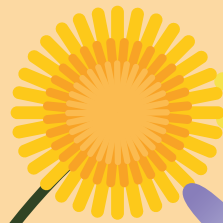
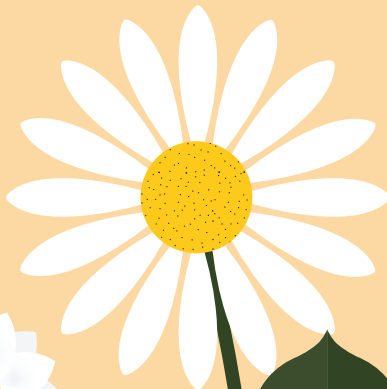




Bush Buddies

VOLUME 6



BUSH HERITAGE
AUSTRALIA

Busy bees

Springtime means flowers, and flowers can help attract an important species into an area - bees.

You might have heard that bees have a very important job, and it's true - bees pollinate plants! They visit lots of flowers to feed on nectar and pollen, collecting pollen, often on their sticky legs. By visiting lots of flowers, and carrying pollen between them they help to fertilise plants so they can reproduce, including important plants for growing edible fruits, vegetables, nuts and seeds.

Many native plant species have evolved close relationships with specific bee species and some are pollinated by only one!

Did you know?



Burrowing bee (most likely *Amegilla paracalva*) at Charles Darwin Reserve, Badimia country, WA. Photo Geoff Corrick.

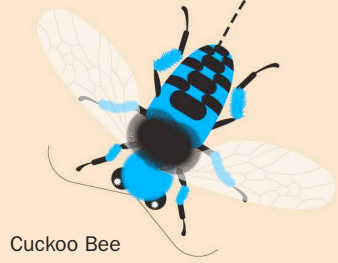
There are an estimated 2,000 species of native bees in Australia. Some of the different types include carpenters, leafcutters, lodgers, cuckoos, short-tongued and long-tongued bees.

Females build burrows on their own, without workers. The sole function of male bees is to locate and fertilise females so they spend lots of time patrolling flowers and burrow entrances.

Most native bees burrow in the ground, or otherwise in dead or rotting wood. Other species use existing holes in dead wood, hollow stems or old wasp nests.

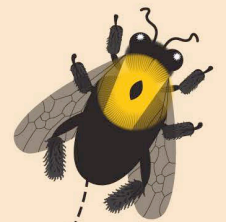
When we think of bees, we often think of social species living in hives, but many species are actually solitary. And it's these solitary species that you might entice into your garden through our next project - a bee hotel.



