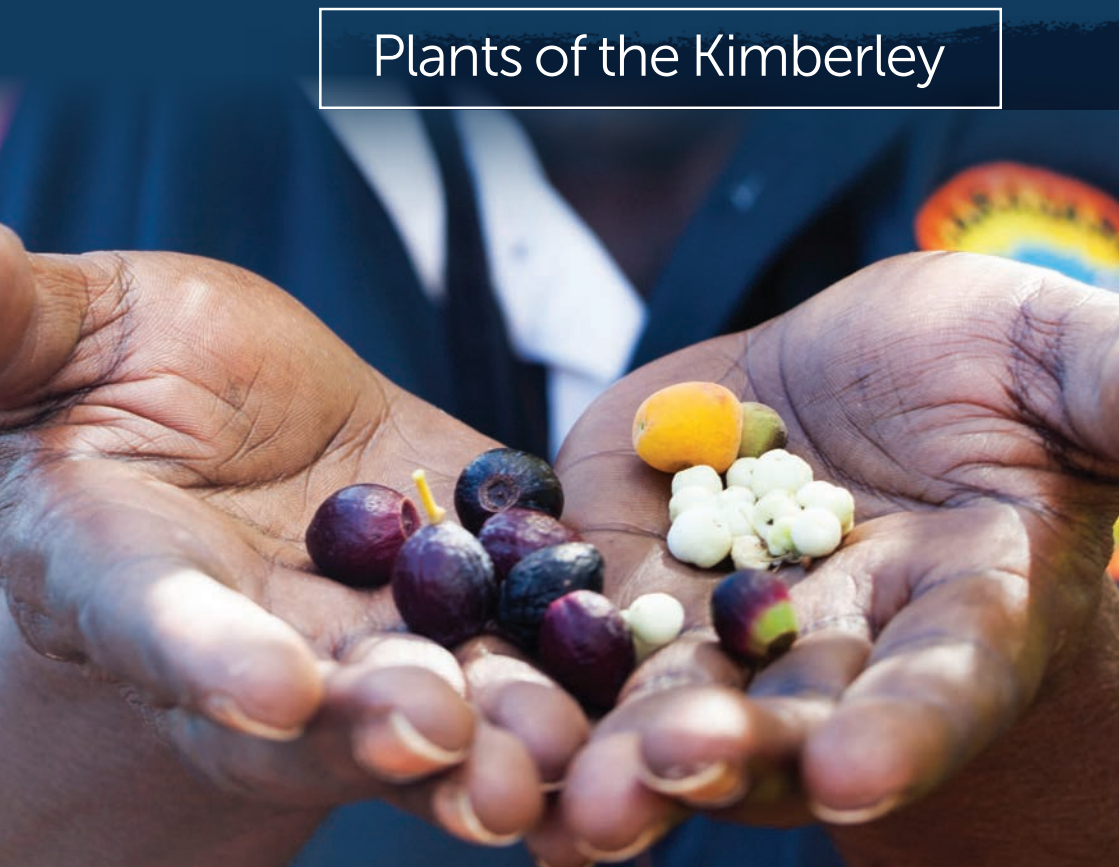


# Seed collection and propagation guide for

## Plants of the Kimberley



Prepared by Ayesha Moss, Louise Beames and Phil Docherty



Nyul Nyul Ranger, Devena Cox, collecting *Senna costata* seeds.

## Acknowledgements

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Plant propagation information comes from published references and the experience of the Kimberley Community Seedbank, with extensive input from Kimberley horticulturists Phil Docherty (Society for Kimberley Indigenous Plants and Animals), Tom Harley (Kimberley Environmental Horticulture), Max Goodwin (Red Dirt Native Plants) and Tim Willing (Broome Botanical Society).

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Bardi Jawi Oorany Ranger, Elaine Riley, collecting goolmi (*Grewia breviflora*).

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## Introduction

The purpose of this guide is to provide advice and tips for collecting, storing and propagating seed of Kimberley plants, so that Kimberley people can grow local plants for their gardens and communities, as well as for restoring bushland that has been disturbed or affected by weeds. People can also use it to support their participation in the Kimberley Community Seedbank.

The Kimberley Community Seedbank produced a preliminary guide to collecting seed of 20 Kimberley plant species in 2017, with support from WWF Australia and the Anita and Luca Belgiorno-Nettis Foundation. This revised edition contains information for 41 Kimberley species. The species were chosen because they are important to Kimberley ecosystems such as the endangered monsoon vine thickets, have good horticultural potential, or are known to be difficult to germinate. This guide is an evolving compendium of knowledge about seed collection and propagation of Kimberley plants. If you wish to contribute knowledge about these or other species, please contact us. We may include it in future editions.

## About the Kimberley Community Seedbank

The Kimberley Community Seedbank (KCS) is a not-for-profit community enterprise within Environs Kimberley's Kimberley Nature Project. KCS works with the local community and Aboriginal groups to collect local seed and support conservation and land management activities. It is also a resource hub, promoting good revegetation practices and providing support for emerging cultural and conservation economies in the region.

The goals of the Seedbank are to:

- Develop and grow sustainable social enterprise based on bush resources
- Expand knowledge and facilitate training
- Conserve threatened species
- Sustainably harvest and manage seed stocks.

## How to sustainably collect, clean, store and propagate native seed

### Legalities

- The native flora of Western Australia is protected under the Biodiversity Conservation Act 2016. A licence is required to collect seeds and other plant material on Crown Land, or if the material is being used for research, identification or sale. Supplying plant material from private and Crown Land is also regulated through Department of Biodiversity Conservation and Attractions (DBCA) licencing. A licence is also required for plant material collected for commercial purposes.

You will also need a letter of approval from the traditional owner group, Registered Native Title Body Corporate (RNTBC) if collecting from native title determined areas.

For more information on licencing go to:

[www.dpaw.wa.gov.au/plants-and-animals/licences-and-authorities](http://www.dpaw.wa.gov.au/plants-and-animals/licences-and-authorities).

- Only collect seed from your own freehold or traditional land, or from land for which you have a permit and signed permission from the private owner.



Figure 1: Sustainable harvest guidelines

## Collecting Seed

### Collecting tips

- **Plan which species you want to collect**, and know where and when to find them.
- **Collect seeds when they are mature and ripe**. This will vary between years and sites depending on rainfall and other factors, so several trips may be needed to monitor seed ripeness.
- **Know what mature seed looks and feels like** to aid collection, e.g. often ripe fruits fall easily from the tree when touched. If you are pulling a fruit from the tree it is not likely to be ripe.
- **Don't overfill collection bags**.
- To make seed cleaning easier, **avoid collecting excess plant materials** such as leaves and branches.
- **Reduce insect damage and spread** by inspecting bags and seeds for noticeable insect damage after collection.
- **Keep good records** so you know what the seed is, when it was collected, where it was from and who collected it. This also helps from year to year to trace back which seeds were most viable and the ripening patterns across different sites, e.g. northern sites may ripen first.
- **Allow seed to ripen in dry environments**. e.g. wattle or Eucalypt seed will dry easily in sun with good airflow. These seeds are likely to become mouldy if kept in plastic, or humid conditions.
- **Thin cotton bags can be tied over unripe seedpods** to catch seed as they mature and drop off, to be collected later.

