

# Five tips for replanting your garden after bushfires

BY [KATE CRANNEY](#) • 31 JAN, 2020 • 8 MIN READ

Australians are starting to return to their homes and rebuild their lives after the bushfires. Creating a garden can be an important part of the process of recovery and reconnecting.



The Creeping Monkey-flower (*Mimulus repens*) is an Australian native that has low flammability can be a good garden plant to choose for bushfire-prone areas (Image: Boobook48 via Flickr)

Bushfires have devastated towns and regions around Australia. Bushfires don't discriminate: they burn large forests, small farms, and backyard gardens alike.

Many people are now returning to their homes and starting to rebuild their lives. Creating a garden can be an important part of the process of recovery and reconnecting. So, how should you go about replanting?

We asked some of our scientists, including Linda Broadhurst (Director, Australian National Herbarium), David Bush (Director, Australian Tree Seed Centre), Tanya Doody (ecohydrologist and Principal Research Scientist), Suzanne Prober (ecologist and Senior Principal Research Scientist) and Andrew Sullivan (leader of the CSIRO Bushfire Behaviour and Risks team).

## Related



Extreme weather caused by climate change has damaged 45% of Australia's coastal habitat

Environment Oceans



Disasters happen, but software shouldn't be one of them

Environment Tech



Bringing biodiversity conservation in from the wilderness

Environment

## Tags

bushfire Fire Natural disasters Plants

Last updated: February 12th, 2020



Grass trees (Xanthorrhoea) can resprout after fire (image: JarraTree via Flickr).

## 1. Replant when it's cooler

Don't rush out to replant. Replant when it's cooler and after there has been some rain. Checking if there is likely to be ongoing rain can be helpful. If it's going to be drier than normal, maybe wait a little longer.

In southern Australia, plants are likely to establish better in spring. If you plant now, during summer, you're going to put the seedlings under more stress due to high summer temperatures. Planting in late winter or spring will give your plants a better chance of surviving, as there will be water in the soil and (hopefully) spring rain on the way.

If you have a large block, you can take this 'wait and see' approach a step further. We recommend allowing the native bush to recover and regenerate itself. [Many of our Aussie plants are adapted to survive in a bushfire](#). Native bush should recover on its own. There are some exceptions: for example, where a fire sensitive plant community (like a wetland) has been burnt in an unprecedented way or if the fire was extremely hot.

You can encourage the natural regeneration of plants by removing livestock and controlling weeds, which may be more likely to grow after the fire. This will help the ecosystem, with resilient local native species, to recover on its own.



Pigface (Carpobrotus virescens) is a hardy, attractive, and fire-resistant garden plant (Image: CSIRO Image)

## 2. Design a garden that's fire-smart

While you're waiting for the cooler months, use that time to plan a 'fire-smart' garden. It's not just about what species you plant: consider the design, or landscaping, of your garden. This can help reduce the impact of direct flames, radiant heat and embers on your house, and reduce its vulnerability. For instance, some people recommend a row of dense tall shrubs to act as wind breaks and 'ember catchers' around the perimeter of the house. There are some great books available, including Joan Webster OAM's work on ['fire-smart' gardens](#), [and](#) [Australian Garden Rescue: Restoring a Damaged Garden](#) by Mary Horsfall.

The Victorian Government's Country Fire Authority (CFA) has also [set out four principles for garden design](#) in fire-prone areas:

1. Plant to create defensible space
2. Remove flammable objects from around the house
3. Break up fuel continuity (keep plants separate and avoid flammable mulches)
4. Carefully select, position, and maintain trees.

See [examples of garden designs](#) for suburban, rural, hill and coastal properties.

### 3. Choose more fire resistant or retardant plants

During a bushfire, the type and amount of plants around your house can play a large part in whether your house survives. You can control the amount of fuel near your home by carefully designing your garden and choosing the right plant species. Reducing the litter layer under trees is also important to reduce fuel load. Some of our research has found that unkempt gardens that were full of debris (fallen litter, twigs, branches) are more likely to lead to a damaged or destroyed house.

The Tasmanian Government publication [Fire retardant garden plants for the urban fringe and rural areas \(PDF, 599KB\)](#) states: "Fire retardant plants can absorb more of the heat of the approaching bushfire without burning than more flammable plants. They can trap burning embers and sparks and reduce wind speeds near your house if correctly positioned and maintained. Fire resistant ground covers can be used to slow the travel of a fire through the litter layer. Fire resistant shrubs can be used to separate the litter layer from the trees above."

