# FLORA LANDSCAPES

Australia is the flattest, lowest and driest of all inhabited continents on Earth, yet our ancient land bustles with unique and rather curious native flora. This is thanks to our isolation from the rest of the world, and the remarkable ways our plants have adapted to survive. Our great southern land is divided into climate zones and a range of landscapes and habitats where local flora thrives.

## DESERT

Australia is dry. Around 35 per cent of our mainland is classified as desert and a whopping 70 per cent is considered 'desert-like'. Plant life includes shrubs, trees, spinifex and other grasses. Water-hogging succulents and vivid wildflowers abound in some regions.

**OUR COMBINED DESERTS COVER 2.7 MILLION KM$^2$**

HARD SPINIFEX
(*Triodia* spp.)

## RIVERS AND LAKES

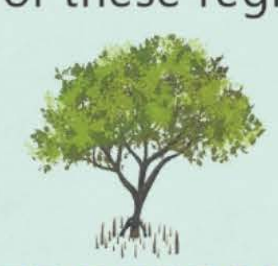
Along with our many lakes and wetlands, our rivers teem with plant life, from saltbush and mulga to reeds and algae. Our largest lake, Kati Thanda–Lake Eyre, spends most of its time completely dry, yet when rains do come, plants pop with a watercolour wash of colour.

**THE MURRAY RIVER IS OUR LONGEST (2508KM)**

SACRED LOTUS
(*Nelumbo nucifera*)

## CLIMATE ZONES

Our main plant regions are rainforest, sclerophyll forest (eucalypts), woodland, grassland and savanna. Each of these regions straddles four major climate zones that influence the kind of flora that grows there.

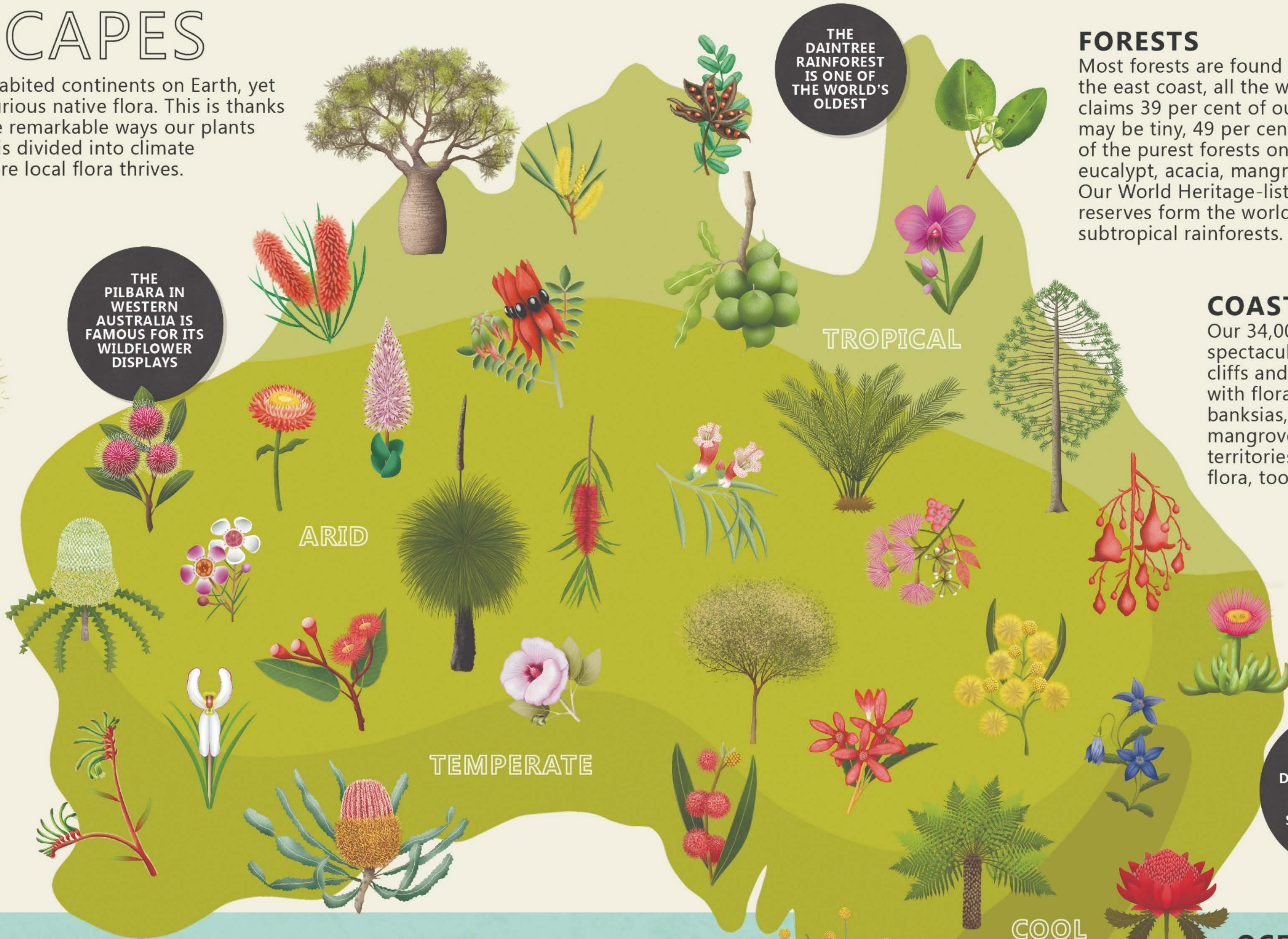


**TROPICAL**
Deciduous trees, grasses, mangroves and jungle-like rainforest species.

**ARID**
Grasses, mallee trees, hummock grass, shrubs, grass trees and wildflowers.

**TEMPERATE**
Wet sclerophyll forest trees, woodland trees, grass, scrub and temperate rainforest species.

**COOL**
Sclerophyll woodland trees, eucalypt forests, temperate rainforest trees and alpine plants.





**THE DAINTREE RAINFOREST IS ONE OF THE WORLD'S OLDEST**

**THE PILBARA IN WESTERN AUSTRALIA IS FAMOUS FOR ITS WILDFLOWER DISPLAYS**

**MOST OCEAN PLANTS ARE NOT REALLY PLANTS! LEARN MORE ABOUT THIS IN THE 'WATER FLORA' SECTION**

## FORESTS

Most forests are found across the Top End and down the east coast, all the way to Tasmania. Queensland claims 39 per cent of our forests and while Tassie may be tiny, 49 per cent of its land is covered in some of the purest forests on Earth. Forest tree types include eucalypt, acacia, mangrove, melaleuca and rainforest. Our World Heritage-listed Gondwana rainforest reserves form the world's most widespread subtropical rainforests.

**FORESTS COVER AROUND 16 PER CENT OF OUR TOTAL LAND**

## COAST

Our 34,000km coastline has spectacular beaches, towering cliffs and glimmering bays bustling with flora, from casuarina trees to banksias, salt-loving grasses and mangroves. Our seven external territories have unique coastal flora, too, like the Norfolk pine.