### Collecting equipment

- Secateurs, pruners, extension pruners, plastic rakes, calico, hessian and paper bags, tags or labels for bags, pens and pencils, collection data sheets, licences, field guides, hand lenses, drop sheets, plastic bins or buckets, gloves, camera.



Karajarri women collecting lurringkin seed by hand-stripping pods onto a tarp



Picking ripe fruit from goolmi (*Grewia breviflora*)

Plant Type	Method
Tall trees (e.g. Eucalypts)	Cut off smaller branches with large quantities of fruit using extension pruners. Remove woody fruit (gumnuts) from branches on site. Most eucalypts in the Kimberley release seed as it ripens, so it is important to keep the woody fruit in a dry bag and clean and process the seed once it has all been released from the dried gumnut.
Large shrubs (e.g. wattle)	For out-of-reach seed, lay tarp below the shrub and hit the higher branches with a plastic rake to collect seed. Sort seed from the pods by shaking tarp up and down; the heavier seed will sink to the bottom.  For seed that is in reach and for species with sticky seedpods, such as <i>Acacia monticola</i> , hand-strip pods from bushes into buckets or bags. Alternatively, use secateurs to remove the seed heads.
Small shrubs	Hand-strip or pick seed from the shrub into buckets or bags. Thin cotton bags can be tied over seedpods (e.g. <i>Acacia</i> , <i>Hakea</i> , <i>Grevillea</i> ) that are about to open, to catch seed. Return to collect bags and seeds.
Grasses	Test seed ripeness by pulling the seed heads through your hand. When seed comes away from the stem easily it is ready to harvest. Collect by hand-stripping or by cutting bunches of seed heads. There are also many types of mechanical grass-seed harvesters on the market.
Fleshy seed	Collect individual fruits by hand. In some species it may be important to remove the flesh from the seed. The flesh can inhibit germination and may cause the seed to rot while in storage. This can be done as you pick the fruits. Some fleshy fruits can be stored whole in the fridge, while for other species it may be important to directly sow the fresh seed with the fruit. Research the storage and germination needs of the species you are going to collect, especially for those with fleshy fruit, to improve its viability. Talk to those who have this knowledge and experience and refer to books and online advice.



Bardi Jawi Oorany and Nyul Nyul women Rangers, with staff members from Apace Nursery WA and Environs Kimberley, learning more about seed collection at Kings Park.

## Cleaning and Storage

### Cleaning tips

- Clean each species separately.
- Hard seeds and grass seed tips:
  - Ensure freshly collected seed is dried completely before cleaning. Dry in paper bags in a warm dry place. On a window sill or car dashboard works well.
  - Sieve, winnow and hand-sort to clean small batches of seed. Run heavy seeds like wattle from one container to another repeatedly in a slight breeze. The seeds will fall into the bottom container while the debris will float away in the breeze.
  - Avoid over-cleaning seeds that contain very small particles of debris as this can be time-consuming and will not affect the germination of the seeds.
  - Ensure valves and pods have been sufficiently dried, have opened, and have dropped all their seed.
  - Clean hard-coated seeds in cool water, discard debris and floating seeds, which are likely to be non-viable, then dry the seeds well on a paper towel before placing in a storage container.
- Fleshy fruit tips:
  - If the seeds need to be separated from the fleshy fruit, then do this as soon as you can to avoid fruits becoming rotten and spoiling the seed.
  - If seeds need to be sown fresh and with the flesh on, then do this as soon as you can and at least within the next 48 hours.
  - Check if fruits can be refrigerated and still remain viable.
- Keep only the good seed. Remove seed that is damaged and, in particular, look for and remove seed with insect borer holes.
- Avoid contaminating collections. Don't mix seeds of the same species that have been collected on different occasions or at different sites. This precaution will reduce the opportunity for one insect-damaged collection to affect another, and enable you to identify which trees, collectors or occasions produced the most viable seed.

### Cleaning equipment

Set of sieves, trays, large plastic bins and containers, gloves, face mask, pens and labels, microscopes, scales, paper bags, paper towels, tarps.

### Seed storage tips

It is important to store your seed well so it doesn't rot, degrade or get destroyed by insects. Don't let your hard work be wasted!

- Place clean and dry seed in airtight containers with a sprinkling of Borax to prevent insect attack.
- Store at a consistent temperature in an air-conditioned room or in a fridge with low humidity.
- Label containers well and include the species name, date, where it was collected from and who collected it.

Type	Cleaning Method	Storage Conditions
Capsules (e.g. <i>Eucalypts</i> , <i>Melaleuca</i> )	Pick capsules (fruits) and put in a bucket to dry. Capsules can open very quickly. If capsules are still attached to branches, dry on a tarp and leave in the sun. Separate seed from other fallen material on a sheet by sieving.	Store airtight at low humidity and temperature.
Grains e.g. grasses	Strip seed and husks by hand, then sieve. Some grass seeds, like spear grasses and kangaroo grass, need their awns (hairy or bristly, curved or straight appendage extending from the seed) to remain attached for successful germination so be careful not to separate them.	
Follicles e.g. <i>Hakea spp.</i> , <i>Grevillea spp.</i>	Remove woody follicles (fruit) from branches. Lay out to dry in a sunny position for a couple of weeks. Shake follicles in a sieve and the papery seeds should release easily. Remove damaged seeds.	Store in fridge to maintain seed viability.
Pods e.g. <i>Acacia</i> , <i>Tephrosia</i> , <i>Senna</i> and other pea-flowered plants	Once dry, pods will split open to release the seeds. Use a sieve to separate smaller seeds from larger pods. Infertile or damaged seed will float in water and can be easily removed. Dry the remaining seed before storing.	Store airtight at low humidity and temperature. Add borax to storage containers.
Fluffy seed e.g. <i>Ptilotus spp.</i>	Store and dry in bags for up to a month before separating seed and 'fluff' in a covered sieve. Large quantities need to be collected as these annuals have very low seed viability.	
Fleshy fruit e.g. <i>Terminalia spp.</i> <i>Celtis spp.</i> <i>Mimosa spp.</i> <i>Grewia spp.</i> <i>Capparis spp.</i> <i>Diospyros spp.</i> <i>Flueggea spp.</i> <i>Jasminum spp.</i>	Fresh seeds germinate best. Remove the fruit by peeling. If difficult, soak fruits in water then rub over a chunky sieve to break up flesh. Dry out then rub over a sieve again to remove remaining dried flesh.  Alternatively, place fleshy fruit in a plastic bag and seal. Allow to ferment for a few weeks before removing the rotting flesh. Much like going through the digestive tract of a bird or bat, this process allows natural chemical inhibitors to be released and cues the seed to germinate.	Store fleshy seeds in an airtight container at low humidity and temperature. Add borax to the containers.  In the case of <i>Terminalia ferdinandiana</i> , dry the seeds out with the flesh either on or off and store in an air-conditioned room for up to a year. Don't store <i>T. ferdinandiana</i> in the fridge.
e.g. <i>Ficus spp.</i>	Fresh seeds germinate best. Don't remove flesh from the seeds.  Seeds that have been through a bird's digestive tract may germinate more readily.	
e.g. <i>Persoonia spp.</i>	Ferment the fruits in water for a few days and then remove the flesh from the seeds by rubbing.	



Karajarri women sieving *Acacia* seeds. Where possible sort seed in the field to avoid bringing back too much unwanted material such as leaves, twigs and empty seedpods.



