

the Ground Storey

Fallen logs,
branches, sticks
and leaves for
wildlife, property, and
landscape health



Removal of dead wood and dead trees - key threatening process listing. The Scientific Committee, established by the Threatened Species Conservation Act, has made a Final Determination to list Removal of dead wood and dead trees as a KEY THREATENING PROCESS in Schedule 3 of the Act. Listing of key threatening processes is provided for by Part 2 of the Act (abridged).

NSW Scientific Committee - final determination: The accelerated and ongoing removal of standing dead trees and woody debris on the ground caused by human activity has been recognised as a factor contributing to loss of biological diversity (ANZECC 2001). Examples of the process include illegal or poorly regulated firewood collection from forests and woodlands and unsustainable loss of fallen woody debris, which may be stacked, burnt, mulched or otherwise removed from the site.

The removal of deadwood, either standing or fallen, can cause the broadscale change of woodlands into paddocks with isolated standing trees, with little natural understorey and no woody debris on the ground (Landsberg 2000).

Removal of dead wood and dead trees may seriously affect the long term availability and viability of habitat. Loss of fallen dead wood from open forests and woodlands will increase impacts of wind on the soil microclimate. Loss of surface moisture resulting from the removal of dead wood will affect soil organisms below fallen logs as well as changing the above ground plant cover and will impact on associated invertebrates (Tongway & Ludwig 1996, Tongway et al. 1989)

Goulburn Broken Catchment Management Authority, Victoria, Australia.

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Front cover: White-browed babbler.

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CONTENTS:

Introduction: Our shared home

1. Real estate and supermarkets
2. Nutrient recycling in a living landscape
3. Erosion
4. The ground storey, fragmented habitats, and weeds
5. Firewood
6. Roadsides
7. Keeping safe
8. Practical action

Conclusion: One property, many homes





A small scattering of fallen timber can make all the difference to the health of your property.

INTRODUCTION

Our shared home

This booklet explores the role of - and need for - fallen logs, branches, sticks, and leaves as habitat. It explores the benefits and addresses some of the issues landholders may have when considering leaving fallen logs, branches, sticks and leaves – ‘the ground storey’ - on their rural property.

The ground storey is home for a multitude of native soil organisms, plants and animals, birds, and insects, that have evolved to adapt and utilise this habitat. As custodians of the land, it is up to each of us to ensure that these native species, many of which are found nowhere else in the world, can thrive in our landscapes. A neat and tidy property devoid of fallen logs and its natural ground layer under paddock trees appeals to the common and more dominant species such as rabbits, foxes, cockatoos, galahs, and magpies. ‘Cleaning up’ is directly at the expense and subsequent loss of the native, smaller, and more vulnerable – and by far the more varied – array of woodland birds, insects, frogs and reptiles. The abundance and diversity of these species is up to us to determine, through the way we manage our shared home.

‘Cleaning up’ isn’t doing the environment a favour, it is something that has serious consequences for the thousands of species that use and depend upon this important link in the food chain. Many of our native species live in hollow logs or use fallen logs as shelter, and the organic layer and decomposing wood provides habitat and food for a multitude of insects and invertebrates which, in turn, are needed for food by larger animals and birds.

Australian fauna evolved with fallen logs, branches, sticks and leaves over many millennia. Cleaning up means fewer - or no - native animals. It really is that simple!

However... first things first:

The purpose of this booklet is to discuss the importance and benefits of retaining and managing the ground storey on a rural property for land and soil health and native wildlife habitat, so it may contribute to an overall healthier environment. This booklet is not suggesting that human life and assets be placed at risk by retaining organic material in areas that, should they be impacted by fire, may cause harm. This booklet promotes the thoughtful retention of this habitat in a safe manner. In accordance with CFA recommendations, landholders are encouraged to keep a clear area around the house and other assets and prepare a fire plan.

Further information can be found at
<https://www.cfa.vic.gov.au/plan-prepare/fire-safety-on-the-farm>
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1. Real estate and supermarkets

In 'human' terms, the fallen logs and the organic ground layer on our properties are the 'real estate and supermarkets' for native species. Without the ground storey - logs, branches, sticks and leaves - invertebrates such as insects, worms and spiders cannot persist in the environment, and without them the ripple effect along the food chain can be catastrophic.

Your property, and all its natural components including the ground storey, is a living, functioning ecosystem. It is important to know that 'cleaning up' is the equivalent of bulldozing housing estates and closing down supermarkets. Nature needs the complexity of the organic ground layer, and all the functions it provides.

From slivers of bark for geckoes to hide beneath, grass stems for spiders to span with webs, and grassy tussocks for echidnas to seek ant nests between, the ground is a natural metropolis. Logs provide small hollows and crevices where lizards can live, the moist soil beneath logs provide a liveable space for slaters upon which the bush-stone curlew and hooded robin can feed themselves and their chicks. A frog will find refuge within the damp decaying interior of a fallen branch where it awaits a dewy evening or the next rain. Our property isn't home to just us; it is inhabited by many native species that also call it their home, and there is always someone home amongst the ground storey habitat.

