

Save our Flora

AN ONLINE INDEPENDENT NATIONAL PROJECT
CONSERVATION THROUGH CULTIVATION

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**Project launched on
14th November 2013**

Maria Hitchcock OAM
 Administrator, Bulletin Editor

Membership

Individuals: 230

Groups: 22

International 3

Membership is free.

Please encourage others to join.

Quarterly Bulletins are sent by email only. Feel free to pass them on.

New members will receive the latest e-Bulletin only. Earlier Bulletins can be accessed on our website. (See box)

This is an informal interactive sharing group. We welcome your emails, articles and offers of seed and cuttings at any time.

Your privacy is respected and assured with this group. You may **unsubscribe** at any time.

*Boronia
keysii*
 See p. 14



**Is your garden a
native plants
sanctuary?**

**All you have to do
is grow one or
more threatened
species.**

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***Unsure if you have any rare or endangered plants? Check them out on
the EPBC list***

<http://www.environment.gov.au/cgi-bin/sprat/public/publicthreatenedlist.pl?wanted=flora>



Save our Flora

Maria writes:

As I write this there is a gentle rain falling outside. The tank is overflowing and the dam is almost full. A trip into town is met with detours because of flooding. On the coast people are being evacuated or rescued from being caught in flood waters. Sydney's dams are either full or getting there and the insurance industry is tearing its hair out at the latest batch of claims.

Who could have predicted that this would be the situation less than 2 months after the worst drought year in history hit most of NSW. I'm sure Dorothea Mackellar didn't mean her 'droughts and flooding rains' to occur side by side with one catastrophe immediately leading to another. The media is still full of post bushfire stories and there appears to have been an awakening in the general population that there might just be something called 'climate change'. I prefer to call it 'climate disruption'. We are now starting to hear terms like 'climate emergency' as well.

Australia has taken a massive economic hit with the fires and floods but also has to contend with the coronavirus epidemic in China which has sneaked out of the country and is affecting us in so many ways. The one thing that has come out of all of this is how Australians love to put all their eggs in the one basket. This lack of resilience is now having a major effect and could even bring the government down.

The loonies are out in force helped by an uncensored social media. One wag in Torrington suggested that the government cut down all the eucalypts in the Torrington Reserve and replant with fire resistant trees. Is there such a thing? I suggest he move house to the desert - much cheaper and more sensible. A group of Northern Tablelands farmers whose properties are bounded by Guy Fawkes NP and who were affected by the Bees Nest fire are suing the State Government and demanding to be allowed to graze their cattle in the NP. That would get rid of the 'rubbish'. I would suggest if they want more feed for their cattle, buy another property. They also want the right to burn in the NP. The Ebor Rd fire plus many others were started by people doing their own burns. Protection of personal Marijuana crops seems to have been the motivation in more than one case.

We see lots of pictures of cuddly koalas but apart from the Wollemi Pines which were saved, we don't see much in the media about threatened flora. I wonder why this is? Perhaps we need to alert the media to this problem ourselves. Botanists and native plant enthusiasts tend to be quiet people not prone to frenzied demonstrations. We have had

Save our Flora

PowerPoint Presentation

Ready to go!

30 slides approx 30 mins. talk

**If you are interested in obtaining
this presentation**

please email me

I can send it in an email (4.3MB)

or as a CD

**Send me a C5 stamped addressed
envelope**

Attach 2 stamps

or on a memory stick

**Send me a blank memory stick plus a
stamped addressed envelope - 2 stamps**

some examples of strong campaigns to save forests and eco-systems. The Tasmanians are particularly good at this.

In this newsletter I have links to a couple of actions you can take. You can join other bush regenerators to weed regenerating fire affected areas. You can join others in a citizen science project on bush recovery by photographing and recording observations. Why not send these to local media, add them to your facebook pages and start educating people about our bush.

Finally start growing a few rare species and encouraging others to do the same. We need those insurance populations for replanting in the wild later on. Many endangered species fall into that category because their habitat has been severely disturbed. I have been growing the rare *Boronia keysii* (see p. 14) for many years. It is quite cold tolerant and only died in the garden because of drought. Plants in the shadehouse which get watered regularly are doing extremely well. This is a highly ornamental plant which flowers almost all year round and should be grown more widely. Take care everyone!

Gondwana-era rainforest stand of nightcap oak devastated by unprecedented bushfire

ABC North Coast Sat 18 January 2020
[Joanne Shoebridge](#), [Catherine Marciniak](#)

A rare stand of Gondwana-era rainforest plants that has survived for tens of millions of years, has now been ravaged by fire in the wet, sub-tropical rainforests of northern New South Wales.

Unlike the [successful mission to save the Wollemi Pine](#) in the Sydney Basin, the fate of the nightcap grove has received almost no attention.

The nightcap oak *Eidothea hardeniana* is one of 20 extremely rare ancient plant species found in a small area in the Nightcap National Park, north of Lismore. In the same botanical hotspot, there are also 29 threatened animal species, including the endangered giant barred frog.

In early November, the Mt Nardi fire, which started with a lightning strike weeks earlier, flared up in hot, gusty conditions after a record dry spell. It eventually threatened homes in communities near Nimbin in the west, Terania Creek in the south, Mullumbimby in the east and Uki in the north. In between lay an ancient, precious asset.

