

Being a Good Neighbour to our Yass Gorge

Authors: Geoff Robertson & Ryl Parker.

With contributions and assistance from: Ken Bell, Tyrone Bell, Aaron Chatfield, George Dashwood, Dennis Dyer, Bruno Ferronato, Jill McGovern, Michael Mulvaney, Michaela Newling, Margaret Ning, Kym Nixon, Damen Oliver, Maya Potapowicz, Lesley Peden, Kim Pullen, Rainer Rehwinkel, Tony Robinson, Geoffrey Simpson, Ross Webster and Rebecca Widdows.

Images in booklet are attributed to: Ryl Parker - Cover and back page and drawing on page 50; Rebecca Widdows - Map of Yass Gorge on pages 8 & 9; Yass Valley Council - Images on page 5 & Signs at/below Yass Gorge on pages 1, 10-11, 15, 20-21 & 45; and Icons and images from Canberra Nature Map on pages 31 & 41.

Photographs: Supplied by organisations: CNM - Canberra Nature Map, NMA - National Museum of Australia, YGF - Friends of Yass Gorge Facebook, WW -Canberra Water Watch, YT - Yass Tribune, and YVC - Yass Valley Council. Supplied by individuals: RP (Ryl Parker), GR (Geoff Robertson), ReW (Rebecca Widdows) & RoW (Ross Webster). Supplied by CNM by: JB (John Bundock), TC (Tony Clark), AC (Aaron Clausen), MJ (Mark Jekobson), RMcD (Roy McDowall), AM (Alison Milton), DB (Deb Ralph), KT (Ken Thomas) and JW (John Wombey).

Published by: K2C Incorporated (on behalf of the Kosciuszko to Coast partnership), 229 Mt Livingstone Rd, Michelago NSW 2620, Copyright 2018 ©.

Funding: The booklet is published as part of the project *Yass Gorge - being a good neighbour to the bush* which has been assisted by the New South Wales Government through its Environmental Trust.

Views expressed in this booklet: are those of the authors and don't necessarily represent the organisations or funding bodies involved.

why a booklet on the gorge?

Yass Gorge, stretching from Flat Rock Crossing to the Yass Dam wall, is a wonderful natural treasure in the middle of Yass and an ideal place to visit and learn about the geology, the Traditional Ngunnawal owners, rare native plants and animals and much more. Work is being undertaken to restore the Gorge to its original vegetation and habitat values - this is a work in progress.

This booklet has been prepared to encourage local residents and visitors to use the Gorge as a recreational area and possibly participate in its conservation and restoration. It is the final part of the *Yass Gorge - being a good neighbour to the bush* project organised by Kosciuszko to Coast with the assistance of Friends of Yass Gorge, Yass Valley Council, local schools and many more conservation and community groups mentioned throughout the booklet. This project has been assisted by the New South Wales Government through its Environmental Trust.

This booklet has been written as an easy-to-read resource so that all Yass residents, young and old, as well as visitors may appreciate the natural values of the Gorge and surrounding country and become better acquainted with the Traditional owners.

context

welcome to ngunnawal country	1
experiencing the gorge	2
a long history	4
orientation, walking, views & signs	6
(map of gorge, legend & signs - pages 8-11)	
yass - a geological hotspot	12
yass river	14
natural temperate grasslands	16
river red-gum & riparian vegetation	18
gorge in profile	20
birds of the gorge	22
mammals and reptiles	24
creatures of the water	26
indigenous plants of the gorge	28
hidden terrestrial life	30
bush tucker	32
threatened communities & species	34
weeds	36
feral animals	38
citizen science	40
traditional owners of the gorge	42
ngunnawal people & yass gorge	44
connors-dawson walking trail	46
adult community and the gorge	48
younger folk and the gorge	50
local heroes	52
partnership with government	54
a plan for the gorge	56
tips on being a friend of yass gorge	58
some further reading & resources	60
acknowledgements	62
addendum: species lists & Ngunnawal plant use	64

The local community, Aboriginal and non-Aboriginal, is working towards regenerating the Yass Gorge, to ensure the cultural values of the Gorge can be appreciated by all.

Thanks to the Green Army trainers, Buranya Aboriginal Corporation and Onercoal Local Aboriginal Lands Council for their actistance with this subormation. Aboriginal people have lived in Australia for over 60,000 years. During this time a rich cultural history has developed and continues to grow within our communities. Aboriginal people have a strong connection and belief system which is intertwined with Country and its ability to provide spiritual guidance. The Yass Valley has traditionally been inhabited by the Ngunnawal people. The township of Yass was named after Yarrh or Yharr, the word for running water in the Ngunnawal language.

Rivers have always been the life blood of Aboriginal people, providing food and resources for all. In the past the Yass River was full of Cod, Yellow Belly and Yabbies - all vital food sources for the Aboriginal community. The Yass River was also used recreationally, with many of the local community learning to swim and fish in a deep natural pool between Flat Rock Crossing and the Yass Dam wall.

Welcome to Ngunnawal Country

The *Welcome to Ngunnawal Country* sign at Yass Gorge reminds us that we are standing on the lands of the Ngunnawal people who welcome us and who with other Aboriginal and non-Aboriginal people are working towards regenerating the Yass Gorge to ensure that cultural values are appreciated by all. The artwork is by Ngunnawal Artist, Robert Bulger.

experiencing the gorge

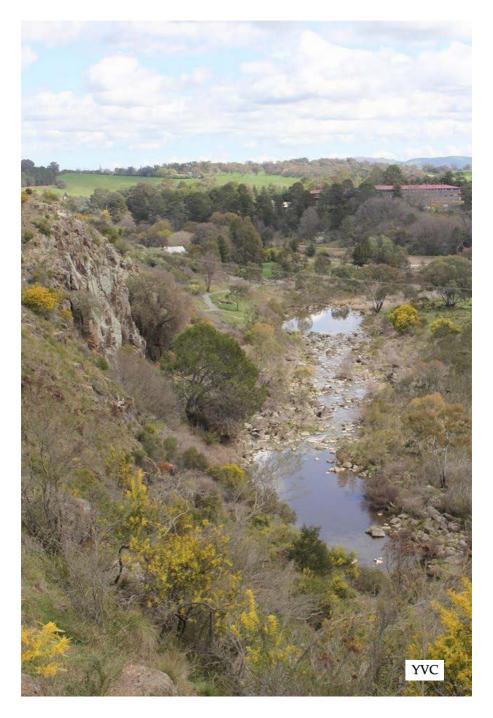
Whether you are a visitor to Yass, or a local resident, Yass Gorge is a place like no other, where you may experience its many sounds, fragrances, tastes and textures, observe its striking geological features and natural beauty, hear the ripples of water and swim and fish in its large ponds, stroll through the native grasslands with their rich flower displays in spring, shelter under magnificent river red-gums in summer, catch a glimpse of many rare native mammals, birds, reptiles and frogs, and discover the numerous spiders, insects and many other invertebrates.

The Gorge may be observed or entered from many entry points. The paved Munnagai Yerribi Walk allows easy access for those less mobile, while for the more moderately fit there is the Connors-Dawson Walking Trail. Great views and signage makes visiting rewarding, while barbecue facilities offer opportunities to extend your stay.

Visitors may observe the restoration work by Yass Valley Council, local community groups and others. They may come and observe organised groups watching and recording birds, identifying plants and/or monitoring water quality. They might also see school excursions and scouting visits participating in restoration, citizen science or art projects.

If you have an opportunity to visit the Gorge with the Traditional Ngunnawal owners, grab it and learn about their culture and traditional management of the Gorge.

Neighbours are encouraged to protect the future of the Gorge by avoiding unsuitable plants in their gardens. Dogs on-leash are welcome provided any droppings are removed.



a long history

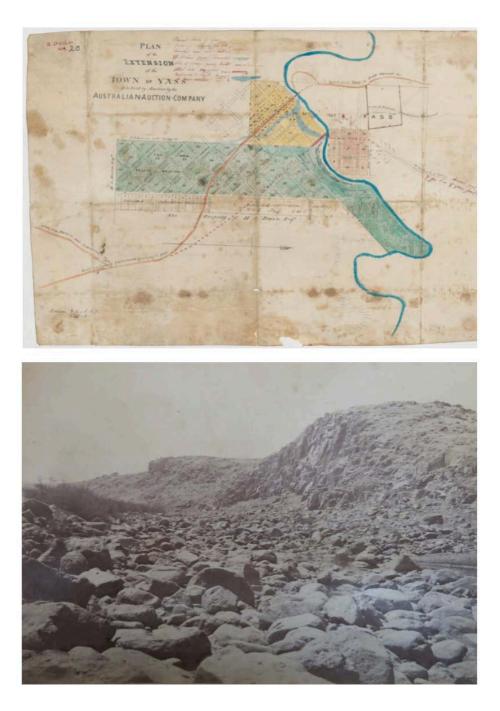
Yass, located on the Yass River within the Yass Valley, is 270kms southwest of Sydney and 60kms north of Canberra. As its 6500 residents will tell you, it is a delightful town to visit.

Early European explorers Hamilton Hume and William Hovel passed through the Yass Plains in 1824 during their expedition from Appin near Sydney to Port Phillip Bay. In the late 1820s European settlers brought flocks of sheep to the Yass Valley establishing the wool industry there. By 1835, a small village developed on the south side of the river and the town of Yass was gazetted in 1837. The 1841 census recorded 173 people. The first major flood was recorded in 1852.

We are beginning to learn how local Aboriginal people saw this incursion. Ngunnawal sources explain that early European settlers called the town and area Yass, a corruption of "Yhar", meaning running water and that Ngunnawal people of Yass were referred to as "Wallabaloa" meaning beside flowing water. The spelling of Ngunnawal with a single 'n' is also widely used and reflects the traditional pronunciation of 'noon-a-wal'.

European settlers, at best, treated local Aboriginal people by ignoring and excluding them from white society and forcing them onto reserves. They were not counted in the 1841 and many subsequent censuses. Nevertheless, Aboriginal people camped at the Black Camp in Yass Gorge, likely a favoured place, for tens of thousands of years.

Top: Plan of the Extension of the Town of Yass, 1840 (NSW State Archives). Below: Yass Gorge 1912 - Yass historical archives.



orientation, walking, views & signs

Yass Gorge is best accessed from Flat Rock crossing, the weir that joins Ford and Warrambalulah Streets. Informal parking is available nearby on the south side of the Yass River. The aerial map and legend on pages 8 & 9 show the key features of the Gorge.

The Gorge area, within the red border, is managed by Yass Valley Council and consists of Council-owned land, Aboriginal Land and land with title that is still being resolved.