**THE NORFOLK PINE IS NATIVE TO NORFOLK ISLAND**

NORFOLK PINE
(*Araucaria heterophylla*)

## MOUNTAINS

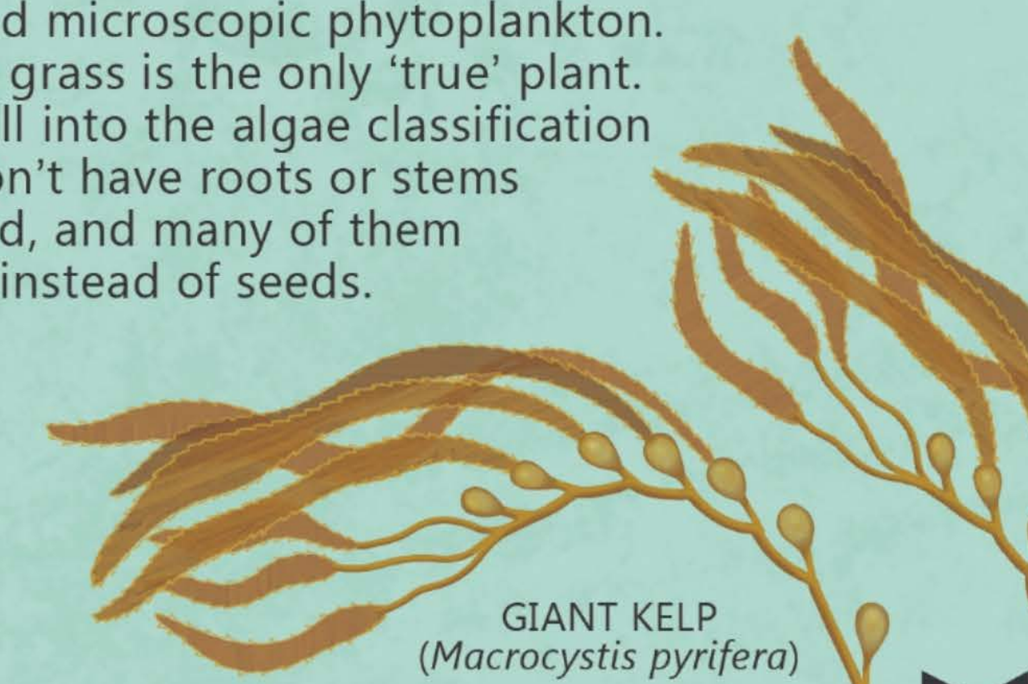
Australia may be flat and hot, but we have our very own alps. The Great Dividing Range is the world's third-longest land-based mountain range. Most of our mountainous trees are eucalypts, and other plants include alpine grasses, conifers, heath and shrublands.

**OUR GREAT DIVIDING RANGE GETS MORE SNOW THAN SWITZERLAND!**

RED IRONBARK
(*Eucalyptus sideroxylon rosea*)

## OCEAN

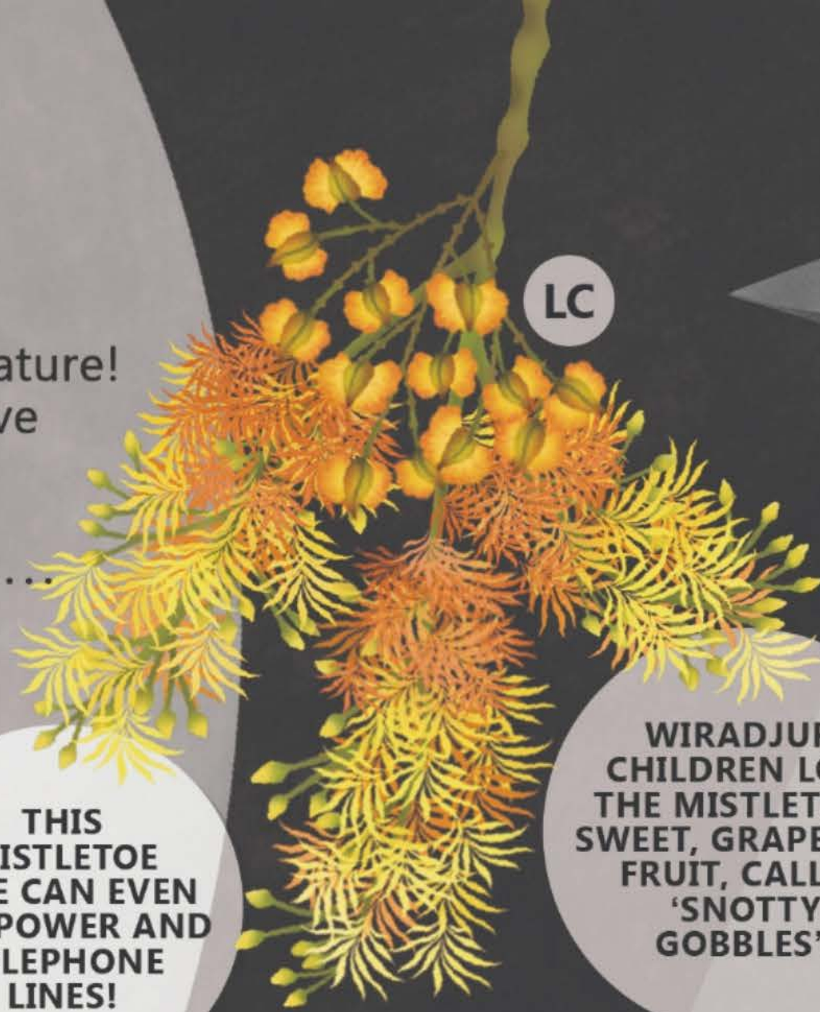
Our ocean is an underwater garden of plant life. The main types of flora are seaweed, sea grass, tree-like kelp and microscopic phytoplankton. Of all these, sea grass is the only 'true' plant. The others all fall into the algae classification because they don't have roots or stems to transport food, and many of them produce spores instead of seeds.



GIANT KELP
(*Macrocystis pyrifera*)

# SCI-FI FLORA

Don't head to the cinema for a science-fiction fix—just take a walk in nature! These astonishing plants might seem like they're from Mars, but they live in our own backyard—all the way from the Top End down to Tasmania.