Ancient and rare botanical gems

Robert Kooyman is an evolutionary ecologist who works with the Royal Botanic Gardens, Macquarie University and the Missouri Botanical Gardens in the US. "It's a catastrophe," Dr Kooyman said. "They've all been severely affected."

As soon as the fires cooled down, Dr Kooyman laced up his hiking boots to see how the dinosaur-era stand of trees, he first identified in the 1980s, had fared. There are only 120 fully grown nightcap oaks and another 100 saplings, as well as other equally ancient and rare botanical gems in a remote area divided by sheer cliffs.

More than 2,000 hectares of the rainforest burned, including some of the precious nightcap oaks. The lower reaches of the national park haven't been logged for 50 or 60 years, but there's evidence of logging throughout.



Eidothea hardeniana Image: Flickr

Only 1 per cent of 40-million-year-old rainforest remains Dr Kooyman said historical logging amplified the effect of the fire, making it hotter, and extending its reach further than any fire previously. "With all of the heads of old trees, the big, old logs, they've added significantly to the heat of the fire," he said.

"Also, the rainforest was logged out and clear-felled and converted to eucalypt forest, which has decreased the area of rainforest and expanded the reach of the fire, and the consequence of that has been dramatic." Just 1 per cent of the original 40-million-year-old Gondwanan rainforest survives in Australia.

"To add insult to injury, we've contracted them further and increased the likely impact of fire by growing eucalyptus, and more pyrolytic vegetation adjacent to them," Dr Kooyman said.

By November 10, when the Mt Nardi fire went to emergency, the National Parks and Wildlife Services (NPWS) rangers fighting the fires found they had a massive fire front on their hands. But with thousands of neighbours adjoining the park, Nimbin Fire Brigade senior deputy captain Charlie Cohen said they were called to a different section. "Well, how many different fires could they work on at once? These two guys told me they were exhausted when they got there and exhausted when they left. One of them told me he hadn't had a day off in 30 days."

Unmaintained fire trails a death trap

Mr Cohen was part of a remote access fire fighting unit parachuted into Tasmanian temperate rainforest that was burning. But he said he'd never seen subtropical rainforest near his own home. He said the cutbacks to NPWS staff, and the resulting reduction in maintenance, nearly cost him and his crew their lives.

"There's no money to keep the trails open," he said. "We nearly lost our lives up there because one of the exits was blocked and had been since Cyclone Debbie, and we couldn't escape from there."

The forgotten species

Dr Kooyman said the level of attention the nightcap Gondwana species received from government was minimal. "Compared to Wollemi, there hasn't been the drum-beating so there hasn't been the attention focused on the nightcap," he said. "Which is ironic, given that in terms of the Gondwanan rainforest, the nightcap represents the highest-value forest in NSW and has more concentration of threatened species than anywhere in Australia."

Dr Kooyman said monitoring to understand the impact of the fires, a recovery plan and significantly more funding was needed to protect the Nightcap Range. He said there would also need to be a better response to any future fire threat. "We need to learn some lessons here and get better at what we do in terms of identifying what assets we have, and I mean natural assets, and protecting them," Dr Kooyman said.



The Mt Nardi Bushfire burnt more than 2000 hectares of World Heritage Rainforest Image: Darcy Grant



Nightcap NP is home to other rare species of plants and animals.

Image: ABC North Coast Catherine Marciniak

<https://www.abc.net.au/news/2020-01-18/gondwana-era-nightcap-oak-devastated-by-bushfire/11877770?pfmredir=sm>

How you can help!

Pulling out weeds is the best thing you can do to help nature recover from the fires

[Don Driscoll](#) - Professor in Terrestrial Ecology, Deakin University *The Conversation* 28/1/20

Many Australians feel compelled to help our damaged wildlife after this season's terrible bushfires. Suggested actions have included [donating money](#), [leaving water out](#) for thirsty animals, and learning how to [help the injured](#). But there is an equally, if not more, important way to assist: weeding.

An army of volunteers is needed to help land owners with judicious weed removal. This will help burnt habitats recover more quickly, providing expanded, healthy habitat for native fauna. Other emergency responses, such as culling feral animals and [dropping emergency food from aeroplanes](#), are obviously jobs for specialists. But volunteer weeding does not require any prior expertise – just a willingness to get your hands dirty and take your lead from those in the know.

Why is weeding so critical?

The recent bushfires burned many areas in national parks and reserves which were infested with weeds. Some weeds are killed in a blaze, but fire also stimulates their seed banks to germinate. Weed seedlings will spring up en masse and establish dense stands that out-compete native plants by blocking access to sunlight. Native seedlings will die without setting seed, wasting this chance for them to recover and to provide habitat for a diverse range of native species.

This mass weed germination is also an opportunity to improve the outlook for biodiversity. With a coordinated volunteer effort, these weeds can be taken out before they seed – leaving only a residual seed bank with no adult weeds to create more seed and creating space for native plants to flourish. With follow-up weeding, we can leave our national parks and reserves – and even bushland on farms - in a better state than they were before the fires.

Weeding works

In January 1994, fire burned most of Lane Cove National Park in Sydney. Within a few months of the fire, [volunteer bush regeneration groups were set up to help tackle regenerating weeds](#).