The **Munnagai Yerribi Walk** (meaning "come let's walk") is a sealed path, shown in yellow, suitable for wheelchairs. It begins at Flat Rock Crossing and ends at Hovell Street, although the last section is gravel. It is also accessible from Grampion Street. Spectacular Gorge views may be seen along the Walk and from the eastern ends of Grampion and Hovell Streets.

Off the Walk, the **magnificent River Red-gum tree and shady picnic**/ **barbecue area** may be visited via the short path and several steps. Below there is a lovely riverside spot, a great place to observe birds.

The **Connors-Dawson Walking Trail**, south side of the river, is a spectacular walk, beginning as an easy gravel walk but becoming a narrower and more difficult track. It passes by spectacular cliffs, a rock overhang and many magnificent large rocky ponds along the river. The track divides, the lower portion winding between the grassland and the riparian vegetation and the upper leg leading through the grassland to the Meehan and Therry Streets turning circle. The story of the Trail is found on pages 46 and 47.

For spectacular Gorge views on the south side, visit the Meehan and Therry Streets turning circle and the corner of Rossi and Demestre Streets. These are good places to view the grasslands.



A winter visit, approaching the magnificent River Red-gum & picnic area and views from the picnic area.





Legend

- Concrete path
- Gravel path
- Trail path
- Gorge boundary

Items of interest

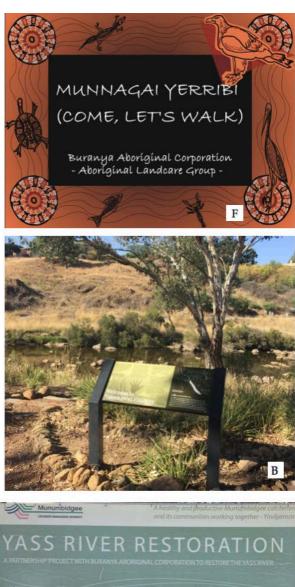
- Welcome to Yass Gorge sign and beginning of Connors Dawson Walking Trail
- 2 Birds of Yass Gorge sign, beginning of Munnagai Yerribi Walking Trail
- 3 Retention Dam
- 4 Access track to Significant Tree and picnic area
- 5 Picnic area, Ngunnawal sign and steps down to river
- 6 BBQ area
- 7 Drainage line, walking access to Grampian St
- 8 NTG sign
- 9 Bench seat
- 10 Concrete trail ends
- 11 Locked gate into dam wall access
- 12 Bee hive
- 13 Bench seat
- 14 Steps down to historic swimming hole
- 15 Trail divides head up through native grassland to Meehan St or proceed
- 16 Trail ends at drainage line
- 17. Grasslands trail and sign





Signs below Yass Gorge area

G. YG restoration.H. Yass EuropeanSettlement.I. What lives in theRiver. Also see page15.



Andream and productive Maintening et al.
Andream and productive Maintening et al.
Andream and productive Maintening et al.
Andream and as communities working together - Yindyaman
Andream and as communities working
Andream and as communities working together - Yindyaman
Andream and as communities working
Andream and a

yass - a geological hotspot

According to local geologist Dennis Dyer, the Yass Gorge and lower Yass River geology has been of great interest to geologists and natural scientists, as a "geological hotspot".

Some 450 million years ago, the east coast of Australia was located in far western NSW and the Yass area lay beneath a deep ocean.

About 440 million years ago tectonic activity caused the coast to move eastward so that the Yass area was located below a shallow tropical sea. During that time, there were periods of violent volcanic activity, interspersed with quieter periods when silt and sand were deposited to form sandstone layers. Coral reefs formed in the shallow waters. These became siltstone and sandstone beds, interspersed with some fossiliferous (containing many fossils) limestone.

Volcanic activity resulted in the formation of volcanic rock such as dacite, rhyolite and tuff. Subsequent tectonic activity resulted in the beds being folded and faulted which is now observed as exposed dipping beds.

These different formations are observed in and around Yass. Spectacular fossiliferous limestone cliffs may be found at Hatton's Corner on the Yass River on the western end of Rossi street. Layers of sandstone may be observed at Bicentennial Weir in Riverside Park and around the base of the bridge in Laidlaw Road. Exposed volcanic rock may be seen throughout the Gorge. Right: Exposed volcanic rock at the beginning of Connors-Dawson Walking Trail.

Middle: O'Briens Creek Sandstone showing exposure and dipping, located at Bicentennial Weir, Riverbank Park, Yass.

Below: Limestone formation on Yass River at Hatton's Corner at the western end of Rossi Street.







yass river

The Yass River rises in rugged country south west of Bungendore and generally flows north north-west then south-west and is joined by seven minor tributaries. It eventually joins the Murrumbidgee River. Along its route, it passes through some spectacular scenery, including the Yass Gorge, where it often forms large ponds.

The sign *What lives in the Yass River,* shown here, is found on both sides of the Yass River downstream from Flat Rock crossing. It states

"the Yass River is home to fish, frogs, turtles, yabbies, waterdragon, macro invertebrates (insects, crustaceans, mites, molluscs and worms) and platypus.

There are around 13 frog species in the Yass River, most of which are relatively common. Frogs provide a valuable service by reducing mosquitoes and other pest insects. Tadpoles also improve water quality by consuming large quantities of nutrients that would otherwise contribute to algal growth. The number and diversity of water fauna is a good indicator of water quality."

Rivers have always been the life blood of Aboriginal people, providing food and resources for all. In the past the Yass River was full of Cod, Yellow Belly and Yabbies - all vital foods for the Aboriginal people. The River was also used recreationally, with many of the local community learning to swim and fish in the deep natural pool between Flat Rock Crossing and the Yass Dam wall.



Above: Yass River in flood at Yass Gorge. Below: The sign below Flat Rock describing river fauna.

The Yass River is home to fish, frogs, Two frogs that are regularly beard turtles, yabbies, water dragons, macro-invertebrates (insects, crustaceans, mites, molluscs and worms) and platypus.

Yass River, most of which are relatively mating call is "kink uk uk uk th"- a bit

Frogs provide a valuable service by reducing mosquitoes and other pest insects. Tadpoles also improve water quality by consuming large quantities of nutrients that would otherwise contribute to algal growth. The mumber and diversity of frogs can be

along the Yass River in the warmer months are the Spotted Grass Frog and the Pobblebonk.

The Spotted Grass Prog is moderately There are around 13 frog species in the large in size (up to about 5 cm). Its

> like a toy machine gun. The Eastern Banjo Frog or Pobblebook is a large frog (up to 8.5 cm). Its mating call is a distinctive loud 'bonk' when the frog is in the water; or a

lood 'toe' if calling from land.

Frog calls can be heard during their breeding season. It is generally the males that do most of the calling, as a way of attracting females. Males also call to advertise their territory to other competing males.

If you go fishing at Riverbank Park, you are likely to catch Carp (an exotis pent) or a native Golden Perch (ske Tellow Belly). If you are lucky you may also catch a Murray Cod or a Silver Perch. Other small native feh in this section of the Yess River include elidus) and the Western carp guatgeon (Hypschetra klummyrri)

calls as you walk along the Rive



What lives in the Yass River

natural temperate grasslands

The rich grassy plains that greeted Hume and Hovel lured the pastoralists that followed them. The grasslands, for millennia cared for by Aboriginals, were alive with wildlife: kangaroos and bettongs, brolgas, bustards and emus, and many smaller birds, lizards, snakes and frogs. Wildflowers sparkled in the sun: sheets of colour blazed from daisies, lilies, bluebells, and many other species. There were orchids of delicate beauty, peas in sunset colours or the deepest purple.

It didn't take long, however, before that diversity was depleted. The large birds and many mammals disappeared under the hunters' guns. Many wildflowers declined, because the pioneering pastoralists didn't understand our variable climate. The plants weren't adapted to stock grazing patterns. Overstocking, rabbit plagues and droughts followed. Soils were compacted by stock. Areas were transformed for cropping and exotic pastures. Weeds were introduced. Towns, roads, railroads and industrial developments occupied areas of the grassy plains.

In the late 1980s, scientists realised that the grasslands of south-eastern Australia were threatened. In 2016, one community, *Natural Temperate Grasslands of the South Eastern Highlands*, was declared a critically endangered ecological community. The grassland at Yass Gorge is one of the last remnants of the extensive Yass Plains. The specific grassland type at Yass Gorge, formally described in 2013, is particularly rare.

Yass Gorge's grassland retains many of the plants that were once common, but are now only found in special sites. Here, you'll still see Rock Lilies, Creamy Candles and Smooth Flax-lilies and other rarities, such as Tick Indigo and Yellow Burr-daisy. The last two are amongst several species that help define this vegetation type from more widespread grassland communities. Grassland dominated by Kangaroo Grass.



Grassland dominated by Snow Grass.

river red-gum & riparian vegetation

The River Red-gum, made famous by the artists Albert Namatjira and Hans Heysen, is the most widely distributed of all eucalypts. Found Australia-wide in riparian (riverside) situations, and alongside temporary and permanent wetlands, River Red-gums sometimes form extensive forests on flats adjacent to major rivers.

The Yass region has the most easterly population of this species at this latitude. River Red-gums have suffered from clearing for agriculture. Before rail transport, its wood fuelled the riverboats that transported wool from the western stations to markets on the coast. The River Redgum was the core of a major forestry industry. Now substantial areas of River Red-gum Forest are protected in national parks.

At Yass Gorge the riverbanks and adjacent terraces host a number of River Red-gums. The tree has smooth, mottled grey-and-white upperbark, while a "stocking" of rough, dark bark surrounds the trunk's base. The leaves are long, pointed and pendant. Old River Red-gums have a graceful weeping habit, with outer branches often arching to the ground. The trees live for centuries. Old trees develop deep hollows and spouts, which are important for hollow-nesting fauna like bats, parrots, owls, kookaburras and possums.

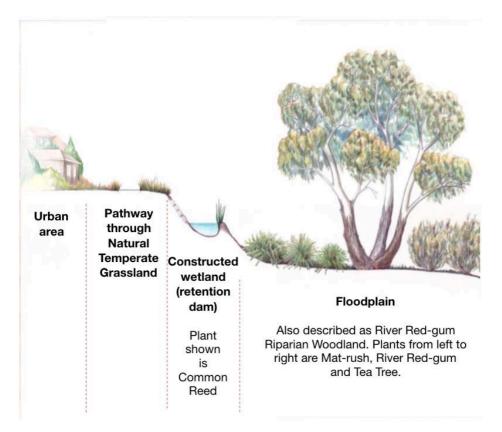
Other plants growing along the river include thickets of Burgan, wattles, the occasional River Bottlebrush, and many terrestrial, semiaquatic and aquatic grasses, sedges, rushes and herbs. This plant community provides niches for many animals, including invertebrates, reptiles, waterbirds, smaller birds, and mammals, including the Eastern Water-rat and Platypus. Frogs and aquatic invertebrates depend on the wetland fringes and submerged vegetation. Fish find essential habitat amongst the fringing vegetation and submerged tree branches. Lunch following a working bee organised by Friends of Yass Gorge at the barbecue area under a magnificent River Red.



