Lying flat along the ground.

Rhizome: An underground stem.

Species: Name of a group of plants capable of interbreeding.

Stamen: Flower part - male flower part comprising anther and filament.



Stigma: Flower part -female part that catches pollen.

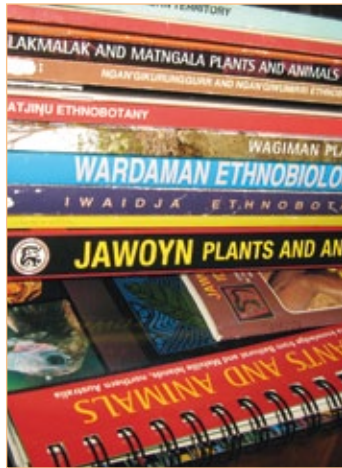


Stipules: Leaf part - a paired structure found at the base of the leaves.



Style: The female part of the flower that connects the stigma to the ovary.





Go to the Resources section of Greening Australia's website (www.greeningaustralia.org.au) for more information about books – look for the link to NT publications.

REFERENCES

PLANT BOOKS FOR YOUR LOCAL AREA

- Albrecht, D.E.A. & Rogers, L. 1999. *Weeds of the Tanami: a field guide to the weeds of the Tanami region, Central Australia*. Newmont Australia, Adelaide.
- Blake, N.M., Wightman, G. & Williams, L. 1998. *Iwaidja Ethnobotany: Aboriginal plant knowledge from Gurig National Park, Northern Australia*, Northern Territory Botanical Bulletin No. 23. Parks and Wildlife Commission of the Northern Territory, Darwin.
- Brennan, K. 1986. *Wildflowers of Kakadu*. Brennan, Jabiru, NT.
- Bryce, S. 1997. *Women's Gathering and Hunting in the Pitjantjatjara Homelands*. IAD, Alice Springs.
- Dobson, V. P. 2007. *Arelhe-Kenhe Merrethene: Arrernte traditional healing*. IAD Press, Alice Springs.
- Everard, P. et al. 2002. *Punu: Yankunytjatjara plant use: traditional methods of preparing foods, medicines, utensils and weapons from native plants*. Jukurpa Books, Alice Springs.
- Green, J. 2003. *Anmatyerr Ayey Arnang-akert Anmatyerr: Plant Stories by the women from Laramba (Napperby) community*. IAD Press, Alice Springs.
- Holmes, J., Bisa, D., Hill, A. & Crase, B. 2005. *A Guide to the Threatened, Near Threatened and Data Deficient Plants in the Litchfield Shire of the Northern Territory*. WWF-Australia, Sydney.
- Liddy, L.G. et al. 2006. *Wagiman plants and animals: Aboriginal knowledge of flora and fauna from the mid Daly River basin, northern Australia*. Northern Territory Botanical Bulletin No. 30. Dept. of Natural Resources, Environment and the Arts, Katherine, N.T. and Diwurruwurru-jaru Aboriginal Corporation, Darwin.
- Lindsay, B. et al. 2001. *Malakmalak and Matngala Plants and Animals: Aboriginal flora and fauna knowledge from the Daly River area, northern Australia*. Northern Territory Botanical Bulletin No. 26. Parks and Wildlife Commission of the Northern Territory, Darwin.
- Marfurra, P. et al. 1995. *Ngan'gikurungurr and Ngan'giwumirri Ethnobotany: Aboriginal Plant Use from the Daly River Area, northern Australia*. Northern Territory Botanical Bulletin No. 22. Conservation Commission of the Northern Territory, Darwin.
- Nambatu, N.J. et al. 2009. *Marri Ngarr and Magati Ke plants and animals: Aboriginal knowledge of flora and fauna from the Moyle River and Rak Neninh areas, north Australia*. Northern Territory Botanical Bulletin No. 32. Dept. of Natural Resources, Environment, the Arts and Sport and Batchelor Institute of Indigenous Tertiary Education, Darwin.
- Purdie, J., Materne C. & Bubb, A. 2008. *A field guide to plants of the Barkly Region Northern Territory*. Barkly Landcare and Conservation Association, Tennant Creek.
- Puruntatameri, J. et al. 2001. *Tiwi Plants and Animals: Aboriginal flora and fauna knowledge from Bathurst and Melville Islands, northern Australia*. Northern Territory Botanical Bulletin No. 24. Parks and Wildlife Commission of the Northern Territory and Tiwi Land Council, Darwin.
- Raymond, E. et al. 1999. *Wardaman Ethnobiology: Aboriginal plant and animal knowledge from the Flora River and south-west Katherine region, north Australia*. Northern Territory Botanical Bulletin No. 25. Parks and Wildlife Commission of the Northern Territory, Darwin.