Their efforts eradicated weeds from areas where the problem previously seemed intractable and prevented further weed expansion. Key to success in this case was the provision of funding for coordination, an engaged community which produced passionate volunteers and enough resources to train them. Following recent fires in the Victorian high country, volunteers will be critical to controlling weeds, [particularly broom \(Scotch broom and related species\), which occurs throughout fire-affected areas](#).

Fire typically kills these woody shrubs but also stimulates seed germination. Without intervention, broom will form dense stands which [out-compete native plant species](#). However, swift action now can prevent this. Mass germination [reduces the broom's seedbank to as low as 8% of pre-fire levels, and around half of the remaining seeds die each year](#). Further, broom usually takes three years to flower and replenish its seedbank. So with no new seeds being produced and the seedbank low and shrinking, this three-year window offers an important opportunity to restore previously infested areas.

Parks Victoria took up this opportunity after the 2003 fires in the Alpine National Park. They rallied agencies, natural resource management groups and local landholders to [sweep up broom](#). Herbicide trials at that time revealed that to get the best outcome for their money, it was critical to spray broom seedlings early, within the [first year and a half](#). Broom management also needs to use a range of approaches, [including using volunteers to spread a biological control agent](#).

Plenty of work to do

Parks Victoria continue to [engage community groups in park management](#) and will coordinate fire response actions when parks are safe to enter. Similar programs can be found in [New South Wales](#), [Western Australia](#), [South Australia](#), [Queensland](#), [Tasmania](#), [the Northern Territory](#), and the [ACT](#). A [wide range of weeds expand after fire](#) and warrant a rapid response. They include [lantana](#), [bitou bush](#), and [blackberry](#).

Managing weeds after fire is currently a high priority at many sites. At the edges of the World Heritage Gondwana rainforests of southwest Queensland and northern and central NSW, there is a window to more effectively control lantana. In many forested areas in NSW, Victoria and South Australia, fire has created an opportunity to address important weed problems. State government agencies have the mapping capacity to locate these places. Hopefully they can make these resources easy for the public to access soon, so community groups can self-organise and connect with park managers.

All this needs money

Emergency funding is now essential to enable community-based weed control programs at the scale needed to have a substantial impact. Specifically, funding is needed for group coordinators, trainers and equipment. While emergency work is needed to control regenerating weeds in the next 6-18 months, ongoing work is needed after that to consolidate success and prevent reinfestations from the small, but still present, seed bank.

Ongoing government funding is needed to enable this work, and prepare for a similar response to the next mega-fires.

Want to act immediately?

You can volunteer to do your bit for fire recovery right now. In addition to state-agency volunteer websites, there are many existing park care, bush care and “friends of” groups coordinated by local governments. They’re waiting for you to join so they can start planning the restoration task in fire-affected areas. Contact them directly or [register your interest with the Australian Association of Bush Regenerators](#) who can link you with the appropriate organisations.

If we do nothing now, the quality of our national parks will decline as weeds take over and native species are lost. But if you channel your fire-response energy and commitment to help manage weeds, our national parks could come out in front from this climate-change induced calamity. By all means, rescue an injured koala. But by pulling out weeds, you could also help rescue a whole ecosystem.



Scotch broom, a native shrub of Western Europe, has infested vast swathes of Australia. Gunter Maywald-CSIRO/Wikimedia

Ref:

https://theconversation.com/pulling-out-weeds-is-the-best-thing-you-can-do-to-help-nature-recover-from-the-fires-130296?utm_medium=email&utm_campaign=Latest%20from%20The%20Conversation%20for%20January%202020%20-%20201519614480&utm_content=Latest%20from%20The%20Conversation%20for%20January%202020%20-%20201519614480+CID_95e759a130584ceb9e01dfae3bfc0836&utm_source=campaign_monitor&utm_term=Pulling%20out%20weeds%20is%20the%20best%20thing%20you%20can%20do%20to%20help%20nature%20recover%20from%20the%20fires

From the members

Rosemary Race - Portland Vic writes:

I have moved from Rosedale Gippsland to Portland Southwest Victoria as I am involved with many more environmental volunteer groups here.

Especially SWAT, Southwest Woody Weeds Action Team Inc. who are predominantly slowly eradicating Sweet Pittosporum from country roads, farmers land and the Cobboboonee Forest. I am also a member of Portland Coastal Cliffs Inc. as they are concentrating their efforts at Nuns Beach Portland with Victorian Gorse.

Both groups are also involved with **Portland North Primary School and Portland Secondary School** to whom I will be forwarding your Newsletter to in the hope they will join Membership.

I have planted my native garden at my unit as honey eaters are now busy discovering what I have, great sun trap in front of my unit which previously was 4 standard roses. My courtyard which never had even a weed in it for 25 years is flourishing with herbs, fruit and veggies, natives too and yes weeds which I'm pleased about, birds have located it as the bees are returning. Hopefully it will be self sufficient as I don't water my plants!

Victoria T ACT sent this link

Last year the ABC caught state-owned Victorian loggers illegally chopping down trees on public land, but instead of being punished they were compensated. Now it seems they plan to do it again.

<https://www.abc.net.au/news/2019-12-19/vicforests-plan-to-log-native-ash-trees-on-public-land-maps-show/11805812>

Available Propagators

The following people have indicated a willingness to work with projects that require good propagation skills. If you would like to be added to this list please let Maria know.

Maria Hitchcock Armidale NSW

Life member NSW - APS

Over 40 years propagating experience.