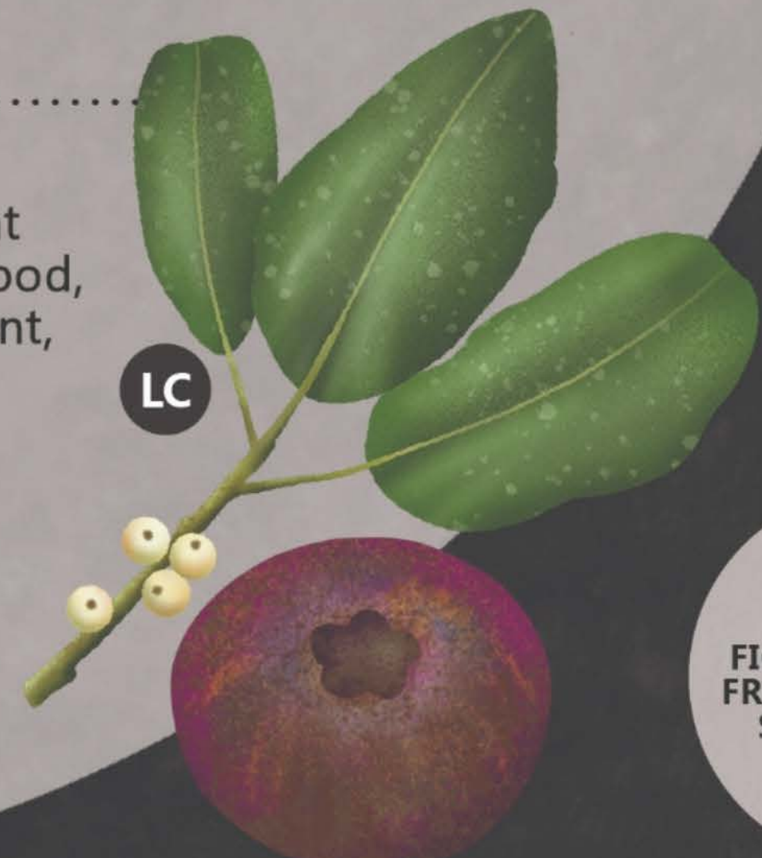

## MISTLETOE

*(Nuytsia floribunda)*

Forget kissing under the mistletoe in Europe—Australia is the real home of mistletoe, with the most species on Earth. Our Christmas tree is the world's largest parasitic plant and is one of the few mistletoes that grow as a tree, not a shrub. This freeloader doesn't get its nutrients from the barren soil ... it sends roots up to 150m in search of a host, then grows a ring (haustoria) around a victim's root. The haustoria contains—wait for it—sharp wooden 'blades'! These sever the host root so the tree can attach its own root and steal food and water.

THIS MISTLETOE TREE CAN EVEN CUT POWER AND TELEPHONE LINES!

WIRADJURI CHILDREN LOVE THE MISTLETOE'S SWEET, GRAPE-LIKE FRUIT, CALLED 'SNOTTY GOBBLES'!




## STRANGLER FIG

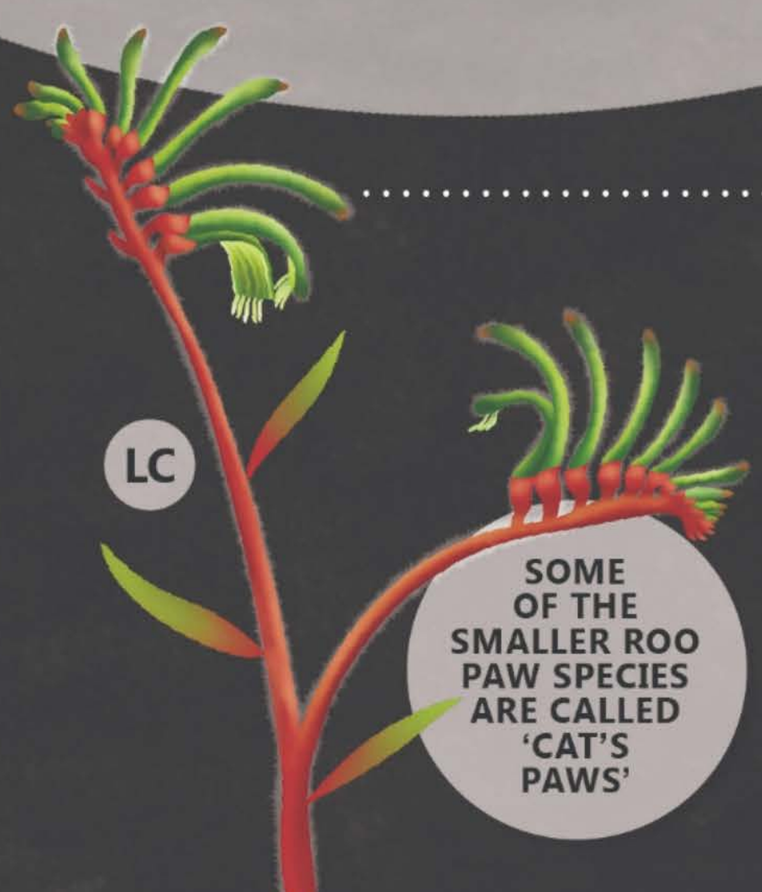
*(Ficus virens)*

One of the biggest moochers in the plant kingdom, strangler figs take it all—the food, the top floor apartment and the basement, too. When birds eat then poop this fig's seeds into trees below, the seedlings flourish ... with deadly plans. Like all stranglers, the white fig sends curling roots down and around the host tree's stem, anchoring into the ground to steal nutrients. Soon, the victim gasps its last breath ... and dies.

## INSIDE-OUT FLOWERS

The flowers and pollen of figs are hidden inside their fruit! A female wasp crawls inside the fig, lays her eggs and dies. When the babies mature, they chew their way out and carry pollen to the next fig.

DON'T WORRY, THE FIGS WE EAT ARE FROM WASP-FREE SPECIES ... OR ARE THEY?




## RED AND GREEN KANGAROO PAW

*(Anigozanthos manglesii)*

Like fuzzy zombie paws, this plant's velvety flowers arch up from the earth, forming the perfect perch for long-beaked birds. Stalks can grow over a metre tall and the slender, grass-like leaves can survive long periods without rain. This roo paw is Western Australia's state flower, and like many Aussie plants, it can survive fire thanks to underground stems (rhizomes).

SOME OF THE SMALLER ROO PAW SPECIES ARE CALLED 'CAT'S PAWS'

THYNNID WASP *(Thynnid spp.)*


THIS DANCE BETWEEN ORCHID AND WASP IS A GREAT EXAMPLE OF CO-EVOLUTION

## HAMMER ORCHID

*(Drakaea elastica)*

The only way a hammer orchid can pollinate is with the help of thynnid wasps. So, of course, the head of this orchid just happens to look and smell like a female thynnid wasp! It has a hinged section that bobs up and down like a hammer, and when a male wasp tries to mate with this fake female, the hammer-like petal drops down and traps the male. As he struggles to escape, he's dredged in pollen before zooming off to fertilise another plant.


## CRANBROOK BELL

*(Darwinia meeboldii)*

With its furry-looking, spindly branches and toothy blossoms, this bell may look like a people-eater, but fear not! What looks like tentacles are just very, very leafy stems—with no teeth at all. Inside these pink and white bells are eight small and very harmless flowers, made of bracts, not knives.