#### Replanting with native plants

So, if you're going to replant with native plants, which species are best for you? It really depends where you live. Talk to your local native plant nursery about the best species for you. The [CFA's Plant Selection Key](#) helps you choose plants for a high bushfire area. And groups like the Australian Plants Society, have created [lists of fire resistant or retardant plants](#), including some beautiful trees, shrubs and ground cover, like:

- Native frangipani tree (*Hymenosporum flavum*)
- Native passionfruit (*Passiflora herbertiana*)
- Saltbush species, including *Atriplex* and *Maireana* species
- Dune Fan-flower (*Scaevola calendulacea*)
- Pigface (*Carpobrotus* species) and other native succulents



Native frangipani is an Australian trees with low flammability (Images: Tatter via Flickr)

Non-native species can also have low flammability and create attractive gardens. If you choose non-native, fire-resistant species for your garden, we advise you to take care that they're not species likely to become invasive in nearby bushland. For example, planting non-native invasive species in close proximity to water bodies can create havoc with our waterways. Be aware that even plants considered to be 'fire resistant' will burn if they become dry enough.



The Dune Fan Flower (*Scaevola calendulacea*) has low flammability (Image: John Tann via Flickr)

#### 4. Avoid flammable plants

Some plants are highly flammable. Many of our Australian plants, like eucalypts, have highly combustible leaf litter, and peeling or ribboned bark. This, combined with volatile oil in their leaves, makes them a hazard to have close to your home during a fire.

The Australian Plants Society suggests avoiding species like these near your house:

- Eucalypt and corymbia species
- Tea tree and melaleuca species, like Crimson Bottle Brush (*Callistemon citrinus*)
- Lilly pilly trees
- Many wattle species, like Silver wattle, Blackwood and Prickle Moses
- Some exotic species, like Camphor laurel, bamboo, poinciana, English oak, gorse, lemons.

#### 5. Seek advice from trusted sources, like local native plant nurseries

The suggestions of plant species above are not complete lists. It's best to contact your local native plant nurseries when deciding on what species to replant. The staff will know what the best species are, and they can also let you know about a plant's ability to regenerate after fire.



Talk to your local native plant nursery about which plant species to choose (Image: Gondwana Wholesale Native Plant Nursery)

#### Some things to remember when replanting your garden

- **Be careful when returning home:** Before you return to your house, there are some practical things you need to consider to keep you and your family safe. See the advice for your state: [Victoria](#), [New South Wales](#), [Queensland](#), [South Australia](#), [Western Australia](#), [Tasmania](#), [Northern Territory](#), or visit the [Australian Red Cross](#).
- **Contamination:** Test your soil, especially if you're growing an edible garden. The ash that has fallen in your garden may have been contaminated from asbestos or the chemicals from treated pine.

- **Pests and diseases:** When you're choosing plants and buying seedlings, be careful not to introduce pests or diseases by only buying from [accredited nurseries](#).
- **Wind and rain erosion:** [Here are some tips](#) to prevent the erosion of soil from wind and rain, after a fire, but before you start planting.
- **Regulations:** Your local and state government may be prescriptive about what you can plant, and where.
- **Garden design:** Where you plant is just as important as what you plant. For instance, the [Tasmania Fire Service](#) recommends that around every house in bushfire prone areas there should be a zone where vegetation and other fuels are minimal.
- **Consider longer time frames:** Climate change means that droughts and bushfires are likely to be more severe and frequent in many parts of southern Australia. Aim to include species that are likely to cope with projected climates and fire in your area.

If you've been hit hard by the recent bushfires, remember that recovery may take some time. Nevertheless, we can take heart from the extraordinary resilience of many Australian plant species even to the hottest of fires.



Bossia seedlings germinating after fire (Image: Doug Beckers)

We've been involved in bushfire research for more than 60 years

Share this



PREVIOUS POST:



[Understanding coronavirus](#)

COMING UP NEXT:

[Quantum computing: What's the big deal?](#)



## 6 comments



Susan

2nd July 2021 at 11:45 am

I'd be really interested in the role of hydration in plant flammability. As a landscape design professional I'm advising my clients to maximise water holding capacity in the soil to assist moisture content in plants – as well as careful plant selection for low flammability. I know fires often come with summer and droughts, but having a dedicated water supply for gardens with design for maximising permeability may assist. Any advice?

Reply



Team CSIRO

7th July 2021 at 9:15 am

Hi Susan,

Thanks for your question. Dr Andrew Sullivan, leader of our Bushfire Behaviour and Risks team says: "Plant flammability is an inherent trait and is a function of chemical and physical composition. However, plant combustibility, which is related to the moisture content of the vegetation is a dynamic attribute related to available moisture, is an indication of how easy a fuel is to ignite and sustain flaming combustion. Watering plants and the surrounding debris is a great way to increase the moisture content of the dead fuel and decrease combustibility. However, on hot windy days, dead fuels dry out very quickly and rapidly recover their combustibility (the primary effect of periods of drought) so a continuous watering regime (when it doesn't rain) is essential to keeping combustibility low."

