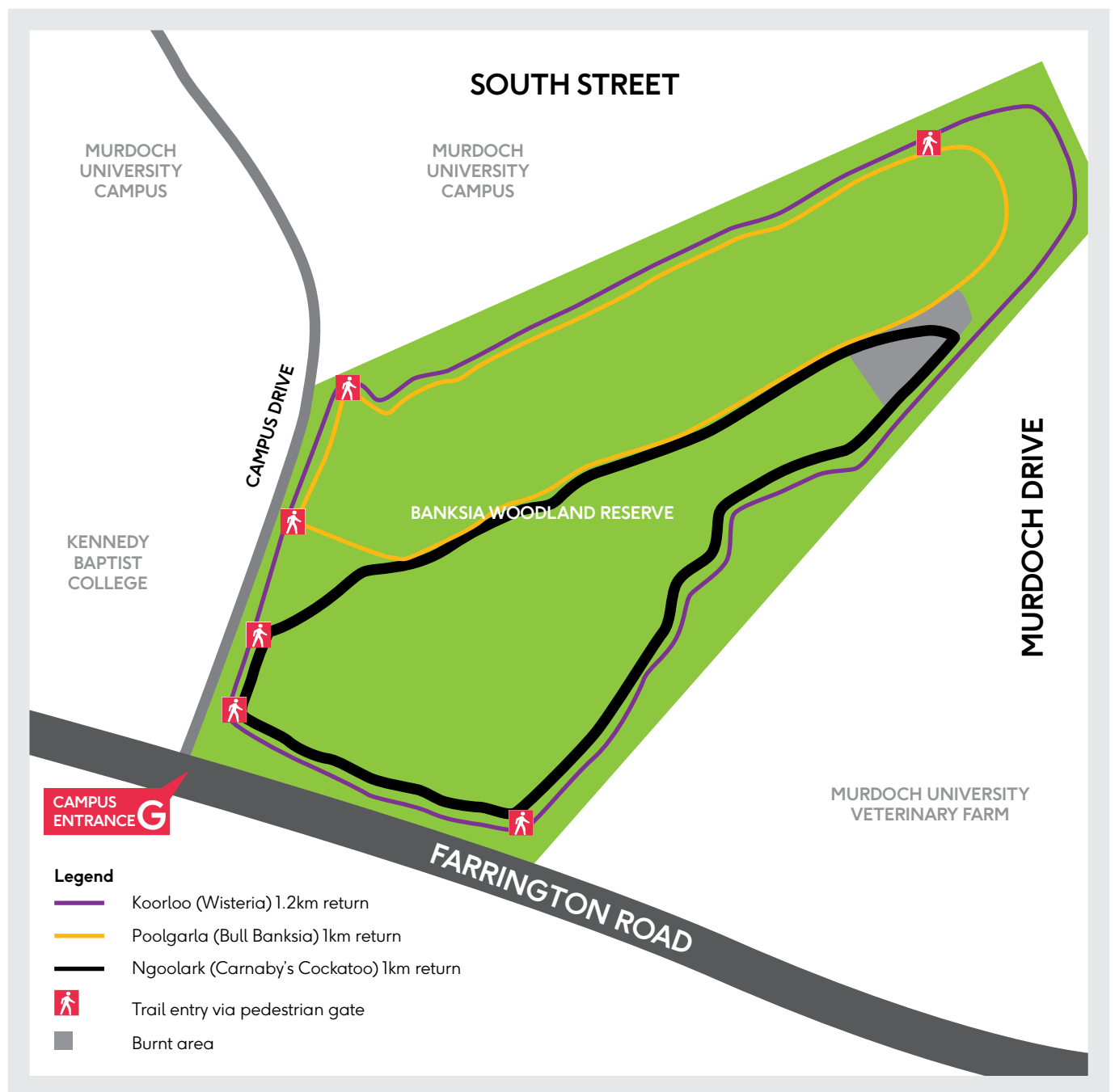


# A Guide to Ngoolark Walk Trail



## Welcome to the Ngoolark Walk Trail

Enjoy your walk on the Ngoolark (Carnaby's Cockatoo) Trail (1km). Use this guide to learn about the Banksia Woodlands' flora and fauna and how they interact with the woodland's special environment.

The trail can be enjoyed as a self-guided walk or by joining one of the occasional guided walks by the Murdoch branch of the Wildflower Society. Come experience and learn about the ecology of the Banksia Woodland, and see how many varieties of native plants, birds and other animals you can spot throughout the year.

This reserve is precious. Please help us protect this area from the spread of dieback and other plant diseases by staying on the paths and ensuring your footwear is clean before entering. Consider cleaning your shoes before leaving home with a brush or spraying with methylated spirits. Take only photographs; leave only footprints.