THIS SCI-FI PEA IS THE FLORAL EMBLEM OF SOUTH AUSTRALIA

## STURT'S DESERT PEA

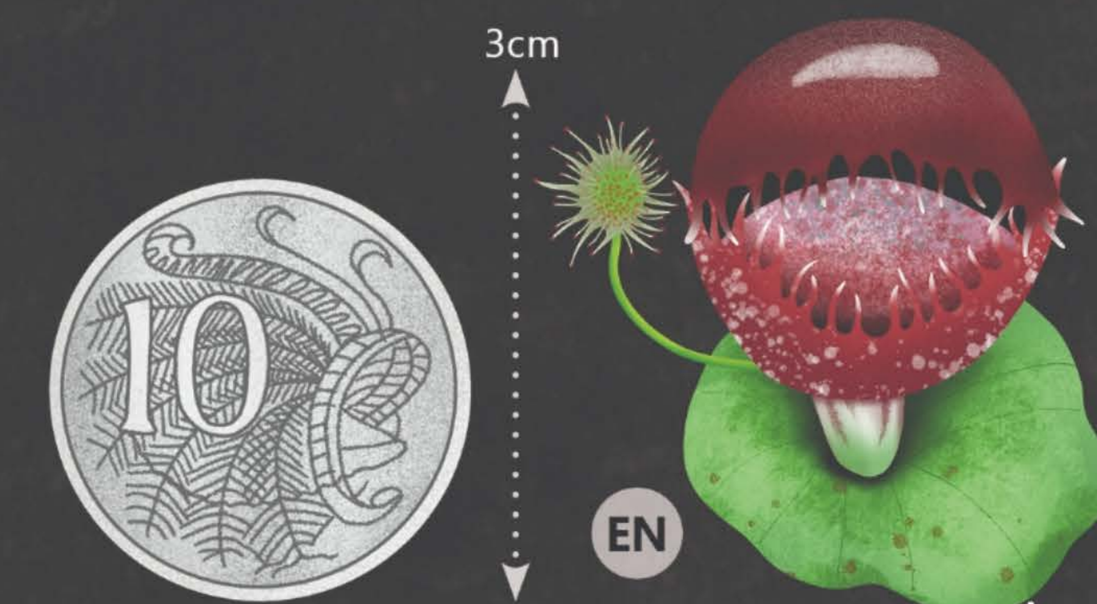
*(Swainsona formosa)*

The trailing stems of this extra-terrestrial pea swirl and creep over the barren Outback. Each flower's haunted black eye (called a 'boss') acts like a barrier to prevent small insects from stealing pollen. This is because the desert pea prefers pollinators with a long proboscis or beak that can reach into its flowers. The petals of this desert species are shaped a bit like a yacht—with a standard petal, a keel and two wings.


## FIREWOOD BANKSIA

*(Banksia menziesii)*

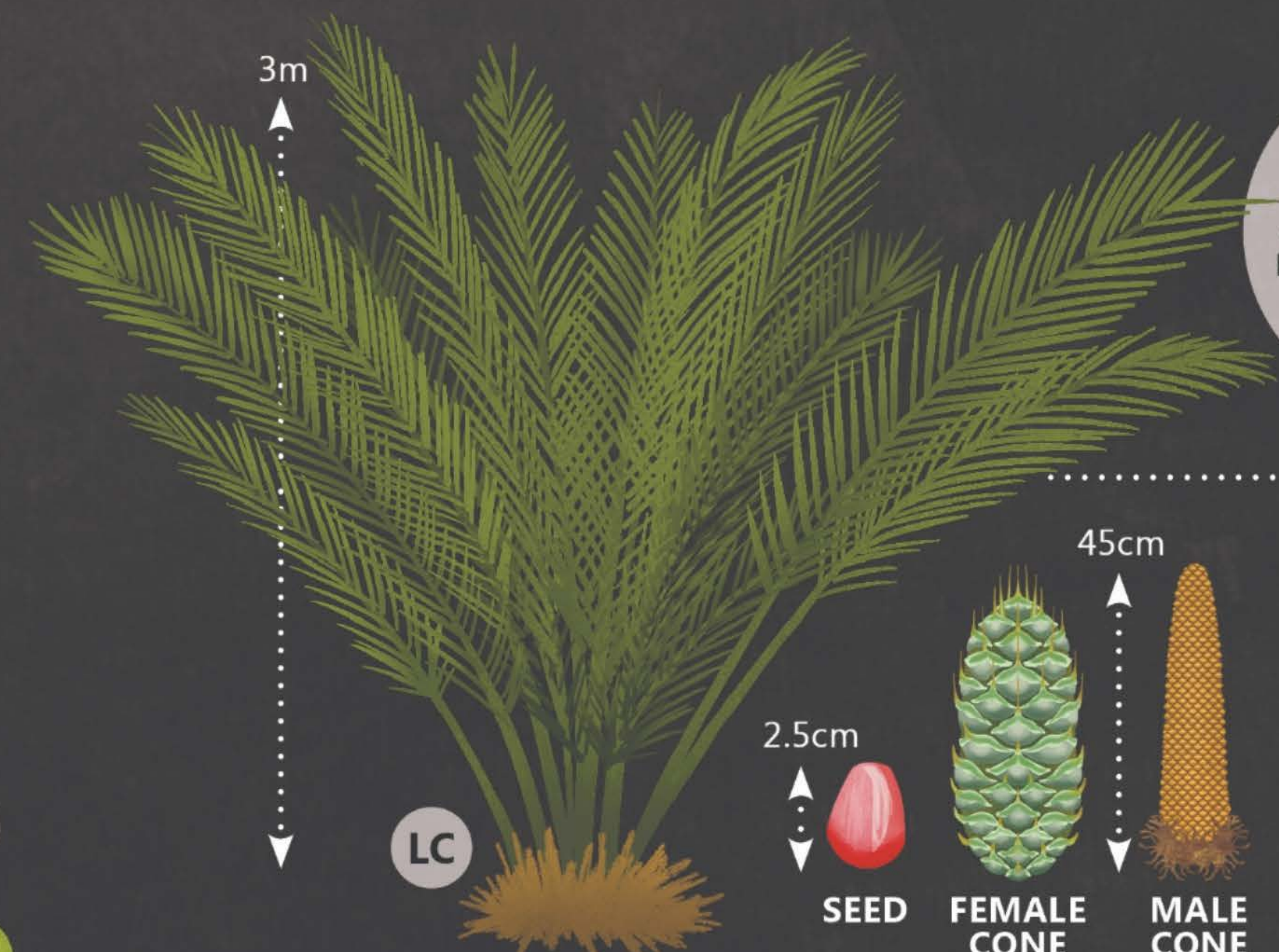
Despite its pretty blooms, this nest of saw-blade leaves might be a little alarming to stumble upon on a moonless night. These leaves can reach almost half a metre in length and are covered in a waxy layer and fine, white hairs that reflect the sun's rays. This hard-core stunner sacrifices itself for its seeds, which need fire to germinate. Don't get too close—you may be dragged in and devoured!




## FRINGED HELMET ORCHID

*(Corybas fimbriatus)*

Is it a plant or a blood-sucking Martian tick? Whatever it is, don't worry—it's teensy! A single leaf supports this odd little orchid with its petal fringes that look a bit like insect legs. Bees are lured by the orchid's earthy aroma. They transfer pollen as they pop in and out of the flower.




THE BURRAWANG IS A DESCENDANT OF EARTH'S VERY FIRST FLOWERING PLANTS (CYCAD FERNS)