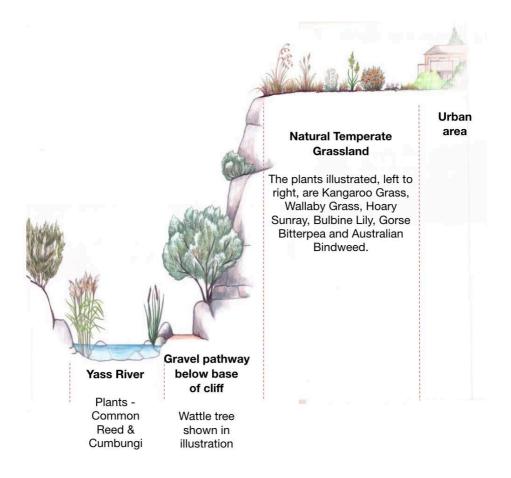


A growing River Red and associated riparian vegetation around one of the many Gorge ponds.

gorge in profile



This cross section image of the Gorge, found at the beginning of the Connors-Dawson Walking Trail, shows the urban areas on both sides of the Gorge, while next in are areas of Natural Temperate Grasslands (described on page 16). The pathways are the sealed Munnagai Yerribi Walk (north side) and the gravel Connors-Dawson Walking Trail beneath the magnificent cliff face (south side). The constructed wetland (retention dam) is a leaky weir to intercept contaminated runoff from the local High School Agricultural Farm. Below that, the Yass River opens to a floodplain. Finally, the Yass River bisects the Gorge.



Drawing was composed by Karen Carter to show the succession from one habitat zone to the next and to illustrate the different plant communities. Each zone provides a different habitat for different groups of animals.

birds of the gorge

The Yass Gorge is a great place to observe many species of birds. The bird list on pages 66 to 68 contains 83 native and 7 non-native bird species recorded at the Gorge and another 11 birds (likely to make an appearance at the Gorge) within a ten kilometre radius.

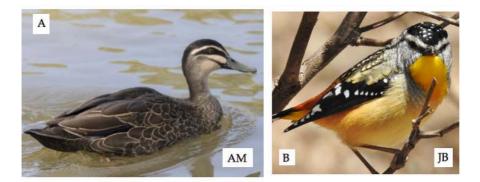
The list was largely compiled from two bird surveys, organised by Kosciuszko to Coast, Canberra Ornithologists Group and Friends of Yass Gorge in 2016 and 2017, with other bird enthusiasts contributing. The list is likely understated as the bird surveys were conducted on autumn days. Hence birds active at night could not be easily observed and spring-summer migrants were absent. Hence there are opportunities for bird watchers to add to the list.

Not surprisingly, being along a river, fifteen waterbird species, including many native duck, have been recorded. The Gorge is also a favourite spot for raptors - some eleven species have been recorded. Eight parrot, eight honeyeater and four cuckoo species have been recorded as have another 13 large and medium sized bird species and 24 smaller bird species.

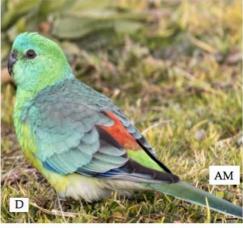
Each bird species is fascinating to observe and has particular behaviour, preferred food, habitat and ways of concealing itself.

Learning about birds is easy and fun. If you haven't already, buy or borrow a quality pair of binoculars and carry *A Field Guide to Birds of the ACT* (see page 60). You will become an expert in no time. You can also contribute to citizen science (see page 40).

A - Pacific Black Duck, B - Spotted Pardolate, C - Nankeen Kestrel, D - Redrumped Parrot, E - Superb Fairy-wren & F - Sacred King Fisher.











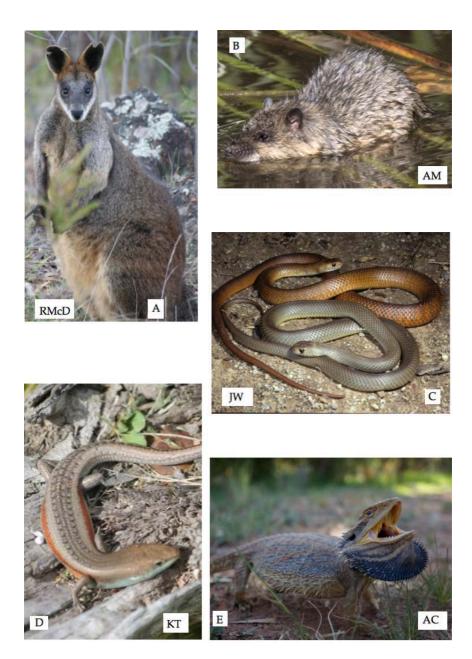
mammals and reptiles

No formal mammal, reptile or frog surveys have been conducted in the Gorge. Nevertheless, Platypus, White-tailed Water Rat and three species of macropod (Eastern Grey Kangaroo, Swamp Wallaby and Wallaroo) may be observed at the Gorge, while within a ten kilometre radius, Wombat, Ringtail and Brushtail Possums, Echidna, and two bat species have been recorded. There is a likelihood that Antechinus and other smaller native mammals are present.

Recently baby Macquarie River (short-necked) Turtles were discovered in Yass Gorge, and Long-necked Turtles have been recorded within a 10km radius.

Eastern Brown and Red-bellied Black Snakes are often sighted in the Gorge. Both are beautiful animals for anyone who has any appreciation of Australian reptiles. Both belong to the family of Australian elapids or short fang snakes, and both are highly venomous. However, deaths in Australia from snake bite are two or fewer per year. Black Snakes are not known to be aggressive, and there have been no deaths recorded from Black Snake bites. Keeping to pathways where you have a good view of what is on the ground, and wearing boots, long loose trousers, and even gaiters, are recommended. If you come too close to a snake, stop still, then slowly back away. Within 10km of the Gorge, small and rarely seen elapids, Dwyer's Snake and Bandy-bandy, have been recorded as well as the non-elapid, Blackish Blind Snake.

Within the Gorge, two species of dragon (Eastern Water and Eastern Bearded), several large skinks (Eastern Blue-tongue, Shingleback and Cunningham) and two delightfully coloured smaller skinks (Southern Rainbow and Copper-tail) have been observed. Within 15km Marble Gecko, two Delma species (Striped and Olive Legless Lizards) and Morethia Skink have been recorded.



A - Swamp Wallaby, B - Australian Swamp Rat, C - young Brown Snakes, D - Rainbow Skink, & E - Eastern Bearded Dragon.

creatures of the water

The Yass River teems with fauna. While two large exotic (non-native) fish, Carp and Redfin Perch, dominate the river, frequent releases of native fish fingerlings have allowed adult Murray Cod and Golden Perch to re-establish in the Gorge, while Silver Perch, Mountain Galaxia and Western Carp Gudegon are found nearby in the river. Trout (or Blue) Cod and Macquarie Perch are within a 10km radius.

Several fishing clubs use the Gorge, including the Yass Soldiers Fishing Club, the Yass branch of the The Monaro Acclimatisation Society, and the Transgrid Freshwater Fishing Club. Recreational fishers are encouraged, and in the case of threatened species obliged, to return native fish to the water, but retain, humanely kill and utilise any captured exotic fish. All clubs subscribe to the conservation of native fish and promote a catch and release policy for native fish.

Three frog species are known to exist in the Gorge, Common Froglet, Banjo Frog (Pobblebonk), and Spotted Grass Frog, and a further five species have been recorded within 10km of the Gorge.

The larger and more noticeable aquatic invertebrates include Yabby, Mosquito Wriggler, Freshwater Shrimp, Caddisfly larva, and Gastropod (snail). WaterWatch Canberra conducts a monthly survey of two sites, one in the Gorge and the other 1km downstream, at the confluence of Chinaman's Creek and Yass River, to monitor water quality and the health of water biota. Survey findings highlight any issues with water quality which may trigger appropriate corrective actions.

Downstream WaterWatch water bug (macroinvertebrate) surveys have recorded sensitive species such as mayflies, caddisflies and water mites, and more tolerant species such as aquatic beetles, glass shrimps, mosquito larvae, damselfly larvae, aquatic worms and water boatman. Local fisher person, Dominic O'Malley, holding a Murray Cod. The fish below is a Golden Perch. Both were caught within the Yass town limits.





WaterWatch volunteer Ben Serafin performing water quality testing at Yass Gorge.



indigenous plants of yass gorge

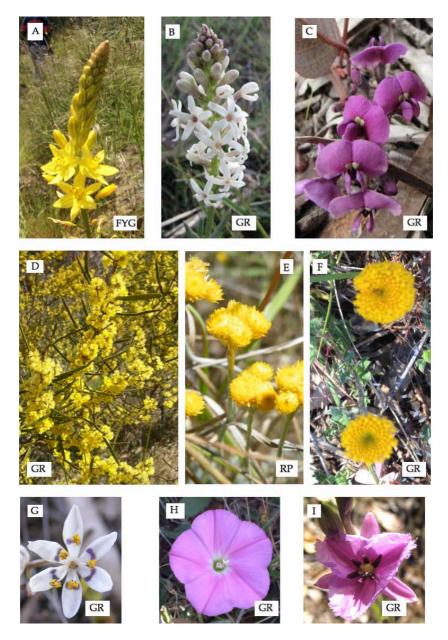
A list of plants at the Gorge, based on Rainer Rehwinkel's surveys from 1998 to 2015, is included on pages 64-6. It identifies 111 indigenous plant species, that is plants that have always been in the Yass region. Non-indigenous plants, generally regarded as weeds, include nonnative and some native plants.

For indigenous plants, there are four large tree species, 24 shrubs and smaller trees, 25 grass, sedges and rushes, 10 lilies and related species, 13 daisies, seven peas, 23 other flowering plants, and five ferns. Amongst the trees, River Red-gum and River Oak are dominant species in the riparian vegetation. The small number of Yellow Box trees on the fringe of the Gorge is evidence that box gum woodlands, a threatened ecological community, may once have fringed the Gorge.

Each grass species has a story to tell. Kangaroo Grass is dominant in large areas of the grassland, Snow Grass is dominant in smaller patches along the southern ridge, while River Tussock dominates the fringe of the riparian zone. Other grasses dominate smaller areas and/or are sprinkled throughout the Gorge. Sedges and rushes appear when water is close by.

