

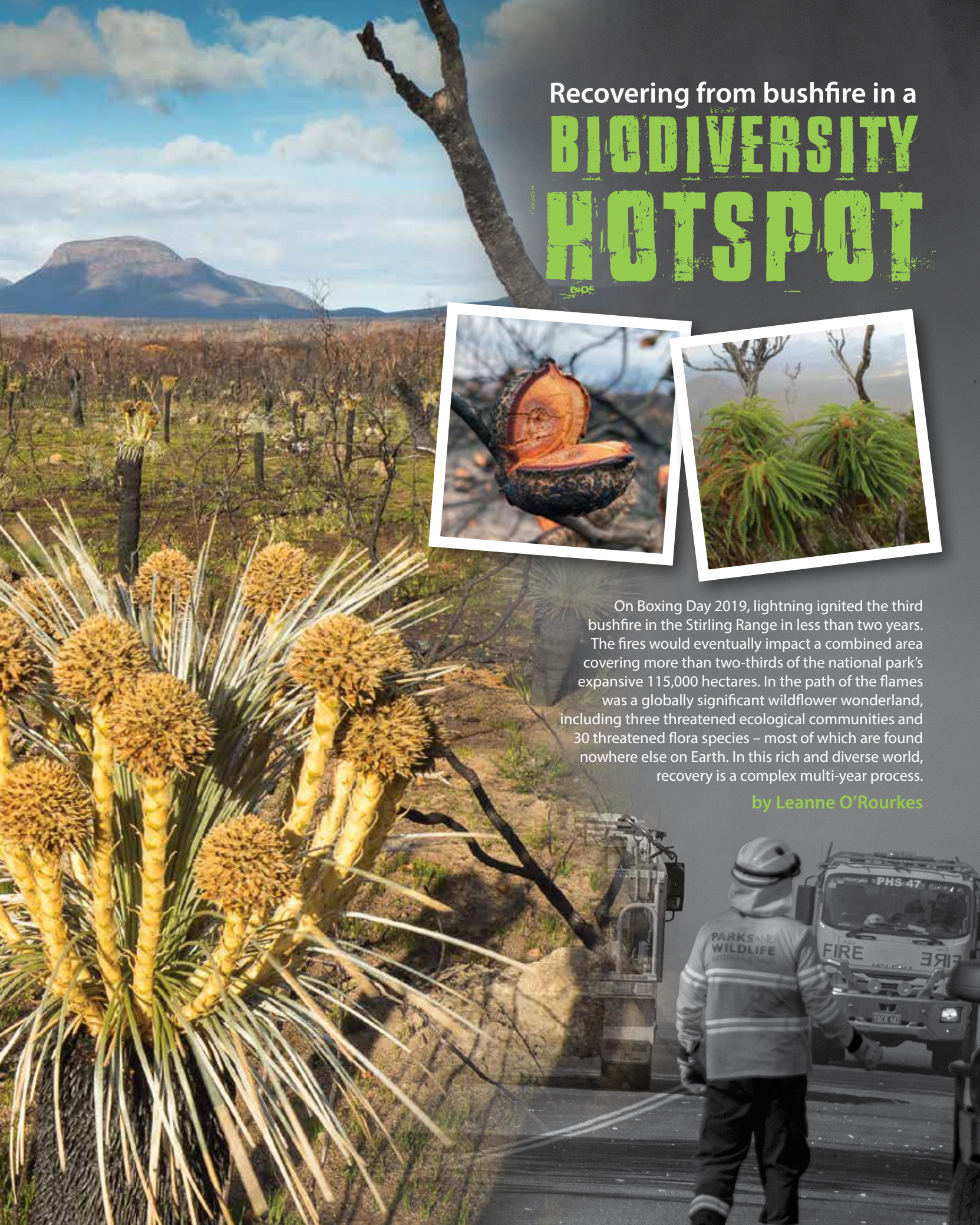


Recovering from bushfire in a **BIODIVERSITY HOTSPOT**



On Boxing Day 2019, lightning ignited the third bushfire in the Stirling Range in less than two years. The fires would eventually impact a combined area covering more than two-thirds of the national park's expansive 115,000 hectares. In the path of the flames was a globally significant wildflower wonderland, including three threatened ecological communities and 30 threatened flora species – most of which are found nowhere else on Earth. In this rich and diverse world, recovery is a complex multi-year process.