## History of the Banksia Woodland Reserve

The lands now used for Murdoch University, Beeliar Regional Park and the Banksia Woodland were first used by Nyoongar Whadjuk people to move between the freshwater lakes and wetlands. Here they hunted and gathered a huge diversity of plants and animals to be used for food, medicine, shelter, tools and utensils. More recently, much of this region was used for grazing horses, cattle and sheep, and was planted with pine trees (*Pinus pinaster*) for timber.

The Banksia Woodland is unique in the region because it was logged for native timber (jarrah and marri), and used for grazing, but it was never part of the pine plantations. Therefore, the reserve has retained much of its precious soil structure and native plant diversity. A remnant of the old post and wire fence still stands near the Poolgarla walk trail's northern side. The walk trails were constructed by Murdoch University in 1994 and the University conducts ongoing significant environmental restoration projects to protect the Woodland's biodiversity values.



Pine plantation in the early 1950s – South Street is the curved road at the top right hand corner. Chelodina Wetland, now at the centre of Murdoch University's Campus, is centred in the photo, the edge of North Lake can be seen on the top left hand corner.

## Location

The Banksia Woodland reserve is located at Murdoch University's Murdoch campus. Access any of the three walk trails through the Banksia Woodland reserve from Campus Drive, which comes off Farrington Road. An informal parking area is available off Campus Drive adjacent to the Somerville Baptist College, but please do not park in the College's grounds or on vegetation (see adjoining map).

## Acknowledgments

Murdoch University stands on Whadjuk Nyoongar land. The University manages the Banksia Woodland reserve in conjunction with the Murdoch Environmental Restoration Group (MERG) as part of the Beeliar Regional Park. These information leaflets, and the interpretive signage along the Koorlo walk trail, were developed with Environmental Community Grant funding from the Department of Environment and Conservation. Photos supplied by Keith Lightbody, Leah Knapp, Neil Goldsborough, Tony Kirkby and Jiri Lochman.

## Climate Watch

The Banksia Woodland is a Climate Watch trail. Record your observations about selected flora and animals on the Climate Watch app, and help scientists understand how climate change is impacting on biodiversity all over Australia.

Species of interest to Climate Watch are indicated on these brochures with a green and white dotted circle logo.





## TREES of the Banksia Woodland Reserve

Jarrahs grow up to 50m in height and provide shade and food for many insects and animals (e.g. Black Cockatoos), and nutrients to the soil. Its white flowers emerge from clusters of small cone-shaped bud caps during spring and early summer. The bark is fibrous and stringy; its thickness helps protect the tree from fire.

Marris are an important tree in the ecosystem, producing nesting habitat and food for many animals, including Black Cockatoos. In summer and autumn the marri flowers are rich in nectar, later forming large, urn-shaped 'honky nut' fruits full of seeds. Reaching up to 30m, Marri is identified by its rough grey bark and red gum that seeps from the trunk.

There are several species of Banksia within the reserve, including the Holly-leaved Banksia (*Banksia ilicifolia*), the Candle Banksia (*Banksia attenuata*) and the Firewood Banksia (*Banksia menziesii*). Dieback and drought have greatly reduced their numbers here and regionally. The seeds are an important food source for Carnaby's Black Cockatoos.



Jarrah (*Eucalyptus marginata*)



Marri (*Corymbia calophylla*)



Firewood Banksia (*Banksia menziesii*)

## FLOWERS of the Banksia Woodland Reserve

The Pink Fountain (*a Styliidium*) is common to the Banksia Woodland. Styliidiums are known as trigger plants as the pollen-laden stigma springs out when 'triggered' by an insect landing on the flower, depositing pollen on the insect's back. The insect then transfers pollen from flower to flower, assisting with pollination.

There are many varieties of Orchid throughout the woodland, including the Sun Orchid (*Thelymitra pauciflora*) which needs sunny areas to flower, and also Donkey Orchids (*Diuris corymbosa*) which have two lateral sepals that form the shape of donkey ears. Spider Orchids (*Caladenia sp.*) can also be found here.

Bright red and green Kangaroo Paw flowers used to be found throughout the reserve but are now hard to spot. Cats Paws are related to Kangaroo Paws. They have a combination of bright yellow, red and orange flowers from July to October on short stems, creating a bright display close to the ground.



Pink Fountain  
(*Styliidium brunonianum*)



Donkey Orchid (*Diuris corymbosa*)



Cats Paw (*Anigozanthos humilis*)

## FUNGI of the Banksia Woodland Reserve

As the name suggests, the impressive Ghost Fungus glows a ghostly green in the dark, which nocturnal animals can spot within the Banksia Woodland at night. Unlike most other fungi here, ghost fungi are parasitic and poisonous.

Mycorrhizal fungi, such as the Pink Amanita (a priority species possibly only found in the Murdoch area), commonly have a mutually supportive relationship with other plant species as they transfer nutrients, water and trace elements. Fungi appear year round, dependent on soil moisture levels.



Ghost Fungus  
(*Omphalotus nidiformis*)



Pink Amanita  
(*Amanita carneiphylla*)

## INSECTS of the Banksia Woodland Reserve

Insects play a crucial role in the woodland ecosystem, providing food for animals, pollination of flowers and nutrient recycling to the soil.