Many shrubs grow in patches which is a good indicator that the Gorge retains a patchy mosaic of vegetation, ideal for many birds and other fauna. Lilies, daisies and other flowering plants are found sprinkled throughout the Gorge - many are grassland specialists.

Getting to know each plant, how to identify it, its life cycle, its flowering and reproduction strategy, its preferred habitat, and its food, medicinal and shelter values for humans and animals is endlessly fascinating. Your learning about plants may contribute to their ultimate ability to thrive. There are many books on plants. Two highly recommend are *Grassland Flora* and *Woodland Flora* (see pages 60-61).



All these flowers may be observed in spring: A - Rock Lily, B - Creamy Candles, C - False Sarsaparilla, D - a wattle, E - Common Everlasting, F -Scaly Button, G - Early Nancy, H - Australian Bindweed, & I - Chocolate Lily.

hidden terrestrial life

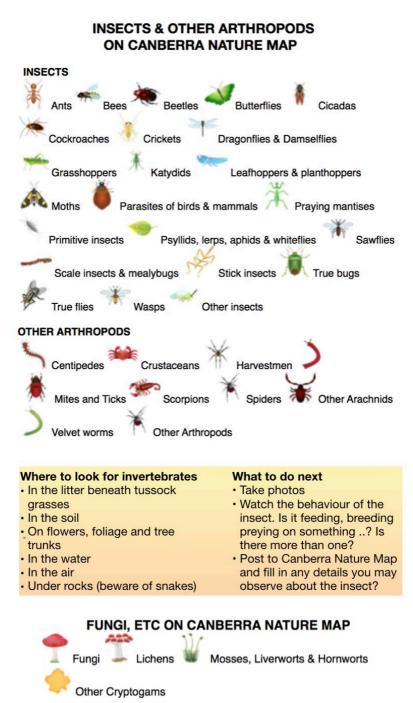
While the plants, birds and other larger creatures of the Gorge are readily observable, most life at the Gorge remains hidden and largely unknown. These life forms include insects and other invertebrates and fungi, lichen, liverworts etc.

Terrestrial invertebrates include insects, arachnids (such as spiders, scorpions and mites), snails and earthworms. Water (aquatic) and terrestrial (land) invertebrates between them make up 85% of all known animal species worldwide. Do little creatures horrify or fascinate you? Many are beautiful, all are fascinating, and few are harmful.

The categories of insects and other arthropods, but not water invertebrates, shown on Canberra Nature Map are shown on page 31. Within any one group, beetles for example, there are many, diverse and fascinating sub-orders and families. An excellent field guide is *Insects of south-eastern Australia* (see pages 60-61).

Fungi are a kingdom separate from plants and perform many essential and diverse roles in nature, including recycling of dead material to the soil in a form in which it can be reused, forming mycorrhizal associations with plants essential for plant growth, providing food and medicines, releasing bio-controls, and performing other important roles. Lichen is yet another fabulous group, a mix of fungi and cyanobacteria. Canberra Nature Map captures this group - the classification is shown on page 31.

At a working bee in the Gorge, Kim Pullen, an invertebrate specialist, joined us and opened our eyes to the wonderful world of invertebrates. He demonstrated where to look (see *Where to look for invertebrates* and *What to do next* on page 31) and how to record sightings on Canberra Nature Map (for more on Canberra Nature Map see page 40).



bush tucker

For 60,000 years, Aboriginal people lived off the resources described in the previous pages. They used plants, animals and other materials to make food, tools and implements, medicine, shelter, fish poison, dye, paint and much more. Plants and animals also featured in spiritual beliefs and ceremony.

In the last twenty years many books on Aboriginal plant use, and more particularly use of plants as bush tucker, have appeared. One very informative and highly recommended book is *Ngunnawal Plant Use* (see pages 60-61). Apart from illustrating the use of many plants, it describes the local Ngunnawal people, their culture and traditional land management practices.

One plant common in the Gorge is Spiny-headed Mat-rush (see D) which has many uses, including chewing and eating the white base of the leaves, grinding up the seeds to make damper, making twine out of the fibres in the leaves to weave rope for nets, baskets and fish traps, and using the roots for medicinal purposes. Fibres were also used to make strings for arm bands and bracelets. The base of the plant provides a home for smaller creatures which are also nutritious tucker.

Aaron Chatfield (see A), whose family are Gamillaroi (central west NSW) has promoted a knowledge of Ngunnawal plant use in many Gorge and Yass school activities. In a recent talk at Yass Library he showed a tray of young plants of Chocolate Lily that may be grown in the home garden (see C). Chocolate Lily is one of many plants with tubers that may be lightly roasted, and are highly nutritious and flavoursome (E). These and plants like Yam Daisy were widely cultivated by Aboriginal people and were a staple food source. He also illustrated how plants may be used for decoration, making tools for hunting, carry bags, and so on (see B).



threatened communities & species

The Commonwealth and each State and Territory jurisdiction has threatened species legislation. Relevant legislation for Yass Gorge is the Commonwealth Government's *Environment Protection and Biodiversity Conservation Act* 1999 (EPBC Act) and the New South Wales' *Biodiversity Conservation Act* 2016 (BC NSW) and *Fisheries Management Act* 1994 (Fish NSW).

Under the EPBC Act, *Natural Temperate Grassland of the South Eastern Highlands* have been declared a critically endangered community. Hence the grasslands at Yass Gorge have the highest conservation status.

Seven threatened bird species observed at the Gorge are:

- Diamond Fire-tail, vulnerable (BC NSW) (A)
- Little Eagle, vulnerable (BC NSW) (C)
- Superb Parrot, vulnerable (EPBC Act; BC NSW) (D)
- Flame Robin, vulnerable (NSW BC) (B)
- Scarlet Robin, vulnerable (NSW BC)
- Speckled Warbler, vulnerable (NSW BC)
- Dusky Woodswallow, vulnerable (NSW BC)

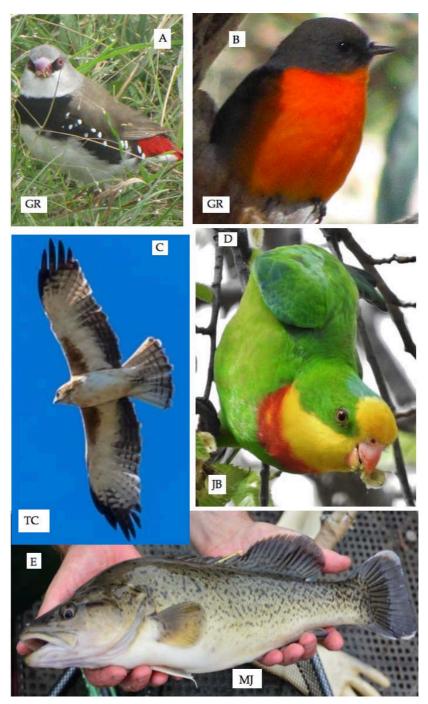
Two fish species near the Gorge, and possibly present at the Gorge, are:

- Trout (Blue) Cod, endangered (Fish NSW) (E)
- Macquarie Perch, endangered (EPBC Act; Fish NSW)

Fingerlings of Silver Perch, a vulnerable fish species (Fish NSW), have been released at the Gorge and more generally into the Yass River. None seem to have survived to adulthood.

Further surveys may identify more threatened fauna species. No plant species recorded at the Gorge have been listed as threatened.

Images of some threatened species in or near Yass Gorge.



weeds

Non-native plants and some non-indigenous native plants, commonly called weeds, out compete indigenous plants. Weeds often better exploit added nutrients in soils caused by nutrient run-off from farms and home-gardens. Weeds, often resistant to insects, grow more vigorously and often shade out indigenous plants. Less food for insects, the bottom of the food chain, means less food for small lizards and birds that feed on them. Often non-native plants produce more and larger fruit which advantages larger seed-eating and omnivorous birds which crowd out and/or snack on smaller animals. Invasive weeds also hinder human access and are unsightly.

By the early 1990s, the Gorge was rife with invasive woody weeds, including willow, blackberry, hawthorn and privet, forming dense thickets and other environmental damage. Willows choked the river, caused erosion, reduced the ability of River Red-gums to regenerate, and reduced water quality, oxygen levels and habitat. Blackberry and other woody weeds suppressed and shaded out native vegetation, made large parts of the Gorge impenetrable, and by providing abundant fruit changed the balance of birds in favour of larger birds.

Since that time willows and blackberry have been removed from the Gorge. However, Cotoneaster, Wild Plums, Prickly Pear and invasive non-native grasses, especially Phalaris, remain a problem. A list of non-indigenous plants at the Gorge is given on pages 65-6.

Currently, weeds are being removed from the Gorge using best practice bush regeneration approaches. These focus on integrated weed management planning principles, including prioritising which weeds to control, with the aim of eventually controlling each weed at a manageable level, consistent with restoring indigenous plants. An important strategy is to watch out for and suppress newly-arrived weeds which could become invasive quickly.



Before & after photos of willow removal.



feral animals

In the Yass River, the Carp and Red Fin are a major threat to native fish, frog and other water biota. Between them, they muddy the waters, compete for food, and prey on native fauna. A virus, not lethal to native fish and that may reduce Carp, shows some promise.

Non-native mammals such as wild dogs (including farm and pet dogs), cats, deer, goats, foxes, rabbits, hares and even mice may seriously suppress smaller native species through preying on them, competing for habitat and food, and/or by overgrazing which removes food and shelter. Oddly, the presence of dingoes usually advantages smaller native animals by suppressing cats and foxes.

Pet cats are particularly insidious as they attack, kill and eat small native creatures. In some other urban areas "no cat" areas are increasingly being accepted and responsible cat owners are building enclosures that allow cats to move freely between indoor and outdoor areas while still being contained. Contained cats have substantially greater life expectancy.

Non-native birds such as Common Myna, Starlings and Sparrows may likewise prey on smaller native species and/or suppress them by competing for food, nesting sites and habitat.

Native animals may also cause concern. Overgrazing by kangaroos may remove food and shelter for other species - hence the importance of monitoring and managing kangaroo numbers. Overabundant native bird species such as Currawongs are notorious for preying on nestlings. Here home gardens providing exotic berries, and households feeding birds and leaving pet food around, may result in higher numbers of larger birds that prey on and push out smaller birds and reptiles. Page 68 lists non-native fauna recorded at the Gorge and/or with a 10km radius of the Gorge.





Roaming pet cats may be insidious killers. Miss Tibbles is a contained cat which has a substantially greater life expectancy.

citizen science

The Gorge offers many opportunities for people to learn about the plants and animals at the Gorge, and also for an amateur to become a citizen scientist. During recent years, workshops were held explaining how to use eBird, an easy-to-use way to record birds. eBird records are included in the list of birds on pages 66-68.

