



Creating a Wildlife Haven

A Guide to Designing
Habitat-Friendly Gardens





Creating Wildlife Habitat in Your Garden

Welcome to your guide for creating a wildlife-friendly garden in the Northern Rivers region. As natural habitat has been cleared and urban development continues to grow, the role of our gardens in supporting biodiversity has never been more important. By making simple changes to your outdoor space, you can create vital refuges for native animals - from birds and frogs to bees and beneficial insects. These changes help maintain essential ecosystems and improve the health of your garden, all while contributing to the survival of local wildlife and the joy of seeing local wildlife flourish in your garden.

Whether you're adding native plants, designing a frog-friendly pond, or attracting pollinators, every step you take helps protect the unique biodiversity of this beautiful region.

Let's get started and make a difference - one garden at a time!



Steps to Attract Wildlife

1. **Observe:** What animals visit your garden or nearby areas?
2. **Learn:** What do they need - food, shelter, water? What threats can you reduce?
3. **Create:** Design your garden to meet the needs of local wildlife.

Key Principles for a Wildlife-Friendly Garden

1. **Favour Native Plants:** Local animals prefer plants from their natural habitat.
2. **Mimic Nature:** Include a variety of plants and layers - ground covers, shrubs, and trees. Let some areas stay "messy" with leaf litter and fallen branches.
3. **Be Water-Wise:** Choose drought-resistant plants and add a birdbath or small water source.
4. **Use Natural Pest Control:** Avoid chemicals that harm wildlife. Opt for natural methods to manage pests and weeds.





Essential Elements of a Habitat Garden

- **Mulch & Rocks:** Protects soil and provide shelter for insects and small animals.
- **Plant Variety and Quantity:** Include plants with different heights and structures to provide sufficient food and shelter year-round. Dense or spiky plants are great for protecting small birds.
- **Water:** A clean birdbath or pond offers essential hydration.
- **Limit Threats:** Avoid clearing too much vegetation, using poisons, or installing barriers that restrict movement. Keep pets in check.
- **Shelter & Nesting:** Provide diverse plant types for shelter and nesting. Include bushes, trees, hollow logs, or ground cover for animals to hide and nest.

By incorporating these elements, you'll create a garden that offers food, water, shelter, and nesting spaces, encouraging local wildlife to thrive.

Creating a Frog-Friendly Garden



Did You Know?

- **Frog Species:** There are at least 45 species of frogs in the Northern Rivers region, 20 of which can thrive in a backyard with the right habitat.
- **Pest Control:** Frogs help manage pest insects like mosquitoes, flies, cockroaches, caterpillars, beetles, spiders, and slugs.
- **Ecosystem Indicators:** Frogs are excellent indicators of a healthy ecosystem.
- **Cane Toad Exclusion:** With the introduction of cane toads, it's important to find ways to exclude them while encouraging native frogs.



1. Preventing Cane Toads

- **Raised Ponds:** Cane toads are poor climbers, so raising your pond off the ground can keep them out. An old bathtub works great.
- **Toad Fencing:** If your pond is in-ground, install a toad fence or thick plantings (such as *lomandra*) around the pond or garden perimeter. The fence should be 400-600 mm high and made of shade cloth or mesh. Native frogs will easily jump or climb over it.