- Smith, N.M. & Wightman, G.M. 1990. *Ethnobotanical notes from Belyuen, Northern Territory, Australia*. Northern Territory Botanical Bulletin No. 10. Conservation Commission of the Northern Territory, Darwin.
- Smith, N.M., Wididburu B., Harrington, R. N. & Wightman, G.M. 1993. *Ngarinyman Ethnobotany: Aboriginal Plant use from the Victoria River area, northern Australia*. Northern Territory Botanical Bulletin No. 16. Conservation Commission of the Northern Territory, Darwin.
- Turner-Neale, M. & Henderson, J. 1994. *Bush Foods: Arrernte foods from Central Australia Nhehe-areye anwerne-arle arlkweme*. IAD Press, Alice Springs.
- White, D. et al. 2009. *Warray Plants and Animals: Aboriginal flora and fauna knowledge from the upper Adelaide and upper Finnis Rivers, northern Australia*. Northern Territory Botanical Bulletin No. 33. Dept. of Natural Resources, Environment, the Arts and Sport and Diwurruwurru-jaru Aboriginal Corporation, Darwin.
- Wightman, G.M. & Brown, J. 1994. *Jawoyn Plant Identikit*. Conservation Commission of the Northern Territory, Darwin.
- Wightman, G.M., Jackson, D. & Williams, L. 1991. *Alawa Ethnobotany: Aboriginal Plant Use from Minyerryi, northern Australia*. Northern Territory Botanical Bulletin No. 11. Conservation Commission of the Northern Territory, Darwin.
- Wightman, G.M., Dixon, D. Williams, L. & Dalywaters I. 1992. *Mudburra Ethnobotany: Aboriginal Plant Use from Kulumindini (Elliott), northern Australia*. Northern Territory Botanical Bulletin No. 14. Conservation Commission of the Northern Territory, Darwin.
- Wightman, G.M., Roberts, G.J. & Williams, L. 1992. *Mangarrayi Ethnobotany: Aboriginal Plant Use from Eley area, northern Australia*. Northern Territory Botanical Bulletin No. 15. Conservation Commission of the Northern Territory, Darwin.
- Wightman, G.M. & Smith, N.M. 1991. *Ethnobotany, Vegetation and Floristics of Milingimbi, northern Australia*. Northern Territory Botanical Bulletin No. 6. Conservation Commission of the Northern Territory, Darwin.
- Wightman, G.M. et al. 1994. *Gurindji ethnobotany: Aboriginal Plant use from Daguragu, northern Australia*. Northern Territory Botanical Bulletin No. 18. Conservation Commission of the Northern Territory, Darwin.
- Wijnjorrotj, P. et al. 2005. *Jawoyn Plants and Animals: Aboriginal flora and fauna knowledge from Nitmiluk National Park and the Katherine area, northern Australia*. Northern Territory Botanical Bulletin No. 29. Jawoyn Association and Department of Natural Resources, Environment and the Arts, Darwin.
- Yunupingu, B. et al. 1995. *Rirratjingu Ethnobotany: Aboriginal Plant Use from Yirrkala, Arnhem Land, Australia*. Northern Territory Botanical Bulletin No. 21. Parks and Wildlife Commission of the Northern Territory, Darwin.

NORTHERN TERRITORY PLANT BOOKS

- Aboriginal Communities of the Northern Territory. 1993. *Traditional Aboriginal Medicines in the Northern Territory of Australia*. Conservation Commission of the Northern Territory, Darwin.
- Allan, C. & Wilson, D. 2006. *Central Australian Grass Guide: The essential glovebox guide for pastoral lands*. CLMA and Northern Territory Government of Australia, Darwin.
- Blombery, A.M. 1989. *The Flowers of Central Australia*. Kangaroo Press, Kenthurst.
- Booth, R., Harwood, R.K. & Mangion, C.P. 2001. *Field key for the monsoon rainforest flora of the Darwin region*. Northern Territory Botanical Bulletin No. 28. Parks and Wildlife Commission and Key Centre for Tropical Wildlife Management, Darwin.