Cool Natives Online Nursery

<https://coolnativesnursery.com>

Col Jackson

Over 20 years propagating experience

Member of the Latrobe Valley APS Victoria

coljackson57@hotmail.com

Spencer Shaw

We operate two nurseries,
Brush Turkey Enterprises Wholesale

www.brushturkey.com.au and

Forest Heart Eco-Nursery

www.forestheart.com.au

and specialise in SE QLD native plants,
particularly rainforest.

spencer.shaw@brushturkey.com.au

0428 130 769

Helen Howard

grevillea.hh@gmail.com

I have grafted Eucalypts, Grevilleas,
Eremophilas and Brachychitons. My
teacher was Merv Hodge. If any BG has a
project I could help out with let me know.

Birds, insects, animal poo: citizen science search for data to make sense of bushfire devastation

Scientists call on the public as they scramble to understand the impact of unprecedented fires across Australia *Guardian Australia*
[Graham Readfearn](#) Fri 31 Jan 2020

Australians are being asked to join a mass citizen science program to photograph how the nation's habitats and wildlife are responding in the wake of the unprecedented bushfire crisis. The scale of the bushfires that have so far burned about 111 million hectares across the country has ecologists and scientists in "uncharted territory" as they scramble to gather data to understand the devastation.

But the new citizen science project organised by the University of New South Wales could deliver essential data and observations that will feed into recovery efforts and future scientific papers.

Ecologist Casey Kirchhoff, of the UNSW Centre for Ecosystem Science, has started the project that lets people upload photographs using a free smartphone application called [iNaturalist](#) or its [linked website](#).

Kirchhoff, a PhD candidate studying climate change impacts on alpine plants, lost her own NSW home at Wingello, next to Morton National Park, when a fire razed the area on 4 January.

Preliminary government data suggests the fires burned through at least half the known habitats of more than 100 threatened species. More than a billion animals have likely perished, with scientists fearing some species have been pushed to extinction. Prof Richard Kingsford, director of the UNSW Centre for Ecosystem Science, told *Guardian Australia* the project was a "really important opportunity to allow citizen science to meet rigorous science".

"We want to learn what sort of animals and plants are bouncing back, and in which areas. We know the severity of the fires is extreme and extended into rainforest patches and into mangroves and places we hadn't expected it to go."

Kirchhoff said as some areas were showing signs of recovery, "we know there's a lot out there that might not bounce back.

"That's why we need people out there looking for us. We are not discriminating here – we want birds, insects, green shoots, animal poop, fungus ... anything people think might be useful information. Even if it's a tree that has burned to a crisp, that's still useful."

Kirchhoff kick-started the project despite the loss of her own home. She left the smallholding on 30 December with husband Michael and their three dogs Cookie, Evie and Billy, and an assortment of quails and chickens, including three chicks since named Spark, Ember and Flame. Fire eventually engulfed their home in an "inferno" on 4 January.

She said the new project was a welcome distraction from the devastation. Kingsford said the information uploaded to the project was open source and available to any members of the public, as well as researchers from anywhere in the world. He said understanding the way habitats were responding was "critical" and the information from the project could be used in multiple ways – from helping to target recovery efforts to informing longer-term scientific studies.

The government has announced an initial \$50m to help research and recovery efforts, but Kingsford said that would be "sucked up pretty quickly". "Using citizen science is a great opportunity and yes, it comes with challenges, but we are realising that those are more than outweighed by all the information we can gather from lots of people."

Prof John Woinarski, of Charles Darwin University, applauded the efforts, and said: "It's very important the recovery effort and the assessments are not just left to scientists. We have had nothing of the scale and intensity of these fires and to some extent we are in uncharted territory. The issue we are facing is that there are so many things that need doing and we have subverted the status of so many species, resources, recovery plans and management actions and now we have to pick all these pieces up again. That's an enormous task."

How to get involved

No scientific or photographic experience is required to take part, said Kirchhoff, but people needed to ensure that places were safe to enter.

Anyone interested can register a free account at [iNaturalist](#) either online or through a free iNaturalist smartphone application. iNaturalist is a joint initiative of the California Academy of Sciences and the National Geographic Society.

Users then need to search for the "[Environment Recovery Project: Australian Bushfires 2019-2020](#)" and join that "project".

Photographs can be uploaded with only simple descriptions. Some 40 people have already joined the project, uploading more than 160 images from Queensland, New South Wales, Victoria and South Australia.

The images already uploaded show deceased wallabies, surviving koalas, sprouting eucalypts, piles of bird bones and fungi. A team of scientists work to identify the images for people who don't know exactly what they are looking at.

Kirchhoff said they were hoping for a wide range of images from across different habitats all around bushfire-hit areas of Australia. Every image had value, she said, whether it was a landscape photograph showing the state of the tree canopy, to closeups of sprouting trees, grasses, fungi and images of animals.