Bardi Jawi Oorany and Karajarri Women Rangers removing the flesh from madoorr/nyaminyari (*Terminalia ferdinandiana*) using water and a sieve.

## Germinating Seeds

### Germinating tips

- Seed germination is generally best with rising soil temperatures in late dry season. Artificial heatbeds in a hothouse can mimic these conditions at other times of the year.
- Monsoon vine thicket species (especially those with fleshy fruits) can lose viability within six weeks of ripening. It is advisable to sow the seeds as soon as possible, even without optimum planting conditions.
- Most species have higher germination rates when sown fresh, as viability is often reduced as the seeds age, unless the seeds have a natural dormancy mechanism (see below). Good storage practices can keep most seeds viable for longer.
- Seed dormancy can affect the germination of some species. Dormancy might be the result of a feature like a hard seed-coat that needs the heat of a fire to crack open. These mechanisms assist seeds to survive until conditions are best for germination. Check this guide for techniques used by propagators to overcome dormancy e.g. applying hot water, smoked water or scarification.
- Plant seeds at the depth of the seed's width.
- Use a soil mix containing 50% sand to 50% sterile soil/potting mix.
- Use air-pruning pots so plants don't develop root-curl.
- Label the planted seeds and any germination treatments. This is so you can measure the viability of the seed collected on different occasions and the effectiveness of alternative germination treatments, e.g. smoked water vs freshly sown.
- Use pot sizes to suit the species. For example: small tubes are good for *Acacias* while vine thicket species grow best in wide tubes. Eucalypts and larger savannah species are best grown in tall tubes.



SKIPA volunteer sowing small seeds in furrows.

## Planting

- **Plant advanced seedlings during the wet season** to catch the rain. When rains are irregular during the early establishment phase (first 3 months), ensure that planted seedlings receive water at least weekly.
- **Remove weeds around the plant and immediate area prior to planting.** Maintain the area and remove weeds regularly to reduce competition for water and nutrients.
- When digging the hole, **ensure the soil is loosened at least 50cm in depth and diameter.** Remove just enough soil to fit the plant in and keep the soil at the same level around the stem of the plant as it was in the pot. **Create a bowl of earth around the seedling** to allow water to accumulate around the plant rather than running off.
- **Use a thick layer of mulch around the plant to help retain soil moisture, and to smother and prevent weeds.** This will improve the ability of the plant to survive hot and dry days.
- When choosing which Kimberley plants to grow, **consider the suitability of the site for the fully grown plant.** Consider the mature height and spread of the plant for the area, especially for verge planting; the action of roots or limbs near buildings and boundaries; and the water requirements and compatibility with existing vegetation.

For information about how to prepare a site for planting, direct sowing or planting trees and shrubs, please see some great resources developed by Roebuck Bay Working Group and Society for Kimberley Indigenous Plants and Animals.

<https://www.environskimberley.org.au/skipa>

<https://roebuckbay.org.au/pdfs/coastal-gardens-web-version.pdf>



Grow seedlings in tubes or pots. For improved survivability, advanced seedlings with well-formed roots and foliage should be planted during the wet season.

## Collecting and propagating some popular local plant species – West Kimberley

For each of the following species we provide a brief description of the plant, its habitat, approximate seeding and flowering times and propagation notes. It is important to note that flowering and seeding times can vary greatly from year to year and place to place, depending on rainfall and temperature. It is best to monitor target plants to see when they are flowering and seeding, and watch for ripening, rather than relying on calendar information.

West Kimberley Aboriginal language names, where known, are included alongside scientific names. These are Bardi (B), Nyul Nyul (N), Yawuru (Y), Karajarri (K) and Bunuba (Bb). These languages are spoken in Broome and areas to the north, south and east, where the Kimberley Community Seedbank and Kimberley Nature Project have been working with Aboriginal ranger groups to develop skills and cooperate on projects. Spelling has been checked with each group's language centre, cultural advisors, Registered Native Title Body Corporate or language dictionary. Some of these Aboriginal language names are known and used in the broader community as well.

## Species List

1. *Abrus precatorius*
2. *Acacia bivenosa*
3. *Acacia coleii*
4. *Acacia monticola*
5. *Adansonia gregorii*
6. *Barringtonia acutangula*
7. *Bauhinia cunninghamii*
8. *Callitris columellaris*
9. *Calytrix exstipulata*
10. *Canarium australianum*
11. *Capparis umbonata*
12. *Carissa lanceolata*
13. *Corymbia bella*
14. *Corymbia paractia*
15. *Cymbopogon procerus*
16. *Diospyros humilis*
17. *Dodonaea platyptera*
18. *Erythrina vespertilio*
19. *Ficus aculeata*
20. *Ficus virens*
21. *Flueggea virosa*
22. *Grevillea refracta*
23. *Grevillea wickhamii*
24. *Grewia breviflora*
25. *Gyrocarpus americanus*
26. *Hakea arborescens*
27. *Hakea macrocarpa*
28. *Jasminum didymum*
29. *Lophostemon grandiflorus*
30. *Mimusops elengi*
31. *Murraya paniculata*
32. *Nauclea orientalis*
33. *Pandanus spiralis*
34. *Persoonia falcata*
35. *Pittosporum moluccanum*
36. *Ptilotus exaltatus*
37. *Sersalisia sericea*
38. *Tephrosia rosea*
39. *Terminalia kumpaja*
40. *Terminalia ferdinandiana*
41. *Terminalia petiolaris*

*Abrus precatorius*, ngaminy-ngaminy (B) (N) jinyjalgurany (Y)  
ngarwaluwali (Bb)



**Crab's eye bean** is a slender climber that grows onto trees and shrubs. It typically grows during the wet season and is widespread across the Kimberley.

**Flowers:** purple-violet pea flowers bloom from December to April.

**Seed collection:** pods stay on vine for some time after ripening and can be hand-picked from the vine or ground from December to August.

**Propagation:** break the hard coat of this seed by soaking in hot (not boiling) water and leave overnight. Scarifying or nicking the seed-coat may help further.

**CAUTION:** the seeds are extremely poisonous and can be lethal if consumed. Breaking the hard seed-coat releases the toxins. It is important to wear gloves when working with this seed, to clearly label the germination preparations as dangerous and to dispose of the used water safely.

*Acacia bivenosa*, nirliyangarr (Y) nilarrangka (K)

**Cable Beach** or **dune wattle** is a large bushy shrub growing to 3m tall with elliptic or egg-shaped, blue-green leaves. The bark is a smooth, light grey. It is common in sandy soils throughout the southern Kimberley, the Pilbara, Northern Territory and Queensland.

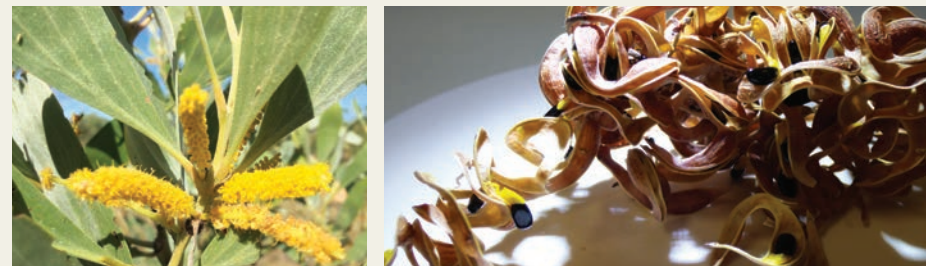
**Flowers:** yellow, globular flowers occur from June to October.