RESOURCE AND REFERENCES



- Brock, J. 2007. *Native Plants of Northern Australia*. Reed New Holland, Sydney.
- Clark, M. & Traynor, S. 1987. *Plants of the Tropical Woodland*. Conservation Commission of the Northern Territory, Darwin.
- Clifford, H.T. & Cowie, I.D. 1992. *Northern Territory Flowering Plants: A key to families*. Northern Territory Botanical Bulletin No. 12. Conservation Commission of the Northern Territory, Darwin.
- Cowie, I., Short, P. & Osterkamp Madsen, M. 2000. *Floodplain Flora. A flora of the coastal floodplains of the Northern Territory, Australia*. Flora of Australia Supplementary Series Number 10. ABRIS, Canberra.
- Crowder, S. & Siggers, B. 2010. *Grasses of the Northern Savannas: a field guide*. Greening Australia (NT) Ltd, Darwin.
- Dhanji, S. 2009. *Weeds of Central Australia: a field guide*. Greening Australia (NT) Ltd, Darwin.
- Dunlop, C.R., Leach, G.L. & Cowie, I.D. 1995. *Flora of the Darwin Region*. Volume 2. Conservation Commission of the Northern Territory, Darwin.
- Harmer, J. 1975. *North Australian Plants. Part 1 – Top End Wildflowers*. Society for Growing Australian Plants, Sydney.
- Hearne, D. 1975 *Trees for Darwin and Northern Australia*. AGPS, Canberra.
- Jessop, J.P. (ed.) 1981. *The Flora of Central Australia*. Reed Books, Sydney.
- Latz, P. 1995. *Bushfires & Bushtucker – Aboriginal plant use in Central Australia*. IAD Press, Alice Springs.
- Latz, P. 1999. *Pocket Bushtucker: a field guide to the plants of Central Australia and their traditional uses*. IAD Press, Alice Springs.
- Latz, P. & Wightman, G. 1995. *Desert Bush Tucker Identikit: common native food plants of Central Australia*. Parks and Wildlife Commission of the Northern Territory, Darwin.
- Milson, J. 2000. *Trees and Shrubs of North-west Queensland*. Department of Primary Industries, Brisbane.
- Milson, J. 2000. *Pasture Plants of North-West Queensland*. Department of Primary Industries, Brisbane.
- Simon, B.K. & Latz, P. K. 1994. *A key to the Grasses of the Northern Territory, Australia*. Northern Territory Botanical Bulletin No. 17. Conservation Commission of the Northern Territory, Darwin.
- Smith, N.M. 1995. *Weeds of Natural Ecosystems. A field guide to environmental weeds of the Northern Territory*. Environment Centre NT, Darwin.
- Smith, N.M. 2002. *Weeds of the Wet/Dry Tropics of Australia. A field guide*. Environment Centre NT, Darwin.
- Smith, N. 2007. *Native Plants for Top End Gardens*. Greening Australia (NT) Ltd, Darwin.
- The Darwin Reconstruction Commission. 1976. *Tropical Gardening in Darwin*.
- Thomson, B.G. & Kube, P.D. 1990. *Arid Zone Eucalypts of the Northern Territory*. Northern Territory Botanical Bulletin No. 9. Conservation Commission of the Northern Territory, Alice Springs.
- Urban, A. 1990. *Wildflowers and plants of Central Australia*. Southbank Editions, Port Melbourne.
- Vinter, A. & Forth, F. 2007. *Native Plants for Central Australian Gardens*. Greening Australia (NT) Ltd, Darwin.

Wheaton, T. (ed.) 1994. *Plants of the Northern Australian Rangelands*. N.T. Dept. of Lands Housing and Local Government, Darwin.

Wheeler, J. (ed.) 1992. *Flora of the Kimberley Region*. Department of Conservation and Land Management, Perth.

Wightman, G.M. 2006. *Mangroves of the Northern Territory, Australia. Identification and traditional use*. Northern Territory Botanical Bulletin No. 31. Department of Natural Resources, Environment and the Arts, Darwin.