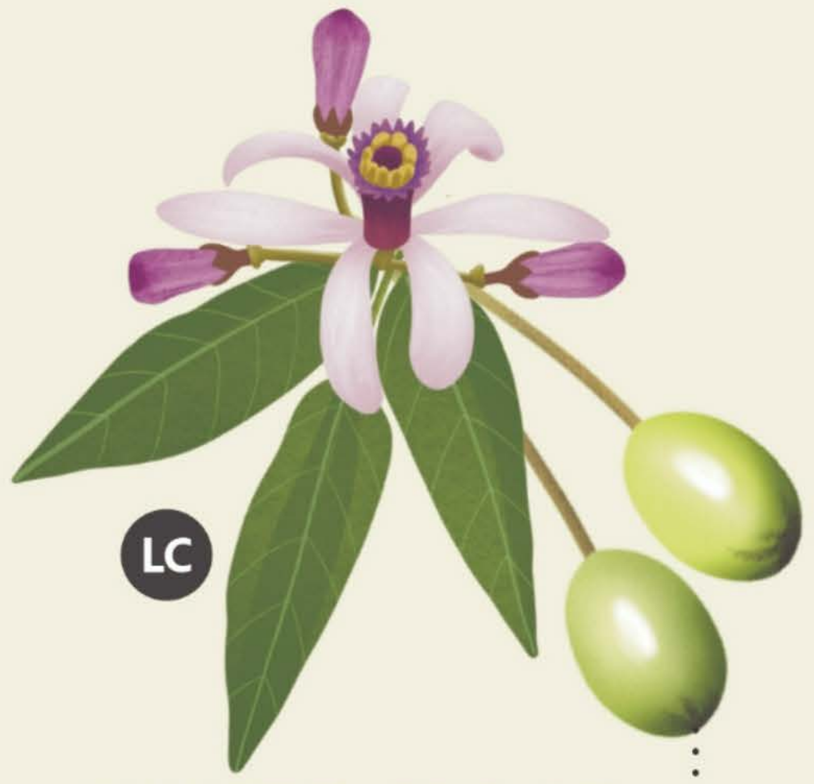
## BURRAWANG

*(Macrozamia communis)*

The burrawang dates back 200 million years. It may look like a fern from a dinosaur movie, but it's not—it's related to conifers! Plants are either male or female. The male has long, narrow cones packed with pollen and the female has a larger cone that breaks open to spill enormous seeds. The burrawang grows just a few new leaves each year and can live to count hundreds of birthday candles.

# DEADLY FLORA

Plants may seem rather harmless, but many produce a witch's cauldron of harsh and even deadly chemicals to help protect themselves against attack. Some animals have developed immunity, while many others, including us, have not. Thankfully, our toxic flora isn't that appealing to us (so happy mangoes aren't toxic!). Poisoning is rare and usually by accident, but this is why we can't eat (or sometimes even touch!) plants we're unfamiliar with. Here are some plants that might give you nightmares. Read on if you dare ...




## BAT'S WING CORAL TREE

(*Erythrina vespertilio*)

Part of the pea family, this tropical tree is named after its pretty coral flowers and leaves that flutter like flying bats. Don't be fooled by pretty, though. Deadly toxins are found in the leaves and bark of the coral tree, and most especially the seeds. On top of that, the tree's trunk and branches are covered in sharp, rose-like thorns. Small branches often drop to the ground and can wound barefoot wanderers!


THIS IS ONE DEFENSIVE PLANT!

## WHITE CEDAR

(*Melia azedarach var. australasica*)

This tree has lovely timber and pretty clusters of fragrant flowers. It's the fruit that rears its ugly head, with a complex blend of poisons including neurotoxins that can cause seizures and even coma. Birds have somehow developed immunity because the tree relies on them to eat their fruit and disperse seed in their droppings. Now, that's some kind of co-evolutionary cleverness!

WARNING!


## STINGING NETTLE

(*Urtica incisa*)

While not deadly, the stinging nettle is still painful. Its tiny hairs releases histamines, which cause pain, itching and redness—yet tender young nettles can actually be eaten! Cooking or drying out the leaves destroys the hairs and they can be made into delicious tea and soup, or even blanched and added to salads or pizza!

UNDER THE MICROSCOPE

CHECK WITH AN ADULT BEFORE EATING ANY UNKNOWN PLANT

## BUNYA PINE

(*Araucaria bidwillii*)

The bunya pine may look beautiful and even harmless, but its cones are bigger than footballs and can weigh a massive 10kg. These cones drop without warning and can fall as far as 50m. You certainly don't want one landing on your head! This pine is sacred to the Gubbi Gubbi people. It can't be harmed, so only one person is now authorised to cut and mill the timber.


CONE


THE SLOW-GROWING BUNYA CAN REACH 500 YEARS!




## ROSARY PEA

(*Abrus precatorius*)

The seeds of this supposedly 'sweet' pea may look like ladybirds—but they're actually capable of murder. Immature seeds, or even those with a tiny scratch, can release a deadly poison, and just a tiny part of each seed is enough to kill a human. In fact, breathing in the poison is even more dangerous, but the rosary pea doesn't care! It's out to conquer the world, spreading all over the planet's tropical regions and down into the southern hemisphere—including Queensland where it has become naturalised.

THE TOP END STONEFISH IS ONE OF THE ONLY KNOWN ANIMALS THAT CAN SAFELY EAT ROSARY PEA SEEDS

ROSARY PEA SEEDS ARE OFTEN USED TO MAKE JEWELLERY, BUT EVEN POKING HOLES THROUGH THESE SEEDS IS DANGEROUS!


EATING EVEN A TINY PIECE CAN BE DEADLY, SO THE BOTTOM LINE IS: NEVER EAT A WILD MUSHROOM OF ANY KIND ... EVER!

## DEATH CAP MUSHROOM

(*Amanita phalloides*)

Mushrooms are not plants—they are types of fungi in a plant-like form. In fact, they are the fruit-like part of fungi's main body, which is made up of a network of threads called mycelia. These mushroomy 'fruits' make reproductive spores in the gills underneath their caps, so it's easy to mistake them for a type of plant. They're still worth a mention because some people treat them like plants, and it's good to know if death caps are growing in your garden. These mushies are highly toxic and are responsible for many poisonings.

## EUCALYPT THUGS

FORGET ABOUT DROP BEARS—IT'S BRANCHES YOU NEED TO WATCH OUT FOR

Eucalyptus trees can sometimes shed a branch or two, with zero notice. Known as 'sudden branch drop', this only really happens during drought, disease or severe stress. The thing to remember is that many types of tree occasionally drop branches, and the reason our eucalypts get a bad rap is because they make up most of the trees in our country!

### WATER TRAP

NOONGAR–WUDJARI PEOPLE USE THE RATHER HARMLESS-LOOKING KANDYAP YOOLBA (BLIND GRASS) TO POISON WATERHOLES. AFTER DRINKING THE WATER, ANIMALS LIKE KANGAROOS FALL ASLEEP AND QUICKLY BECOME LUNCH!

## GYMPIE GYMPIE

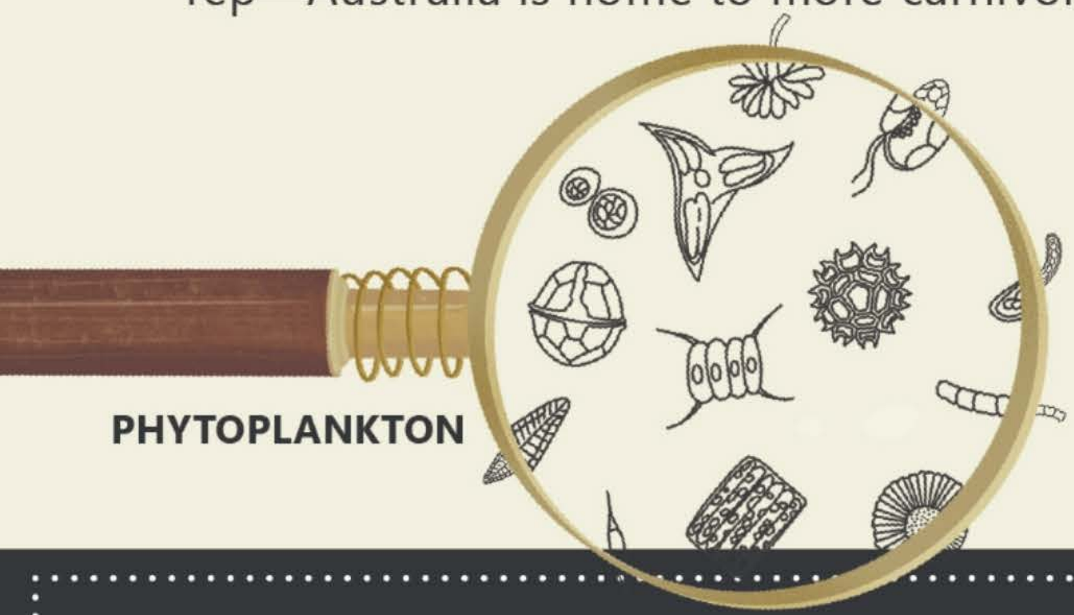
(*Dendrocnide moroides*)