**Seed collection:** curved woody seedpods mature once they turn light brown, from September to November. Collect the pods just before the majority split wide open. Use tarps or sheets beneath the trees while collecting to catch the ripe seed falling from open pods. Seeds are glossy dark brown to black with bright red arils.

**Propagation:** Seed of most *Acacia* species have a long storage life and high viability. When viable seed is soaked in hot water, it will swell, lighten in colour and sink. Repeat this process for seeds that don't swell on first soaking. Non-viable seed will float and should be discarded. Plant in trays, pots or the ground at a depth that is roughly the same as the width of the seed.

*Acacia colei*, noomoorrgoodoord (B) numornagugud (N)  
lirringgin (Y) lirringkin (K)



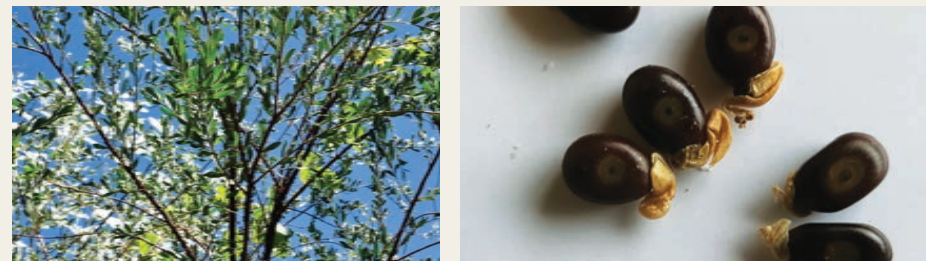
**Soap wattle** is an open shrub growing to 5m tall. The leaves are bluish-green or silvery and feel almost silky. When the immature seedpods are rubbed together with water, a soapy froth is formed, hence the common name. Soap wattle occurs throughout the Kimberley and Pilbara and into Northern Territory and Queensland.

**Flowers:** golden-yellow flower spikes occur from May to September.

**Seed collection:** the light green then golden coiled seedpods form in clusters and turn reddish-brown when mature, from August to November. Seeds are shiny black and have bright yellow arils. Use tarps or sheets beneath the trees while collecting to catch the ripe seed falling from open pods. Alternatively, hand-strip into large buckets.

**Propagation:** see *A. bivenosa*

*Acacia monticola*, galirrin (B) galarrajan (N) warraga (Y) burrundu (Bb)



**Red, curly bark** or **scratchy wattle** is a shrub or tree growing to 3–5m tall. It occurs throughout the Kimberley, Pilbara and Goldfields regions in red sand, ironstone and lateritic soils. The bark is reddish-brown and continuously peels in small curly flakes. The leaves are small and seed-pods are narrow, mostly flat, slightly raised over seeds and sticky to touch. Seeds are brown with creamy-white arils.

**Flowers:** yellow balls occur from April to August.

**Seed collection:** September/October. The hairy, sticky pods turn dark brown and split easily. Bulk collection can be difficult; consider plucking by hand. Placing unopened seedpods in a paper bag in a warm dry place for several days can help release seed. Any remaining seed from unopened pods can be separated by crushing in a canvas bag, then sieving.

**Propagation:** as for other *Acacia* spp.



*Adansonia gregorii*, larrgid (B) larrgardi (Y) larrkarti (K) larrgari (Bb)



**Boabs** have been cultivated in the Broome area, but naturally occur in the SE corner of the Dampier Peninsula, north west, central and east Kimberley and the Victoria River district of the Northern Territory. The Boab is a swollen-stemmed deciduous tree growing to 10m tall. *A. gregorii* is the only member of its genus found in Australia. Six species of *Adansonia* are found in Madagascar and one in Africa.

**Flowers:** large, creamy-white flowers with many stamens bloom from December to February and sometimes until May, depending on location.

**Seed collection:** the large boab fruits contain kidney-shaped seeds inside white, chalky pith. Fruits can be collected from December to August with seasonal variations according to local conditions.

**Propagation:** before planting, soak seeds at room temperature until they germinate. Avoid root-rot by not over-watering. Plants develop a strong taproot and should be transferred to a larger pot or planted directly into the ground.

*Barringtonia acutangula*, mirlbarridi (Y) malaa (Bb)



**Freshwater mangrove** is a tree or shrub growing to 4m tall. It has dark green leaves and many fissures (splits) in the outer bark. When the outer bark is cut open it reveals a rich, orange-coloured living bark. It occurs throughout the Kimberley, in sandy clay by riverbanks and floodplains, throughout northern Australia, and in Afghanistan and southern Asia.

**Flowers:** hanging racemes of pink-red flowers bloom year-round but are most abundant in April/May.

**Seed collection:** can be year-round, with much available at the end of the wet season.

**Propagation:** the seeds have a short shelf life, but there can be up to 90% germination rate for fresh seed, particularly if sown at warmer temperatures. Soak the fresh seed in lukewarm water overnight. Plant with the stalk-end of the seed down.

*Bauhinia cunninghamii*, jagal/joomoo (B) jigal (N) jigily (Y) jikily (K) ngiyali (Bb)



**Jigal or Kimberley bauhinia** is a dense spreading shrub or tree growing to 6m around Broome, but can become as tall as 12m in other places. It is common throughout the Kimberley and found as far south as the Gascoyne and across northern Australia. The leaves are butterfly-shaped, with young leaves starting red and turning to green/blue/grey when mature.

**Flowers:** red, tubular and filled with nectar, from April to October.

**Seed collection:** young seedpods are red, flat and slightly spiral, turning brown once dried and mature; around September–December. Place a tarp under the tree and use a plastic rake to dislodge the mature pods, or collect by hand from lower branches.

**Propagation:** there is generally good seed viability and germination success. Soak seed in warm water for 5–10 minutes, then sow directly into seeding trays.

*Callitris columellaris*, guru (Bb)



**Northern cypress pine** grows to 8m tall and is commonly found throughout the wetter north and central Kimberley on hill slopes, summits and sandplains, as well as throughout much of northern Australia. It has blue-green needle-like leaves and rough, fibrous or fissured grey bark. The heartwood of older trees is a deep yellow, and fragrant when burnt. The round cones crack open to release the pollen.

**Seed collection:** when ripe the cones open gradually to release the seeds. Seeds can be collected anytime during this process, from October/November to January.

**Propagation:** dry and then extract the many seeds from within each seed capsule. In the bush, seeds can germinate rapidly after fires. In the nursery, soak the seeds in smoked water overnight and sow abundantly in the seed tray. Seed viability is generally low and seedling growth is slow. Plump firm seed is likely to give the best results.

### *Calytrix exstipulata*, gidigid (B)



**Kimberley heather** or **turkey bush** is a shrub growing to 4m tall. It can also grow as a prostrate shrub under 1m. The leaves are pale green and needle-like. It is widespread across the Kimberley, Northern Territory and some parts of Queensland. It can grow on laterized gravels and on outcrops, sand and clay.

**Flowers:** masses of star-shaped, off-white, pale pink or mauve, fine-haired, papery flowers, April to September.

**Seed collection** best from July to December when the flower petals have fallen to the ground and the star-shaped calyx and pointed floral tube remaining on the plant begins to brown and ripen, and can be easily removed.