ANPC News Jan 2020

['Millstone': Environmental funding cuts to hinder fire recovery plans - SMH, 21 January 2020](#)

Leading ecologists say decades of underspending on environmental research mean governments will likely struggle to assess the impact on wildlife from the huge bushfires let alone develop effective recovery plans. The assessment comes days after the Victorian and NSW governments developed initial responses to the fires, and the Morrison government declared as many as 100 threatened species had lost at least half their habitat. The Australian Conservation Foundation said federal Coalition governments had sliced 40 per cent off the Environment Department's budget since 2013, with more loss of staff likely once it is merged with the Department of Agriculture. "Governments have viewed the environment as millstone - dragging back progress," Richard Kingsford, director of the University of NSW's Centre for Ecosystem Science, said. [Read more.](#)

[Why prescribed burns don't stop wildfires - SMH, 23 January 2020](#)

The Prime Minister has declared hazard-reduction burning is just as important as action on climate change to limit Australia's wildfire risk – but with lives, properties, flora and fauna at real risk, it is critical to understand the realities and limitations of fire management. Prescribed burns are fires created by fire-management authorities to reduce fuel in an attempt to stop the advance of future possible wildfires. Unfortunately, areas in the devastated fire zones that recently had prescribed burns offered little resistance to the advance of the latest wildfires. The fires simply passed straight through them. But why? Current practices of prescribed fires essentially burn the ground flora, the shrubs, herbs and creepers. At most, heat from the ground might scorch the upper canopy. It tends to be patchy. These are called surface fires. But wildfires burn everything. [Read more.](#)

[NSW Nature Conservation Council's 2020 Bushfire Conference - Sydney NSW, 19-21 May 2020](#)

Call for abstracts is now open. The NSW Nature Conservation Council's Bushfire Program is hosting it's 12th Biennial Bushfire Conference, '*Cool, Warm Hot: the burning questions*', to bring together academics, agencies, Traditional Owners, practitioners and communities to explore how different fire intensities can influence ecosystems and communities in a changing climate. Presentations will investigate the effects of low, medium and high intensity fires on the four sub-themes: climate change; fire ecology; ferals, weeds and restoration; and community resilience. The conference will examine how to incorporate and respond to cool, warm and hot fires in fire management as part of an optimal fire regime to achieve multiple objectives for biodiversity and cultural values, hazard reduction objectives and community resilience. Abstract submissions close 12 February 2020. [Click here for more information.](#)

Save our Flora

Australian Network for Plant Conservation News Jan. 2020

What we can do to help post-fire recovery of plants and ecological communities - Please share with your colleagues, neighbours and friends who may be in fire-affected areas

We are putting together some resource pages on plants and fire after the devastating 2019/20 Australian bushfires. Find out how plants and ecological communities recover from fire and what we can all do to help, including not dumping garden waste in burnt areas like the photo below. Help us get the word out there! Weeds are one of the biggest threats to plant recovery at this time. [Read more.](#)

- **Stay out** of recently burnt areas until it is safe – trees and branches may continue to fall for days, weeks and months after the fire has passed.
- **When it's safe** to go in the bush, **assess** the site. Keep to formed tracks and do not walk in areas where plants are regrowing and seedlings emerging as this can damage their recovery and lead to soil erosion.
- Carefully **assess** biodiversity loss and **natural plant recovery** after the fires, as some species may disappear, but many have mechanisms to cope with fire. Use standardised monitoring techniques so different sites can be compared.
- Identify **threats** to plant recovery such as weeds, grazers and disease.
- Use the assessment results to **develop a restoration plan**. Implement your plan, keep good records about what you do, monitor your site to determine the effectiveness of any restoration actions.
- Work with **others** – join a local bushcare volunteer group, call your local council or local land/catchment management group, collaborate with your local university, join local and national networks.
- **Learn, communicate.** Attending training courses, talk to others in your area, read books, apply for funding if you need assistance. Share your information with others.
- Continue to **protect burnt areas**, as they need time to recover, and **unburnt areas too**, as these may act as refuges for biodiversity – from which species can repopulate burnt areas.
- Don't plant or seed into burnt and naturally regenerating areas in the period immediately after the fire - wait to see what comes back first.
- Don't clear “dead” plants which may resprout and provide shelter for remaining wildlife.
- Don't collect seeds in burnt areas
- Don't take too much seed from unburnt areas.
- Don't dump garden waste or other organic material in the burnt areas. This can do more harm than good

Western Australia bushfires devastate the Stirling Ranges — one of the world's richest biodiversity hotspots

ABC Great Southern

Tyne Logan, [John Dobson](#) 7 Jan 2020

Rare and unique flora and fauna in Western Australia's Stirling Range may never fully recover from a massive series of fires which devastated the national park, which is considered one of the world's most important biodiversity hotspots.

Sparked by lightning, intense fires tore through more than 40,000 hectares of land in the park, about 400 kilometres south-east of Perth, between Boxing Day and the New Year. The series of fires left almost half the rugged park scorched.

With efforts from over 200 fire crew across the week, the fire was brought to advice level without any lives or property damaged. But there are now concerns for the park's unique flora and fauna, which has faced multiple large-scale fires in the past two decades.

The south-west of Western Australia is recognised internationally as a biodiversity hotspot, largely thanks to the Stirling Range. The National Park has more than 1,500 species of flora packed within its boundaries — more than the entire British Isles. At least 87 of those species are found nowhere else in the world — including rare mainland quokkas.

Chief executive of Gondwana Link, a private conservation enterprise, Keith Bradby described the park as "one of the most precious jewels of the region" but said frequent fires in the park had put species under a lot of stress. He said the landscape would never fully recover.

"It will be changed for decades, if not centuries," he said. "If [there is] fire too frequently you'll be taking out plant species before they have a chance to set seed again. You will be favouring a few plant species, you'll totally change the flora and vegetation and you'll totally change the whole feeding pattern of wildlife — the whole food chain alters."

