Vegetation Recovery After Bushfire

A guide to natural succession following bushfire in sclerophyll forests and rainforests of south-east NSW

NSW Biodiversity Conservation Trust

NSW GOVERNMENT

Acknowledgement of Country

The NSW Biodiversity Conservation Trust acknowledges the Traditional Custodians of NSW and recognises their ongoing connection to land, waters, biodiversity, and culture.

Aboriginal cultural values are connected to Country and are found in waterways, mountains, wetlands, floodplains, hills, sandhills, rock outcrops and within the biodiversity of these geological features.

These cultural values are often present on privately-owned land and are associated with ongoing cultural practices and learning.

We pay our respects to Elders past, present, and future and commit to genuinely collaborate and partner with Aboriginal people in private land conservation.

Vegetation Recovery After Bushfire: A guide to natural succession following bushfire in sclerophyll forests and rainforest of south-east NSW **is a research project of Australian National University Bachelor of Science and a Bachelor of Environment and Sustainability student Ella Wishart.**

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Contents

Introduction

Vegetation recovery following bushfire is affected by a range of factors, including rainfall, temperature, fire severity, and the suite of species present before the fire.

This guide describes common changes over the time natural succession occurs, and as habitat recovers after fire.

However, it is important to note that every fire event and site is unique, so there may be variations in the changes observed between different areas.

Many Australian plant species have evolved over thousands of years to cope with fire, and vegetation recovery after a fire is a tale of resilience and rapid regrowth with burned areas generally returning to a state like their pre-fire conditions.

This can take significant time and monitoring and recording the species can help document vegetation recovery.

What happens after high-severity bushfire?

Natural succession

Vegetation and canopy cover removed by a high severity bushfire.

Dense regrowth less than a year after fire in the same location.

Credit: Adam Hook

The NSW Biodiversity Conservation Trust's *R.E.N.E.W.S* fact sheet offers advice following a bushfire.

High-severity bushfire can initially cause stark changes to an area.

You may notice:

- **cleared litter, grasses and shrubs in the ground and understorey layers**
- **removal of the canopy and an increase in light reaching the ground**
- **an accumulation of logs on the ground due to fallen trees**
- **large patches of exposed, bare ground.**

The removal of vegetation by bushfires creates an open environment where light and nutrients are readily available.

Many plant species capitalise on these favourable growing conditions, leading to a flourish of dense regrowth soon after a bushfire, with species that weren't present before the fire.

Some species store seeds in the soil that persist long after the mature parent plants die and germinate only after fire passes through. Other species may be brought into a recently burned area by animals, wind or water.

As plants grow, the amount of light, space, and nutrients available changes. Individual plants that cannot access enough light, water or other resources to grow will die off, meaning the density of regrowth will slowly thin with time due to the number of plants decreasing.

Over time, as resource availability changes, and individual plants senesce, the dominant species in an area will change.

Species less tolerant of low light or nutrient levels can thin or disappear if outcompeted. Species that will dominate are those best suited to growing under the new conditions.

This dynamic process of species turnover is known as natural succession.

Natural succession leads to vegetation structure in an area changing over time.

For example, after a fire, sunlight reaches the ground allowing grasses and herbs to flourish and grow rapidly. Then, as the cover of shrubs and taller species

increases, grass growth stabilises and declines while shrub cover peaks.

The eventual return of the canopy shades the understorey and ground layers triggering a transition to an open understorey with a lower density of shrubs.