by Leanne O'Rourke





Reaching the base of the Stirling Range is an extraordinary experience for tourists arriving by road who have become accustomed to the flat lands that surround these rugged peaks for seemingly endless kilometres. Rolling mountains seem to suddenly appear from the landscape, each with a unique character, such as the intriguing three separate peaks of Mount Trio, the steep point of Mount Toolbrunup or the sheer cliffs of popular Bluff Knoll, which is often shrouded in mysterious cloud and reflective of the Aboriginal name for the area – Koi Kyenunuruff or ‘mist rolling around the mountains’.

Even among the surreal moonscape of the recently forged fire scars, a drive through the area provides spectacular perspectives of the scenery. However, the park’s rare features are best appreciated up close. These unusual geological formations attract hikers, backpackers and nature enthusiasts from far and wide, keen to walk, climb or scramble up to some of the more challenging summits for 360-degree views or to enjoy a closer look at the incredible flora.

Devastatingly, the park experienced three major bushfires in 2018 and 2019. The third fire, which started on Boxing Day 2019, was brought under control in early 2020 thanks to an outstanding multi-agency effort by Volunteer Bush Fire Brigades, DBCA staff, volunteer firefighters,

SES, Department of Fire and Emergency Service personnel and countless support workers. While many Western Australians were recovering from post-holiday blues, locals were assessing the damage to 26 of the park’s threatened flora species – more than three quarters – including 16 critically endangered plants and turning their attention to a very different kind of recovery.

FOCUSSING ON FLORA

In a familiar tale about the remarkable resilience of the Australian bush,

many species are bouncing back with impenetrable tenacity, like the abundant grass trees (*Xanthorrhoea platyphylla*) whose blackened trunks only sprout flowers after a fire. Other species like the critically endangered late hammer-orchid (*Drakaea confluens*) and Drummond’s grass (*Deyeuxia drummondii*), which is listed as vulnerable under the *Biodiversity Conservation Act 2016*, are also likely to respond positively to fire.

However, many of the re-seeding species may not fare as well and will require

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Previous page

Main Recovery at Stirling Range National Park, June 2020.

Photo – Cliff Winfield

Right Crews work to manage the fire at Chester Pass Road in 2019.

Photo – Sally Treasure/DBCA

Inset left Fire causes plants such as hakea to release their seeds from woody fruits.

Photo – Leanne O’Rourke/DBCA

Inset right Critically endangered Stirling Range dryandra (*Banksia montana*).

Photo – Sarah Barrett/DBCA

Above Fire burns along Chester Pass Road.

Photo – Sally Treasure/DBCA

Above right Stirling Range dryandra (*Banksia montana*) burnt in the fire.

Photo – Sarah Barrett/DBCA

Right Clouds roll over Bluff Knoll.

Photo – Rob Neave/Sallyanne Cousans Photography



Discover more about
 Stirling Range National
 Park

Scan this QR code or
 visit Parks and Wildlife
 Service’s ‘LANDSCOPE’
 playlist on YouTube.





Above left Vegetation near Mount Trio before the fire.

Photo – Marie Lochman

Top Late hammer-orchid.