Jewel Beetles are common in the Banksia Woodland. They feed on flower nectar during the day and are easily spotted due to their metallic sheen and bright colours. They have a long oval body and very large eyes. The Graceful Sun Moth (*Synemon gratiosa*), a small day-flying moth, also used to be common in this region but is now endangered due to over-clearing of its habitat.



Jewel Beetle

## BIRDS of the Banksia Woodland Reserve

Murdoch University's campus is home to two species of endangered cockatoos – the Carnaby's Black Cockatoo (*Calyptorhynchus latirostris*) and Forest Red-tailed Black Cockatoo (*Calyptorhynchus banksii naso*). The Banksia Woodland reserve is an important roosting, mating and feeding area for both species, but the lack of big old trees limits their nesting sites. Look and listen for them in the treetops, especially on the stags (standing dead trees). You may also see both species feeding on the Jarrah and Marri flowers and nuts and the Carnaby's feeding on the Banksia cones.

Look and listen for the other residents of the Banksia Woodland such as New Holland Honeyeaters. These active and chatty little yellow, white and black birds flit in and out of flowering trees and plants searching for nectar.

During winter and spring, look for the bright blue flash of the male Fairy Wren in his breeding plumage. His harem of females is rather drab, brown in comparison, but never far from him.

The Red-capped Parrot is also known as the King Parrot. Easily identified by their crimson cap, yellow-green cheeks and purplish chest, listen for their distinctive 'churrink' call. They are endemic to Western Australia's Marri and Jarrah forests, but not long ago were regarded as an agricultural pest. They are now a protected species under the Wildlife Conservation Act 1950.

## BATS of the Banksia Woodland Reserve

Yes there are bats found within the woodland! Listen for the call of the White Striped Mastiff Bat, which is an almost metallic 'tik-tik-tik' sound. It is one of eight bat species found in south-western Australia and the only bat in the Perth region whose call is audible to the human ear. You might spot them on a late evening walk, as they forage for insects above the tree canopies and roof tops, and even around carpark floodlights.

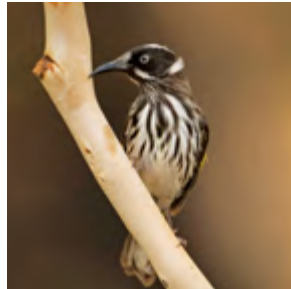
Can you see the bat roosting box that has been installed in the Banksia Woodland reserve? Many bats rely on hollows, which are becoming rarer in suburbia as older trees are removed, so these boxes provide an alternative for shelter, nesting and protection, particularly during daylight hours.



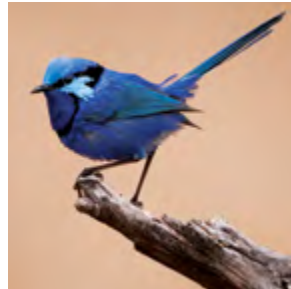
Carnaby's Black Cockatoo  
(*Calyptorhynchus latirostris*)



Forest Red-tailed Black Cockatoo  
(*Calyptorhynchus banksii naso*)



New Holland Honeyeater  
(*Phylidonyris novaehollandiae*)



Fairy Wren (*Malurus splendens*)



Red-capped Parrot  
(*Purpureicephalus spurius*)



Bat box



White Striped Mastiff Bat  
(*Nyctinomus australis*)

## REPTILES of the Banksia Woodland Reserve

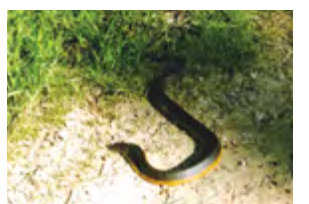
Bobtails, also known as shinglebacks, are from a family of blue-tongued lizards. They are unique, with a triangular shaped head, thick body and round-ended tail, growing up to 30cm in length. They look sturdy but are quite fragile, so please keep your dogs on a lead.

Like bobtails, tiger snakes and dugites like to laze on sun-warmed pathways. They are carnivores, eating various lizards, birds, mammals and even frogs. Tiger snakes are usually black with yellow bands; they give birth to live young (viviparous). Dugites vary in colour from grey to brown on the top, sometimes with black scales, with an olive or yellowish belly. Dugites lay eggs.

If you see a snake on the path, don't panic – stop, turn around slowly and walk the other way. All native snakes are protected under the Wildlife Conservation Act 1950.



Bobtail lizard (*Tiliqua rugosa*)



Tiger Snake (*Notechis scutatus*)

## AMPHIBIANS of the Banksia Woodland Reserve

Motorbike frogs, also known as Western Green Tree Frogs, can be heard around the bushland in spring through to late summer. Listen for the sound of a motorbike changing gears (the male's mating call) and look for a dark brown to greenish-gold frog about 7cm long.



Motorbike frog (*Litoria moorei*)