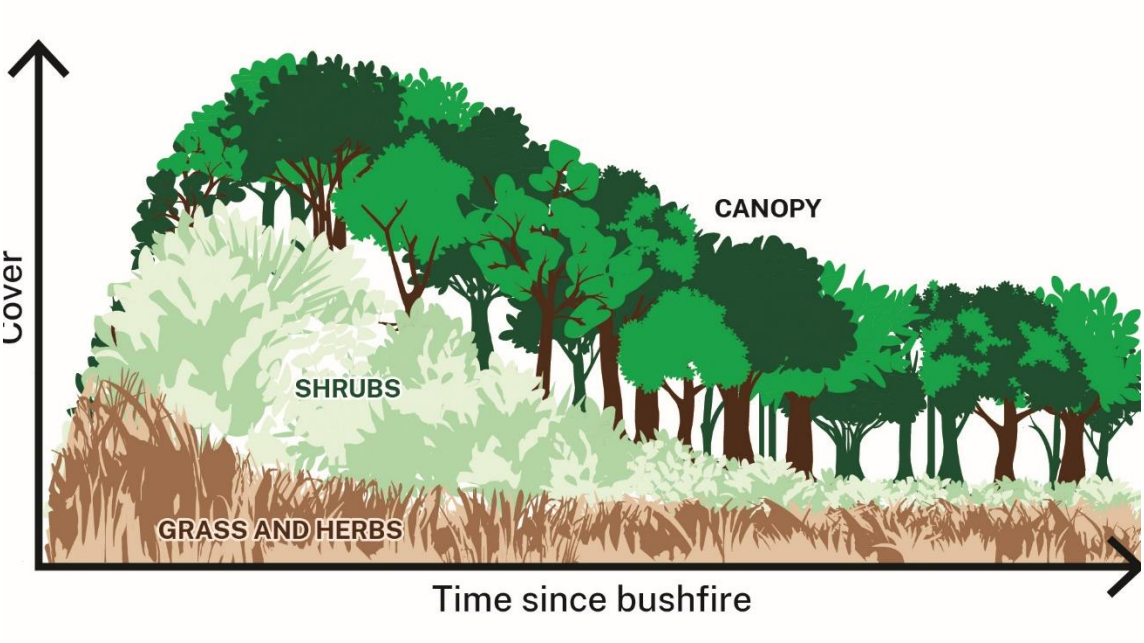


Figure 1: A depiction of the rapid peak and decline in grasses, herbs, shrubs and canopy following a bushfire.

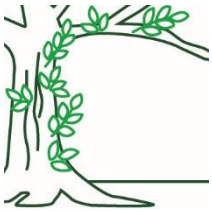
Plant response mechanisms

Plants can respond to fire by 'resprouting' or germinating from seed stored in the soil.

Species that resprout have specialised tissue, or buds, from which new shoots form after the plant has burned. These tissues and buds are often protected by thick bark, leaf bases, or are hidden underground.

In many cases, species can both resprout and germinate from seed, and are known as facultative resprouters. Examples of facultative resprouters include red stringybark (*Eucalyptus macrorhyncha*) and blunt-leaf wattle (*Acacia obtusifolia*).

Table 1: Descriptions of resprouting responses post-bushfire

Resprouting	
	**Basal resprouting** Shoots emerge from the base of the trunk, at or below the ground. This can be especially common after high severity fire.
	**Epicormic resprouting** Shoots emerge along the trunk and branches from specialised tissue protected by bark. This gives trees a 'fuzzy' appearance during their recovery.
	**Suckers** Regrowth is produced from the roots or rhizomes hidden underground.
	**Aerial budding** Flowers and shoots emerge from buds at the end of a tall stalk or stem protected from fire. Grasstrees and tree ferns often regenerate this way after fire.

However, some species can only germinate from seed and are called obligate seeders. Examples of obligate seeders include alpine ash (*Eucalyptus delegatensis*) and mountain ash (*Eucalyptus regnans*).

Very few Australian plant species fail to respond to fire. An example that does not recover and is completely removed from fire-affected areas is brown beech (*Pennantia cunninghamii*).

Species that are removed by fire may still return to an area if seeds are carried by birds, wind or water to germinate at a site.

Table 2: : Descriptions of seed germination responses post-bushfire

Seed germination	
	**Seed stored in the canopy** Often stored in woody capsules, seeds in the canopy can fall to the ground and germinate when fire scorches the canopy.
	**Seed stored in the soil** Seeds buried in the soil are protected from heat and can germinate after a fire passes through.
	**Imported seeds** No seed is stored at the site and must be brought in by wind, water or animals after a fire.

Vegetation recovery in wet sclerophyll forests

Bushfires in wet sclerophyll forest are usually infrequent and of a high severity. They occur mostly in summer months and often during periods of drought.