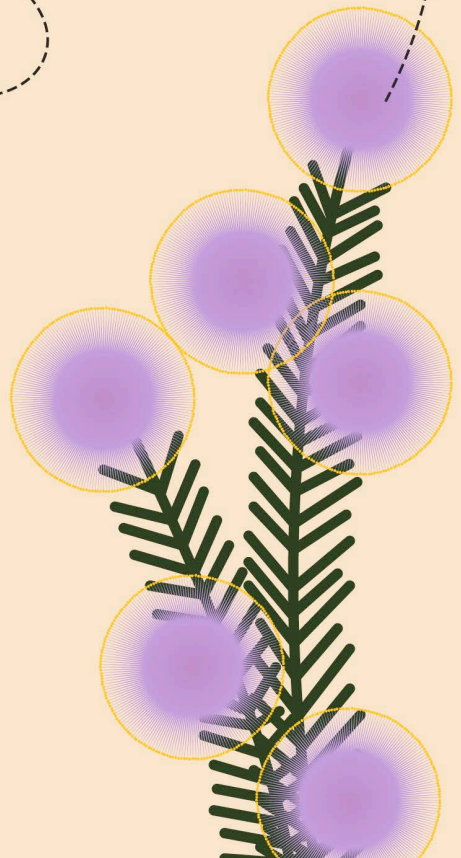


Cuckoo Bee

Leafcutter Bee



Carpenter Bee



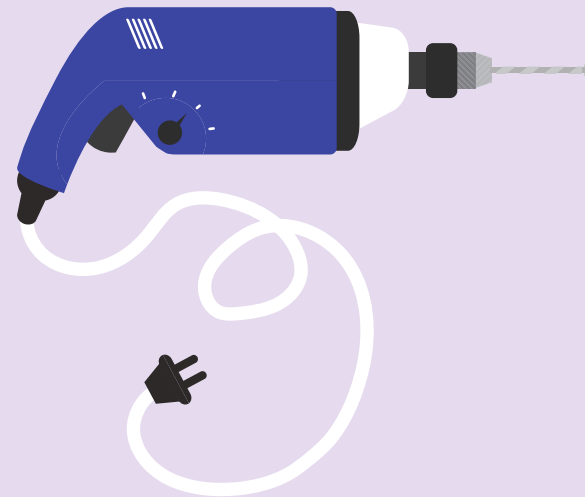
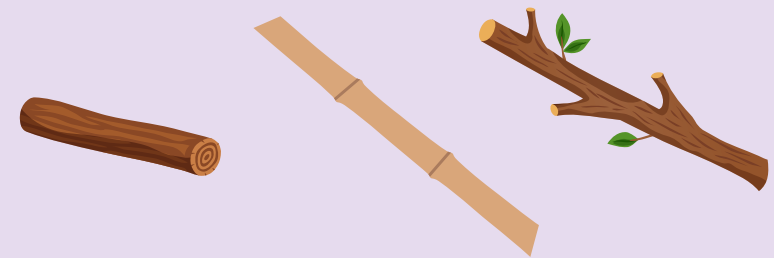
How to make a bee hotel

What you'll need:

- A wooden box (of any height and width, but not too big) that's about 15cm deep. You could make your own or might have bought something that came in an unwanted box.
- Some blocks of wood, round logs and bamboo. Cut these to the depth of your box.
- Cutting bamboo can be tricky. If you can find garden edging at a hardware or garden centre that's already cut to a uniform height it will make the job easier.
- Drill some holes in your wood and logs. Use a variety of widths, from 2mm to 10mm.
- Fill your box with all your material, to create a range of hiding places/tunnels for solitary bees to nest.
- That's it. Find a sunny spot in your garden and hang it on the wall (nearby some flowers to attract bees to the area).

Remember, bees in your garden will help pollinate plants so more of them grow!

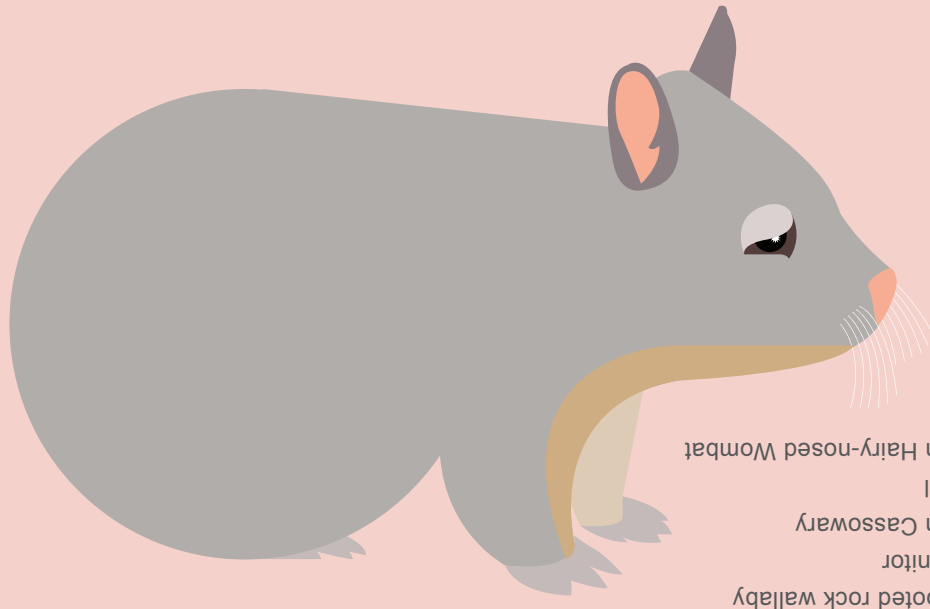
Learn more about Australia's wonderful bees.
Visit [BushHeritage.org.au/bees](https://bushheritage.org.au/bees)



Make sure you have a grown-up on the tools or supervising!