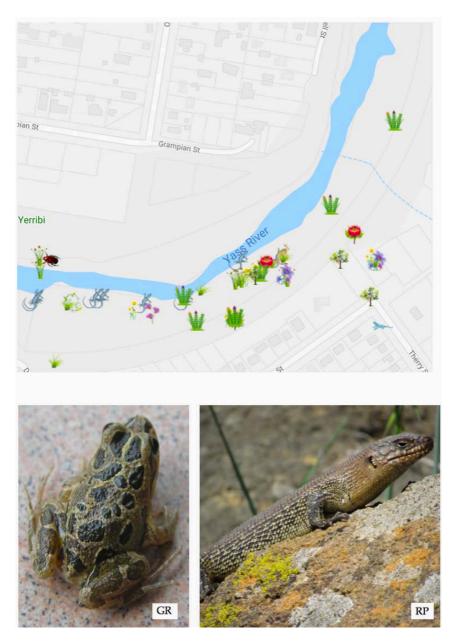
A great on-line resource to learn about and to contribute to our knowledge of plants and animals at the Gorge is Canberra Nature Map (CNM). If you like taking photos of plants and animals either at the Gorge or in the broader region, you upload them, have them moderated and mapped on CNM.

If using a personal computer to check out what is already recorded at the Gorge, go to CNM on the web and login. Then click "Maps" and then "Places". Scroll all the way down to Yass in NSW and click on "Yass". You will be able to see the records for Yass and a map of Yass. You can increase the scale of the map to look at Yass Gorge and click on individual records.

You can also register as a contributor and when you are accepted you can "add a sighting". To do so, you need a good photo (which has date and location imbedded - most modern cameras have this) of the plant or animal you wish upload. Options exist to record the species name, but that is non necessary, as your sighting will be identified or moderated. iPhone and Android Apps of the CNM are also available.

CNM records are periodically uploaded to the Atlas of Living Australia (ALA). Both CNM and ALA provide an excellent way to learn more about local plants and animals.

Start mapping!



Above: Canberra Nature Map records of species at Yass Gorge. Below: two species, Spotted Grass Frog and Cunningham Skink, found at the Gorge.

traditional owners of the gorge

The Yass region provided the Ngunnawal people with ample plants, fauna and other resources for making food, weapons, equipment, medicines, carry baskets and shelter. They frequently visited and camped at the Gorge and, likely, occasionally gathered there in large numbers. The Ngunnawal people, like other indigenous people, regard themselves as belonging to Country which is their source of knowledge and their teacher. Aboriginal culture defines relationships and lore, of which sustainable land management is a key element.

The British invasion of Australia in 1788, followed by the settlement of Europeans, resulted in appalling treatment of our first Australians, including the Ngunnawal people. Eventually many were confined to fringe areas and reserves around towns like Yass and often the use of their language was forbidden. Despite this, they kept their culture, sometimes hidden, and showed tremendous resilience and adaptation. Now we are fortunate to witness Aboriginal people across Australia willingly sharing their culture, language and traditional land management practices with non-Aboriginal people.

Some Aboriginal Elders offer tours and walks which explain how particular plants and resources were used and intertwined with culture, language and land management. It is now apparent that Aboriginal people not only adapted to living in Country but actively managed the land. Working with nature and using cool-fire mosaic burning techniques allowed them to refresh vegetation to encourage animals to graze in particular spots. In addition, they cultivated plants using particular digging and planting practices and moving around plant material. If possible take part in an Indigenous tour. It will give you a whole new appreciation and insight into culture and nature.



Another reminder of Aboriginal presence is artwork by Mark Huddleston at the base of the Hume Bridge in the centre of Yass. The top photo shows Ngunnawal elder Eric Bell (deceased) and National Museum of Australia curator Karolina Kilian.



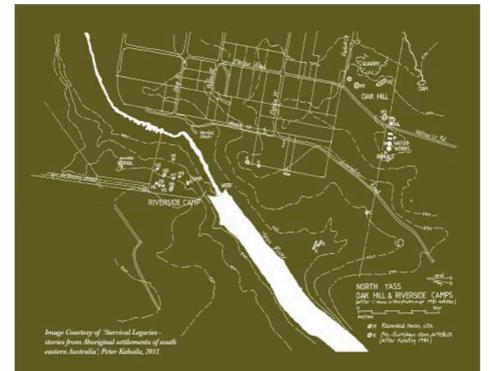
ngunnawal people & yass gorge

Early European settlers observed Aboriginal people living in camps on the south side of the river. In 1888 the Oak Hill Reserve was created and Aboriginal people were forcibly moved there. In 1910 Aboriginal people were moved to a new Reserve at Edgerton Aboriginal Station, located about 15 kilometres upstream of the dam wall. Aboriginal people living in the Canberra region were forcibly moved there in 1911. The last forced move to Edgerton took place in 1912. The school at the reserve provided for the education of Aboriginal children who were excluded from government schools.

The Edgerton Reserve closed in 1916 and Aboriginal people trickled back to the Yass Gorge area. Oak Hill became a major settlement. Aboriginal Elders Aunty Agnes O'Shea and Ruth Bell were born at Oak Hill. Aunty Agnes described Oak Hill as an open area where Aboriginal people built and lived in *gunjes*, dwellings with dirt floors, stringy-bark walls and galvanised iron roofs. They had no electricity or running water.

Hollywood Reserve was established in Rossi Street in 1934 and most Aboriginal people were forced to move there. Well known Ngunnawal people lived there as children, including Eric Bell, Don Bell, Ken Bell, Matilda House and Aunty Agnes O'Shea. Hollywood was closed in 1955 and some of its former residents were allowed to live in Yass, although some lived at Oak Hill until 1985. That site is now covered by several Yass suburbs.

Don Bell, a strong advocate for Ngunnawal language and culture, has produced a number of picture books of Ngunnawal Dreaming for children including *The Swan, Dyirri the Frog, Mununja the butterfly,* and *How water leaves the lake.* He has also produced *Queen of Ngunawal.*



Oak Hill and the Old Blacks' Camp

Two camps were built by the sides of the River; one to the north known as Oak Hill (1888-1910 and 1916-1985) and one to the south known as the Old Blacks' Camp (1890-1912 and 1916-1934). Stories have been passed down about the camps to the current generation of Ngunnawal people, thus creating strong family histories with the camps, the families that lived there and how they lived.

This image is part of the Welcome to Ngunnawal Country sign at the Gorge. It shows the location of the Old Blacks' Camp (Riverside Camp) and Oak Hill.

connors-dawson walking trail

The Connors-Dawson Walking Trail, constructed in 2001 by the Illawarra Institute (TAFE) Yass Campus students studying for their Aboriginal Certificate II in Bush Regeneration, was named after highly respected Ngunnawal elder, Mrs Rosemary Connors, and Malcolm 'Dawson' Williams, a young Ngunnawal man who died in tragic circumstances. The project preserved Aboriginal sites, removed weeds, and planted indigenous plants. It received modest funding and resurrected an earlier National Parks and Wildlife trail, which was "overgrown with a dense jungle of ferocious blackberries, African box thorn, hawthorns, wild roses and other noxious woody weeds. In places the impenetrable thickets were more than two metres high."

The TAFE course included bush regeneration techniques and weeds and native plants identification skills. Then "with removal of dense, choking weed growth, more and more native plant species were revealed. Where there was once a blanket of blackberries, we started to find bulbine lilies, flax lilies, rock ferns, mat rushes and native grasses."

In areas where the trail crossed steep slopes or unstable or unsafe, the students used their bush construction skills to make the trail safe. Additionally, the students constructed a barbecue area, including a wooden table and chairs, near the start of the trail and built stone stairs to reach it. "Finally, native grasses, shrubs and trees (including river she oaks and red gums) were planted at various locations to enhance the aesthetic and wildlife values of the area."

Amongst the students, Robert Simpson was praised for intricate rock work, Steve Giles for concrete work and welding skills, Kenny Simpson for his chainsaw skills, and Steve Giles for his photography. A memorial plaque at the beginning of the trail to Connors and Williams, and several rock paintings by Ngunnawal artist Desi Connors have since disappeared.



adult community and the gorge

The Gorge in recent years has provided many opportunities for people to visit it to study, learn, work or simply enjoy its recreational facilities. Often these activities combine learning and recreational experiences and have included:

- Visits by groups such as the Murrumbateman Landcare Group, the Yass Area Network (Landcare) and Friends of Grasslands to learn about the natural history of the Gorge.
- Working bees, to remove weeds and to plant suitable plants, and participation in Yass Valley Council Clean Up Days, organised by Friends of Yass Gorge and Kosciuszko to Coast.
- Surveys by Canberra Ornithologists Group of birds in the Gorge, Friends of Grasslands of plants in the Gorge, and WaterWatch to monitor water quality and biota.
- People walking in the Gorge for recreational purposes, for using the facilities for barbecues and picnics, and/or to undertake birdwatching. Many people express the view that visiting the Gorge provides a personal spiritual and healing experience.

Visiting experts have provided sessions on the plants, birds, geology, insects, and Aboriginal plant use, etc., to visiting and local groups. Talks on the birds, reptiles, bush tucker and work on restoring the Gorge have been given at Yass Library, and talks on citizen science opportunities have been given at local Yass venues.

> Above: a bird-watching group passing a mass flowering of Bulbine Lily. Below: a Community Field Day at the Gorge.



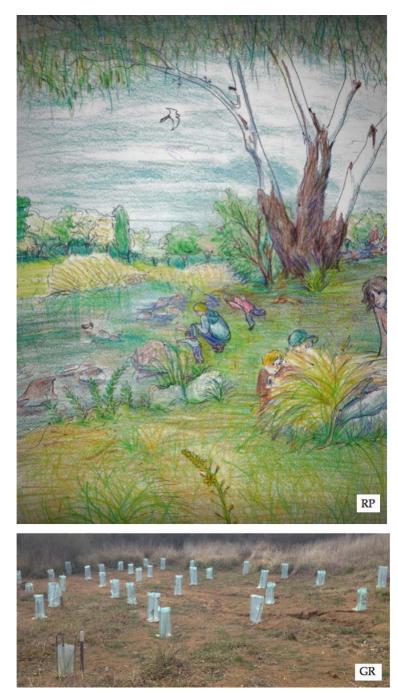
younger folk and the gorge

Many opportunities exist for younger folk to learn about the Gorge and its natural wonders, to sketch and paint its magnificent landscapes, to embrace Aboriginal cultural values, and to participate in its restoration.