**Propagation:** this plant can be difficult to grow and a heatbed can help stave off fungal attack. Select only plump firm seeds, yellow at the base. Sow seeds pointy end down in 50/50 sterile seed-raising mix and coarse river sand. Sow three in each tube or pot for better success. It may be worth experimenting with smoked or hot water. It can grow from cuttings.

### *Canarium australicum*, jalgir (B)

**Mango bark** or **turpentine tree** tree is a beautiful, large, spreading shade tree growing from 6m to 20m tall. It is widespread in the Kimberley and Northern Australia and also occurs in Papua New Guinea. It has rough, silvery-yellow bark with an aromatic resin, and large leaves. The seeds within the edible fruits are commonly spread by birds.



**Flowers:** small yellow-green/white, on long inflorescences; occur from November to December or from January to April, depending on local climate variability.

**Seed collection:** the fruits are about the size and shape of a raisin. They turn purple-black when ripe and can be collected from April to September, depending on local conditions. Dried fruits can often be found underneath the tree at other times.

**Propagation:** germination success can be sporadic. Scouring the hard seed-coat may allow moisture to enter and assist in germination. Opening seed compartments with a scalpel has had mixed success. Leave to break down on soil-covered tray for a few weeks then open a window on the seed-coat. When crack appears, push into soil. Try covering seeds in a seed tray with rich composted material and keep well-watered. You can find large numbers of already-germinated seedlings in thick mulch under established trees; prick these out to transfer them to the nursery and grow in pots.

### *Capparis umbonata*, jamparr (K) gudida (Bb)



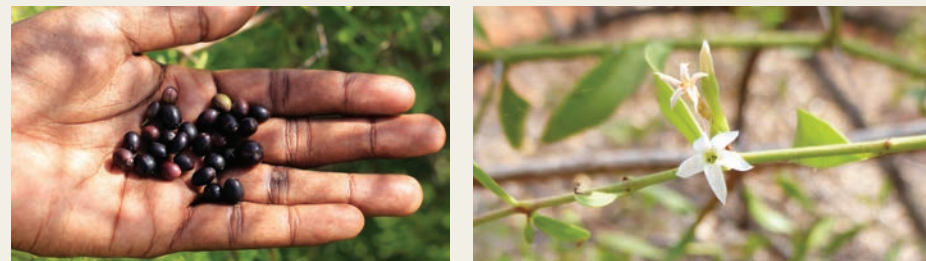
**Wild orange** is a tree growing to 8m tall. The leaves are dull green, linear and leathery, and have a drooping habit. The bark is dark and rough and the younger branches have curved spines and hairs. It often grows on rocky outcrops, but favours flood plains in the drier southern areas of the Kimberley.

**Flowers:** short-lived white-cream-yellow upright flowers from January with many protruding stamens.

**Seed collection:** the fruit is a large woody berry to 4cm turning yellow to orange-red when ripe, from January.

**Propagation:** fresh seed germinates well, but there can also be good success with seed a few years old. Clean off the flesh, wash the black seeds and sow into seedling trays.

### *Carissa lanceolata*, goonggar (B) koongkurra (N) gunggara (Y) jima (K) biriyali (Bb)



**Conkerberry** is a small, spiny, spreading, open shrub growing to 3m tall. The leaves are a bright shiny green and the bark is slightly rough, greyish-brown, with a shallow, checkered pattern. It grows across northern Australia and as far south as northern New South Wales.

**Flowers:** small, white, star-shaped and fragrant, from April to December.

**Seed collection:** ripe, edible, bluish-black berries can be collected from April but the timing is dependent on rainfall.

**Propagation:** soak the fruit in warm water and clean flesh off the small hard seed found within the berry, using a sieve. Sow in seedling trays and provide lots of water. Seed viability is high but seeds can take up to three months to germinate. Can also be grown from cuttings and root suckers.

*Corymbia bella*, marroolal (B) goonoorr (N) gunurru (Y) walarri (Bb) kunurru (K)



The **weeping ghost gum** is widespread throughout northern Australia, but in Broome and the Dampier Peninsula it is localised near the coast. Growing to 12m tall in the west Kimberley and up to 20m in higher rainfall areas, it has smooth white bark and narrow, weeping leaves.

**Flowers:** creamy-white flowers occur from October to May.

**Seed collection:** check capsules (fruits) to see if valves have begun to open to release the seeds, then pick and place in a paper bag for the seeds to dry out. The valves will open fully in the bag and the fruits can then be shaken to release the many tiny circular brown seeds and chaff.

**Propagation:** chaff can be separated from seed by gentle winnowing. The seed is generally larger and darker in colour than the fine chaff. Sow disc-like seeds directly into pots. Seeds will germinate easily.

*Corymbia paractia*, gunurru (Y)



The **Cable Beach ghost gum** is endemic to the Broome peninsula and mainly found in the narrow coastal zone where the beach dunes merge with pindan. It is a key component of a WA Priority One Ecological Community (PEC). It usually grows 5m to 8m tall, and sometimes up to 12m. It looks much like other ghost gums but for its narrow, flute-shaped (rather than cup-shaped) buds. Cable Beach ghost gums often lose many leaves in the late dry season and produce new red leaves in October/November that become large, pendulous and green. The trunks are white with characteristic peeling bark at their base.

**Flowers:** profuse creamy-white blossoms in the wet season, usually from December.

**Seed collection:** as soon as possible in December/January as the fruit browns off. Dry and clean as for *C. bella*.

**Propagation:** as for *C. bella*.

*Cymbopogon procerus*, janjani (Bb)



**Lemon grass** or **citronella grass** is found throughout the Kimberley, Northern Territory and Cape York Peninsula. It grows to 2m tall and is a common understorey grass found in many ecosystems, including on the edge of monsoon vine thickets or coastal dunes. It is a perennial (year-round) grass and the leaves give off a strong lemon scent when crushed.

**Flowers:** green, from March to December.

**Seed collection:** seeds will come away easily from the plant as they mature and become fluffy. Collect them from April to June.

**Propagation:** can be done from seed or by dividing larger plants. Place seed in trays and cover lightly with sterile seed-raising mix. The first seedlings will appear in 2–3 weeks. Prick out seedlings into pots when they are 50–100mm tall.

*Diospyros humilis*, birimbiri (B) birimbirr (N)



**Ebonywood** has blackish-grey, fissured bark and dark green glossy leaves with a dull underside. It grows to 6m tall in the monsoon vine thickets of the Dampier Peninsula and up to 12m in higher rainfall areas. It is also found in the Northern Territory, Queensland and some parts of south-east Asia. The fruit is edible, but the skin and seed are bitter.

**Flowers:** small and yellowish, from March to April.

**Seed collection:** the pea-sized fruit is dark green at first, turning yellow as it ripens and tangerine colour when fully ripe from September to January. There are usually two seeds to each fruit.

**Propagation:** remove ripe flesh by eating it, or soak fresh fruit in warm water overnight before cleaning flesh from the seed. Sow cleaned seeds directly into pots. They have a hard seed-coat and may take a long time to germinate; however, they germinate readily with increasing ground temperature in the late dry/early wet.

*Dodonaea platyptera*, biindanjoon alarrgarr (B)



**Broad-winged hop bush** is scattered throughout northern Australia, while on the Dampier Peninsula it is often found between monsoon vine thickets and mangrove stands. This shrub grows to 4m tall and has patterned, grey-brown bark.