Unscramble these words

1. wolye-ofdeot ocrk ylbawal
2. ceaL rotimn
3. hueronts oawscyras
4. narb wlo
5. ueorhnts ariyh-oesdn otwabm



Spring punchlines

- 1: How do you know flowers are friendly?
- 2: What did the tree say to spring?
- 3: What did the dirt say to the rain?
- 4: What is the best flower for a boy to give his mom?
- 5: Why did the farmer bury all his money?
- 6: Why are frogs so happy?
- 7: What kind of book does a frog like at bedtime?

- 1: They always have new buds!
- 2: What a re-leaf!
- 3: If this keeps up my name will be mud.
- 4: A son-flower!
- 5: To make his soil rich.
- 6: They eat whatever bugs them.
- 7: One with a hoppy ending!

Caring for our frogs

By Carly Starr

Did you know we have at least 242 native frog species in Australia? You may have heard that many of our beautiful Australian frogs have started to get sick this winter. Frogs are very important in our environment; they play a vital role in the food web for all species. They eat lots of insects, including pest species and are food for some species of birds, reptiles, and mammals. When they're born as tadpoles, they can control mosquitos and algae in our dams and creeks.



Here are some activities for helping our frogs:

1. Become a citizen scientist!

Do you ever hear frogs in ponds or waterways when out walking? Ask your parents to download FrogID on a phone or tablet. You can record and submit frog recordings where you live to the Australian Museum, and a frog expert will identify which species it is!

If you don't have access to the app, you can email them: calls@frogid.net.au. Plus, you'll be contributing important data to scientists who are working to save our frogs and making a real difference for conservation.



2. Build a tree frog hotel

These frog hotels are built specifically for Australian tree frogs (who have sticky toe pads needed to crawl over the slippery surface of pipes – other frogs wouldn't be able to climb in and out). Tree frogs are widespread across many parts of Australia – You can look on FrogID to see what types of tree frogs live in your area.

While ponds and water are important breeding sites, it's not where most frogs live. They need somewhere cool and moist to shelter and sleep. After rain on a hot day you might find them in your house, water tank, drainpipe or mail box.

The main role of the hotel is to provide a nice safe hiding place which is out of the sun and provides moisture.

What you'll need:

- Some cable ties.
- You might use a pot/bucket/old bath/pond if you don't want pipes going directly into the ground.
- Some rocks or gravel.
- Some decorations.
- PVC pipes (you might have some spare pieces or pick some up from a hardware/plumbing store. You'll need an adult to help you cut to size (20cm minimum but about 60cm is high enough to keep Cane Toads out if they're in your area. You can vary each piece.)
- You can get some pipe joiners to make the pipes face different directions and provide more shade.
- A pot, bucket or big bowl to place them in.
- Use a cable tie to bunch them together so they'll stand up straight.
- Use non-toxic paints if you want to decorate the hotel. You could add a solar light to attract insects, some native plants, or place a small pond nearby if you want to create more habitat!
- Your imagination!



How to build:

- You'll need a grown-up to help you cut the pipes if they aren't a good size. They need to be at least 20cm but about 60cm is high enough to keep Cane Toads out if they're in your area. You can vary each piece.
- Use some sandpaper to make sure the edges where you've cut any pipes are nice and smooth.
- Use a cable tie to hold the pipes together as a bunch so they will stand up straight and not fall over.
- PVC pipes need to go into the ground at least 15cm deep to create a nice dark, moist microclimate for our tree frogs. You can put smaller pipes inside bigger ones to create smaller spaces for frogs to hide.
- If you don't want these going directly into the ground, you can stand them up in a bucket, pot or container. You'll need to seal the bottom so it holds water and keep this topped up just to the top of the gravel or stones, to reduce mosquito activity. Rainwater is ideal. If using chlorinated water, let it sit for 24 hours for the chlorine to evaporate.

- Make sure frogs can easily get in and out of these by surrounding them with some gravel, pebbles or stones - these will also hold your pipes nice and steady. You can also add pot plants. If you want to paint these, make sure you get a non-toxic paint. Be as creative as you like! You could also place these near compost or flower gardens which attract insects.

