



SUSTAINABLE FARMS

HEALTHY FARMERS, HEALTHY FARMS,
HEALTHY PROFITS

FIRE IN FARM LANDSCAPES

Keep your fallen timber and dead trees

Fallen timber and dead trees are essential to healthy, functioning ecosystems. They provide refuge, shelter and resources for plants and animals. This shelter is particularly important for animals during fire and to support ecosystem recovery after fire.

Keeping fallen timber and dead trees in the landscape is one of the best things you can do for biodiversity and landscape health on your farm.

In a paddock or on a woodland floor, fallen timber stabilises soil, reduces erosion, and creates a protected microclimate where small animals can thrive, nutrients collect, and seedlings can gain a foothold protected from grazing and the elements.

Large dead trees provide hollows that are essential nesting sites for wildlife – sites that are rapidly disappearing, meaning that every large dead tree, whether alone in a paddock or part of a vegetated patch, is valuable.

Supporting healthy farm ecosystems

- Hundreds of species of wildlife rely on fallen timber for shelter and food resources, while standing dead trees often provide hollows that are important nesting sites for wildlife.
- During natural disasters such as fires, logs and tree hollows provide shelter for wildlife.
- Retained dead timber plays an essential role in ecosystem recovery post-fire, enabling flora and fauna to recover more rapidly across the landscape.
- You can support biodiversity by retaining fallen timber and dead trees, particularly large hollow-bearing trees, on your farm.



A superb parrot (*Polytelis swainsonii*) perches in the branches of a burnt tree. Photo by Logan Lalonde CC-BY-NC-Int.

Why keep fallen timber?

Fallen timber is often cleared for firewood, for aesthetic reasons, to facilitate farm operations, and sometimes due to concern about fire risk. But the removal of fallen timber is a key threatening process in woodland ecosystems because of the many species that utilise and rely on it.

There are a range of benefits to retaining fallen timber in agricultural landscapes, including:¹

- Cycling nutrients back into the soil as the timber degrades
- Reducing erosion and stabilising slopes and gullies
- Supporting more productive microclimates and helping retain localised soil moisture
- Creating a site for re-colonisation by ground cover plants, particularly wind and water dispersed plants, following fire or other disturbance
- Providing shelter, habitat, food resources and foraging grounds for native species, from tiny microbial communities through to birds and mammals.

Removing fallen timber interrupts all of these processes, leading to reduced biodiversity and less resilient ecosystems. It can also have a devastating effect on wildlife.²



Native grass resprouting from the ash bed, sheltered by fallen timber. Photo by Amber Croft.

Tree hollows: Wanted dead or alive

- More than 300 native vertebrate species use tree hollows to survive.³
- It can take a century or more for hollows to develop in woodland trees, so it is extremely important to retain and protect large old trees, including paddock trees, in the landscape.
- Even if large old trees are killed by fire, their role in providing hollows for breeding and shelter will continue to be important. Fires will often accelerate the development of new hollows where tree limbs are lost.

An important resource during and after fire

Fallen timber is an important habitat element, especially in the context of fire, as it provides shelter during a fire and supports flora and fauna to recover from fire.

During a fire, fallen timber and tree hollows provide refuges for mammals, birds, reptiles and insects. Timber on the ground also provides sheltered niches where plants, seeds, micro-organisms and fungi are more likely to survive.

After fire, the areas around fallen branches and trees become critically important sites for post-fire recovery. Fallen timber can:

- Provide food and shelter for surviving wildlife, including protection from predators such as foxes, which will often target burnt landscapes in search of prey
- Create sites where leaf litter and nutrients accumulate, and where emerging seedlings and resprouting grasses are more protected from sun, wind and grazing animals
- Provide ground cover and stability to exposed soils, reducing soil erosion and ash runoff from rain or winds.

Is fallen timber a fire risk?

Not all fallen timber increases fire risk. Larger branches, logs and fallen trees do not easily ignite and, once ignited, don't contribute significantly to the spread of fire. In contrast, fine fuels contribute the most to fire spread, intensity and severity⁴, and are the target of fuel reduction burns.