Known as the most painful plant on Earth, just a light touch of the gympie gympie can feel like acid, fire and electrocution—all at the same time. How? The plant's fine little hairs (called trichomes) are like nature's hypodermic needles. When they enter the skin, they inject their fiery venom ... and the pain can last for months. But don't worry—just avoid the rainforests between Cape York Peninsula and northern New South Wales, and you'll be fine! And if you can't avoid these areas, be sure to wear long pants when walking in the bush.

UNDER THE MICROSCOPE

# CURIOUSER AND CURIOUSER

Australian flora is definitely unique, but some species take things to a whole new level, with unusual or bizarre looks, clever tricks and astonishing adaptations—like becoming their very own water tank. Our country may not be known for succulents, but the fleshy species we do have are pretty cool. Our plants can even eat meat! Yep—Australia is home to more carnivorous plants than anywhere else in the world.




## UNDER THE MAGNIFYING GLASS

Some plants are very hard to see. Phytoplankton may be the largest plant group on Earth but they're also the smallest, just a few micrometres in size. Other itty-bitty plants include bryophytes (liverworts, hornworts, mosses) and teensy tiny ferns. The Pacific mosquito fern (*Azolla filiculoides*) has fronds just a few millimetres wide (3000 micrometres).

ONE MICROMETRE IS ONE MILLIONTH OF A METRE. HOW SMALL IS THAT? WELL, THE HEAD OF A PIN MEASURES A WHOPPING 2000 MICROMETRES ACROSS

## SUCCULENTS

Succulents can store water in their leaves, stems and roots, making desert life a whole lot easier. Most species have a special form of photosynthesis called CAM (crassulacean acid metabolism). At night, when it's cooler, they use CAM to draw in carbon and store it as acid in their cells, just like a battery. When the sun rises again, these acids break down into the carbon dioxide needed for photosynthesis. Clever!

## LARGE-ARTICLED SAMPHIRE

(*Tecticornia bulbosa*)

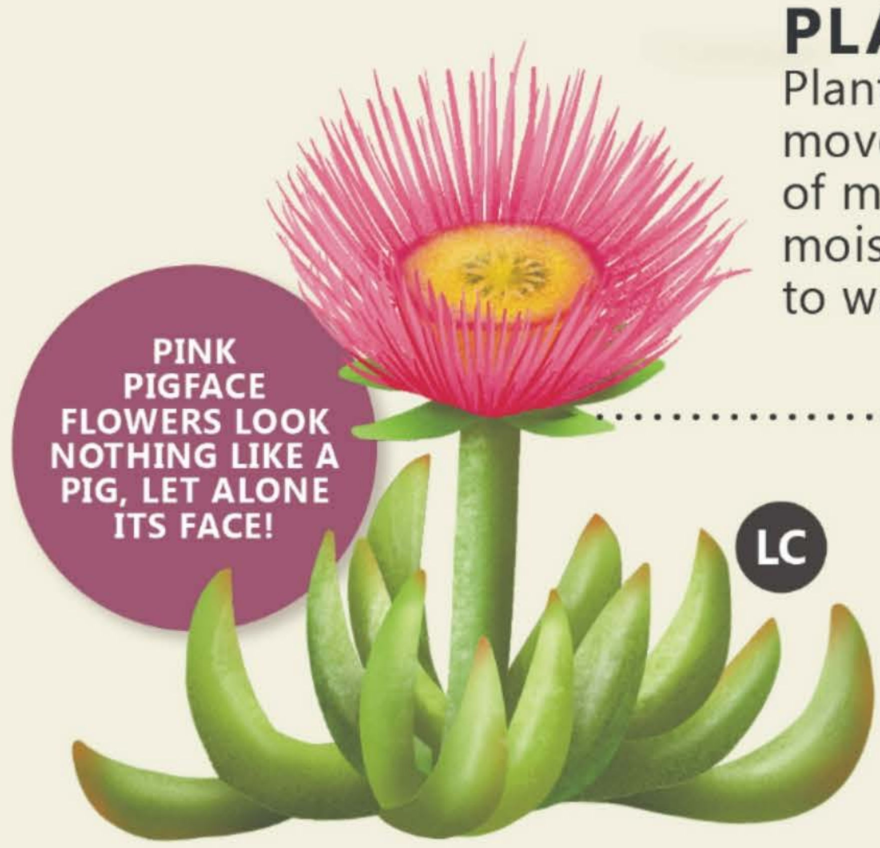
This native has strange, barrel-shaped segments (called articles) that can change from green to pale blue, pink and red. Its flowers are hermaphroditic, meaning it needs no boyfriend or girlfriend—it just self-pollinates (called autogamy). Found along salty coastlines, this samphire thrives in places most plants fear to tread. It's nicknamed 'pickleweed' for its tangy flavour, and its stems can be pickled, just like cucumbers!

SALT-LOVING PLANTS ARE CALLED HALOPHYTIC

VU

## PLANTS ALIVE!

Plants collect information. They can sense light and some can even follow the movement of the sun across the sky (known as heliotropism). They can make use of magnetism and electricity, and can sense temperature, vibrations, nutrients, moisture—even gravity. Plants also 'talk' to each other. They release chemicals to warn nearby pals that hungry beetles are on the way!



PINK PIGFACE FLOWERS LOOK NOTHING LIKE A PIG, LET ALONE ITS FACE!