What to do next:

It may take some time for frogs to move into your hotel so don't be worried if you don't see them for a little while! Once they do, you could upload your records to FrogID and start to learn more about the ecology of your new residents.

Hop to it and enjoy!



Glider

Australian gliders are characterised by folds of skin (or membranes) between their ankles and wrists that are used like parachutes allowing them to glide up to 140 metres through the air.

Among the most acrobatic of Australia's small mammals are the gliders – small, possum-like marsupials that spend much of their time in tree canopies, leaping and gliding extraordinary distances with their limbs outstretched.

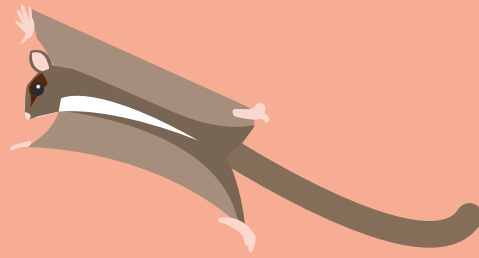
Gliders can also change direction mid-air thanks to their long tails, which they use as rudders.

Measuring between 6.5cm and 46cm in length (excluding their tails), gliders have large eyes, short faces and soft, silky fur. The largest species – the **Greater Glider** – can weigh up to 1.6kg, while tiny feathertail gliders weigh around 12 grams and are the size of a small mouse.

Seven species of glider are found in Australia: the **Greater Glider**, the **Broad-toed Feather Glider** and the **Narrow-toed Feather Glider** (known collectively as feathertail gliders), the **Squirrel Glider**, the **Sugar Glider**, the **Mahogany Glider** and the **Yellow-tailed Glider**.



Sugar Gliders. Photo Steve Parish



Where do Australian gliders live?

Gliders can be found in all states and mainland territories. Six of the seven Australian species are found in Queensland and four of these have been observed at our Yourka Reserve.

All gliders depend on tree hollows to make their homes, but each has unique needs.

The Greater Glider requires certain altitudes where specific eucalypts can be found. It prefers old-growth forests and has never been found in rainforests. Feathertail gliders are less choosy, living in rainforests at any altitude and even in city parks and backyards where eucalypts grow.

Sugar Gliders can flourish in both wet and dry forests and woodlands and in remnant vegetation. They've also been successfully reintroduced in some areas. The Mahogany Glider is found in a very small area of Northern Queensland and is the most endangered of all Australian gliders. It finds its home in open forests with a diverse array of flowering plants that provide a food source.

Another two glider species (the Northern Glider and the Biak Glider) can be found in Papua New Guinea and Indonesia, respectively.

Glider behaviour

Gliders are arboreal (tree-dwelling), nocturnal animals that spend their nights leaping between trees in the hunt for food. Most are omnivorous, feeding on nectar, pollen, seeds, insects and even – in the case of Sugar and Squirrel Gliders – on small birds and their eggs. The Greater Glider, however, is herbivorous and feeds mainly on eucalypt leaves.

Gliders are known for their aerodynamic leaps and fantastic climbing ability. Feathertail gliders, for example, are known to spend about 80% of their time over 15 metres above the ground and typically glide between trees three to five times an hour throughout the night. They've also been reported to be able to **climb up vertical panes of glass!**

Most gliders are social creatures, with family groups crowding together sharing the same nest hollow.

The Greater Glider is the only solitary glider, coming together only in the breeding season, and using a large number of nests in its home range.

Feathertail and Sugar Gliders are both known to enter **torpor**, where an animal slows its breathing and dramatically reduces its physical activity for days or even up to weeks, dropping its body temperature and oxygen consumption and wrapping its body into a ball. This enables them to reduce energy needs and survive periods of food shortage.