Removal of standing dead trees and woody debris on the ground, caused by human activity has been recognised as a factor contributing to loss of biological diversity (ANZECC 2001).



Homes for thousands: Many branches contain hollows or hollow spaces, important for many native species to breed, sleep, feed, shelter or avoid predators. 'Cleaning up' *immediately* reduces the diversity of native species. Once homes and food sources are destroyed, they are very slow to return. 'Cleaning up' is fast-acting and long-lasting.

Even the smallest of gaps in a branch is important real estate to a Boulenger's skink.



Logs, sticks and leaves – Vital real estate and supermarkets for these native species.

Main photo: Brown tree creeper.

Inserts top to bottom: Grey-crowned babbler, eastern bearded dragon, bandy bandy, eastern banjo frog.

2. Nutrient recycling in a living landscape

Invertebrates, fungi, and bacteria live and work within fallen logs and the organic ground layer to ultimately return the 'captured' nutrients to the soil. This important process is known as nutrient recycling.

Compost for the soil: A home gardener knows that healthy plants need healthy soil, and a strong indication of healthy soil is the presence of earthworms. These unassuming invertebrates are the champions of nutrient recycling. They quickly digest and break down organic matter to deposit as nutritious castings, they provide aeration and enable moisture to move freely and deeply through the soil profile; even an earthworm's 'slime' contains nourishing nitrogen. Their bodies are nutrient-packed, so when they die, they become 'instant fertiliser'.

Homes for earthworms: A healthy domestic garden usually provides optimum conditions in which earthworms can thrive. In a rural setting, conditions are harsher; drier and less predictable, but earthworms – these champions of nutrient recycling - still seek a place to live and work. All components of the organic ground layer provide protection and help trap soil moisture, and it is here the humble earthworm will be found.

A place for fungi: A multitude of fungi species are nutrient recyclers found growing on, around and beneath fallen logs. Although it appears that fungi 'eats away' at logs, as a true decomposer, fungi utilises chemical and biological processes to directly absorb nutrients and break down the log's organic structure. Eventually, this matter is returned to the ground where the once-captive nutrients re-joins the soil... to feed the next generation of germinating seedlings.

The role of bacteria: Fallen logs, soil, moss, lichen, fragments of insects, leaves, and roots, are also home to the tiniest of decomposers: bacteria. Bacteria is important because it can immobilize the nitrogen present in the soil, keeping it from being lost to the air and water. Bacteria confines nitrogen to the root zone to nourish growing plants and trees. Bacteria can also act as a disease suppressor, break down acids in the soil to release nutrients, help aerate the soil and accelerate creation of topsoil and humus.



Soil nutrient in the making. Photo: Ruth Ault.



Without safe hiding spaces on the forest floor, the ground dwelling wolf spider will not survive.

3. Erosion

The organic ground layer provides a protective buffer for precious topsoil against the erosive effects of frost, heat, wind, and water.

Keeping it together: The impact of raindrops, especially in a heavy downpour, can, over time (and sometimes over not much time at all) have a devastating effect on the stability of the soil, especially on our old, friable, and thin Australian topsoils. Logs, branches, sticks and leaves 'trap' organic matter, disperse impact and reduce the velocity of run-off during heavy downpours. Many eroding gullies reaching many metres wide and deep have been accelerated by the patter of raindrops relentlessly carving their way through exposed and unprotected topsoil into the layers below.

Part of the overall picture: Naturally, not all erosion can be wholly apportioned to a lack of fallen logs and the organic ground layer – that would be too simple! However, the ground storey contributes to the overall health, resilience, and stability of your property helping to protect against the devastating impacts of erosion, which is always expensive - and often impossible - to restrict or fully repair.



A healthy, intact ground layer scattered with fallen timber protects the soil from the destructive effects of erosion.



Insects and fungi need logs too: Invertebrates and fungi depend on decaying logs. The interactions between the organic ground layer, insect use, and nutrient recycling are complex but extremely important for a healthy, functioning environment. Healthy soil means multiple menu-options for the blue-tongued lizard.



Ground that is bared by burning the ground layer and fallen timber is an open invitation to weed invasion.

4. The ground storey, fragmented habitats, and weeds

Removing fallen logs and the organic ground layer fragments the stability and 'intactness' of the environment, which can mean an open invitation for weeds.

Weeds love bare ground. 'Cleaning up' the ground layer and burning it provides weeds with the perfect growing environment at the expense of more desired plants. Having evolved outside of the Australian environment, common weeds such as capeweed, heliotrope, St John's Wort and Paterson's curse don't need to cope with natural checks and balances such as predation and temperature extremes that native species experience. Many pest species are equipped to rise above these challenges – or they simply don't find them a challenge at all. Therefore, in Australia, these plants are adept at gaining a fast foothold in altered, unhealthier habitats – such as bared ground left open by the burning up of the ground layer and fallen timber. As many landholders who battle pest plant species already know, once a pest gains a foothold, it is almost impossible to completely close the door on it ever again. An organic ground layer means the topsoil is better protected against a weedy invasion.