2. Moving Water

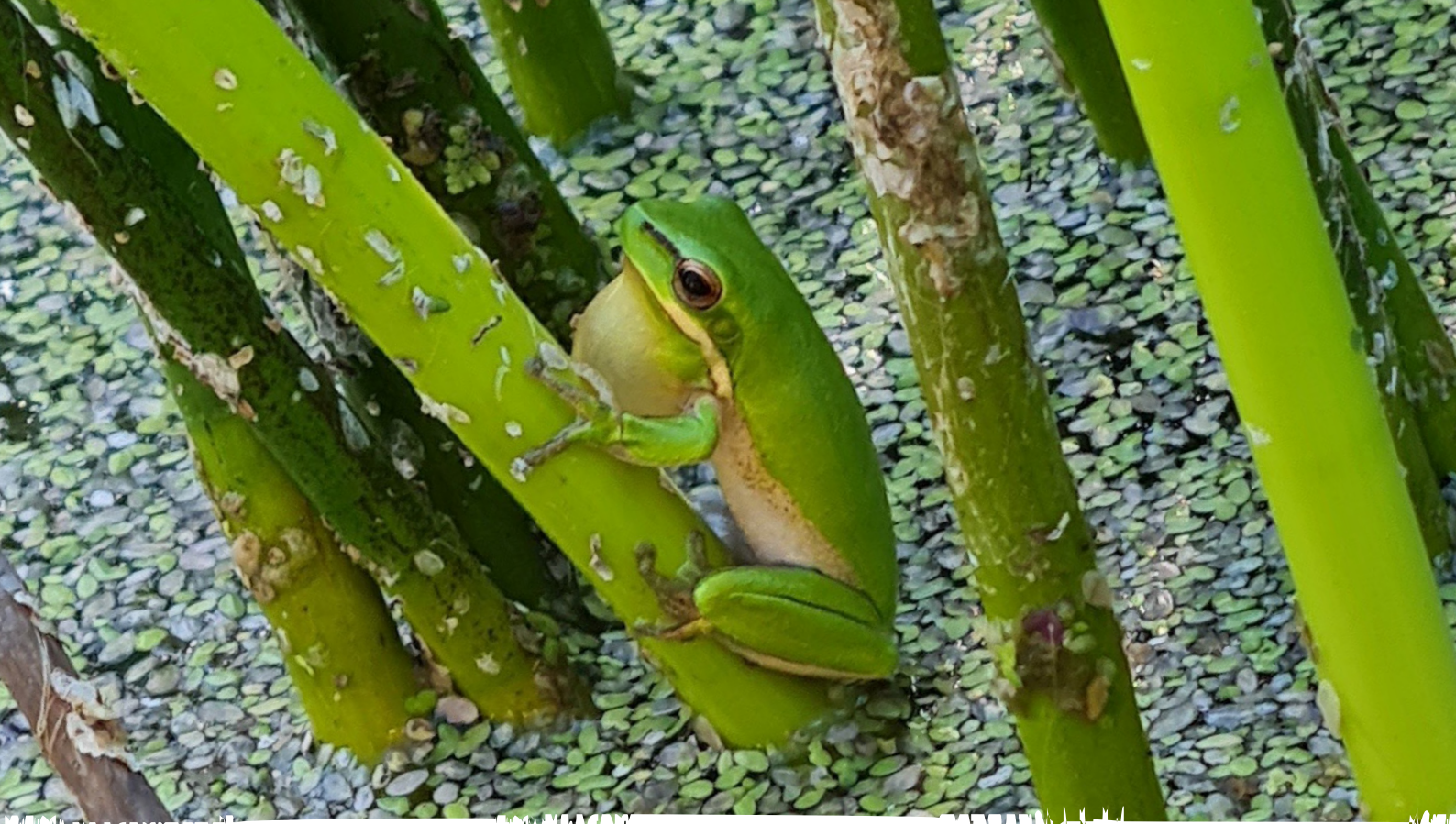
- **Why It's Important:** Moving water (like a fountain or waterfall) discourages mosquitoes and adds oxygen to the pond. The sound of water also attracts frogs.
- **Maintaining Water Flow:** Regularly remove leaves and organic debris to prevent clogging the pond pump, which can lead to nutrient overload and algae growth. Too much algae depletes oxygen, causing an imbalance in the ecosystem.

3. Fish for Balance

- **Introducing Native Small Fish:** Adding a couple of pairs of native fish helps maintain a balanced ecosystem. They'll eat mosquito larvae and insects on the water.
- **No Feeding Required:** Avoid feeding fish, as extra nutrients can disturb the pond's balance.