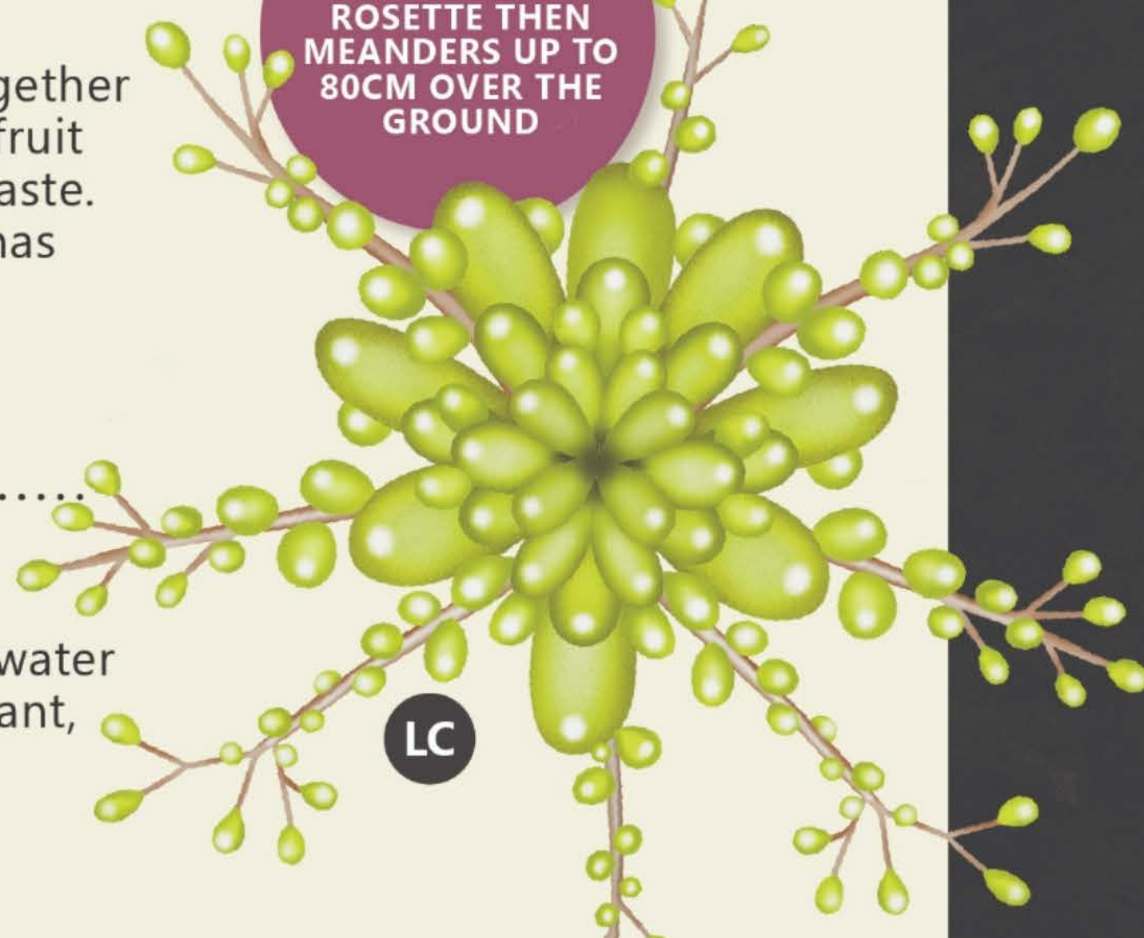
LC

## PINK PIGFACE

(*Carpobrotus glaucescens*)

One of our few true succulents, this beach-loving creeper holds sand dunes together and is a surprising food source. Its leaves, fruit and ultra-pink flowers have a salty-sweet taste. The green pigface (*Gunniopsis septifraga*) has modified leaves that look like large lollies. It changes colour during times of stress.

THIS JELLY BEAN GROWS LIKE A ROSETTE THEN MEANDERS UP TO 80CM OVER THE GROUND



LC

## JELLY BEAN PLANT

(*Calandrinia creethae*)

This cool plant comes in a variety of candy colours, with leaves like plump jelly beans. It may seem delicate, but this jelly bean thrives in the desert by storing water in its stems and closing its blossoms at night. Many wildlife species love this plant, including emu chicks, who totally rely on it for their first six weeks of life.



## CARNIVOROUS PLANTS

Our carnivorous plants live almost everywhere—from forests to billabongs and deserts. Alison Baird Reserve south of Perth covers just 35 hectares, yet it has more carnivorous plants than Europe! These minuscule munchers catch flying insects and sometimes snails and caterpillars. They occasionally (by accident!) catch small frogs, birds and mammals, which can't be digested.

IF YOU'RE EVER TRAPPED BY A CARNIVOROUS PLANT, DON'T PANIC! JUST STAY STILL AND THE PLANT WILL SOON OPEN ITS JAWS TO RELEASE YOU


CR

## WATERWHEEL PLANT

(*Aldrovanda vesiculosa*)

This underwater version of the Venus fly trap doesn't need roots because its food arrives alive and kicking. When its modified leaves are triggered by prey, they snap shut (in 20 milliseconds) then slowly digest lunch before popping open again for the next meal. Its floating leaves resemble the blades of a waterwheel.

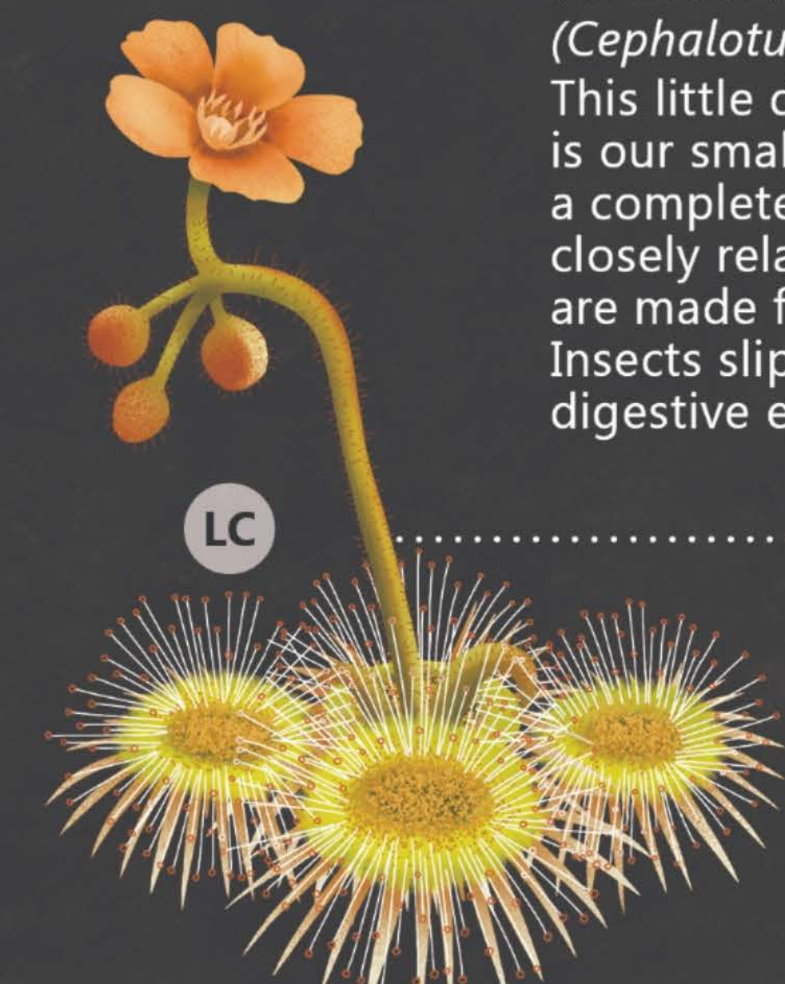
VU

## ALBANY PITCHER PLANT

(*Cephalotus follicularis*)

This little dinosaur has been around for 55 million years and is our smallest pitcher plant, with traps just 4cm high. It has a completely different ancestry to other pitchers and is more closely related to cabbage! Like other pitcher plants, its traps are made from modified leaves that form a sort of bucket. Insects slip into the liquid below, which is packed with digestive enzymes that break down prey.