5. Firewood

You can collect firewood *and* maintain the homes of the multitude of animals, plants, and micro fauna and flora that rely on fallen logs, branches, sticks and leaves.

Firewood collection is often a recreational or family activity but can also be perceived as performing a community service by reducing a fire hazard. It is important to be aware that removing fallen timber and branches has major environmental impacts and implications that will ultimately affect your property's health, resilience and diversity of native species.

Firewood collection generally involves collecting undecayed fallen logs and branches, but this repeated loss will over time, reduce or eliminate the availability of all ground storey habitat. 'Cleaning up' all fallen timber for any reason and burning up the left-over 'trash' isn't doing the environment a favour, it is something that has serious consequences for all the species that use and depend upon it.

Here's how you can make firewood collection more sustainable on your property:

- Plant trees on your property to replace any timber removed. Better still, establish your own purpose-planted firewood plantation. Even if you think you won't see it come to 'fruition', it is an asset that will add value to your property and will save fallen logs in the future from becoming firewood. Even a small firewood lot consisting of 10 or 20 trees is useful.
- Always leave hollow logs – these are important homes for native wildlife.
- If you purchase wood from a supplier, make sure you know from where it was sourced – otherwise it may be from an unsustainable firewood collection area.



More than firewood. Faded and sun-dried, aged and weathered logs, with their cracks and crevices, offer the cryptic Burton's snake lizard camouflage and refuge.



A small purpose-planted firewood lot can provide a constant supply of fuel, save you time, add to your property's value and save habitat.



As well as destroying the visual amenity of the area, the removal of the protective ground layer on roadsides severely affects the health of roadside trees and impacts the native species that rely on this roadside habitat for food, shelter, and movement through the landscape.

6. Roadsides

Roadside vegetation is incredibly precious. These linear arks often contain the last vestiges of what the entire landscape once looked like, offering us a glimpse through a window to a past world.

Healthy roadsides with a diverse range of vegetation species and an intact ground storey serve to connect habitats. They are places of refuge for plants and animals that may have been largely lost to agriculture and development. It is incredibly important that these narrow 'highways' are healthy, diverse and connected.

Roadside vegetation is often the only way native species can travel throughout the landscape. Many woodland birds cannot travel across open spaces as they are at risk from predators. If roadsides are fragmented – meaning they are not connected by vegetation or the ground layer, or there are too many large gaps - native animal populations suffer from a lack of food and experience a lack of genetic diversity and robustness due to an inability to travel for 'out-breeding opportunities'.

The CFA Roadside Program provides support for general roadside fire management issues. If you have a roadside fire management issue, contact your local municipal council or your local CFA office for advice.



'Cleaning up' fallen timber habitat either on roadsides or private land, means the immediate destruction of homes and food sources – real estate and supermarkets - for thousands of native animals, birds, reptiles, and invertebrates. It also creates an instant pest animal harbour.

7. Keeping safe

Fire risk is the most commonly considered risk when retaining the ground storey. Your personal safety is priority in fire. It is imperative that your house, sheds and surrounds are free from all flammable material, and you have prepared a fire plan.

You can have fallen logs on your property and keep safe: Removing all flammable materials around your house and sheds is the best way to protect yourself and your assets in a fire. Remember too, that any material located around the house and sheds can also inhibit emergency access and egress. As the Country Fire Authority (CFA) website states: *Research shows that clearing fuel near your house is one of the most important things you can do to help protect it from a bushfire. Fuel management (such as mowing or slashing grass) and other preventative measures around key assets on your property will have a significant impact on your safety and survival from bushfire.*

It is also recommended that the ground along fence lines is kept free from any flammable material, so it doesn't burn in the event of a fire. If there are larger fallen logs or branches near the house or sheds, they can be re-located to a safe, appropriate area on your property.

Away from your house and sheds, fallen logs become useful habitat, protect the soil, inhibit the effects of erosion, serve as scratching posts for stock or safe havens for newborn calves and lambs, or if semi-submerged can become basking platforms for turtles or perching habitat for water birds in the farm dam.