4. Safety for other animals:

- **Create a way out:** Make sure to have a stick protruding from the pond to ensure animals can get out of the water



Role of Plants

- **Native Plants:** Plants are vital for creating the right habitat for frogs and other wildlife. Remove any invasive species that may appear, often brought in by birds or animals.
- **Choosing Plants:** Use the "Trees Near Me" app to identify local native species. If your area lacks wetland plants, source species that grow in nearby wetlands or riparian areas. Purchase these from community nurseries or wholesalers to ensure local sourcing.
- **Oxygenating Plants:** Plants with leaves in the water help to oxygenate the pond, supporting the ecosystem.

Managing Cane Toads

- **Toxicity:** Cane toads, their eggs, and tadpoles are toxic to most animals. Female cane toads can lay up to 30,000 eggs, which can severely disrupt the freshwater ecosystem, harming fish and animals that consume them.
- **Exclusion Strategy:** Create barriers to prevent cane toads from entering the ecosystem while allowing native species to thrive.
- **Regular Inspection:** Inspect your pond frequently, especially during warmer months. Cane toads breed from October to December but can continue into cooler months.

Time Commitment

Maintaining a frog-friendly space requires dedication. Inspect the area daily in warmer months and weekly during colder months to manage the ecosystem and keep cane toads in check.

By following these tips, you can create a healthy, balanced ecosystem that supports native frogs and other wildlife while keeping invasive species like cane toads at bay.





Designing Your Space for Birds

What Birds Need:

- **Habitat:** A space that mimics their natural environment.
- **Shelter:** Areas for nesting and protection.
- **Safety:** Protection from predators and harsh weather.
- **Food:** Natural and appropriate food sources.
- **Clean Water:** For drinking and bathing.
- **Diversity, Predictability, and Sustainability:**
A variety of plants and consistent access to resources.

Structure Matters as much as Plant Species

Birds are attracted to specific structural elements, such as:

- **Tree Patterns:** Especially old-growth trees.
- **Hollows in Old Trees:** Perfect for nesting.
- **Shrub Thickets and Tree Canopies:**
Provide protection and shelter.
- **Fallen Branches & Dead Trees:** Offer perches and habitat for insects, which birds eat.
- **Vines:** Create hiding spots and nesting areas.
- **Dense Understory:** Plants like ferns and lomandra give shelter and nesting sites.
- **Open Meadows:** Provide space for foraging.
- **Water Bodies:** Ponds, lakes, and billabongs attract birds for drinking and bathing.
- **Shallows and Muddy Edges:** Birds love the open, muddy edges of water bodies.



Some Native Fruit Trees for Fructivorous Birds

Common Name	Scientific Name	Main fruiting period
Bangalow Palm	<i>Archontophoenix cunninghamiana</i>	Various through the year
Large Figs	<i>Ficus macrophylla, rubiginosa, henneana, watkinsoniana, obliqua, virens</i>	Irregular through the year depending on species
Sandpaper Fig	<i>Ficus coronata</i>	Various through the year
Bolly Gums	<i>Litsea australis, L. reticulata, Neolitsea australiensis, N. dealbata</i>	Summer to winter (except <i>L. australis</i> , spring)
Red Ash	<i>Alphitonia excelsa</i>	All year except late winter
Celerywood	<i>Polyscias elegans</i>	Autumn and winter
Pencil Cedar	<i>Polyscias murrayi</i>	Autumn and winter
Pepperberry	<i>Cryptocarya obovata</i>	Autumn
White Cedar	<i>Melia azederach</i>	Autumn to early winter
Native Tamarind	<i>Diploglottis australis</i>	Spring and summer
Red Apple	<i>Acmena ingens</i>	Colder months
Blue Quandong	<i>Elaeocarpus grandis</i>	Late winter to late summer
Coolamon	<i>Syzygium moorei</i>	Autumn