JUST 20 SMALL GROUPS OF THE ALBANY PITCHER PLANT REMAIN, ALL NEAR ALBANY IN WESTERN AUSTRALIA



LC

## PIMPERNEL SUNDEW

(*Drosera glanduligera*)

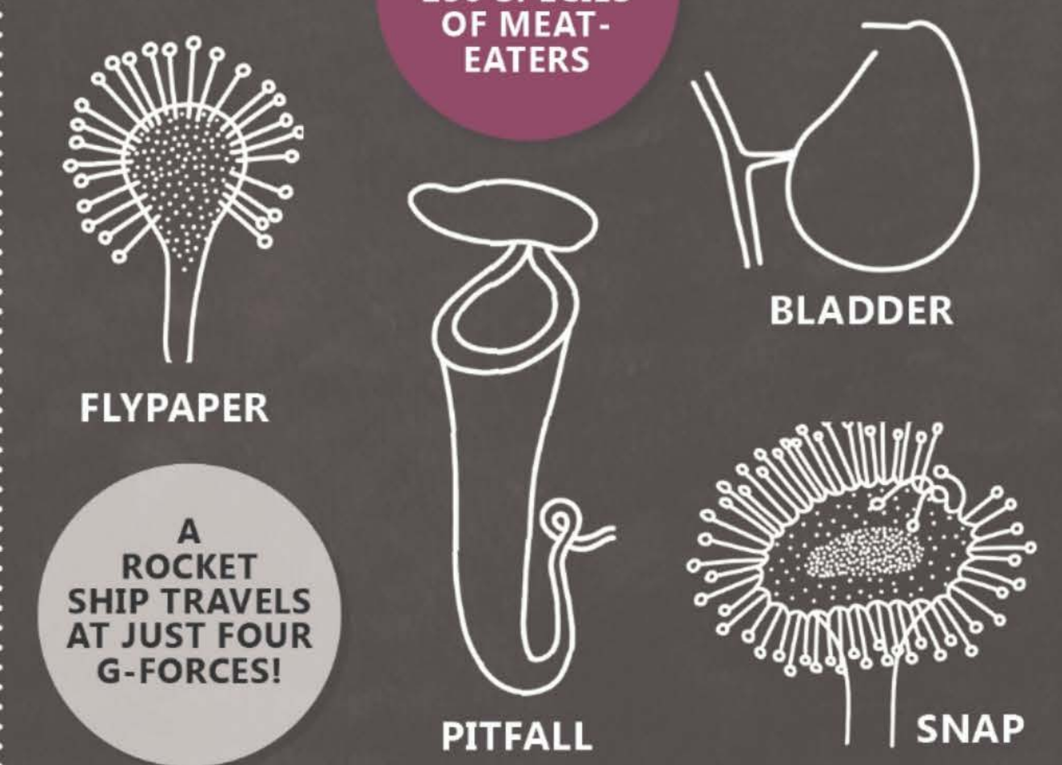
Sundews are one of the largest groups of carnivorous plants. This unique species actually has two types of trap—flypaper and snaptrap. Its leaves are covered in sticky flytrap tentacles, and when an insect lands, the snap-tentacles around the edge of each leaf push it onto the flytrap tentacles in the centre (where digestion can begin). Unlike some other snaptrap plants, once a tentacle snaps down, it can't come back up again.

## ENTRAPMENT

Most carnivorous plants are found in nutrient-poor soils and so have come up with inventive ways to find lunch. Although they have no teeth (yet!), they have evolved several types of trap:

- FLYPAPER Victims are lured by sticky droplets, and when they land, they're instantly stuck.
- PITFALL A bucket-like container made from a modified leaf full of digestive fluid. Prey slips in and becomes soup!
- BLADDER Bladderworts (*Utricularia*) grow tiny bladders on their roots. When micro prey get close, the bladder's flap flips open and prey is sucked inside at a speed of 60 G-forces, making them the world's fastest plant!
- SNAP Leaves and tentacles are touch-sensitive, closing on prey in the blink of an eye. This movement is thanks to an electrochemical process that rapidly alters leaf cells.

WE HAVE MORE THAN 250 SPECIES OF MEAT-EATERS




A ROCKET SHIP TRAVELS AT JUST FOUR G-FORCES!

# BUSH FOOD

It's easy to fall in love with native ingredients. Bush food (previously called bush tucker) is not only delicious, it's nutritious, sustainable and includes native plants traditionally harvested by First Nations people. Bush food may taste brand new or familiar—from tart finger limes that seem a little grapefruity to nutty wattleseeds with notes of spice, coffee, raisins and chocolate. Yum!


## WATTLESEED
(*Acacia* spp.)
An important source of protein, wattleseeds are enjoyed by Wiradjuri people, who roast and grind them into flour to make damper and Johnny cakes. With a savoury, nutty flavour, they are also scrumptious in foods like ice cream and scrambled eggs.

## LEMON MYRTLE
(*Backhousia citriodora*)
With a fresh, zesty lemon flavour, this herb is used fresh or ground into a powder. It's delicious in desserts, sauces, syrups and teas.

## PENCIL YAM
(*Dioscorea transversa*)
Also called finger yams, the roots of this rare, climbing plant really do look like long, knobbly fingers. Growing up to a metre below ground, they are delicious roasted.

## BUSH TOMATO
(*Solanum centrale*)
This small, tangy tomato has a punchy, sweet yet savoury flavour. High in vitamin C, it's used in chutneys and sauces, or ground into a spice. Don't eat too many, though. Noongar–Wudjari people say it could give you a belly ache.

## KAKADU PLUM
(*Terminalia ferdinandiana*)
This plum is one of the world's richest sources of vitamin C. It has a tangy, sour and sometimes salty flavour, and makes tasty jams, chutneys, sauces, drinks and desserts.

**WARNING!**
SOME PLANTS ARE TOXIC AND COULD MAKE YOU VERY ILL, SO NEVER EAT ANY PLANT YOU'RE UNFAMILIAR WITH

## MACADAMIA NUTS
(*Macadamia integrifolia*)
Famous worldwide for their rich, buttery flavour, macadamia nuts are used in cooking and baking, to make oil or just as a delicious snack. Their seed coats are so hard, you will definitely need an elephant to help you open them.

## SCOTT'S GINGER
(*Hornstedtia scottiana*)
This edible rhizome tastes a bit like regular ginger. The fleshy flower spike can be peeled like a banana to reach the sweet seeds inside. Kuku Yalanji children love these seeds, but to stop them being eaten before they are ripe, elders warn the seeds can cause thunderstorms and lightning!

## FINGER LIME
(*Citrus australasica*)
A rainforest citrus fruit, the finger lime bursts with beads (called pearls) packed with citrusy juice. High in vitamin C, they're used to garnish both sweet and savoury dishes.

## BUSH COCONUT
(*Corymbia opaca*)
The bush coconut comes from an unusual (and perhaps a little icky!) dance between the desert bloodwood tree and a grublike insect (*Cystococcus*). A female grub chooses a spot on a tree branch and starts scratching. To defend itself, the tree grows a knobby tumour (gall) around the grub, who happily spends the rest of her life inside, gobbling sap and welcoming mates via a tiny air hole. Both the gall and the grub form the 'bush coconut' and the Ngarluma people say its thick white lining tastes like—you guessed it—coconut!

## RIVER MINT
(*Mentha australis*)
The leaves of this native have a strong peppermint flavour and can be used fresh or dried. They are used in teas and to add flavour to both sweet and savoury dishes. Try it in sparkling water with a squeeze of lemon.