Organised school visits have allowed students to learn about bird and frog behaviour and identification, water monitoring and bush tucker. These visits have been complemented by knowledgeable people joining in class room activities that have enriched learning opportunities, enhances skills, and met curriculum requirements. Yass High School and Kosciuszko to Coast organised a recent art event which allowed Year 8 students to use the Gorge to learn about the plants and animals and to sketch and paint a subject of their choice. Their art was displayed in the Yass Library.

The Yass Scouts (including joeys, cubs, scouts, and venturers) and parents have enjoyed several Gorge activities. One event involved Rebecca Widdows, Stuart Johnson (Yass Valley Council) and Linda Swadling (Scouts) in a walk and scavenger hunt. The scouts gave creative answers to questions like "Why are some plants prickly and others not?", and "why are Pied Cormorants black and white when they hunt over water?". They also visited the pumping station (Stuart's responsibility), and touched spiky kunzeas and lichen-covered rocks, crushed and smelled leaves, listened to the bird calls, picked up rubbish and so on. The scouts have also held planting working bees at the Gorge.

Younger people have assisted in the restoration of the Gorge and it provides opportunities for them to become citizen scientists (see page 40). Schools can also develop garden beds that focus on teaching horticultural skills and developing indigenous plants and bush tucker gardens. Drawing by Ryl Parker of a school visit to Gorge in May 2018.



A recent planting by Yass High School students.

local heroes

George Dashwood initiated restoration work in the Gorge. In the 1990s his Learn, Experience, Access Professions (LEAP) course for Aboriginal and other unemployed youth, combined practical work experience and accreditation training. In 2001 he organised a TAFE NSW land management and conservation course and in 2006 he provided a similar TAFE course funded by a Department of Water and Energy.

Eric Bell (deceased), a driving force in many community organisations, working with Aboriginal youth established the Connor-Dawson Walking Trail in 2001. In 2009, he helped establish the Buranya Aboriginal Corporation which constructed the Munnagai Yerrabi Walk. He won the Landcare Indigenous Award in recognition of his work. Ken Bell continues Eric's work through the Buranya Corporation.

Ross Webster, a former Yass Valley Council Councillor, is a strong Gorge advocate, knowledgeable weeder and advisor on infrastructure. Ross with Ken Bell has restocked native fish in the Yass River and is a fish moderator for Canberra Nature Map. He has received the Local Volunteer of the Year Award (2016), Local Hero (Australia Day 2018), and the inaugural NSW Fish Habitat Partnership Individual Award.

When Yass Area Network (YAN), the successor of Yass Landcare, formed Friends of Yass Gorge, Ross Webster and Jill McGovern were founding members and office holders. Jill was awarded the YAN Landcarer of the Year award for her work at the Gorge. She has worked tirelessly, especially applying for and administrating grants and in community engagement. The Friends organise regular working bees and is the key community contact for activities at the Gorge.

Rainer Rehwinkel first saw the Gorge about 1997 and gradually linked up with others mentioned in this booklet. He became passionate about its values, particularly its grasslands, and has led many surveys there.



A - George Dashwood, B - Eric Bell (deceased), C - Jill McGovern, D - Ross Webster, E - Rainer Rehwinkel, F - Lesley Peden*, G -Ryl Parker*, H - Maya Potapowicz* and I - Rebecca Widdows*. (* see page 54).

partnership with government

Making our Yass Gorge a treasured community asset has involved an ongoing partnership of many organisations and individuals. State agencies (Office of Environment and Heritage, Local Land Services and the Environmental Trust) and their staff have played important rolls. Yass Valley Council's Natural Resource and Sustainability Officer, Kym Nixon, and more recently and Rebecca Widdows, have played pivotal roles in enabling the community to achieve its goals.

Between 2009-2018, several grants involving Yass Valley Council, Buranya Aboriginal Corporation, Yass Landcare Group, Kosciuszko to Coast, Greening Australia and Friends of Yass Gorge were received to remove willow and blackberry, clear and update access trails, make reed beds, place signage, and build seats. The Green Army, undertook the lion's share of on-ground work from 2014, placing the last signs in place in 2017. In February 2015, a grant was awarded to Yass Landcare Group which employed Lesley Peden (Kosciuszko to Coast) to prepare a Grassland Plan of Management (see page 56) and to provide community awareness events and ecological advice to the Green Army teams. Members of Friends of Yass Gorge contributed considerable hours in organising the grants and on on-ground work. A National Anniversary Landcare Grant, awarded to Yass Landcare, provided funds to build a "Leaky" Weir (see page 25) to intercept contaminated runoff from the local High School Agricultural Farm.

A follow-on grant *Yass Gorge - being a good neighbour to the bush* in 2016 aimed to increase community awareness and participation at the Gorge. Lesley Peden, Maya Potapowicz and Ryl Parker, all enthusiastic professional ecologists, delivered this project on behalf of Kosciuszko to Coast. This booklet is part of the project. The partnerships between all these organisations are continually making the Gorge more readily accessible and its use by local people is dramatically increasing.



Above: Munnagai Yerribi Walk (2017).

Above & below: Munnagai Yerribi construction.



Kym Nixon, former Natural Resource & Sustainability Officer, Yass Valley Council.



a plan for the Gorge

In 2016 the Yass Valley Council, with involvement from the Friends of Yass Gorge, Yass Area Network and South East Local Land Services, prepared a Draft Plan of Management (PoM) for Yass Gorge 2017-2027 "to safeguard the future of Yass Gorge, public land which has significant environmental value". Following its exhibition, the plan was adopted by Council on 27 September 2017.

The PoM recognises Yass Gorge as a very special place, easily accessible as a place of natural beauty right in the centre of town, and important for its rare vegetation (especially Natural Temperate Grassland and Riparian communities) and animal and bird habitat.

The PoM contains a number of objectives to ensure the Gorge's ongoing ecological viability and biodiversity, to protect and manage the aesthetic, heritage, recreational, educational and scientific values, to restore degraded areas and to manage weeds.

The PoM represents a commitment to ensure future generations can experience the Gorge too, and seeks to ensure community ownership. It contains maps demonstrating the many dimensions of the Gorge and lists future management actions. It provides historical background and, importantly, the Gorge's significance to the Ngunnawal people.

Part of the PoM was a separate *Yass Gorge Natural Temperate Grassland Management Plan* prepared by Lesley Peden on behalf of Kosciuszko to Coast.

Plan of Management for Yass Gorge 2017-2027

Yass Valley Council Date of Adoption 27th September 2017





Natural Temperate Grassland

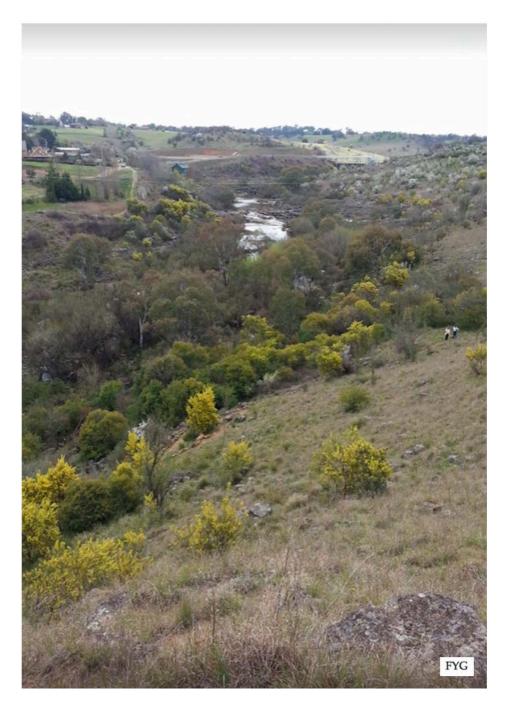
Management Plan



Prepared for Yass Landcare by Lesley Peden – K2C Facilitator February 2016

tips on being a friend of yass gorge

- Home garden use indigenous plants; avoid plants that may become garden escapees and / or grow large berries or fruit; and avoid unwanted runoff by minimising use of fertilisers and herbicides.
- Contain animals at home stop them entering the Gorge area.
- Don't feed wild birds bread can make them sick and supplementing their died may upset the natural balance of birdlife at the Gorge.
- Garden waste never dispose of garden or other waste in public places. This can cause great damage and spread unwanted weeds.
- Learning and social activity join in organised activities, including walks, birdwatching, working bees, etc. a great way to learn and to make friends.
- Walking in the Gorge for possible (but unlikely) encounters with snakes, dress sensibly with boots or at least proper shoes, wear long loose-fitting trousers, etc. Stick to pathways to avoid damaging important plants. If walking a dog, keep it on leash and don't leave droppings behind.
- Recreation enjoy picnics and even a barbecue but do not leave waste food behind. Enjoy contemplation, birdwatching or other passive recreational activity at the Gorge.
- Tell your friends and neighbours take them on a walk and point out the Gorge's many special features.
- Teachers use the Gorge as a learning resource.
- Become a supporter of the Gorge learn about its history, become a citizen scientist, discourage (and even report) bad behaviour, and/or become a volunteer (e.g. join Friends of Yass Gorge). To learn and participate more, contact groups mentioned in this book.



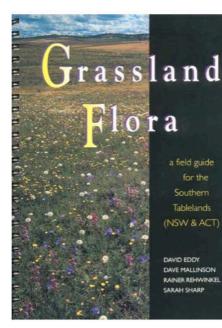
some further reading & resources

Hopefully by now readers have a better understanding of the natural and cultural richness of the Gorge and its surrounds. However, there are many opportunities to learn more.

There are many excellent books and material on the internet to learn more about plants, animals and other life forms in and around Yass. A few that are most immediately helpful are:

- Grassland Flora and Woodland Flora, field guides for the Southern Tablelands (NSW & ACT) by Eddy, Mallinson, Rehwinkel and Sharp, \$20 & \$25 respectively.
- *Field Guide to the Birds of the ACT* by McComas Taylor, Illustrations by Nicolas Day. (\$27.50).
- *Insects of south-eastern Australia, an ecological and behavioural guide* by Roger Farrow. Publisher: CSIRO Publishing. (\$45)
- *Ngunnawal Plant Use, a traditional Aboriginal plant use guide for the ACT region, published by ACT Government Canberra.*
- Yass Gorge Management Plan and Yass Gorge Natural Temperate Grassland management Plan (available from Yass Valley Council).

A magnificent source of information on plants, animals and other life forms is Canberra Nature Map (see page 40). A further comprehensive source of records of Yass fauna and flora is the Atlas of Living Australia - this has been extensively used to compile information in this book.