Fine fuels:

- Includes woody debris < 6mm diameter, such as dry grass, leaf litter, twigs and dry bark
- Have very low moisture content; are quick to ignite and quick to burn out
- Enable fires to spread rapidly and higher into the woodland canopy, which can lead to 'crowning' fires
- Are easily transported ahead of the fire front by wind, contributing to spot fires

Heavy fuels:

- Includes woody debris > 6mm diameter; such as dead branches, trees and logs
- Are slower to reach ignition so may not ignite as fire passes through; however if heavy fuels do ignite, they may continue to smoulder after the fire front has passed
- Create only low flame height and low risk of ember attack

Making the most of fallen timber and dead trees on farms

Keep

Wood might 'grow on trees' but it is a resource that can take many years to accumulate. Unless it poses a direct risk to property assets, keep it in the landscape. Leaving fallen timber and burnt standing trees in place will provide important habitat and resources for native wildlife.

Connect

Connectivity of habitat patches is necessary for many animals to move across the landscape and access resources, especially in fire-affected areas. Fallen timber and dead trees can act as stepping stones for fauna, whether that be an isolated paddock tree or scattered branches among rocky outcrops. Retaining fallen timber in different environments throughout the landscape supports more complex and resilient ecosystems on your farm.

Cultivate

After fire or drought, trees may appear dead but regrowth can occur many months later – often not until after rain. Even young fire-affected plantings may re-sprout, and fallen trees can continue to regrow if not completely severed. If possible, exclude livestock from regenerating areas to support vegetation regrowth.

Create

Sometimes fallen timber needs to be moved away from infrastructure or tracks. Think of it as a useful ecological resource instead of waste! Rather than burning it, use it creatively and transfer it to a location where it can provide habitat for wildlife, or to slow erosion on slopes or in gullies. It can also be used to re-sag creeks or dams, providing habitat for aquatic species.



A lace monitor (*Varanus varius*) shelters in the hollow of a dead tree. Photo by David Smith.

REFERENCES

- ¹ Threatened Species Scientific Committee (2005) *Continuing net loss of native hollow-bearing trees and coarse woody debris due to firewood harvesting practices. Advice to the Minister for Environment and Heritage*. Department of the Environment and Heritage.
- ² Lindenmayer DB, Michael D, Crane M, Florance D and Burns E (2018) *Restoring Farm Woodlands for Wildlife*. CSIRO Publishing, Melbourne.
- ³ Gibbons P and Lindenmayer DB (2002) *Tree Hollows and Wildlife Conservation in Australia*. CSIRO Publishing, Melbourne.
- ⁴ Rural Fire Services. *Standards for low intensity bushfire hazard reduction burning*. URL: <https://www.rfs.nsw.gov.au/resources/publications/hazard-reduction>. Accessed 31 Jan 2020.

Reducing fire risk on farms

Fallen timber and dead trees are not major contributors to high fire risk. The most effective way to protect built assets such as houses and other infrastructure from fire is to maintain a 30-40m buffer zone around them, which is kept clear of fine fuels and highly flammable vegetation. Recommendations regarding buffer zones vary as the size and management of a buffer zone will depend on the slope of the land, connectivity and structure of surrounding vegetation, and amount of fine fuels on your property.⁴

Protecting assets

- Strategically plant trees and shrubs to create windbreaks and interrupt embers.
- Maintain low levels of fine fuels throughout the year by watering, hand-raking and mowing.
- Choose fire-resistant or fire-retardant species for any planting near assets. Certain native flora such as kurrajong trees and some saltbushes are a good choice, and are also important for native wildlife. Some non-invasive, fire resistant exotics are also a good choice for planting close to built assets, but have fewer biodiversity benefits.

Managing remnants and plantings

- The Rural Fire Service recommends retaining at least 75% ground cover to prevent soil erosion.⁴
- Fine fuels such as dry grass and leaf litter can be reduced by hand-raking, slashing, mowing, crash grazing, or, when safe, conducting hazard reduction burns. If undertaking hazard reduction burns, take care to avoid damaging heavier fuels such as dead wood or trees.
- Access gates into and tracks through shelterbelts and plantings are crucial to allow access for fire-fighting vehicles or for crash-grazing to reduce fine fuels.

FURTHER INFORMATION

For information about managing native vegetation on your property, including regulations and technical advice, contact your Catchment Management Authority in Victoria, Local Land Services in NSW, or your local council.

For recommendations and advice on buffer zones around buildings and managing fuel loads on properties, contact your local fire authority:

Rural Fire Service (NSW)

T: 1800 679 737
E: www.rfs.nsw.gov.au

Country Fire Authority (VIC)

T: (03) 9262 8444
E: www.cfa.vic.gov.au



Fallen timber provides essential shelter, food and habitat for a range of animals after a fire. Photo by Eleanor Lang.



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