Plants found in wet sclerophyll forests have evolved over time to cope with this fire regime and are among the most fire-adapted species on the planet.

A high density of seedlings established less than 1 year after fire in a wet sclerophyll forest.

Credit: Adam Hook/NSW Biodiversity Conservation Trust

Canopy recovery

Most eucalypts that dominate the overstorey in wet sclerophyll forests can resprout and germinate from seed after fire.

Epicormic and basal resprouting can start one to two months after a bushfire[1].

After a very high severity fire, basal resprouting may be more common than epicormic growth. This is because the specialised tissues responsible for epicormic resprouting can be damaged by very intense heat, while those underground are better protected.

Seeds stored in the canopy fall to the ground almost immediately after fire, but it may take several months for seedlings to emerge.

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[1] **See Table 1.**

The aftermath of fire in a wet sclerophyll forest.

Overstorey trees regenerating one year after fire in the same area.

Credit: Bidda and Julian Davies.

Significant rainfall helps germination and seedling growth. While a very high density of seedlings is likely to emerge initially, these will thin naturally over time.

The combination of resprouting mature trees and growing seedlings means canopy cover can return within 20 years after a bushfire in wet sclerophyll forests.

In forests dominated by ash eucalypts like alpine ash (Eucalyptus delegatensis sub. delegatensis), recovery is slightly different because these species are obligate seeders, and only germinate from seed after fire.

These trees store copious quantities of seed in their canopy, which are released and germinate in their thousands following fire.

predation, soon after emerging, meaning seedling regrowth thins quickly.

Seedlings that survive will go on to form canopy cover. In ash forests, canopy cover may take 40 years to reform.

Understorey recovery

Resprouting and germination of grasses and shrubs can begin in the first month after a bushfire and is most prolific in the first year.

Sprouts, suckers, and seedlings[2] emerge to reform understorey layers relatively quickly, compared to the canopy.

Ground cover and understorey regrowth will often return within two years of a bushfire, leaving few areas of exposed soil and greatly minimising the chance of erosion.

Tree fern species usually flower and sprout new growth very quickly after fire. These species are aerial resprouters and have buds protected from heat.

Tree ferns including the soft tree fern (*Dicksonia antarctica*) and rough tree fern (*Cyathea australis*) can start to recover within a month of fire.

It's very common for a thick, shrub-filled understorey to form and dominate in the first five to 10 years following a fire, often comprised of *Acacia* and/or *Pomaderris* species.

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[2] See Table 2.

These shrub species produce seeds that lie dormant in the soil for decades. One study[3] reported the germination of a 151-year-old Australian blackwood (*Acacia melanoxylon*) seed.

Seed accumulates in the soil between fires, and when a fire does pass through, the heat and smoke can trigger widespread seed germination.

A thick understorey established two years after bushfire.

Credit: Clare Kerr/NSW Biodiversity Conservation Trust

The understorey that is generated by this post-fire regrowth will thin naturally over time when individual plants are outcompeted and shaded by the reforming overstorey canopy, and as species reach the end of their lifespan.

Depending on the shrub species present, it may take between 50 and 70 years for shrubs to thin enough for the vegetation community to return to an open, grassy understorey.

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[3] Leino, M.W., Edqvist, J. Germination of 151-year old Acacia spp. seeds. Genet Resour Crop Evol 57, 741–746 (2010).

Vegetation recovery in dry sclerophyll forests

Fire in dry sclerophyll forests

Dry sclerophyll forests in south-east Australia are fire prone environments. Infrequent, high-severity fires are a common feature of these ecosystems.

Plants found in dry sclerophyll forests often recover rapidly after high-severity fire.

Canopy recovery

Almost all eucalypt species dominating the canopy of dry sclerophyll forests respond to fire by both resprouting and germinating from seed.

In dry sclerophyll forests, it can take between 10 and 15 years for canopy coverage to return.

Resprouting from the base or along the trunk and branches often begins within a month or two of a fire passing through. If the fire was of a very high severity, basal resprouting may be more common than epicormic resprouting, because intense heat can damage the buds along the trunk and branches needed for epicormic regrowth to form.