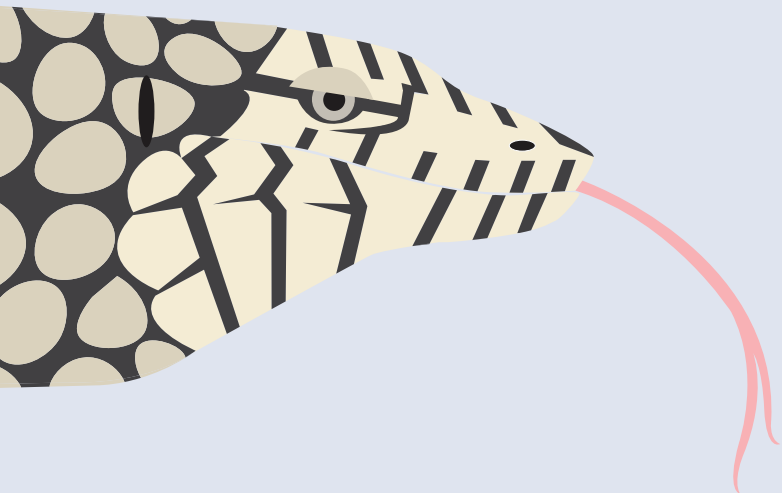
Breeding habits vary across glider species. Feathertail gliders, being small and susceptible to heat loss in cold weather, are known to nest in artificial sites such as telephone boxes and meter boxes. Nest hollows are often lined with dry leaves, whereas the Greater Glider, is not known to build a nest. And while the Yellow-bellied Glider is monogamous, male Squirrel Gliders and female feathertail gliders are promiscuous.

Greater Gliders give birth to only one young and feathertail gliders can give birth to up to four. The other species usually have one or two young. Being marsupials, they carry their young in a pouch.

Threats to gliders

Like many Australian species, gliders are in decline. They require mature trees with well-developed hollows. Habitat destruction and fragmentation are of particular concern, reducing the number of available hollows.

However, other threats include fire and feral predators, as well as the use of barbed-wire fences that can trap the animal's gliding membrane causing a slow and painful death. Natural predators include owls, goannas, pythons, kookaburras and quolls.



Where they're found

Feathertail Gliders: Yourka and Carnarvon reserves (Qld)

Greater Gliders: Tarcutta Hills (NSW), Burrin Burrin (NSW), Reedy Creek, Yourka and Carnarvon (Qld)

Sugar Gliders: Brogo and Scottsdale reserves (NSW), Goonderoo, Reedy Creek, Carnarvon and Yourka Reserves (Qld). Nardoo Hills (Vic), Wunambal Gaambera country (WA), Olkola Country (Qld), Warddeken IPA and Arafura Swamp (NT)

Yellow-bellied Gliders: Carnarvon

Squirrel Gliders: Reedy Creek, Yourka and Carnarvon reserves and on Olkola Country (Cape York) in Queensland.

What's Bush Heritage doing?

We preserve remnants of old-growth forest where tree hollows are present and habitat for gliders is good. We also manage fire, weeds and ferals in these areas to maintain and enhance the quality of the habitat for gliders and other species. In some places, nest boxes are used to provide additional nesting habitat for gliders (for example, at Yourka to encourage feathertail gliders).