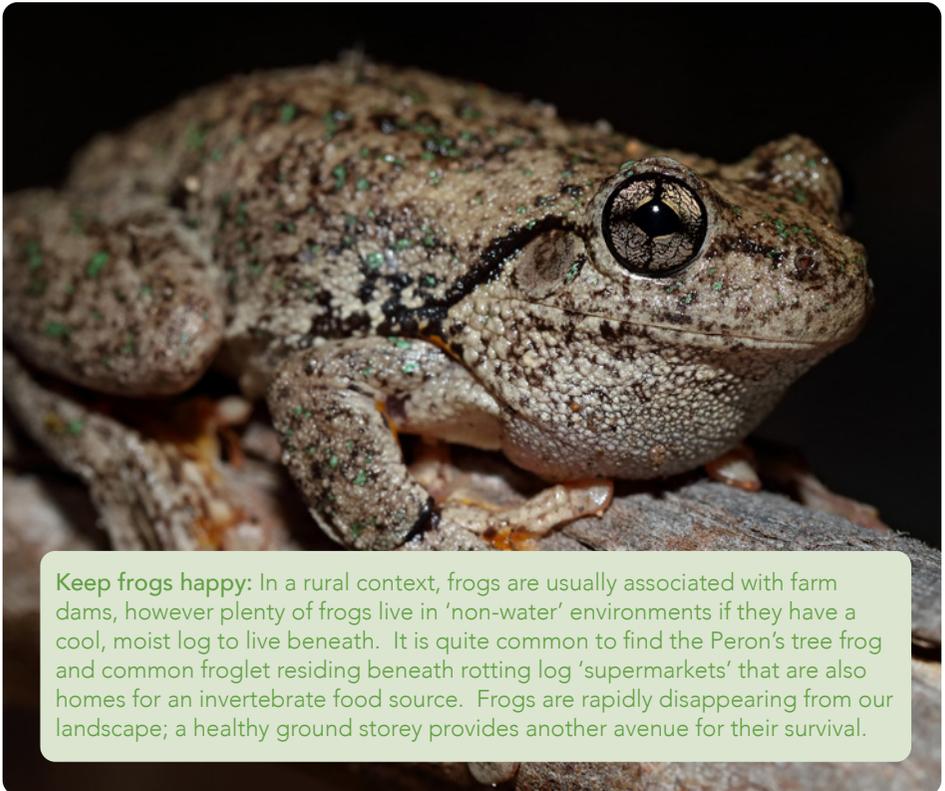
- Before the fire season take steps to remove where practicable, anything flammable around your home.
- The CFA website is a good resource for planning for fire safety around your home and property.
- <https://www.cfa.vic.gov.au/plan-prepare/fire-safety-on-the-farm> and
- <https://www.cfa.vic.gov.au/about/plan-and-prepare> can provide further information on bushfire protection, preparedness, and management.

8. Practical action

- **Retaining the ground storey on your property will save you time.** The time you save burning up this habitat can be better spent doing other jobs around the property.

Reduce the effects of drought: The ground storey is vital for trapping and retaining soil moisture. With a steady decrease in annual rainfall, retaining any moisture in the soil can only be a positive!

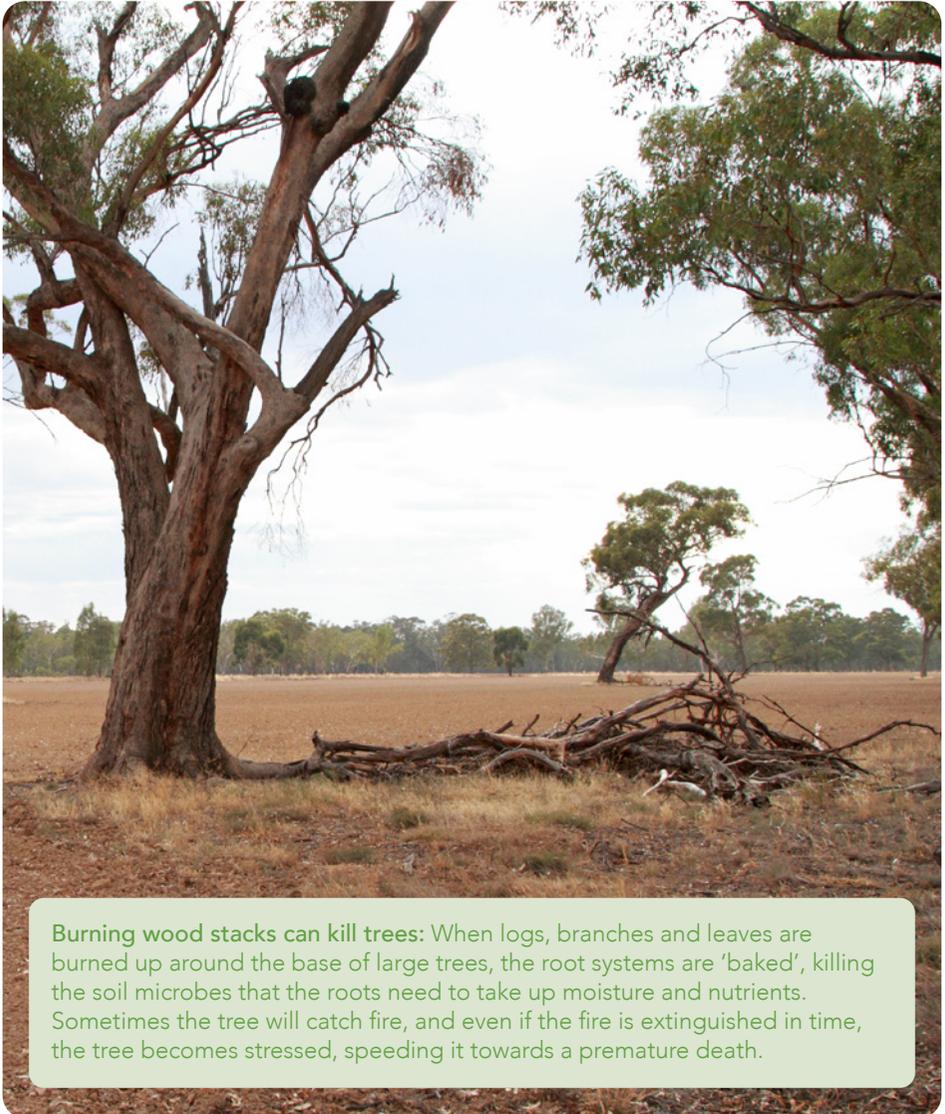
- **Look upon fallen logs, branches, sticks, and leaves as a valuable resource produced by your property.** If it is in the 'wrong spot', relocate this material where possible, to a safe area on the property. Experiment by semi-submerging larger logs and branches in a suitable dam, as habitat for waterbirds, frogs, turtles, fish, yabbies, and insects. It is amazing what animals will turn up when supermarkets and real estate are provided.