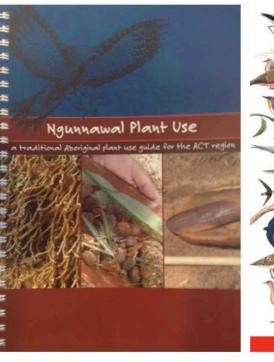


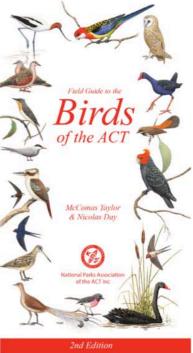


INSECTS OF South-Eastern Australia

AN ECOLOGICAL AND BEHAVIOURAL GUIDE







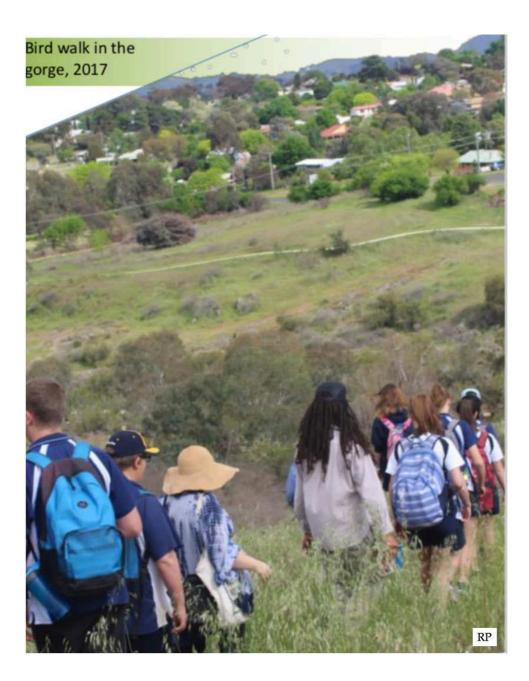
acknowledgements

This booklet is written as part of the project *Yass Gorge - being a good neighbour to the bush* to promote public education and restoration of Yass Gorge. The project was undertaken by Kosciuszko to Coast (K2C) assisted by the New South Wales Government through its Environmental Trust. The project took place between July 2016 and October 2018. Many young and older people, schools, community groups, and agencies contributed to the success of the project and this booklet reflects their many achievements.

To deliver the project, K2C contracted in turn, Lesley Peden, Maya Potapowicz and Ryl Parker, while K2C office holders Rainer Rehwinkel, Tony Robinson and Geoff Robertson oversaw the project.

Friends of Yass Gorge played a critical role, and in particular, Jill McGovern and Ross Webster attended many meetings, took part in all phases of the planning and delivery of the project, and played key roles in organising many actives of the project. The Yass Valley Council has continued a strong and ongoing commitment to restoring the Gorge. In particular, the Council's Rebecca Widdows has led that contribution. We would also like to acknowledge the *Yass Tribune* which has publicised articles on the project from time to time.

Many people contributed greatly to this booklet, as acknowledged on Page i, through interviews, digging out material, contributing text, images and photos, and reading and correcting many drafts.



indigenous plants

Trees, excluding taller shrubs

Brachychiton populneus (Kurrajong) Casuarina cunninghamiana (River Oak) Eucalyptus camaldulensis (River Red Gum) Eucalyptus melliodora (Yellow Box)

Shrubs

Acacia dawsonii (Poverty Wattle) Acacia dealbata (Silver Wattle) Acacia rubida (Red-stemmed Wattle) Beyeria viscosa (Sticky Wallaby-bush) Brachyloma daphnoides (Daphne Heath) Bursaria spinosa (Sweet Bursaria) Callistemon sieberi (River Bottlebrush) Calytrix tetragona (Common Fringe-myrtle) *Clematis microphylla* (Old-Man's-Beard) Cryptandra amara (Bitter Cryptandra) Cryptandra propingua (Star Cryptandra) Dodonaea boroniifolia (Fern-leaved Hopbush) Dodonaea viscosa (Sticky Hopbush) Dysphania pumilio (Crumbweed) Einadia nutans (Nodding Saltbush) Gonocarpus tetragynus (Common Raspwort) Kunzea ericoides (Burgan) Lepidosperma laterale (Dryland Sword-sedge) Leucopogon fletcheri (Fletcher's Beard-heath) Melichrus urceolatus (Urn Heath) Pimelea curviflora (Curved Rice-flower) Pomaderris sp. (a pomaderris) Rubus parvifolius (Native Raspberry) Westringia eremicola (Slender Westringia)

Grasses, sedges and rushes

Aristida ramosa (Purple Wire-grass) Austrostipa bigeniculata (Tall Speargrass) Austrostipa densiflora (Brush-tailed Speargrass) Austrostipa scabra (Corkscrew Grass) Bothriochloa macra (Red Grass) Carex appressa (Tall Sedge) Carex sp. (a sedge) Chloris truncata (Windmill Grass) Cymbopogon refractus (Barbed-wire Grass) Cymodon dactylon (Couch) Dichanthium sericeum (Queensland Bluegrass) Dichelachne sp. (a plumegrass) Elymus scaber (Common Wheatgrass) Enneapogon nigricans (Nine-awn Grass) Eragrostis brownii (Brown's Lovegrass) Juncus spp. (rush species) Microlaena stipoides (Weeping Grass) Phragmites australis (Common Reed) Poa labillardierei (River Tussock) Poa sieberiana (Common Snowgrass) Rytidosperma carphoides (Short Wallaby-grass) Rytidosperma spp. (wallaby-grass species) Sorghum leiocladum (Native Sorghum) Sporobolus sp. (a rat's-tail grass) Themeda australis (Kangaroo Grass)

Lilies & related plants

Bulbine bulbosa (Bulbine Lily) Bulbine glauca (Rock Lily) Dianella longifolia (Smooth Flax-lily) Dianella revoluta (Black-anthered Flax-lily) Dichopogon sp. (chocolate-lily) Lomandra filiformis (Wattle Mat-rush) Lomandra longifolia (Spiny-headed Mat-rush) Lomandra multiflora (Many-flowered Mat-rush) Tricoryne elatior (Yellow Rush-lily) Wurmbea dioica (Early Nancy)

Daisies

Brachyscome dentata (Lobe-seeded Daisy) Calotis lappulacea (Yellow Burr-daisy) Cassinia aculeata (Dogwood) Cassinia quinquefaria (Sifton-bush) Chrysocephalum apiculatum (Golden Buttons) Leptorrynchus squamatus (Scaly Buttons) Senecio quadridentatus (Hoary Fireweed) Senecio sp. (a fireweed) Solenogyne dominii (Smooth Solenogyne) Solenogyne gunnii (Hairy Solenogyne) Triptilodiscus pygmaeus (Austral Sunray) Vittadinia cuneata (Fuzzy New Holland Daisy) Vittadinia muelleri (New Holland Daisy)

Peas

Bossiaea buxifolia (Box-leaved Bossiaea) Desmodium varians (Variable Tick-trefoil) Dillwynia sp. (a parrot-pea) Glycine clandestina (Twining Glycine) Glycine tabacina (Vanilla Glycine) Hardenbergia violacea (False Sarsparilla) Indigofera adesmiifolia (Tick Indigo)

Other flowering plants

Acaena ovina (Sheep Burr) Alternanthera sp .A (Dwarf Joyweed) Asperula conferta (Common Woodruff) Boerhavia dominii (Tarvine) Convolvulus erubescens (Australian Bindweed) Crassula sieberiana (Australian Stonecrop) Cynoglossum australe (Austral Hound's-tongue) Cynoglossum suaveolens (Sweet Hound's-tongue) Erodium crinitum (Native Stork's-bill) Galium gaudichaudii (Rough Bedstraw) Geranium sp. (a native geranium) Goodenia pinnatifida (Scrambled Eggs) Hydrocotyle laxiflora (Stinking Pennywort) Oxalis perennans (Grassland Wood-sorrel) Persicaria prostrata (Creeping Knotweed) Plantago varia (Variable Plantain) Portulaca oleracea (Pigweed Purslane) Rumex brownii (Swamp Dock) Rumex dumosus (Wiry Dock) Sida corrugata (Corrugated Sida) Stackhousia monogyna (Creamy Candles) Stellaria pungens (Prickly Starwort) Wahlenbergia sp. (native bluebell species)

Ferns

Asplenium flabellifolium (Necklace Fern) Cheilanthes distans (Bristly Cloak Fern) Cheilanthes sp. (Rock Fern) Pellaea falcata (Sickle Fern) Pleurosorus rutifolius (Blanket Fern)

non-indigenous plants

Trees, excluding taller shrubs

Acer negundo (Box Elder) Celtis australis (Nettle-tree) Pinus pinea (Stone Pine) Salix spp. (willow species) Schinus areira (Peppercorn-tree)

Shrubs

Acacia baileyana (Cootamundra Wattle) Cotoneaster glaucophyllus (Cotoneaster) Crataegus monogyna (English Hawthorn) Grevillea rosmarinifolia (Rosemary Grevillea) Grevillea spp. (grevillea species and hybrids) Prunus spp. (plum species) Pyracantha sp. (a firethorn) Rosa rubiginosa (Sweet Briar) Rubus fruticosus (Blackberry) Salix spp. (willow species) Schinus areira (Peppercorn- tree)

Grasses, sedges and rushes

Aira spp. (hair grass species) Avena spp. (wild oat species) Briza maxima (Quaking Grass) Bromus molliformis (Soft Brome) Bromus spp. (brome species) Dactylis glomerata (Cock's-foot) Eragrostis curvula (African Lovegrass) Nassella trichotoma (Serrated Tussock) Panicum effusum (Hairy Panic) Paspalum dilatatum (Paspalum) Phalaris aquatica (Phalaris) Poa bulbosa (Bulbous Poa) Typha sp. (Cumbungi) Vulpia spp. (a rat's-tail fescue)

Lilies

Romulea rosea (Onion-grass)

Daisies

Arctotheca calendula (Capeweed) Carthamus lanatus (Saffron Thistle) Chondrilla juncea (Skeleton-weed) Cirsium vulgare (Spear Thistle) Conyza spp. (fleabane species) Hypochaeris glabra (Smooth Cat's-ear) Hypochaeris radicata (Cat's-ear) Lactuca serriola (Wild Lettuce) Onopordum acanthium (Scotch Thistle) Sonchus sp. (a milk thistle) Xanthium spinosum (Bathurst-burr)

Peas

Chamaecytisus palmensis (Tagastaste or Tree Lucerne) Trifolium angustifolium (Narrow-leaved Clover) Trifolium arvense (Hare's-foot Clover) Trifolium campestre (Hop Clover) Trifolium spp. (clovers and trefoils) Ulex europaeus (European Gorse) Vicia spp. (vetch species)