Some Native Fruit Trees for Smaller Gardens

Common Name	Scientific Name	Main fruiting period
Lime Berry	<i>Micromelum minutum</i>	Late winter to mid summer
Kangaroo Apple	<i>Solanum aviculare</i>	Spring to autumn (short-lived)
Tuckeroo	<i>Cupaniopsis anacardioides</i>	Spring to summer
Blueberry Ash	<i>Elaeocarpus reticulatus</i>	Autumn to spring
White Aspen	<i>Acronychia oblongifolia</i>	Late autumn to spring
Hairy Birdseye	<i>Alectryon tomentosus</i>	Late summer to winter

Feeding Birds



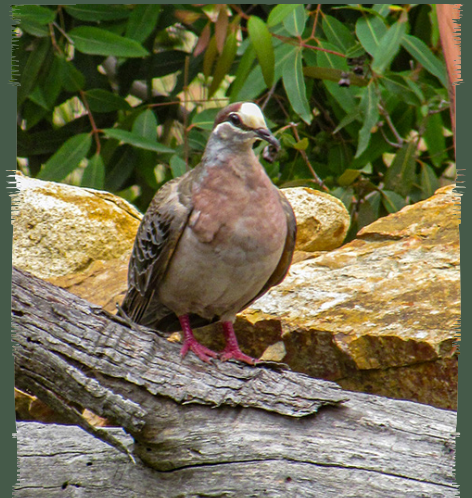
Best Practices

1. **Create Natural Habitat:** Focus on planting native vegetation to attract birds.
2. **Avoid Poor Feeding Practices:** Feeding the wrong food can lead to malnutrition, the spread of disease, and imbalance in the local ecosystem. Overfeeding can encourage invasive species like mynas, rock doves, and house sparrows.
3. **Avoid Feeding Ferals:** Feeding non-native birds disrupts the natural balance.



What Not to Feed Birds

- **Bread, Crackers, Biscuits & Cakes:** Instead, offer healthier alternatives like peas, grapes, oats, lettuce, and sweet corn for ducks.
- **Sunflower Seeds:** Avoid feeding them to lorikeets, as they can cause obesity and fatty liver disease. Other parrots should also not eat too many.
- **Raw Meat and Mince:** This can lead to calcium deficiencies and bacterial infections.
- **Junk Food:** Avoid potato chips and processed foods.



Disease Prevention

- Avoid overcrowding at feeding areas and keep them clean by removing old food regularly.





Feeding Specific Birds

- **Nectivores:** Honeyeaters, silvereyes, and lorikeets can be fed nectar mix (e.g. Wombaroo brand).
- **Fructivores:** Birds like fruit doves, figbirds, and some honeyeaters thrive on fruit from native trees. Plant a diverse range of fruit-bearing native species.
- **Granivores:** Pigeons, cockatoos, parrots, and finches can be given small-grained bird seed, but keep the seed clean and dry.
- **Insectivores:** Encourage insects by planting native plants, minimising insecticides and pesticides and/or cultivating mealworms.

Bird Baths

- **Multiple Baths:** Place at least three bird baths in different areas to reduce crowding.
- **Placement:** Keep them in or near shaded areas, close to low tree branches.
- **Maintenance:** Ensure bird baths are always clean and filled with fresh water.

By designing your space thoughtfully, with diverse plant structures and appropriate feeding practices, you can create a safe, attractive haven for a wide variety of bird species.





Native Stingless and Solitary Bees:

A Guide to Bee Hotels and Conservation

Did You Know?

- Australia has over 2000 native bee species, with only around 1500 identified and named.
- Only 11 species are social (living in hives), while the rest are solitary.
- Native bees are excellent pollinators, essential for the health of ecosystems.