Mr Bradby said he was most concerned for the Montaigne thickets and the quokka population. "It's one of the few mainland populations of quokkas left, and they were in that part of the park," he said. "Whether they're going to rebound I can't tell. And the Montaigne thickets are already damaged because of dieback. Whether they're on a downhill trajectory or whether we've terminated it — we don't know."

The Department of Biodiversity and Conservation (DBCA) will now begin to assess the damage at the national park. Yesterday, Parks and Wildlife Officers started inspecting the damage on Bluff Knoll, the park's highest peak at 1,090 metres.

DBCA south coast regional manager Greg Mair said they will not know the full extent of the damage until spring, when species start to regrow. "We haven't had the opportunity to assess apart from an aerial survey," he said. "But we do know that among the very rare and interesting species that are in the Stirling Range National Park, a number of them have been burnt, 14 are critically endangered and there are two threatened ecological communities."

Mr Mair said similar scale fire had burned in the park in 1991, 2000 and 2018. "The key to this is the interval between fires," he said. "Some of these species require really long intervals before they can produce viable seed and if you have too frequent a fire that starts to reduce the seeding capacity and the reproductive capacity of the plant."

The Stirling Range National Park will remain closed indefinitely, including [the popular Bluff Knoll hike](#), as DBCA assess damage to infrastructure and walk trails to make sure it is safe to enter.

Save our Flora

ANPC News - Jan 2020

[Leaked report lays bare environmental devastation of Victorian fires](#) - The Age, 10 January 2020

The ecological devastation of the Victorian bushfires has been laid bare in a leaked report which warns some species are likely to already be extinct – even as authorities brace for many more weeks of fires....It warned that 31 per cent of the state's rainforests had already gone up in flames, as well as 24 per cent of wet or damp forests, and 34 per cent of lowland forests....Leading conservation biologist Professor David Lindenmayer said it would take more than 100 years for wet and damp forests to recover from the ferocity of this season's fires. Of more concern was the increasing severity and regularity of fire seasons, with many of the areas that have already burnt or which are predicted to burn in 2020 being ravaged as recently as 2014. "A lot of these areas won't even have started to recover from the last fire before they get smashed again by another fire, and they won't go back to what they were," Professor Lindenmayer said. "They just collapse into something different." [Read more.](#)

[Incredible, secret firefighting mission saves famous 'dinosaur trees'](#) - SMH, 15 January 2020

Desperate efforts by firefighters on the ground and in the air have saved the only known natural grove of the world-famous Wollemi pines from destruction during the record-breaking bushfires in NSW. The rescue mission involved water-bombing aircraft and large air tankers dropping fire retardant. Helicopters also winched specialist firefighters into the remote gorge to set up an irrigation system to increase the moisture content of the ground fuels to slow the advance of any fire. "It was like a military-style operation," NSW Environment and Energy Minister Matt Kean told the *Herald*. "We just had to do everything." [Read more.](#)

['It's heart-wrenching': 80% of Blue Mountains and 50% of Gondwana rainforests burn in bushfires](#) - The Guardian, 17 January 2020

At least 80% of the Blue Mountains world heritage area and more than 50% of the Gondwana world heritage rainforests have burned in Australia's ongoing bushfire crisis. The scale of the disaster is such that it could affect the diversity of eucalypts for which the Blue Mountains world heritage area is recognised, said John Merson, the executive director of the Blue Mountains World Heritage Institute....The Blue Mountains world heritage area covers one million hectares of national park and bushland and is dominated by temperate eucalypt forest. The area is renowned for the diversity of its vegetation and is home to about a third of the world's eucalypt species. While most are fire-adapted and can regenerate, many of the species depend on long intervals between fires, Merson said. "We had a very large fire in 2013. It's only six years after that," he said. [Read more.](#)

[Tasmania's montane conifers, including King Billy and pencil pine, fruit for first time since 2015](#) - ABC Tas Country Hour, 21 January 2020

Theories abound, but there is no hard and fast way to tell when certain kinds of trees will fruit — the only thing you can be sure of is that it does not happen very often. Tasmania's montane conifers — several species of which are endemic to the state — last propagated, or masted, in 2015, sending researchers scrambling to collect their seeds. Now the trees are at it again, but the seeding is not just confined to the Apple Isle, or even Australia. "Masting events like this appear to be global, with conifers seeding in New Zealand and other parts of the world," said the Tasmanian Seed Conservation Centre's (TSCC) James Wood. "The most recent modelling on masting suggests that the last two warm summers may have contributed to this event." [Read more.](#)

Save our Flora

Threatened Species Hub

Threatened Species Recovery Hub Leadership Group

Stephen Garnett, Sarah Legge, David Lindenmayer, Martine Maron, Brendan Wintle, John Woinarski

A conservation response to the 2019-20 wildfires Wed, 22 Jan 2020

With other concerned conservation biologists, researchers from the Threatened Species Recovery Hub have developed a 'blueprint' for management responses to the 2019-20 wildfires. This report can be downloaded [HERE](#).

This document is a response to the profound impacts of these fires on many threatened plant and animal species, and it reflects our hub's primary objectives – to enhance the conservation of Australia's threatened species (and ecological communities) and to provide evidence and advice to the community and many other stakeholders about such conservation.