Photo – Andrew Brown/DBCA

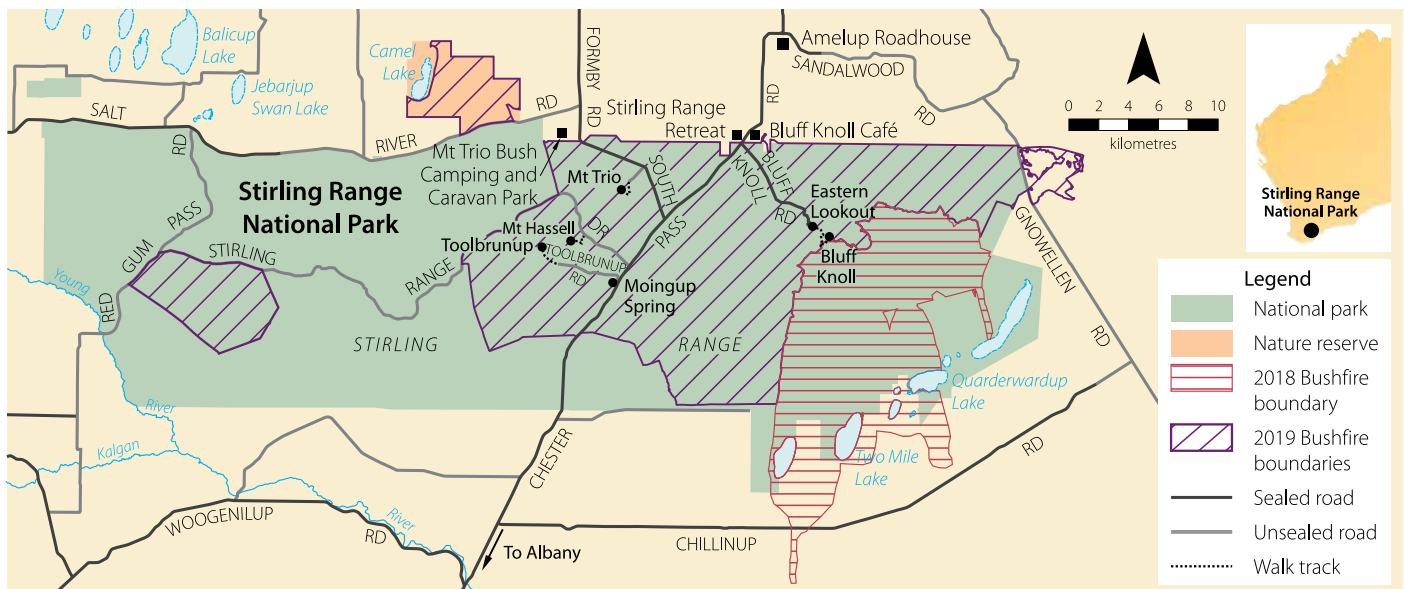
Above Drummond's grass.

Photo – Ellen Hickman

a focussed effort to ensure their survival. As a notable example, all remaining wild populations of the critically endangered Stirling Range dryandra (*Banksia montana*) were burnt. In a 2018 bushfire, 29 of 37 adult individuals were destroyed and the rest, along with some of the seedlings that germinated since 2018, were decimated in late 2019. It takes ten years for this species to grow from seedling to flowering plant, when bright earth-toned fingers project from the centre of the long leaves that spring from the trunks like fountains.

It takes even longer for this species to develop a seedbank that is adequate enough to support regeneration from future fires. Sadly, the cumulative impact of fires has taken a huge toll; a short interval between incidents in 1991 and 2000 meant the plants did not have long enough to reach maturity and produce seed and thus the species was starting from a poor position when bushfires again raged through the area.

But there is hope. Some adult plants persist outside the park in a small translocation and, along with seed



“The fragility and importance of these species and communities was recognised long before the recent fires threatened their very existence.”



collections at the WA Seed Centre and elsewhere, they may hold the key. Propagation and translocation first at other locations and eventually within the Stirling Range could provide a lifeline in conjunction with protection from other threats like disease and grazing. Fencing, spraying with the fungicide phosphite, completing comprehensive surveys and monitoring can be painstaking work. Although these efforts are largely hidden from view, the dedicated nature

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Above Montane thicket of the eastern Stirling Range.
 Photo – Damon Annison

Top right Brendan Fox, Gavin Bayliss and Deon Grantham working to rebuild the lower reaches of Mount Trio walk trail.
 Photo – Shem Bisluk/DBCA

Above right The fire closed Chester Pass Road.
 Photo – Leanne O'Rourke/DBCA

Above far right Threatened quokka.
 Photo – Jiri Lochman

conservation team is passionate about giving these species a shot at survival.