**Flowers:** small, green, from February to May.

**Seed collection:** 3-4 brown, dry winged-fruit can be collected from February–September. Crush the fruits to release the small, hard black seeds. Clean further by winnowing off the chaff.

**Propagation:** soak in hot water for 5–10 mins then plant out directly in pots or into seed trays.

*Erythrina vespertilio*, jurnpu (K) gandiwali (Bb)



The **bat-wing coral tree** grows from 4m to 10m tall. It is leafless when flowering and is found across north, central and north-eastern Australia. It has slightly curved thorns on the trunk and branches, and grows in alluvial soils.

**Flowers:** large, showy, orange-red pea flowers, from May to November.

**Seed collection:** long pods contain the orange and red bean-shaped seeds. The fruits ripen from June to October. Dry the collected pods in a tray so they split to release seeds.

**Propagation:** soak seed in hot water overnight or until the seed swells. Place in a seed tray and cover with soil.

*Ficus aculeata*, raanyji (B) jirrib (N) ngamarnajina (Y) ranyja (K) yinirri (Bb)



The **sandpaper fig** is a shrub growing 3–4 m tall in the Kimberley and up to 15m in higher rainfall areas. It is found throughout northern Australia. The dark green, hairy leaves are rough like sandpaper. The dark brown bark is slightly fissured.

**Flowers:** within the green, furry figs from April to June.

**Seed collection:** the fruit becomes purplish-black when ripe and edible, from April to June. The timing may vary year to year and by location.

**Propagation:** seed readily germinates after the fruit has been digested by birds. When propagating use fresh or bird-dropped seed. Dry fresh figs completely in a humidity-free environment, then crush them with your fingers and sieve out seeds. Plant seeds straight into a seed tray and cover with soil.

*Ficus virens*, albay (B)



**Banyan or strangler fig** starts life as an epiphytic strangler and becomes a tree with aerial and prop roots. It is deciduous and grows to 15m tall in Dampier Peninsula monsoon vine thickets, and up to 30m in higher rainfall areas. In WA it occurs as far south as the west Pilbara. It is found across northern Australia to northern NSW, and in India and south-east Asia. The leaves are shiny and smooth.

**Flowers:** enclosed within the fig and not readily seen.

**Seed collection:** collect creamish-green, sometimes maroon-tinged, ripe and edible fruits from April to September. Fruits can be collected from the ground, or when they come away easily from the branches.

**Propagation:** fresh seed or seed that has been through the digestive systems of birds or possums will give better results. Dry the figs completely in a humidity-free environment, then crush them with your fingers and sieve out seeds. Plant seeds straight into a seed tray and cover with soil.

*Flueggea virosa*, goorralgar (B) goowaal (N) guwal (Y) kuwal (K) gan.gu (Bb)

**Snowball bush** grows from 2.5 to 5m tall. It is found throughout northern Australia and as far afield as Africa, the Arabian Peninsula, India, China and southeast Asia. On the Dampier Peninsula it is often found in, but is not confined to, monsoon vine thickets behind coastal dunes. The leaves are present mostly in the wet season and are darker above and lighter below.



**Flowers:** between December and April small, yellow, male flowers occur in clusters with a strong, sweet scent. The female flowers are on different plants and less obvious.

**Seed collection:** edible, sweet white fruits can be collected from January to June. Crush the fresh fruit and wash the flesh off using a fine sieve, then dry the seeds.

**Propagation:** sow the fresh seed in a seed tray after removing the flesh.

*Grevillea refracta*, jamoordoo (B) kanparrjiparrji (K)



**Silver-leaf grevillea** grows as a shrub to 1.2m and a small tree up to 6m tall. Its range extends from the northern Pilbara, throughout the Kimberley and across the top end to the Northern Territory and Queensland border. It grows abundantly in a variety of dry, open habitats including woodland, shrubland and grassland. The dull green leaves are lighter and silky or hairy underneath, giving an overall silvery appearance to the foliage.

**Flowers:** pretty, spider-like, varying from red-orange, yellow to pink. Flowers occur from March to December.

**Seed collection:** globular follicles, 13mm long (about the size of a 10-cent coin), mature September to November. Seeds may fall to the ground as the seedpods ripen and open. Consider placing an old stocking or sock over the seedpods, or time picking to just before all the pods start to open.

**Propagation:** fresh seed is best. Soak in warm smoked water for several hours to soften outer seed casing.

*Grevilleas* (like *Hakeas* and *Banksias*) benefit from smoked-water treatment. Plant one seed per pot. Alternatively, scarify seed-coat by gently rubbing on cement floor to allow water to penetrate after sowing.

*Grevillea wickhamii*, jakaja (K)



**Wickham's grevillea** is widespread across the Kimberley, Pilbara, north-western desert regions and Northern Territory, extending to Queensland. It grows to 6m and has holly-like leaves, bronze (with new growth) to grey-green.

**Flowers:** from April to October, striking red/pink/orange/yellow, and become black toward the tips.

**Seed collection:** rounded seedpods follow flowering. Collect the seedpods as soon as they begin to split, as the ripe seeds drop quickly.

**Propagation:** Use fresh seed, soaked in smoked water overnight. Sow in seed trays or plant two seeds per pot. Use well-drained seed-raising mix with 50% clean river sand. Water well to prevent the seeds drying out. Germination happens in around 29 days.

*Grewia breviflora*, goolmi (B) goolm (N)



**Currant bush** is a spreading, shady bush or tree that can grow to 6m tall. It is found throughout northern Australia. On the Dampier Peninsula it is common behind coastal dunes and in monsoon vine thickets. New stems can be densely hairy and the bark is greyish brown. New leaves are lime-green and can be slightly to densely hairy.

**Flowers:** small yellow-orange-green flowers occur from November to April.

**Seed collection:** the purplish-black, edible drupes are sweet when ripe, from November to April.

**Propagation:** remove flesh from the fruit and soak the hard seed in boiling water. Sow fresh, treated seed for best results.

*Gyrocarpus americanus*, bilangamarr (B) mirda (Y) mirta (K) thalaji (Bb)



**Coolamon tree, stinkwood, or helicopter tree** is a deciduous tree growing to 5m tall. It has soft, silvery-grey to golden bark that flakes off in irregular patches to reveal a yellowish-white trunk. It is found throughout northern Australia and as far south as southern Queensland. In the west Kimberley it is common in pindan woodlands and at the edge of monsoon vine thickets. The leaves are dark green above and paler on the underside. The dry fruit has long papery wings that cause it to spin as it falls from the tree.

**Flowers:** yellowish-green with an unpleasant smell, occurring from November/December to May.

**Seed collection:** The bony, winged fruit containing the seed can be collected around April/May.

**Propagation:** germinates readily. Use fresh seed and sow fruit with papery wings still attached. Place the seed-ball below the surface of the soil and the wings above. Soaking fruit in warm water overnight may help with germination.

*Hakea arborescens*, irrgil (B) jirrindi (Bb)



**Yellow or tree hakea** is a small tree or shrub growing to 7m. It is common throughout northern Australia. The linear and flat green leaves have bronze tips when young, while the bark is deeply fissured, corky, black-brown to grey.

**Flowers:** small and yellow and found in clusters from December/January to July/August.

**Seed collection:** ellipsoid, thick, woody, beaked fruit are found from April to August and are grey-brown when mature. Collect as the fruits start to split and place in paper bags while they ripen, becoming dry, cracked and fully open. Each fruit has 1–2 papery winged seeds. Immature fruit will not ripen after being picked.