In basal resprouters, these buds are below ground and protected from heat by insulative soil.

Many eucalypt species store seeds in the canopy. These are released soon after a fire passes through and germinate in the ash bed and soil. Seedling emergence is very dependent on rainfall and temperature but is most prolific in the first year after fire.

Many seedlings die soon after emerging. Some are eaten while others fail to get the water or nutrients to flourish in the harsh conditions of dry sclerophyll environments. This means initial seedling regrowth thins quickly, with only hardy survivors going on to form the overstorey canopy.

Understorey recovery

Understorey species can begin resprouting and germinating from seed one to two months following a bushfire, with regrowth at its most prolific in the first year.

Many grass species can resprout after fire. The density of grasses and other ground cover species increases rapidly, then stabilises about six years after a fire when

growing shrubs and taller species shade the ground layer.

It is very common for a dense, shrub-filled understorey to form and dominate in the first five to 10 years after a fire.

Some shrub species resprout after fire, often by producing suckers and new growth from underground structures. This may occur in species like narrow-leaf bitter pea (*Daviesia mimosoides*) or blunt-leaf wattle (*Acacia obtusifolia*), and within the first month after fire.

In dry sclerophyll environments, most shrub species produce seeds that can lie dormant in the soil for up to several decades. These seeds build up in the soil between fires and can remain even after the mature parent plants have died.

When a fire passes through, the heat and smoke can trigger seed germination, leading to mass seedling emergence in the first year after a bushfire and creating a dense, thick understorey.

As the canopy closes and begins to shade the understorey, and as some shrubs reach the end of their lifespan, this shrubby understorey thins naturally.

This often begins 10 to 20 years after fire, starting the transition back to an open, grassy understorey. Depending on the shrub species present, it may take between 35 and 50 years for a full transition to an open, grassy understorey that resembles pre-fire conditions.

Vegetation recovery in temperate rainforests

Fire in temperate rainforests

The cool, humid conditions in temperate rainforests mean severe fire is generally rare in these ecosystems, often only occurring during drought periods when a fire spreads from surrounding areas.

Even though fire isn't common in these forests, many rainforest plants still possess adaptations that allow them to recover after bushfire.

One study[4] in Northern NSW found 93 per cent of woody rainforest plants had begun to recover within the first three years after bushfire.

Recovery of a rainforest after fire typically takes longer than witnessed in sclerophyll forests, which means rainforests are regarded as 'fire sensitive' environments.

However, it is possible for pre-fire conditions to eventually return.

Canopy recovery

Many species that dominate the overstorey in temperate rainforests can resprout or germinate from seed after fire.

Resprouting typically becomes evident within the first year after a bushfire.

Species such as lilly pilly (*Acmena smithii*) and southern sassafras (*Doryphora sassafras*) can begin to show new regrowth months after fire.

In temperate rainforests, basal resprouting and coppicing can be more common than epicormic resprouting, particularly if the fire was of a high severity. As a result, rainforests can appear 'shorter' through the period of overstorey regeneration.

Seed germination is most prolific in the first year following a fire. Initially, dense seedling growth occurs, often featuring a high diversity of species. Seedlings will thin naturally due to being eaten, or because they cannot access enough water or nutrients to thrive.

It is also common for eucalyptus seedlings to emerge near the edges of burned rainforest, in gaps created by fire.

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[4] Baker, A.G., Catterall, C. and Wiseman, M. 2022. Rainforest persistence and recruitment after Australia's 2019–2020 fires in subtropical, temperate, dry and littoral rainforests. Australian Journal of Botany, 70, 189-203.

Rainforest plants are often slow growing, so it can take a long time for canopy cover to reform. The time taken for canopy cover to return also depends on the species present, post-fire rainfall, and the severity of the fire. One study[5] found canopy cover had returned to little more than a quarter of pre-fire levels, 10 years after a bushfire.

Understorey recovery

Grasses and shrubs in the understorey can respond rapidly to fire, and dense regrowth is often evident in the first five years after fire.

The removal of canopy coverage means grasses and herbs in the ground layer can flourish. The ground cover can largely return within two years after fire, driven by grassy species like *Dryopoa dives*, *Poa* and *Carex* species.