Keep frogs happy: In a rural context, frogs are usually associated with farm dams, however plenty of frogs live in 'non-water' environments if they have a cool, moist log to live beneath. It is quite common to find the Peron's tree frog and common froglet residing beneath rotting log 'supermarkets' that are also homes for an invertebrate food source. Frogs are rapidly disappearing from our landscape; a healthy ground storey provides another avenue for their survival.

Frogs don't always need a body of water – damp soil beneath a log in the paddock can provide the perfect refuge for this Peron's tree frog.

- **Don't stack it – spread it!** Relocate large logs around the 'drip line' vicinity of paddock trees. This will improve the health of the tree which provides shade and shelter for stock, by limiting the impact of concentrated stock camping, therefore reducing soil compaction, excess manure and nutrient build up, soil erosion and changes in soil biology. Do not pile up logs directly beneath trees, as this will only create a harbour for pest animals and will become a concentrated source of fuel for a hot fire that will most likely kill the tree, should fire occur.



Burning wood stacks can kill trees: When logs, branches and leaves are burned up around the base of large trees, the root systems are 'baked', killing the soil microbes that the roots need to take up moisture and nutrients. Sometimes the tree will catch fire, and even if the fire is extinguished in time, the tree becomes stressed, speeding it towards a premature death.

Stacking timber is not advised – it creates a pest animal harbour, and should a fire occur, the concentration of fuel will create a 'hot' burn that will destroy the tree.



Protection for new plants: Even small sticks provide protection for small grasses and plants, such as this hibbertia. The ground storey provides protection from frost, wind, the impacts from animals, sun, and even heavy raindrops which can easily displace germinating seeds.

- **Leave some large logs scattered around the paddock.** This provides habitat for native species, provides protection for the soil and any newly-emerging seedlings (which are the next generation of paddock trees) and are useful scratching stations for stock.

- **Logs in the paddock are protective havens for newborn stock.** Logs scattered strategically throughout paddocks provide safe places for newborn calves and lambs to be 'parked' by their mothers where they are sheltered from the elements and potentially from predators. Having a safe place to safely stash their young may reduce the occurrence of mis-mothering by stock.
- **Pest animal harbours.** Fallen logs and branches can become a fox and rabbit harbour if they are piled up in a stack. Leave the logs scattered on the ground, and the only animals that will use this habitat as a hiding spot are the small native ones.
- **Leave fallen logs, sticks and leaves and start a new neighbourhood trend.** By not 'cleaning up' this habitat you are conveying the message that the ground storey is an important and valuable resource.



Hiding places: The ground storey also provides camouflage, enabling ground-dwelling native species, such as the endangered bush stone-curlew and white-throated nightjar, to rest through the day and avoid predators. The ground storey is fundamental to the 'natural maintenance' of our rural ecosystems and is a vital component in our landscape for overall healthy, functioning ecological processes.

Main photo: Bush-stone curlew. Insert: White-throated nightjar. The value of camouflage for newly-hatched chicks cannot be underestimated!



Main photo: Flame robin. Insert: Red-capped robin.

- **Save our native species:** The Australian landscape is renowned for its rich and varied bird life - how fortunate we are! Unfortunately, one in five woodland bird species are threatened with extinction. Ground-foragers and ground-nesters form around half of our woodland bird species; the ground storey is vital to their survival.



The ground storey means different things to different birds. Brown treecreepers move over logs and branches to feed on insects beneath the bark. Buff-rumped thornbills feed and nest amongst logs and branches. Bush-stone curlews depend upon a healthy ground storey, logs and branches for food, camouflage, and daytime roosting. Sacred kingfishers feed on small reptiles that rely on the ground storey for their food and shelter. Superb fairy-wrens dart to and from the safety of a branch or log whilst hunting insects. Hooded robins 'perch and pounce' from fallen logs (adapted from J. Radford, 2004).

Main photo: Sacred kingfisher. Insert top: Bush-stone curlews. Insert bottom: Superb fairy-wren.