Wightmann, G. 2006. *Mangrove Plant Identikit for north Australia's Top End*. Department of Natural Resources, Environment and the Arts, Darwin, NT Government and Greening Australia NT.

Wightman, G & Andrews, M. 1989. *Plants of Northern Territory Monsoon Vine Forests*. Conservation Commission of the Northern Territory, Darwin.

Wightman, G. & Andrews, M. 1991. *Bush Tucker Identikit*. Conservation Commission of the Northern Territory, Darwin.

Wightman, G. & Mills, L. 1991. *Bush Medicine Identikit: common medicinal plants of Australia's Top End*. Conservation Commission of the Northern Territory, Darwin.

Wilson, B.A., Brocklehurst, P.E. Clark, M.J. and Dickinson, K.J.M. 1990. *Vegetation Survey of the Northern Territory, Australia*. Technical Report No. 49. Conservation Commission of the Northern Territory, Darwin.

Woinarski, J. Pavey, C. Kerrigan, R. Cowie, I. and Ward S. 2007. *Lost from our landscape: Threatened species of the Northern Territory*. Northern Territory Government, Darwin.

OTHER BOOKS

Bell, A. 1991. *Plant Form – an illustrated guide to flowering plant morphology*. Oxford University Press, Oxford.

Brooker, M.I.H., and Kleinig, D.A. 1990. *Field Guide to Eucalypts*. Vol.2. Inkata Press, Melbourne.

Chong, Siew. N. 1987. *Basic Morphology of Flowering Plants*. 2nd ed. (Module A), Technical Trust Publication, TAFE Western Australia.

Chong, Siew. N. 1987. *Identification of Flowering Plants*. 2nd ed. (Module B), Technical Trust Publication, TAFE Western Australia.

Chong, Siew. N. 1985. *Ferns and Gymnosperms*. (Module C), Technical Trust Pub. TAFE Western Australia.

Cronin, Leonard. 1991. *Key Guide to Australian Palms, Ferns and Allies*. Reed Books Pty Ltd, Balgowlah, NSW.

Cronin, Leonard. 1991. *Key Guide to Australian Trees*. Reed Books Pty Ltd, Balgowlah, NSW.

Cronin, Leonard. 1991. *Key Guide to Australian Wildflowers*. Reed Books Pty Ltd, Balgowlah, NSW.

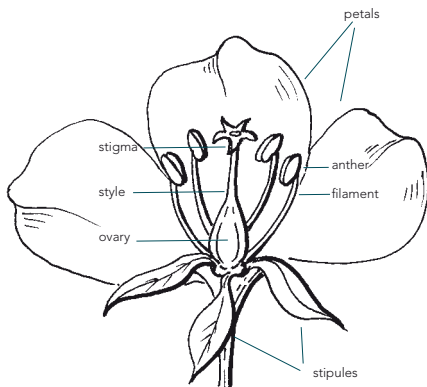
Morely, B.D. & Toelken, H.R. (eds) 1983. *Flowering Plants in Australia*. Rigby, Adelaide.

Parsons, W.T., and Cuthbertson, E.G. 1992. *Noxious Weeds of Australia*. Inkata Press, Melbourne.

Weier, T. E., Stocking, C.R., Barbour, M.G. & Rost, T.L. 1982 Sixth ed. *Botany. An introduction to plant biology*. John Wiley & Sons, New York.



ALEP Learning Guides. These full colour, step-by-step guides provide practical, easy to follow instructions. Based in the Top End of the Northern Territory, they can also be adapted to other regions.



GETTING READY

1. ALEP Learning Guides – Trainer's Guide
2. Carry Out Natural Area Restoration Works

RECOGNISING PLANTS

3. Recognise Plants

4. Collect, Prepare and Preserve Plant Specimens

GROWING PLANTS

5. Collect, Treat and Store Seed
6. Maintain Properties and Structures
7. Install Micro-irrigation Systems
8. Undertake Propagation Activities
9. Pot Up Plants
10. Tend Nursery Plants

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11. Treat Weeds
12. Install, Maintain and Repair Fencing
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In this learning guide, *Recognise Plants* you will learn how to:

- GET PREPARED
- RECOGNISE PLANTS
- PRESS AND STORE PLANTS

ISBN: 978-1-875345-96-0 (2012)

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