Tree ferns can be among the fastest species to recover after bushfire in temperate rainforests. One study[6] found tree ferns in temperate rainforest had returned to their pre-fire frond size within a year of high-severity bushfire.

They respond quickly, due to being aerial resprouters and growing from buds protected by a thick bole. Both the rough tree fern (*Cynthea australis*) and soft tree fern (*Discksonia antarctica*) are examples of aerial resprouters.

A dense, shrubby understorey also typically forms in temperate rainforests after fire. Many shrub species store seed in the soil and these seeds can germinate after fire, with seedlings emerging alongside resprouting shrubs.

Dense shrub regrowth often becomes evident in the first year after fire, and a high shrub coverage typically establishes within two years.

Often, the regenerating understorey will feature many different species and be of higher species diversity than before the fire. This is because some rainforest shrub species can store viable seeds in the soil that germinate after disturbance.

The dominant shrub species in a regenerating rainforest will change over time.

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[5] Tolsma, A., Hale, R., Sutter, G. & Kohout, M. 2019. Post-fire dynamics of Cool Temperate Rainforest in the O'Shannassy Catchment. Arthur Rylah Institute for Environmental Research Technical Report Series No. 298. Department of Environment, Land, Water and Planning. Heidelberg, Victoria.

[6] Tolsma, A. 2022. Rainforest surveys. DWELP Biodiversity response and recovery supplementary report: bushfire impacts on species in Victoria. Melbourne, Victoria: Department of Environment, Land, Water and Planning.

Many rainforest shrubs fast to regrow after fire are short lived and soon replaced by shrubs of a longer lifespan. Species such as kangaroo apple (*Solanum aviculare*) and incense plant (*Calomeria amaranthoides*) can dominate the understorey in the year following a fire, but die off quickly and are replaced by species with greater longevity.

After a high-severity fire, some sclerophyll species such as *Acacia, Pomaderris* and *Cassinia* emerge in an area of burned rainforest. These are usually outcompeted and die off due to the growing canopy species restricting the light available to these shrubs.

Early colonisers

Some native species grow faster than others after a fire has been through. These species possess characteristics that allow them to proliferate and dominate an area in the initial period following fire.

The emergence and growth of colonisers can be alarming, particularly if these species weren't present before the fire and have characteristics suggesting they may be a weed.

However, these species play an important natural role in vegetation recovery. They can prevent erosion, and store or recycle nutrients, such as nitrogen, that assist the recovery of other species.

They may be able to:

- **resprout very soon after fire**
- **produce vast quantities of seeds**
- **produce seeds that remain viable and dormant in the soil for long periods, only germinating after fire**
- **grow rapidly and set seed soon after fire.**

Species with these characteristics are most referred to as colonisers, rapid responders or pioneer species. Colonisers may be species that have remained at the site in the seed store, survived the fire, or moved into the site following a fire.

Table 3: Examples of early colonisers and the vegetation types they're found in

Common name	Species name	DS	WS	TRF
Silver Wattle	*Acacia dealbata*	●	●	○
Spreading Wattle	*Acacia genistifolia*	●		
Mountain Hickory Wattle	*Acacia obliquinervia*	●	●	
Golden Wattle	*Acacia pycnantha*	●		
Red ash	*Alphitonia excelsa*	●	●	●
Incense Plant	*Calomeria amaranthoides*	●	●	●
Forest Bindweed	*Calystegia marginata*	○	●	○
Narrow-leaf Bitter Pea	*Daviesia mimosoides*	●	●	
Golden Tip	Goodia Lotifolia		●	○
Blady Grass	*Imperata cylindrica*	●		
Native Tobacco	*Nicotiana suaveolens*	○	●	●
Bracken Fern	*Pteridium esculentum*	●	●	●
Indian Weed	*Sigesbeckia orientalis*	○	●	●

Common name	Species name	DS	WS	TRF
Kangaroo Apple	*Solanum aviculare*	○	●	●
Oondoroo	*Solanum simile*	●		
Poison Peach	*Trema aspera*	○	●	○

Dry sclerophyll (DS), Wet sclerophyll (WS), Temperate rainforest (TRF).
Generally found: ● *Sometimes found:* ○

Weeds after fire

Weed species present pre-fire can resprout or germinate from seeds left in the soil, just like native species.