CASE STUDY 1

Bush-stone Curlews: Kings and Queens of Camouflage

The bush stone-curlew curlew (*Burhinus grallarius*) is endangered in Victoria (*Victorian Flora and Fauna Guarantee Act 1988*). This iconic woodland bird is mostly nocturnal; through the day it tends to lie or stand motionless, cryptically camouflaged amongst the safety of fallen logs and branches. At night it will hunt and feed. It is extremely difficult to see as it has evolved to camouflage within its ground storey habitat but can sometimes be detected by its distinctive 'weer-lo' calls after dark. Bush stone-curlews have a varied diet, but prefer to feed on insects, slugs and snails, small reptiles, seeds and occasionally small mammals, all of which are found amongst the ground storey supermarket.

Bush-stone curlews lay their eggs directly on the open ground close to logs and vegetation that provide day roosting safe-havens and a supply of food. Removal of logs and branches, and the subsequent loss of a food supply, is the leading reason why adult birds fail to breed or why chicks perish.

A few years ago whilst undertaking field work, ecologist Chris Tzaros came across a welcome site in a farm paddock. Camped peacefully beneath a paddock tree beside a log and a few scattered branches, were a pair of bush-stone curlews – a rare and wonderful find. Upon returning to check the site in the autumn, Chris discovered the site was in the process of being 'cleaned up'. Gone is the real estate and supermarket; gone are the curlews.



With the destruction of this important habitat, bush-stone curlews are unlikely to return to the site of this destroyed 'real estate'. Within a single breeding season they disappear from the farm, and most likely, the wider landscape.



Main photo: Bush-stone curlew. Insert: Bush-stone curlew chicks. These birds are highly reliant upon the ground storey.



Hooded robins need small branches close to the ground from which to 'perch and pounce'.

CASE STUDY 2

Hooded Robins: Perchers and Pouncers

The hooded robin (*Melanodryas cucullate*) is threatened in Victoria (*Victorian Flora and Fauna Guarantee Act 1988*). This little bird has the distinction of being the only 'black and white' member of the robin family, and at around 170mm in length, is larger than its robin cousins, but smaller than a mudlark or pied butcherbird. The female is grey-brown in colour. Like all Australian robins, it is not closely related to either the European or American robin, rather it shares its family tree with pardalotes, fairy-wrens and honeyeaters.

The hooded robin employs a 'perch and pounce' tactic, where upon it will sit motionless on low branches and logs until it spots its invertebrate prey below... and pounces. Its survival is largely dependent upon these perches from where it can gain the best vantage point to spot prey and intruders, and it seems that the hooded robin will choose its foraging sites largely based upon the quality of perching sites available. These all-important perches are usually supplied by the horizontal branches, twigs and stems of fallen trees and logs.

CASE STUDY 3

Marbled Geckos: A Life Lived in a Few Square Metres

The marbled gecko (*Christinus marmoratus*) is non-threatened in Victoria (*Victorian Flora and Fauna Guarantee Act 1988*), however it is a species for which we need to remain vigilant, as its survival greatly depends on the actions of humans.

This little reptile needs an environment of logs, sticks, branches and camouflaging ground cover. It has managed to adapt to the human built environment using crevices in fence posts and making use of small spaces around sheds and buildings.

However, the more natural environment for the marbled gecko is amongst the ground storey, especially around large old trees. The combination of logs, branches and sticks around a large mature tree with its broad trunk, copious bark and hollows, leaves and indentations, becomes the marbled geckos entire universe – in just a few square metres!

Everything this little reptile will ever need is here. Beneath the ground storey the soil is damper, meaning a wider menu selection for the marbled gecko, and where there are safe places for a nest of tiny gecko eggs.



Marbled geckos rely on the safety and food provided by the ground storey.



The yellow-footed antechinus is a carnivorous marsupial that relies on the ground storey in which to hide when foraging for food in the wide, dangerous world.

CASE STUDY 4

Antechinus: A Mighty Marsupial

Antechinus are members of the *dasyurid* family, whose relatives include the Tasmanian devil, brush-tailed phascogale, quoll, and dunnart. There are 10 species of antechinus in Australia, however the agile antechinus (*Antechinus agilis*) and the yellow-footed antechinus (*Antechinus flavipes*) are the species most commonly found in the Goulburn Broken catchment. Antechinus are non-threatened in Victoria (*Victorian Flora and Fauna Guarantee Act 1988*), however as with the marbled gecko, it is a species for which we need to remain vigilant, as its survival greatly depends on the actions of humans.

Antechinus look very much like house mice – but this is where the similarities stop. The antechinus has many sharp teeth, whilst the house mouse, being a rodent, has chisel-shaped front teeth. The antechinus has five clawed toes on its front feet and four clawed toes on its back feet. The house mouse has four clawed toes and a clawless ‘thumb’ on its front feet, and five clawed toes on its back feet. The antechinus has a furred tail and ‘layered’ round crinkly ears, whilst the house mouse has a bald tail and ‘single layered’ ears.

Antechinus forage furiously amongst the ground storey. Not only is this fierce little critter a joy to watch when darting about the logs and trees it is an important link in the food chain, as it becomes food for larger predators such as goannas and birds of prey.