A Squirrel Glider at our Tarcutta Hills Reserve (NSW). Photo Wayne Lawler/EcoPix



A Greater Glider at our Yourka Reserve (Qld). Photo Wayne Lawler/EcoPix



A Sugar Glider. Photo Steve Parish



Daisy chains

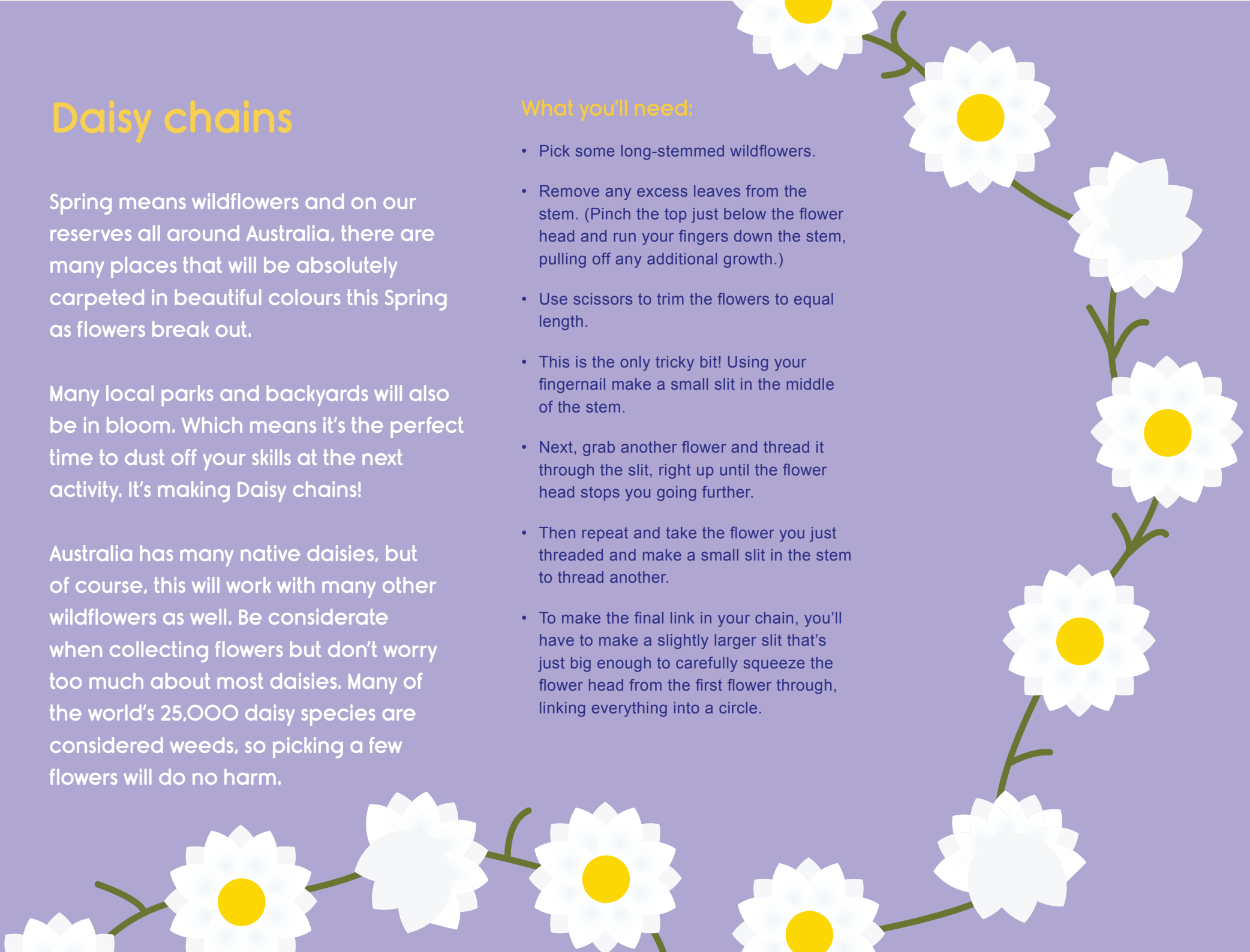
Spring means wildflowers and on our reserves all around Australia, there are many places that will be absolutely carpeted in beautiful colours this Spring as flowers break out.

Many local parks and backyards will also be in bloom. Which means it's the perfect time to dust off your skills at the next activity. It's making Daisy chains!

Australia has many native daisies, but of course, this will work with many other wildflowers as well. Be considerate when collecting flowers but don't worry too much about most daisies. Many of the world's 25,000 daisy species are considered weeds, so picking a few flowers will do no harm.

What you'll need:

- Pick some long-stemmed wildflowers.
- Remove any excess leaves from the stem. (Pinch the top just below the flower head and run your fingers down the stem, pulling off any additional growth.)
- Use scissors to trim the flowers to equal length.
- This is the only tricky bit! Using your fingernail make a small slit in the middle of the stem.
- Next, grab another flower and thread it through the slit, right up until the flower head stops you going further.
- Then repeat and take the flower you just threaded and make a small slit in the stem to thread another.
- To make the final link in your chain, you'll have to make a slightly larger slit that's just big enough to carefully squeeze the flower head from the first flower through, linking everything into a circle.