Weed species present before a fire often recover, and can increase in cover and abundance, quite quickly after fire if given the chance.

New weed species can also establish in recently disturbed areas if plant matter or seeds are carried to a site by wind, water or animals.

Some weed species may flourish for a short time before being outcompeted by native regrowth. This can be the case for both annual or perennial species, especially where the species does not tolerate shade or reduced nutrient levels.

One study[7] conducted at a site near Canberra reported that dense regrowth of thistles occurred one year after severe fire, but by the end of the second year the thistles had been replaced by native vegetation.

Other weed species, such as Blackberry (*Rubus sp.*), rapidly form dense thickets that hinder the regrowth of native species and should be managed as soon as possible.

Table 4: Weed species commonly seen after bushfire

Common name	Species name	DS	WS	TRF
Blackberry	*Rubus sp.*	●	●	●
Cobblers peg / Farmers friend	*Bidens pilosa*	●	●	●
Colombian waxweed	*Cuphea carthagenesis*	●	●	
Fleabane	*Conyza sp.*	●	●	
Fireweed	*Senecio madagascariensis*	●	●	
Inkweed	*Phytolacca octandra*	●	●	●
Lantana	*Lantana camara*		●	●

[7] Doherty, M. D. 2021. Fire Severity and Plant Community Dynamics in the Australian Alps, Southeastern New South Wales. Australian National University.

Common name	Species name	DS	WS	TRF
Nightshade	Exotic *Solanum* sp.	●	●	●
Serrated tussock	*Nassella trichotoma*	●	●	
Thistles	*Cirsium, Carduus, Onopordum* sp	●	●	●
Thornapple/Jimsonweed	*Datura stramonium*		●	●
Tobacco Bush	*Solanum mauritianum*		●	●

Dry sclerophyll (DS), Wet sclerophyll (WS), Temperate rainforest (TRF).

Post-fire land management

Monitoring methods

Photo points help track changes in cover and density of vegetation as land recovers. This photo was taken just after a bushfire.

Creating a species list of the plant and animal species that emerge following a fire can assist in tracking the range of plants and animals in an area and their response to fire.

Establishing photo points and taking photos of these areas regularly after a bushfire shows the change in vegetation density and cover after a fire. Over time, these images can paint an incredible picture of vegetation change and recovery.

Setting up remote cameras and checking footage can help in observing both native and pest animal species that return to fire-impacted areas. They can also pick up shy or rare species less easily observed in person.

Threatened and rare species

The same area 13 months later.

Credit: Bidda and Julian Davies.

Some threatened plant species response positively to fire. Heat and smoke can trigger flowering or germination of seeds lying dormant in the soil, or cue resprouting from rhizomes or tubers hidden underground. For example, orchids, including the endangered eastern spider orchid (*Caladenia orientalis*) only flower after fire.

It is possible for threatened and rare species not obvious before a fire to emerge after a burn. Where they are evident, there's value in documenting them, and protecting any that emerge.

Habitat

Fallen logs and branches

Fallen logs can provide habitat for species such as invertebrates and mammals that may have taken refuge during fire, or in returning to a site. These logs are important habitat and leaving them in situ is recommended.

Artificial hollows and nest boxes

Bushfires can remove mature, hollow-bearing trees, reducing the habitat available for species that rely on hollows, such as greater gliders and powerful owls.

Refer to the NSW Biodiversity Conservation Trust's *Guideline for Artificial Hollows* resource for more information on installing artificial hollows and nest boxes.

While natural hollows reform over a long period, it may be appropriate to install artificial hollows or nest boxes to provide habitat for hollow-dependent fauna in the interim.

When considering artificial hollows, it is important to identity a target species, determine whether installation of artificial hollows will likely benefit it, and if so, identify the most appropriate artificial hollow type for the target species and site conditions.

Installation of artificial hollows is a long-term commitment. Monitoring and maintenance is required.