CONCLUSION:

One property, many homes.

We don't live in isolation on our properties; we share it with a multitude of mammals, birds, insects, invertebrates, reptiles, frogs, and plants that have also called it home for millennia. Just how diverse and interesting this natural element is, is now up to us to determine, through the way we manage the land.

The ground storey is literally 'real estate and supermarkets' for our native fauna. By leaving the ground storey in situ, or by relocating it to a more suitable location on the property, where safe and possible, you are allowing for the natural processes on your property to unfold. You are giving a more diverse range of native species the opportunity to survive, feed and breed, and in return they will provide you with the all the enjoyment and satisfaction a healthy, functioning, and sustainable 'living' property with its varied layers of habitat can provide.



Although lacking in understorey plants and shrubs and showing the effects of 'pugging' by livestock, this site is used as a roosting site by bush-stone curlews. The presence of some fallen timber is all that is needed to make this site viable 'real estate and supermarkets' for this endangered species.

APPENDIX 1.

Removal of dead old trees (either standing or on the ground) results in the loss of important habitat such as hollows and decaying wood (Gibbons & Lindenmayer 2002) for a wide variety of vertebrates, invertebrates, and microbial species.

The table below lists some of the mammals, birds, and reptiles reliant on a healthy, intact ground storey, most relevant to the Goulburn Broken catchment and nearby regions. This list is not exhaustive.

Appendix 1.

List of prominent native species affected by the removal of fallen logs, branches, sticks and leaves.

Mammals

Short-beaked echidna (*Tachyglossus aculeatus*)
Agile antechinus (*Antechinus agilis*)
Yellow-footed antechinus (*Antechinus flavipes*)
Brush-tailed phascogale (*Phascogale tapoatafa*)
Common dunnart (*Sminthopsis murina*)
Fat-tailed dunnart (*Sminthopsis crassicaudata*)
Ride's free-tailed bat (*Ozimops ridei*)
Southern free-tailed bat (*Ozimops planiceps*)
Lesser long-eared bat (*Nyctophilus geoffroyi*)
Gould's long-eared bat (*Nyctophilus gouldi*)

Birds

Turquoise parrot (*Neophema pulchella*)
Hooded robin (*Melanodryas cucullata*)
Crested bellbird (*Oreocia gutturalis*)
Chestnut-rumped thornbill (*Acanthiza uropygialis*)
Buff-rumped thornbill (*Acanthiza reguloides*)
Southern whiteface (*Aphelocephala leucopsis*)
Brown tree creeper (*Climacteris picumnus*)
Bush-stone curlew (*Burhinus grallarius*)
Speckled warbler (*Pyrrholaemus sagittatus*)
Jacky winter (*Microeca fascinans*)
Red-capped robin (*Petroica goodenovii*)
Peaceful dove (*Geopelia placida*)
Painted button-quail (*Turnix varius*)

Reptiles and frogs

Southern rainbow skink (*Carlia tetradactyla*)
Tree skink (*Egernia striolata*)
Yellow-bellied water skink (*Eulamprus heatwolei*)
Bougainville's skink (*Lerista bougainvillii*)
Grey's skink (*Menetia greyii*)
Boulenger's skink (*Morethia boulengeri*)

Garden skink (*Lampropholis guichenoti*)
Ragged snake-eyed skink (*Cryptoblepharus pannosus*)
Eastern striped skink (*Ctenotus robustus*)
White's skink (*Egernia whitii*)
Eastern three-toed skink (*Hemiergis talbingoensis*)
White-lipped snake (*Drysdalia coronoides*)
Red-bellied black snake (*Pseudechis porphyriacus*)
Eastern brown snake (*Pseudonaja textilis*)
Tiger snake (*Notechis scutatus*)
Blind snake (*Anilius nigrescens*)
Little whip snake (*Parasuta flagellum*)
Dwyer's snake (*Parasuta dwyeri*)
Carpet python (*Morelia spilota metcalfei*)
Bandy bandy (*Vermicella annulate*)
Tree dragon (*Amphibolorus muricatus*)
Olive legless lizard (*Delma inornata*)
Striped legless lizard (*Delma impar*)
Burton's legless-lizard (*Lialis burtonis*)
Marbled gecko (*Christinus marmoratus*)
Eastern stone gecko (*Diplodactylus vittatus*)
Eastern bearded dragon (*Pogona barbata*)
Common blue-tongued lizard (*Tiliqua scincoides*)
Tree goanna (*Varanus varius*)
Sand goanna (*Varanus gouldii*)
Eastern banjo frog (*Limnodynastes dumerilii*)
Spotted marsh frog (*Limnodynastes tasmaniensis*)
Eastern sign-bearing froglet (*Crinia parinsignifera*)
Common eastern froglet (*Crinia signifera*)
Sloane's froglet (*Crinia sloanei*)
Brown toadlet (*Pseudophryne bibronii*)
Southern brown tree frog (*Litoria ewingii*)
Peron's tree frog (*Litoria peronii*)

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<https://www.cfa.vic.gov.au/plan-prepare/fire-safety-on-the-farm> Copyright 2018 Country Fire Authority (CFA)

<https://environment.gov.au/biodiversity/threatened/key-threatening-processes>

<https://www.environment.nsw.gov.au/determinations/DeadwoodRemovalKtp.htm>

<https://www.environment.nsw.gov.au/resources/cpp/AssessHabitat.pdf>

USEFUL INFORMATION:

<http://biocache.ala.org.au/explore/your-area> – Atlas of Living Australia – find wildlife recorded in your area.