Social Bees

- **Tetragonula Carbonaria (TC Bees):** A common stingless bee species in the Northern Rivers area.
- **Hive Size:** 1,000 to 5,000 bees on average, up to 10,000 in larger hives.
- **Ideal Habitat:** Found from Brisbane to Sydney; thrive best between 18-28°C

Hive Placement

- Place the hive facing northeast in a shaded area for year-round stability.
- During extreme heat, use wet hessian bags or provide wet towels nearby for moisture.
- Moving the Hive: If moving, take the hive at least 5km away for a few weeks to help bees reorient themselves. Moving the hive needs to occur at night, when the bees are in their hive.

Solitary Bees and Bee Hotels

Solitary Bees: Unlike social bees, solitary bees do not live in hives. They nest in hollow stems, dead branches, or in the ground. Due to habitat loss, you can help by building **Bee Hotels**.

These offer nesting sites to attract solitary bees such as Blue Banded Bees, Teddy Bear Bees, and Leafcutter Bees.



Building a Bamboo Bee Hotel

Materials:

- Large bamboo piece (16cm with a 7cm internal diameter) and small bamboo tubes (15cm long, 3-9cm internal diameter).

Instructions:

- Sand the edges of bamboo tubes to prevent bees from damaging their wings. Secure them inside the large bamboo piece and place the hotel under cover.

Mud Brick Nests for Blue Banded Bees

How to Make a Mud Brick Nest:

- **Materials:** Sand, clay mix (e.g., brickies sand), water, and containers like PVC pipes or terracotta pots.
- **Construction:** Mix the sand and clay, pack it into containers, and let it dry in the sun. Once dry, drill holes (5cm apart) to attract bees.
- Position in a dry location.

Bee-Friendly Gardens

Plants Bees Love:

- Native plants like Lilly Pilly, Bottlebrush, Grevillea, and Lemon Myrtle.
- Herbs like Basil, Lavender, and Rosemary.
- Ornamentals like Daisies, Zinnias, Cosmos, and Sunflowers.

Gardening Tips:

- Avoid pesticides, as they harm beneficial insects.
- Plant in large clusters, preferably in sunny areas with wind protection.
- Provide year-round food sources by planting a variety of species.
- In veggie gardens, let plants go to seed to help provide food for bees.

Attracting More Solitary Bees

- Leave dead branches and create bare, mulch-free patches for ground-nesting bees.
- Offer diverse materials like hollow stems, mud bricks, and drilled wood to accommodate different bee species.
- Check your bee hotel regularly to ensure it's free from predators and observe the fascinating life cycle of native bees.

By creating bee hotels and planting a variety of flowers, you're contributing to the conservation of native bees, essential pollinators for your garden and the environment.

Other Resources

General Habitat

- backyardbuddies.org.au/habitats/create-a-habitat-haven/
- gardeningwithangus.com.au/plant-search/
- Habitat Garden: Attracting Wildlife to your Garden' by Peter Grant, published by ABC Books
- Habitat: A practical guide to creating a wildlife-friendly Australian garden, by AB Bishop, published by Murdoch Books

Birds

- Birdlife Australia <https://birdlife.org.au/>
- www.birdsinbackyards.net/Tips-Designing-Garden-Birds
- Pizzey and Knight Birds of Australia – phone app
- 'Birdscaping Australian Gardens' by George Adams
- 'Wildlife in the Home Paddock' by Rowland Breckwoldt

Frogs

- Download the Frog ID app here: www.frogid.net.au/
- www.qld.gov.au/environment/plants-animals/animals/discovering-wildlife/frogs/build-frog-pond
- www.sgaonline.org.au/frog-ponds/
- frogs.org.au/

Native Bees

- www.anba.org.au/ (Australian Native Bee Association)
- 'A Guide to Native Bees of Australia' by Terry Houston
- beeaware.org.au/pollination/native-bees/
- www.csiro.au/en/news/All/Articles/2018/August/can-you-beelieve-our-guide-to-native-bees
- www.aussiebee.com.au/



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