Thanks,

Team CSIRO

[Reply](#)

Lesley Corbett

12th June 2021 at 2:32 am

Hi Darren, I've written a book about plant flammability based on flammability tests by scientists from around the world. I have conflicting reports for blackwood (*Acacia melanoxylon*). Tests by Gill and Moore (1996) found the green leaves ignited after 22.5 secs, which on the scale I've used indicates it has moderate flammability. Sheridan (1996) classed it as reasonably flammable based on 12 characteristics, including both green and dry leaf flammability (this is classed as moderate on my scale). Bellamy (1988) rated the green leaf as between good and very good (low to very low flammability using my scale). I also have conflicting reports for lilly pilly (*Syzygium smithii* syn *Acmena smithii*). Gill and Moore (1996) found the green leaf ignited after 18.5 secs, which on my scale indicates it has high flammability, although it's fairly close to the moderate borderline. Wyse et al. (2016) classed the partially dried leaf as having borderline moderate/high flammability. Bellamy (1988) rated the green leaf as between fair and good (low to moderate flammability using my scale). In my opinion, the fact that some researchers found these plants to have moderate or high flammability means they should not be classed as having low flammability. When results are conflicting I always err on the side of caution. I would be inclined to treat lilly pilly as a flammable plant and I would treat blackwood as moderately flammable. I would keep in mind that most wattles are quite short lived, and as they age they accumulate a lot of flammable dead material. In case you don't know, blackwood is an invasive weed in some areas. The reason the Tasmanian Fire Service rates lilly pilly as having high flammability is because they base all their information on the combined green and dry leaf flammability in various research papers. That is also the reason they class blackwood as moderate. I can supply the name of my book if CSIROscope is happy for me to do so.

[Reply](#)

Darren Schultz

24th August 2020 at 11:30 am

Actually the Australian Plants Society lists Lilly Pillies and many wattle species including Blackwood as being fire retardant.

<https://apsvic.org.au/fire-resistant-and-retardant-plants/>

State Flora in SA agrees too.

[https://www.stateflora.sa.gov.au/files/sharedassets/state\\_flora/factsheets/fire-resistant-plants-fact.pdf](https://www.stateflora.sa.gov.au/files/sharedassets/state_flora/factsheets/fire-resistant-plants-fact.pdf)

The Tasmanian Govt. doesn't like Lilly Pillies and lists Blackwood as moderate fire danger.

<https://www.fire.tas.gov.au/publications/1709%20Brochure.pdf>

I lost my home in the 2019 bushfires. I'm trying to find out what I should plant so it doesn't happen again. This kind of conflicting nonsense isn't helping me. Can you please all get your act together and talk among yourselves and come up with a proper list. Thanks

[Reply](#)

Team CSIRO

26th August 2020 at 3:30 pm

Hi Darren,

First, we are sincerely sorry to hear about your house, and we can imagine how important it is to start gardening again. We've also noticed some of the information is conflicting. Unfortunately, there is no list of fire retardant or flammable plants that would apply across Australia.

We suggest the best thing is to chat with your local native plant nursery. The staff should know what's best for your area, and can tell you about a plant's relationship with fire.

Thanks,

Kate

Team CSIRO

[Reply](#)

Deborah

1st February 2020 at 9:35 am

Thank you for an intelligent article. I am fortunate, in a way, to live in an outer suburb of Sydney but close to town centre so not as susceptible to fire (although no one is safe, really). I have a background of environmental science and horticulture and have been gardening and observing nature since I could crawl. I don't have to worry much about fire retardant plants but I would never plant a eucalypt or corymbia in a suburban garden, just due to the way they suck up water and nutrients and grow far too big. My local tree species fortunately included some rainforest plants so I was able to develop a small patch of dry rainforest next to the house. Sustainability is as important as anything and fruit trees, veggies and edible shrubs are all included in the mix with water features. I have 10 species of native bee, myriad wasp, spider, cockroach, beetle etc species and frogs, lizards and many birds. Every house holder can do this, even with fire retardant plants. It does take time though. A garden is developed over years, not days. And leave the bush to regenerate, pull out the weeds if you know what you are doing, seek advice if you are unsure and, in the short term, supply food and water to the wildlife. I cannot even imagine how devastated true garden lovers are at the loss of their precious garden. I mourn with them.

[Reply](#)

## What do you think?

We love hearing from you, but we have [a few guidelines](#).

At CSIRO, we solve the greatest challenges through innovative science and technology.

Contact us

 1300 363 400

Subscribe to the CSIROscope

Your email

Subscribe

Weekly  Daily

[Access to information](#) | [Accessibility](#) | [Copyright](#) | [Legal notice and disclaimer](#) | [Policy & Guidelines](#) | [Your privacy](#)

We are committed to child safety and to the implementation of [Child Safe principles and procedures](#).

CSIRO acknowledges the Traditional Owners of the land, sea and waters, of the area that we live and work on across Australia. We acknowledge their continuing connection to their culture and pay our respects to their Elders past and present. View our vision towards reconciliation.