<http://birdsinbackyards.net/places> – how to bring back native birds

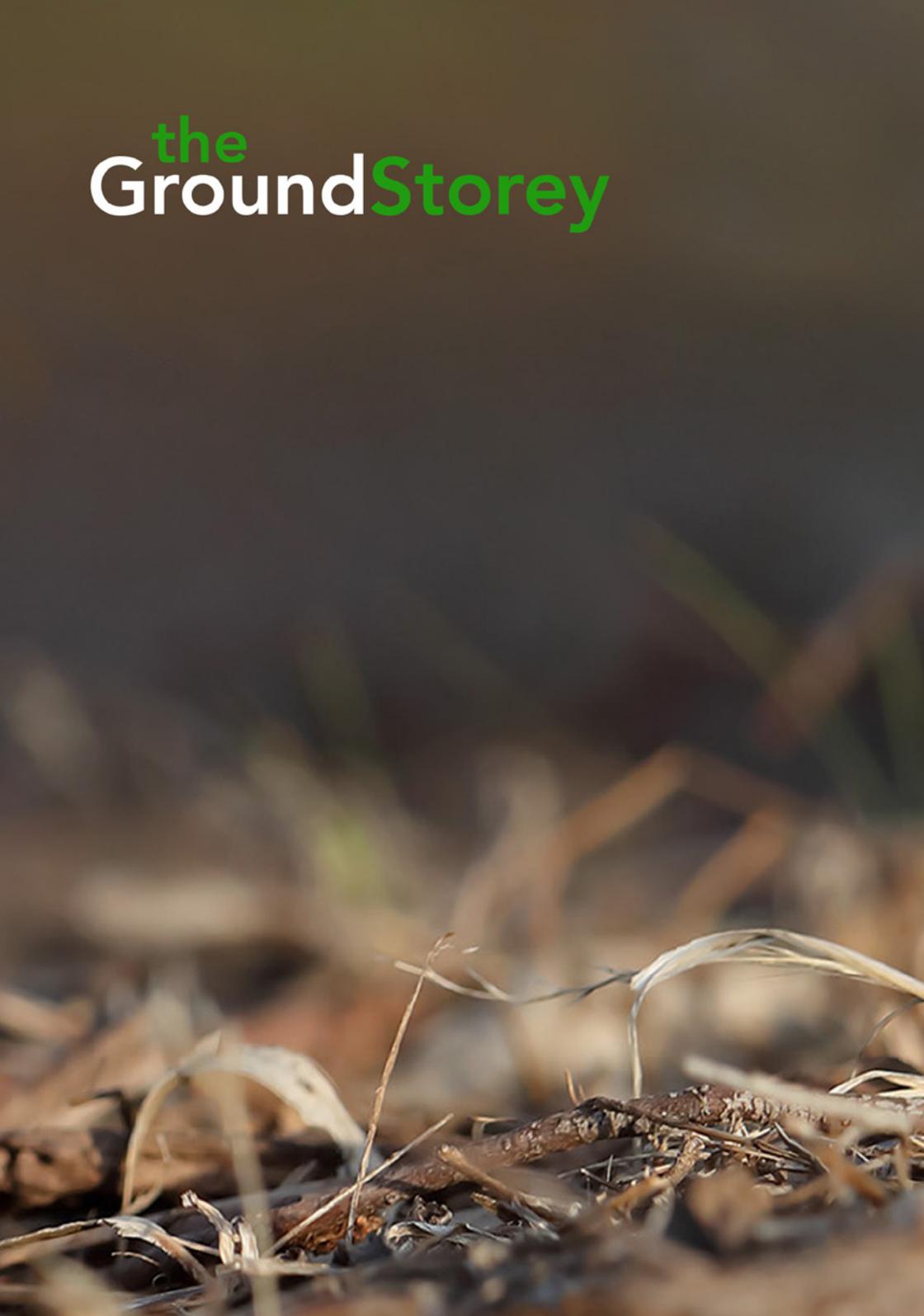
www.cfa.vic.gov.au

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<https://www.cfa.vic.gov.au/plan-prepare/fire-safety-on-the-farm>

For more information about the CFA Roadside Program, contact CFA Community Safety on 03 9262 8444.

For information about VicRoads road management issues go to the VicRoads website <https://www.vicroads.vic.gov.au/>

A close-up photograph of the ground, showing a mix of dry, brown twigs, leaves, and soil. The focus is sharp on the foreground elements, while the background is blurred. The lighting is natural, highlighting the textures of the organic matter.

the
GroundStorey