The purpose of this document is to try to describe and justify the immediate, short- and longer-term responses to these fires. It seeks to provide the broad context for connecting and prioritising these responses. In 'fog of war' situations, such as these fires, there is a need for actions to be coordinated, purposeful and strategic. In this case, there is a priority for urgent response for animal welfare concerns, but also an even more important priority for long-term management, planning and policy refinement to provide the greatest prospect of environmental recovery.

This blueprint is for advice only. Individual agencies, conservation NGOs and other groups will have their own roles to play in this recovery, and their own plans or strategies for response. The ecological losses caused by these fires have been extremely severe, but there has also been an extraordinary willingness by the Australian, and international, community to respond, and a much-shared hope for recovery. We hope that this blueprint will help chart the route to such recovery.

Understanding how threatened plants respond to different fires

Altered fire regimes can have a serious negative impact on threatened plant species and ecological communities. One hub project is working to better understand the effects of different fire regimes on threatened plants in order to improve fire management strategies and conservation outcomes.

We asked hub researcher Mark Ooi at the University of New South Wales about the project and why the season of burns is important to Queensland's Key's Boronia

[READ MORE](#)



Save our Flora

Boronia keysii (Photo on p1)

Threatened Species recovery Hub News

<http://www.nespthreatenedspecies.edu.au/news/tis-the-season-understanding-how-threatened-plants-respond-to-different-fires>

One of our study species, Key's Boronia (*Boronia keysii*), is a native shrub growing up to 2 m high with deep rose-pink or white flowers. There are only 15 known populations, some on private land, and all within a 5 km radius on coastal lowlands around Cooloola, in south-east Queensland. It was thought to be extinct until rediscovered in the early 1970s and inappropriate fire regimes are listed as playing a role in the threat faced by this species.

We used a variety of methods including laboratory trials and experimentally conducted burns to understand the ecology of this threatened species and how it responds to fire. To undertake this work we collaborated with the South East Queensland Fire and Biodiversity Consortium, Sunshine Coast University, the Fire Management team at Queensland Parks and Wildlife and private landholder HQ Plantations.

PhD student Justin Collette from the University of New South Wales examined seed viability and germination requirements. This type of work is essential for understanding potential limitations of threatened species. Seed viability was assessed by x-raying seeds at the Australian PlantBank at the Australian Botanic Garden in Sydney, and identified that the species produced plenty of healthy seeds.

Justin also undertook laboratory germination trials and found that warm temperatures were needed for seeds to germinate, along with the addition of smoke – something that may translate to a warm season seedling emergence response in the field, mainly after fire. If this were the case, it indicates that Key's Boronia may have better germination in the wild if burnt when relatively warm daytime temperatures were still likely for extended periods following the fire event – say early autumn. This

means that the timing of fire may impact how well this Boronia will recover; however, the best way to get the most informed view is via experiments in the field.

Trialling fire seasons

A field trial of implemented fires was carried out in 2018. Burns were conducted in two different seasons to assess fire response, germination and seedling growth in response to the timing of the burn. The key to successfully conducting field experiments like this is strong collaboration between managers, fire crews and researchers, in order to produce well-replicated experimental burns. A coordinated effort between Queensland Parks and Wildlife, landholder HQ Plantations and their fire crews provided similar burns across the two different seasons, allowing University of New South Wales researchers to compare the effects of the season of burn, while minimising the influence of other fire factors.

While several years of data are required to obtain any clear results of fire season impacts on plants, early results indicate a clear seasonal pulse of seedling emergence, matching lab results. The next question is whether the relative delay in emergence after different burns has had any effects on seedling growth. Work like this is essential for informed fire management of threatened species and, as part of our project, and in collaboration with the New South Wales Government's Bushfire Risk Management Research Hub, we have identified seasonal germination requirements for other threatened species, the Endangered *Asterolasia buxifolia* and Vulnerable *Leucopogon exolasius*. Winter burns significantly slowed growth and time to maturity for *Leucopogon*. We have also found a strong effect of season of burn on subsequent soil microbial activity. These findings combined highlight the strong potential for fire seasonality to influence the recovery of threatened species and the need to consider season of burn in management plans of susceptible species.



Seed and Cuttings Exchange

Please send all requests directly to the person making the offer or the group email

saveourflora@gmail.com

Please follow the correct protocols for requests of seed or cuttings. These are detailed on the next page. Please note that some species are in very short supply and cutting material may be limited.

Maria Hitchcock

16 Hitchcock Lane Armidale NSW 2350

Correa eburnea, *C. calycina*, *C. baeuerlenii*,
Callistemon pungens, *Zieria adenodonta*, *Z. prostrata*, *Z. floydii*, *Boronia keysii*

I also sell some endangered species through my online nursery <https://coolnativesnursery.com>

Arthur Baker

55 Moran ST Gatton Qld 4343

Gardenia psidiodes, *Grevillea quadricauda*, *Grevillea glossadenia*, *Eucryphia wilkiei*, *Graptophyllum ilicifolium*

Xanthostemon formosus, *Phaius tancarvilleae*,
Plectranthus nitidus, *Zieria prostrata*, *Grevillea mollis*?