Other flowering plants

Acetosella vulgaris (Sheep Sorrel) Capsella bursa-pastoris (Shepherd's-purse) Centaurium erythraea (Pink Stars) Cerastium glomeratum (Mouse-eared Chickweed) Echium plantagineum (Paterson's Curse) Erodium sp. (a stork's-bill) Eschscholzia californica (Californian Poppy) Galium aparine (Goose-grass) Hirschfeldia incana (Buchan-weed) Narcissus sp. (Daffodil) Opuntia sp. (a prickly pear) Orobanche minor (Lesser Broomrape) Papaver aculeatum (Bristle Poppy) *Papaver* sp. (a poppy) Petrorhagia nanteuilii (Proliferous Pink) Plantago lanceolata (Ribwort Plantain) Rumex crispus (Curly Dock) Salvia verbenaca (Wild Sage) Sanguisorba minor (Sheep's Burnett) Sherardia arvensis (Field Madder) Verbascum thapsus (Great Mullein) Verbascum virgatum (Twiggy Mullein) Viola odorata (Sweet Violet)

native fauna at Gorge

Water birds

Anas superciliosa (Pacific Black Duck) Anhinga novaehollandiae (Australasian Darter) Ardea pacifica (Pacific Heron) Chenonetta jubata (Australian Wood Duck) Egretta novaehollandiae (White-faced Heron) Fulica atra (Australian Coot) Gallinula tenebrosa (Dusky Moorhen) Microcarbo melanoleucos (Little Pied Cormorant) Pelecanus conspicillatus (Australian Pelican) Phalacrocorax carbo (Great Cormorant) Phalacrocorax varius (Pied Cormorant) Porphyrio melanotus (Australian Swamphen) Threskiornis molluca (Australian White Ibis) Threskiornis spinicollis (Straw-necked Ibis) Vanellus miles (Masked Lapwing)

Raptors

Accipiter cirrocephalus (Collared Sparrowhawk) Accipiter fasciatus (Brown Goshawk) Aquila audax (Wedge-tailed Eagle) Elanus axillaris (Black-shouldered Kite) Falco peregrinus (Peregrine Falcon) Falco berigora (Brown Falcon) Falco cenchroides (Nankeen Kestrel) Falco longipennis (Australian Hobby) Haliastur sphenurus (Whistling Kite) Haliaeetus leucogaster (White-bellied Sea-Eagle) Hieraaetus morphnoides (Little Eagle)

Parrots

Alisterus scapularis (Australian King-parrot) Cacatua galerita (Sulphur-crested Cockatoo) Cacatua sanguinea (Little Corella) Eolophus roseicapillus (Galah) Platycercus elegans (Crimson Rosella) Psephotus haematonotus (Red-rumped Parrot) Polytelis swainsonii (Superb Parrot) Trichoglossus haematodus (Rainbow Lorikeet)

Cockoos

Chrysococcyx basalis (Horsfield's Bronze-cuckoo) Cacomantuis flabelliformis (Fan-tailed Cuckoo) Cacomantis pallidus (Pallid Cuckoo) Eudynamys orientalis (Pacific Koel)

Honeyeaters

Acanthorhynchus tenuirostris (Eastern Spinebill) Anthochaera carunculata (Red Wattlebird) Caligavis chrysops (Yellow-faced Honeyeater) Manorina melanocephala (Noisy Miner) Melithreptus lunatus (White-naped Honeyeater) Nesoptilotis leucotis (White-eared Honeyeater) Philemon corniculatus (Noisy Friarbird) Ptilotula penicillatus (White-plumed Honeyeater)

Other larger & medium sized birds

Artamus cyanopterus (Dusky Woodswallow) Coracina novaehollandiae (Black-faced Cuckooshrike)

Corvus coronoides (Australian Raven) Corvus mellori (Little Raven) Cracticus tibicen (Australian Magpie) Cracticus torquatus (Grey Butcherbird) Dacelo novaeguineae (Laughing Kookaburra) Eurystomus orientalis (Dollarbird) Grallina cyanoleuca (Magpie-lark) Merops ornatus (Rainbow Bee-eater) Ocyphaps lophotes (Crested Pigeon) Strepera graculina (Pied Currawong) Todiramphus sanctus (Sacred Kingfisher)

Other small birds

Acanthiza pusilla (Brown Thornbill) Acanthiza chrysorrhoa (Yellow-rumped Thornbill) Acanthiza lineata (Striated Thornbill) Acanthiza nana (Yellow Thornbill) Acrocephalus australis (Australian Reed Warbler) Chthonicola sagittata (Speckled Warbler) Eopsaltria australis (Eastern Yellow Robin) Gerygone olivacea (White-throated Gerygone) Hirundo neoxena (Welcome Swallow) Malurus cyaneus (Superb Fairy-wren) Neochmia temporalis (Red-browed Finch) Pardalotus punctatus (Spotted Pardalote) Pardalotus striatus (Striated Pardalote) Pachycephala rufiventris (Rufous Whistler) Petroica boodang (Scarlet Robin) Petroica goodenovii (Red-capped Robin) Petroica phoenicea (Flame Robin) Rhipidura albiscapa (Grey Fantail) Rhipidura leucophrys (Willie Wagtail) Sericornis frontalis (White-browed Scrubwren) Smicrornis brevirostris (Weebill) Stagonopleura guttata (Diamond Firetail) Taeniopygia bichenovii (Double-barred Finch) Zosterops lateralis (Silvereye)

Mammals

Hydromys chrysogaster (Rakali) Macropus giganteus (Eastern Grey Kangaroo) Macropus robustus (Wallaroos) Ornithorhynchus anatinus (Platypus) Wallabia bicolor (Swamp Wallaby)

Reptiles

Carlia tetradactyla (Southern Rainbow-skink) Ctenotus taeniolatus (Copper-tailed Skink) Egernia cunninghami (Cunningham's Skink) Emydura macquarii (Macquarie River Turtle) Intellagama lesueurii (Eastern Water Dragon) Pogona barbata (Eastern Bearded Dragon) Pseudonaja textilis (Eastern Brown Snake) Pseudechis porphyriacus (Red-bellied Black Snake) Tiliqua scincoides (Eastern Blue-tongue) Tiliqua rugosa (Shingleback)

Frogs

Crinia signifera (Common Froglet) Limnodynastes dumerilii (Eastern Banjo Frog) Limnodynastes tasmaniensis (Spotted Grass Frog)

Fish

Maccullochella peelii (Murray Cod) Macquaria ambigua (Golden Perch or Yellow Belly)

native fauna within 10km

Birds

Anas castanea (Chestnut Teal) Colluricincla harmonica (Grey Shrike-thrush) Corcorax melanorhamphos (White-winged Chough) Dicaeum hirundinaceum (Mistletoebird) Eurostopodus mystacalis (White-throated Nightjar) Coturnix pectoralis (Stubble Quail) Melanodryas cucullata (Hooded Robin) Phaps chalcoptera (Common Bronzewing) Platycercus eximius (Eastern Rosella) Tachybaptus novaehollandiae (Australasian Grebe) Taeniopygia guttata (Zebra Finch)

Mammals

Nyctophilus geoffroyi (Lesser Long-eared Bat) Pseudocheirus peregrinus (Common Ringtail Possum) Tachyglossus aculeatus (Short-beaked Echidna) Trichosurus vulpecula (Common Brushtail Possum) Vespadelus vulturnus (Little Forest Bat) Vombatus ursinus (Common Wombat)

Reptiles

Anilos nigrescens (Blackish Blind Shake) Chelodina longicollis (Eastern Long-necked Turtle) Christinus marmoratus (Marbled Gecko) Delma impar (Striped Legless Lizard) Delma inornata (Olive Delma) Morethia boulengeri (South-eastern Morethia Skink) Parasuta dwyeri (Dwyer's Snake) Vermicelli annulata (Bandy Bandy)

Frogs

Crinia parinsignifera (Eastern Sign-bearing Froglet) Limnodynastes peronii (Brown-striped Frog) Litoria ewingii (Brown Tree Frog) Litoria lesueri (Lesueur's Frog) Pseudophryne bibronii (Brown Toadlet)

Fish

Galaxias olidus (Mountain Galaxia) Hyseleotris klunzingeri (Western Carp Gudegon) Maccullochella macquariensis (Blue Cod) Macquaria australasica (Macquarie Perch)

non-native fauna at the Gorge

Birds

Anas platyrhynchos (Mallard) Carduelis carduelis (European Goldfinch) Columbra livia (Rock Pigeon) Passer domesticus (House Sparrow) Sturnus tristis (Common Myna) Sturnus vulgaris (Common Starling) Turdus merula (Eurasian Blackbird)

Mammals

Oryctolagus cuniculus (Rabbit)

Fish

Cyprinus carpio (Carp) *Perca fluviatilis* (Redfin Perch)

non-native fauna within 10km

Mammals

Bos taurus (feral cattle) Capra hircus (Goat) Felis catus (Feral Cat) Lepus capensis (Brown Hare) Ovis aries (Feral Sheep) Vulpes vulpes (European Fox)

Tradition Ngunnawal use of Gorge plants

Trees, excluding taller shrubs

Brachychiton populneus (Kurrajong) Casuarina cunninghamiana (River Oak) Ngunnawal name: Dhulwa

Shrubs

Acacia dealbata (Silver Wattle) Ngunnawal name: Nummerak Dodonaea viscosa (Sticky Hopbush) Melichrus urceolatus (Urn Heath) Rosa rubiginosa (Sweet Briar) - non-indigenous plant Rubus parvifolius (Native Raspberry)

Grasses, sedges and rushes

Bothriochloa macra (Red Grass) Carex appressa (Tall Sedge) Phragmites australis (Common Reed) Poa labillardierei (River Tussock) Themeda australis (Kangaroo Grass) Typha sp. (Cumbungi) -possibly non-indigenous plant Ngunnawal name: Gummiuk

Forbs & climbers

Bulbine bulbosa (Bulbine Lily) Lomandra longifolia (Spiny-headed Mat-rush) Dianella longifolia (Smooth Flax-lily) Dianella revoluta (Black-anthered Flax-lily) Dichopogon sp. (chocolate-lily) Geranium sp. (a native geranium) Glycine clandestina (Twining Glycine) Hardenbergia violacea (False Sarsparilla) Lomandra longifolia (Spiny-headed Mat-rush) Wahlenbergia sp. (native bluebell species) Wurmbea dioica (Early Nancy)



"As a teenager in Yass there was little to do.

I enjoyed swimming and scrambling around the rocks at the Gorge, and squelching through the mud.

> The willows provided a canopy of solitude now they have disappeared (and I understand why).

Platypus were common."

--- Michaela Newling

This project couldn't have been completed without the support of







Friends of Yass Gorge