**Propagation:** grown easily from fresh seed, germinating in 3–6 weeks. Try placing seed between moist paper towels on a saucer, then enclosing in plastic bag. Keep out of direct sun and keep towelling moist. When the roots are 10mm long, place seedlings in a pot of soil and water daily. Germination may benefit from smoked-water treatment.

*Hakea macrocarpa* jarradiny (B) kurlulu (K)



**Honey hakea** is a gnarled tree to 6m tall with dark grey, linearly fissured, corky bark. It has light green linear leaves and is found in the southern and central Kimberley, and arid/desert regions of the Northern Territory.

**Flowers:** large, pendulous creamy yellow flowers are present from May to September.

**Seed Collection:** hard, woody fruit with a curved beak are brown to grey-brown when mature and can be collected by hand as they start to split. The fruit contain papery winged seeds. Immature fruit will not ripen after being picked.

**Propagation:** as per *H. arborescens*. Sow the seed with the wing up, selecting full, plump seed. Alternatively, scarify the seed-coat by gently rubbing on cement floor. This treatment will allow water to penetrate the seeds when sown.

*Jasminum didymum*



**Native jasmine** is a scrambling vine or shrub growing to 1m. The leaves are pale, yellowish-green and highly variable in shape. It is widespread throughout Australia and southeast Asia and found in rainforests such as monsoon vine thickets, as well as in arid areas.

**Flowers:** white to cream, scented and tubular; occur from January to November.

**Seed Collection:** the small berry turns a purplish-black when ripe, from May to September.

**Propagation:** remove fruit pulp and plant directly into a seed tray. Water regularly. Can also be grown from cuttings.

### *Lophostemon grandiflorus*, lardik (N) buwunyji (Bb)



**Lardik** has dark grey, finely fissured bark and thick, dark green leaves. The underside of the leaf is paler, softly hairy and white. It can grow as tall as 18m, but is much smaller (4–8m) in lower-rainfall areas. It occurs along waterways, permanent waterholes, swamps and rainforest margins, and is widespread across northern Australia. *Lophostemon grandiflorus* subsp. *grandiflorus* is a Priority Three species under the Biodiversity Conservation Act 2016; only known from claypans on the Dampier Peninsula (such as around Lake Champion, about 60km north-east of Broome).

**Flowers:** small white or creamy-green and can occur at any time of the year.

**Seed collection:** look for seed capsules shaped like a chalice, around June, or anytime following flowering. Collect the seed capsules as they brown off on the tree and place in a paper bag in a warm, dry place until they open. Shake out the fine seed and chaff and separate from the capsules.

**Propagation:** easily grows from fresh seed. Place seed and chaff in seedling trays, cover lightly with seed-raising mix and prick out the seedlings when they are tall enough to handle.

### *Mimusops elengi*, joongoon (B) mamajoon (N)

**Bullet wood** or **Spanish cherry** is an evergreen tree commonly growing to 15m. It occurs throughout northern Australia and southeast Asia. The leaves are a glossy dark green on top and a dull green underneath. It is commonly found in monsoon vine thickets.



**Flowers:** small, creamy-white, hairy and scented, and present throughout the year from January to November.

**Seed collection:** collect the edible ripe red berries, which resemble hard cherry tomatoes, from April to July. Animals sometimes eat the fruit directly off the tree and drop the seeds beneath it, making collection from the ground easy.

**Propagation:** remove the fleshy fruit to reveal the small hard seed. The seeds don't stay viable for very long, so use fresh seed when sowing. Gently crack the hard seed-shell to speed germination time. Plant 4mm–6mm apart in a seed tray. Prefers well-drained soil, so when planting loosen the soil to a depth of at least 400mm. Water heavily at irregular intervals when mature.

### *Murraya paniculata*



**Orange jasmine** or **mock orange** grows as a small shrub to 5m tall and is found in coastal areas, along creek lines and on scree slopes of the north Kimberley. It is also found throughout southeast Asia, Northern Territory and the eastern seaboard of Australia to southern NSW.

**Flowers:** few but dense and fragrant, white-cream-yellow.

**Seed collection:** ripening from orange to red, the oblong/ovoid fruit can be collected from September to December.

**Propagation:** the seeds don't stay viable for very long, so best to use fresh seed. There are 1–2 seeds within each fruit. Clean the flesh from the seeds before sowing. Cuttings may be more successful than seeds.

### *Nauclea orientalis*, marrgurda (Y) marrura (Bb)

**Leichardt pine** or **cheesewood** is a broad, shady tree, growing to 21m tall along waterways of the Kimberley. Its range extends throughout northern Australia and into southeast Asia and New Guinea. It grows much taller (30m) with higher rainfall. It is deciduous and sheds its large, smooth, glossy leaves in the late dry season. The bark is variable, brown to dark brown, greyish to reddish brown, smooth to fissured, flaky or corky.



**Flowers:** small, tubular, strong-smelling flowers are clustered into a globular sphere and appear as single, large yellow-orange balls, from May to November.

**Seed collection:** within three months of flowering, produces a brown, wrinkled, hard-surfaced fruit, made up of many tiny fruit forms. As it ripens it smells strongly and contains many seeds. It is ready to pick from January to March.

**Propagation:** germinates readily from freshly collected and dried seed within 2–4 weeks, and can do so in seed trays left under the parent tree to catch fruit scattered by possums and bats. When planted, it requires deep, well-drained soil to develop a strong taproot. Plant trees 5–6m apart. Prefers a well-watered site and an open position. Responds well to heavy mulching and manure-based fertilisers.

*Pandanus spiralis*, iidool (B) mangbang (N) jarmirdany(Y) (K) yarrari (Bb)



**Common screwpine** grows to 10m tall and is widespread in areas with good groundwater supply across northern Australia. It is found in waterways and monsoon vine thickets in the west Kimberley. The leaves are long, narrow, spiny and triangular, green with reddish-brown tipped scales, and organised in a spiral arrangement.

**Flowers:** small, inconspicuous white flowers in November.

**Seed collection:** the pineapple-like cluster of fruits turns orange-red and soft when ripe around June. Ripe seeds are edible when cooked.

**Propagation:** grow from fresh seed by placing fruits in a bucket of water and leaving them to soak for several days. Sow into pots with the pointed end down and the top third of fruit exposed. Each fruit can produce 6–7 plants that can be carefully divided when large enough.

*Persoonia falcata*, gamaloon (B) wankirr (N) ngaliwany (Y) mintirrijina (K)



**Wild pear** or **geebung** is a shrub or small tree to 6m tall, found throughout northern Australia. It has thick, dark grey bark that is layered and flaky. It has sickle-shaped, grey-green leaves that are pink/maroon as new growth. It grows well in pindan soils.

**Flowers:** yellow, somewhat tubular, clustered at the ends of branches and occurring from August to November.

**Seed collection:** edible drupes turn from green to yellow when ripe from December to February. Collect the fruit when fully ripe and easily removed or fallen from the tree. Soak the fruits in water until the flesh softens and can be cleaned off, removing as much as possible.

**Propagation:** does not germinate easily, but rate may improve with smoked-water treatment. Try soaking cleaned seed in smoked water for several days before sowing in trays and keeping well-watered. Can take months to germinate.