Flowering Yellowtop Daisy bush



Poached Egg Daisy



Poached Egg Daisy and Billy Buttons,
Ethabuka Reserve, Qld



Yam Daisy at Nardoon Hills

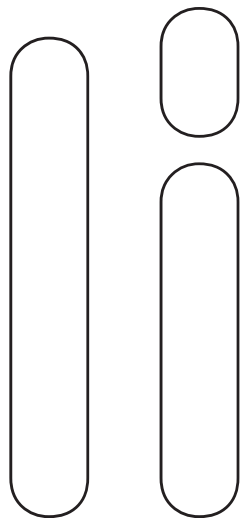


Paper Daisy at Boolcoomatta
Reserve, SA

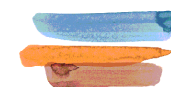
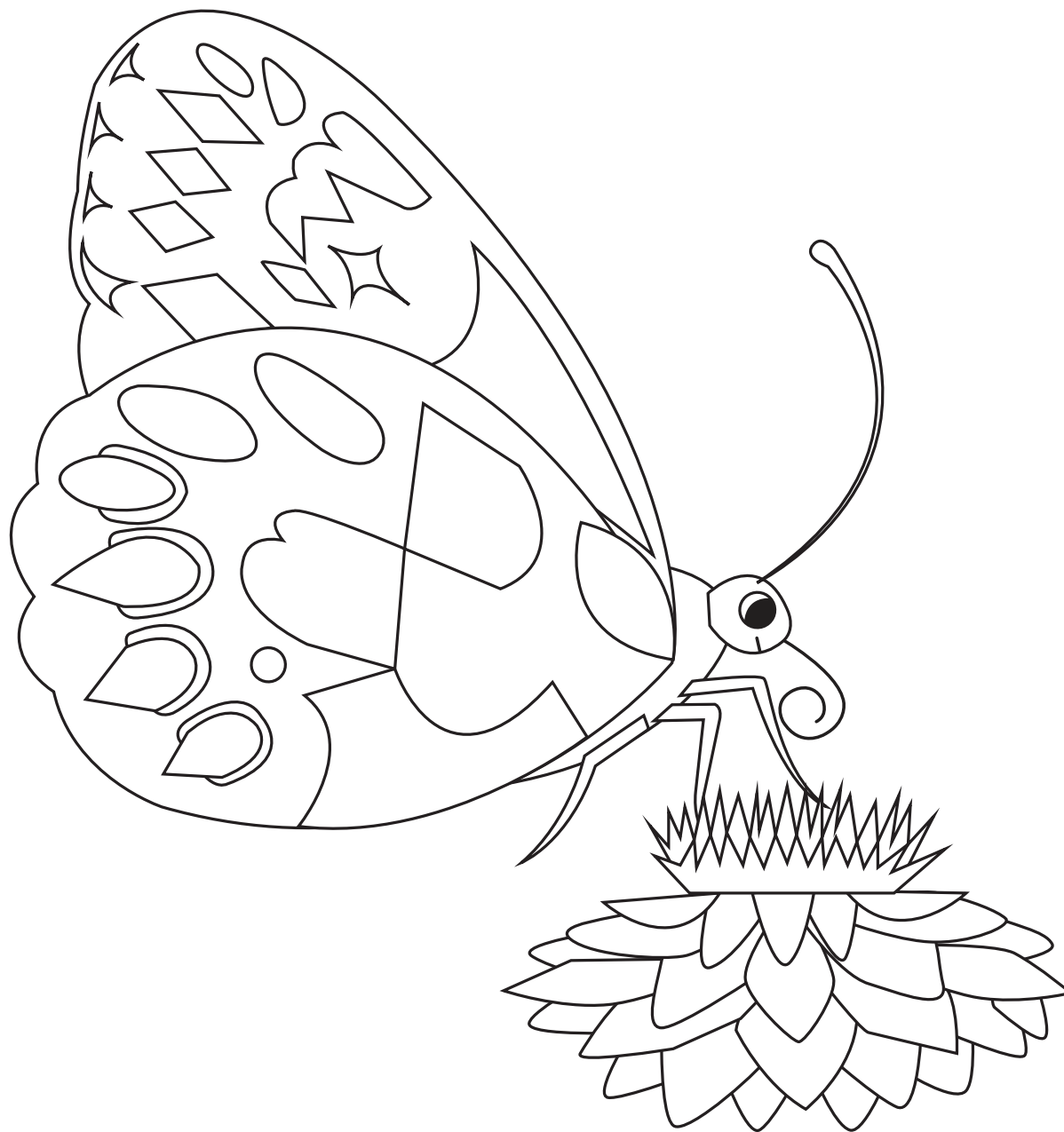