CONSIDERING BROADER COMMUNITIES

A vital management strategy for distinct species relies on a holistic view that considers them as community members part of an intricately connected ecosystem. Stirling Range dryandra (*Banksia montana*) is a species within the critically endangered threatened ecological community (TEC), *Montane Thicket of the eastern Stirling Range*. Post-fire aerial intelligence and ground survey work suggest that the majority of the last unburnt patches of this community have been impacted by the most recent bushfire. Throw in other pressures like drought stress from a drying climate, and the challenges for conservation management are momentous. And this is not an isolated situation. Almost half of the priority *Montane Mallee Thicket of the Stirling Range* TEC was burnt in the last bushfire.

The TECs are not only important for the individual plants they are comprised

of, but also for the threatened fauna species that frequent them. In addition to providing habitat for threatened quokkas (*Setonix brachyurus*), a host of endemic short-range invertebrates are also affected, including the critically endangered shallow-burrowing Toolbrunup endemic trapdoor spiders and the *Banksia montana* mealybug (*Pseudococcus markharveyi*), which relies on its host plant to endure.

A LONG ROAD AHEAD

The fragility and importance of these species and communities was recognised long before the recent fires threatened their very existence. Through knowledge about fire recovery gathered from long-term quadrats and forward planning to prepare for risks such as fire, it is fortunate that not all was lost in the recent bushfires. The next few years are critical. Unlike the intense emphasis at the peak of the bushfires in a race to gain the upper hand and prevent further damage, progress in the environmental recovery space will be slow but essential for both the environment and its visitors.



A month after the last blaze was extinguished, the deafening roar of the December bushfire still lingered in the memory of the Stirling Range community. The area had returned to its usual state of quiet contemplation, but it was even quieter than usual. Ordinarily at the busiest time of the year, noisy cars stretch back as far as the eye can see, full of tourists keen to catch a glimpse of the infrequent snow on Bluff Knoll. In contrast, if you listened through the silence shortly after the fire trucks had moved on, you could hear the clicking and tapping of tools on bolts and slats as crews worked to rebuild trails for the safe return of visitors. By no means a small task, support was embraced from far and wide, including from DBCA staff and Aboriginal rangers from Albany, the Wheatbelt and further afield in the Kimberley. The prison services lent a hand and a helicopter was brought in to airlift over 50 tonnes of material. With the unexpected infrastructure repairs, comes room for improvement. Easier, more accessible trails are just some of the bonuses on the horizon.

Above Newly repaired walk trail at Bluff Knoll.
Photo – Cliff Winfield

Right Grass trees sprout flowers after a fire.
Photo – Damon Annison

A GLIMMER OF HOPE

As is the case in any bushfire affected community, the fire scars are not confined to the landscape. Businesses have struggled to get back on their feet, but the regeneration of the bush brings a glimmer of hope for them. The warm country welcome at the Bluff Knoll Café with its musical instruments, coffee, food and bar remains and both the Stirling Range Retreat and Mount Trio Bush Camp and Caravan Park are excellent options for resting after a day of hiking.

As time passes and the burnt ground recovers, flowering plants will regrow and pop colour into the landscape, high upon the mountains. One thing is certain: the monitoring team will be there in hope and full pursuit of signs that spring has triggered strong germination.



Leanne O'Rourke is an audio visual production leader in DBCA's Public Information and Corporate Affairs Branch. She can be contacted at leanne.ourukes@dbca.wa.gov.au or (08) 9219 9912