Weeds

Fire can create an opportunity to tackle weeds because it burns back existing weed growth, often reducing the extent and density of weed populations.

However, disturbance through fire can also create open space for weeds to invade and thrive.

It is important to monitor fire-impacted sites early and regularly for weeds.

If weeds are identified, their likely recovery response should be considered and, if required, managed as soon as practical to reduce the likelihood they will have significant negative impacts on recovering sites.

Monitoring, encouraging and keeping native regeneration in place is a good way to close disturbed spaces so weeds are less likely to establish. Native species also increases competition for weeds, if they emerge.

Pest animals

Pest species, such as deer, pigs and goats, can return to fire-impacted sites to take advantage of the shelter and food resources new vegetation growth provides.

It is important to look for signs of pest animals in recently burned sites, such as animal tracks, hoofprints, scats or damage, and record any species present.

If identified, populations of pest animals should be controlled to ensure impacts on recovering sites are reduced. Relevant agencies, such as Local Land Services, or expert contractors can provide advice on appropriate management actions for target pests, such as trapping, shooting or baiting.

Infrastructure

Bushfire can have a significant impact on infrastructure, as well as vegetation. While vegetation communities begin to recover, it is important to consider and plan the maintenance or reinstallation of key infrastructure across fire-impacted sites.

If there's a need to replace fencing, consider wildlife-friendly options.

Credit: Clare Kerr.

Tree assessments

There is a high risk of trees and branches falling after a bushfire has burned through, especially when moderate to high-intensity fire has damaged the canopy.

Consider doing a safety assessment of fire-affected standing trees where they are close to roads, fences, buildings or other infrastructure when managing recovering sites.

Track clearing and access

Debris, fallen logs and branches often block access to tracks and trails after a bushfire. Native regeneration can also close tracks where it is growing back.

Where possible and appropriate, it is recommended tracks be cleared and maintained to reinstate access for site management. It is important to take care when clearing tracks, due to the risk of falling branches and where exposed ground is vulnerable to erosion immediately after a bushfire.

Refer to the NSW Biodiversity Conservation Trust's *Essential conservation fencing infrastructure guidelines* for more information.

Fencing

Fences in the path of a bushfire are often left destroyed or damaged.

Where replacement is necessary, it's worth considering whether fences could be rebuilt with a wildlife-friendly design to minimise danger and movement restrictions to native animals.

It is also an opportunity to consider whether fence lines should be replaced, or are needed, to continue to manage a conservation areas.

Landholder support

There are a range of practical ways the NSW Biodiversity Conservation Trust can support and assist conservation agreement holders with areas recovering from fire.

This support can include:

- **Access to ecologists and specialist staff who can provide advice on plants, animals, weeds, pest animals and management techniques relevant to your area.**
- **Links to other agencies, groups and organisations involved in conservation management for expert advice.**
- **Invitations to workshops and local field days on topics such as weed control, native animal surveys or sustainable grazing.**

Resources

There is a range of advice and resources available to assist after a bushfire event.

Agency	Resource
Australian Association of Bush Regenerators	*First aid for burned bushland*
Australian Network for Plant Conservation	*How plants cope with fire*
Bushcare Blue Mountains	*Post fire weeds*
Far South Coast Conservation Management Network	*Local plant database* *Post fire recovery*
Hornsby Shire Council	*Native and weed look-a-likes*
Hotspots Fire Project	*Fact sheets library*
Local Land Services	*Managing native vegetation after a bushfire emergency*
Department of Primary Industries	*NSW WeedWise*
Pulling out weeds is the best thing you can do to help nature recover from the fires	*The Conversation* article
Can Aussie Plants Really Recover From Bushfire?	*Boiling Point* podcast
Wildlife needs fire-damaged and dead trees after fires	*Australian Geographic* article
Plants of South Eastern New South Wales	*Google Play* *Apple Store*

NSW Biodiversity Conservation Trust

Resource
R.E.N.E.W.S: guide for conservation recovery post-fire
Recovering from a fire event
Guideline for artificial hollows (YouTube video)
Weed management and property planning (YouTube video)
Essential conservation fencing infrastructure
Wildlife-friendly fencing (YouTube video)

Further reading

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