Eremophila nivea, *Dodonaea rupicola*,
Xanthostemon arenaris, *X verticulatus*/seeds or cuttings

Kunzea flavescens, *K graniticola*, *Callistemon pearsonii*

Callistemon flavovirens{seeds}, *Melaleuca irbyana*
Lilaeopsis brisbanica {Water plant}, *Hernandia bivalis*
Spathoglottis pauliniae {Tropical ground orchid},

Rhododendron Lachiae

Charles Farrugia (email saveourflora@gmail.com)

Eremophila denticulata ssp *trisulcata*
Eremophila denticulata ssp *denticulata*
Eremophila nivea (blue form)
Eremophila nivea (white form) - limited.
Eremophila vernicosa – extremely limited

Russell (email saveourflora@gmail.com)

Boronia clavata

Denise & Graeme Krake

752 Warrigal Range Rd. Brogo NSW 2550

Seed of

Hakea dohertyi, *Hakea ochroptera*

Hakea longiflora, *Grevillea maccutcheonii*

Geoff & Gwynne Clarke

Grevillea humifusa - cuttings

Angophora robur - seed

Dodonaea crucifolia - cuttings or seed

This was named a couple of years ago by Ian Telford who came down from Armidale to look over our block. Many people were calling it *Dodonaea hirsuta*, but it is not very hairy and has no hairs at all on the fruits. It also grows in a nearby flora reserve. If people would like to try this I can make it available when the material is ready. I have grown it successfully from cuttings, but it does not live long after planting out. It also produces seed and I can collect that after the next flowering (spring fruits). It grows happily around the block, popping up from seed here and there, produces plenty of seed, but it is not long lived even when self sown. Fruits are showy reds.

Bob O'Neill

7 Hillsmeade Drive, Narre Warren South, Vic. 3805

I want to increase our range of *Lechenaultias* and *Correa pulchellas*. Can anyone help us out? Both of these groups of plants are doing well for us at Narre Warren South, Vic. I would be delighted to offer cuttings from our range to interested people. Some plants may be available to people who are able to come to our home address.

Paul Kennedy (Leader ANPSA Hakea SG) (email saveourflora@gmail.com)

I have seed of *Hakea dohertyi* and a large plant of *Hakea ochroptera* from which cutting material could be taken. I also have a plant of *Callistemon megalongensis* which has not flowered yet, but cutting material would be available in autumn. The seed originally came from the Melaleuca Study Group seed bank many years ago.

Verna Aslin

20-22 Bega St Cobargo NSW 2550

Asterolasia beckersii and *Grevillea iaspicula*

Do you have any EPBC plants growing in your garden with sufficient foliage to share cuttings with our members? Let me know and I'll print it here. It would be easier if we can add your address so that members can contact you directly. Please make sure you follow the protocols on the back page. (Ed)

Save our Flora

Requesting and sending seed by post

Please follow these simple steps.

Make a request

1. Send your request by email first. It will be forwarded to the grower so you can request seed and ask for the address.
2. Send your request enclosing a self-addressed envelope with two 60c stamps attached. Post the envelope.

Send seed

1. When you receive an envelope with a seed request, package up the required seed which includes the name, provenance (if known) and date of collection. Add any tips on germinating the seed and post.

Receiving seed

1. Seed should be stored in paper (small manilla seed packets are best but any cheap envelopes will do) and kept in a cool dark place. Some people use those small paper lolly bags and staple them at the top. Add mothballs if you like. This will prevent insect attack. I save moisture absorbers from medicine bottles and add them to my seed drawer to ensure the seeds do not rot.

Seed life varies according to species. Acacias will last for many years while Flannel Flower needs to be really fresh. Old seed may not germinate and needs to be thrown out.

Requesting and sending cuttings by post

Please follow these simple steps.

Make a request

1. Send your request by email first. It will be forwarded to the grower so you can request cuttings and ask for the address.
2. Purchase an Express Post small satchel for \$10.55. it will hold up to 500 gms.
3. Self address your satchel and place it in an envelope with your cuttings request. Add a label/s with the name of the species and sender. Pencil is best for writing on labels.
4. Post the envelope.

Send cuttings

1. When you receive an envelope with a satchel inside, cut about 6 stems of the requested species. The best time to do this is early morning. Store cuttings in the crisper part of the fridge until they are ready to be posted.
2. Wrap the cuttings in damp newspaper and place them in a cliplok plastic bag. Make sure you label each parcel with the names of the species and sender. Squeeze air out of the bag and fasten top.
3. Put the bag in the satchel and post.

Receiving cuttings

Group Members

ANPSA Groups

APS Echuca Moama Vic
 APS Melton Bacchus Marsh Vic
 APS Sutherland NSW
 NPQ Ipswich Qld
 NPQ Sunshine Coast and
 Hinterland Qld

Botanic Gardens and Reserves

Burrendong Arboretum Wellington
 Crommelin Native Arboretum NSW
 Hunter Regional BG NSW
 Lindum Park Flora and Fauna Res
 Tamworth Regional BG NSW
 Swan Reserve Garden Vic

Nurseries

Bilby Blooms Binnaway NSW
 Cool Natives Armidale NSW
 Mole Station Tenterfield NSW
 Forest Heart Eco-Nursery SE Qld

Seed Suppliers

Victorian Native Seeds

Study Groups

Acacia SG
 Correa SG
 Epacris SG
 Garden Design SG
 Grevillea SG
 Hakea SG
 Waratah & Flannel Flower SG

Landscapers

Brush & Bush Tamworth NSW