*Pittosporum moluccanum*



*P. moluccanum* is only found in two locations in the Kimberley and has a limited distribution in other parts of northern Australia. It also occurs in East Timor, Indonesia, Malaysia, Philippines and Taiwan. It grows to 6m tall, has pale grey, smooth bark and narrow, egg-shaped, shiny green leaves arranged in a spiral.

*P. moluccanum* is a Priority Four species under the Biodiversity Conservation Act 2016. This listing means it is rare, near threatened and in need of monitoring. Special Threatened Flora Authorisation, in addition to a seed collection permit, is required from the Department of Biodiversity, Conservation and Attractions to collect seed from this plant.

**Flowering:** strongly-scented, white flowers with five curved petals are found in clusters from March to August.

**Seed collection:** the orange globular seed capsules have two valves containing sticky black seeds. Collect capsules when the valves curve backwards, indicating ripeness, between September and December. Place seeds in paper bags to dry. Clean sticky material from seed for storage or sowing.

**Propagation:** select plump firm seed to sow into seed trays and keep well-watered. Seeds have low viability and take 2–3 months to germinate.

*Ptilotus exaltatus*, bardirlbardirl (Y)

**Pink mulla mulla** is a perennial or annual herb growing to 1.5m tall. It is widespread throughout Australia; in the west Kimberley it is common on sandstone and coastal dunes. The dark green leaves are fleshy and elliptical. They are longer within the basal rosette than on the upper stems.

**Flowers:** the attractive pink-purple 'fluffy' flower spike is present from April to September.

**Seed collection:** collect the flower heads as they begin to dry off; the lower ones do so first. Spread on a tray or keep in paper bags to dry. The fine seed can then be shaken from the fluff.

**Propagation:** spread the freshly dried seed on a seed tray, covering lightly with soil.



Karajarri Ranger, Jacqueline Shovellor, collecting pink mulla mulla seed.



### *Sersalisia sericea*, mangarr (B) (N) minyjuru (Y) (K)



**Wild prune** is a much-branched shrub or small tree growing to 6m. It has dark green leaves, and the buds and young leaves are covered with dense, rusty brown hairs. It tends to grow in rainforest and monsoon forest throughout northern Australia. In the west Kimberley it can be found in relict dune systems in Broome and Dampier Peninsula monsoon vine thickets. *S. sericea* on the Broome Peninsula is listed as a Priority One Ecological Community under the Biodiversity Conservation Act 2016. See report "Relict dune system dominated by extensive stands of Mangarr (Minyjuru) *Sersalisia* (formerly *Pouteria*) *sericea*" for more information; available from the Environs Kimberley website: [www.environskimberley.org.au/minyiurru\\_on\\_relict\\_dunes](http://www.environskimberley.org.au/minyiurru_on_relict_dunes)

**Flowers:** small, inconspicuous and whitish-green or cream-yellow, from November to April.

**Seed collection:** the ovoid berry is edible and becomes dark purple to blackish-blue when ripe. The fruit contains a single seed which is easiest to collect from the ground, after the fruit has been eaten by the birds and bats. Search for creamy-coloured seed amongst the leaf litter directly under the parent plant from May to June. Clean any remaining flesh from the fruit and dry in trays or paper bags.

**Propagation:** high temperatures will give the best germination results. Soak in warm water overnight before sowing fresh seed into pots or trays. Germination rates can be low and slow, but may be improved with bottom heat such as a heatbed.

### *Tephrosia rosea*, ilngam (B) panjurta (K) bawulu (Bb)

**Flinders river poison** is an erect or sprawling small shrub growing to 2m tall. It is found throughout northern Australia in a variety of habitats. The leaves are sparse and the roots are used as fish poison, hence the name.

**Flowers:** small, pink to dark purple pea flowers are found from February to September.

**Seed collection:** silky, hairy pods develop after flowering and contain up to eight seeds. Collect pods as the seeds become full and before the pods start to crack open. Dry pods on trays or in paper bags to release the small seeds.

**Propagation:** soak in warm water overnight before sowing.



### *Terminalia kumpaja*, lamingdalngurru (Y) kumpaja (K)



**Pindan walnut** is only found in Western Australia and is endemic to the south-west Kimberley region. It only grows from Mandora Station, north to Willie Creek. It is classified as a Priority Three species under the Biodiversity Conservation Act 2016. It grows in sandy soil as a small to medium deciduous tree 1.5 to 8m tall. The bark is dark and light grey, fissured and corky. The small leaves are spirally arranged and bright lime green when young.

**Flowers:** small, yellow-white and gathered in a spike, from August to October.

**Seed collection:** red/maroon/brown globular or ovoid, woody fruits become blueish-black when ripe from August to October. Collect the large nut when the outer skin has begun to dry. The kernel within the shell is edible and tasty. The size of the fruit varies considerably. Plants from the Sandfire area have relatively small nuts, whereas those in the Broome area have much larger ones.

**Propagation:** carefully crack the hard, outer shell to retrieve the intact kernel. Plant pointy end down for best germination results. Choose plump, firm white kernels to sow into pots. It may be necessary to protect sown seed from birds, rats and possums.

### *Terminalia ferdinandiana*, madoorr (B) kabiny (N) yaminyarri (Y) nyaminyari (K)

**Kakadu plum** or **gubinge** occurs predominantly in the Kimberley and Northern Territory. It is a deciduous tree to 14 metres. Its flaky, mottled grey/green/cream bark has a characteristic orange-red tinge. New leaves, lime-green to pinkish, emerge in the late dry season, with the increasing humidity. Mature leaves are leathery and pale green. Found in open woodlands and at the edge of monsoon vine thickets.



**Flowers:** bloom on strongly smelling spikes from October to December (but can continue beyond this, depending on rainfall).

**Seed collection:** the sweet-and-sour, prune-like green fruits are slightly soft, and turn a paler whitish-green when ripe from November to February (and beyond, depending on rainfall). Mature seed can be collected from the ground but the best germination results are from fully ripe fruit collected from the tree. Soak fruit in water to soften and remove the flesh. Dry out on trays or in paper bags and store in a cool dry place (do not freeze) until sowing the following September.

**Propagation:** sow stored seed in seedling trays when the weather is humid and consistently warm (nighttime temperature is above 20°C). Alternatively, soak fresh seed in warm water overnight. Sow into seed trays and keep well-watered while placing over bottom heat to assist germination. Be careful not to overwater seedlings in the cool dry months, as they easily rot.

## *Terminalia petiolaris*, marool (B) (N) narwulu (Y) (K)



**Blackberry tree** is deciduous and grows to 15m tall. It is endemic to the Kimberley coast and found within monsoon vine thickets and on or behind dunes systems. It has rough, grey to dark brown/black, fissured bark. The large green, sometimes speckled red leaves become red to purple before dropping.

**Flowers:** strong-smelling cream-white flowers on long spikes bloom from October to April.

**Seed collection:** fruits are the shape and colour of olives, and are edible when ripe, turning purple to purplish black, from April to December. Mature seed can be collected from the ground but will often be compromised by borers. It can be best to collect mature fruit from the tree. Soak seed in warm water to soften and remove flesh. Viable seeds will sink to the bottom.

**Propagation:** soaking fresh seed in warm water overnight and then sowing directly into pots or trays can produce good germination rates. Small seedlings can be pricked out from under trees after rain at beginning of wet season.

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