Daisy flower





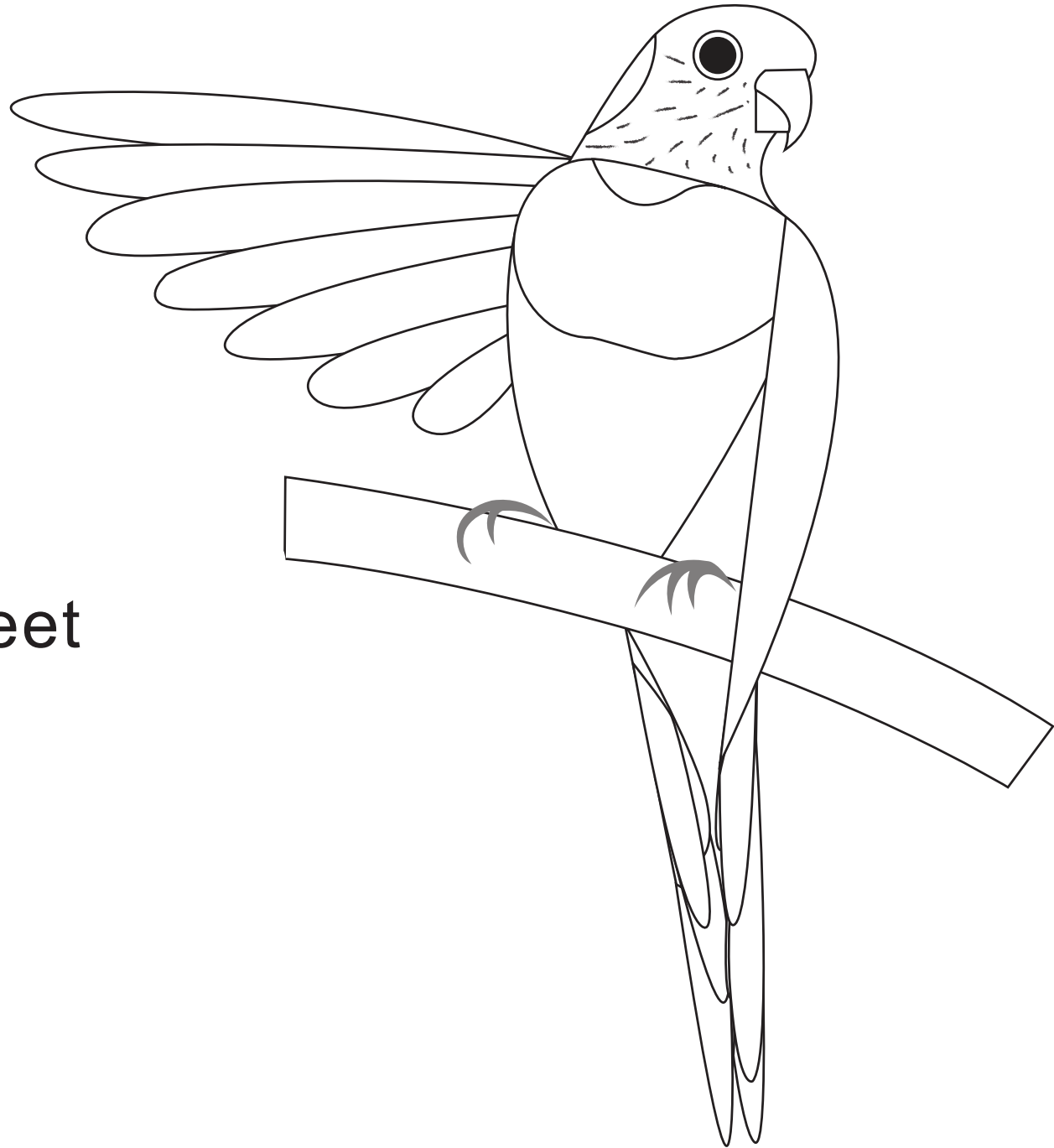
is for
Imperial
Jezebel Butterfly



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Rr

is for
Rainbow Lorikeet



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