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FIELD NATURALISTS' ASSOCIATION OF CANBERRA INC.

FIELD NATTER

## MEETING—Thursday 5 March 2020

7:30 pm Australian National University

Jan Anderson Seminar Room, R.N. Robertson Building, Biology Place, ANU, ACT  
details back page

# History of Australia in Seven Rocks

**Speaker: Marita Bradshaw**

Marita, a leading petroleum geologist, will identify seven rocks that have had a wide ranging and profound influence on Australian society, historical events and biology. These include: the mineralisation of Mount Isa; the Cretaceous shales of the former inland sea which gave us the great artesian basin; and the Cenozoic limestones of the south coast. Marita gave this presentation on November 7th last year at the ANBG as a novel component of the Friends' weekly lecture series.



*The huge Chinaman Creek Limestone boulder was donated from Queensland for the National Rock Garden. Marita will also explain her connections with this unique gallery of fascinating stories east of the National Arboretum, Canberra*

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

Graham Readfearn

Scientists are asking for help from the public to understand bushfire devastation. “We want birds, insects, green shoots, animal poop, fungus ... Even if it’s a tree that has burned to a crisp, that’s still useful,” says Casey Kirchhoff.

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 11 m hectares across the country has ecologists and scientists in ‘uncharted territory’ as they scramble to gather data to understand the devastation.

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 \$50 m 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.

Would like to introduce a new citizen science project to help us monitor regrowth and recovery of Australian ecosystems across the \*huge\* extent of the fires. We need your help to (when it’s safe) get back in see how plants / animals / fungi are doing.

Over 46,000,000 acres have burnt so far in the 2019–2020 Australian bushfire season in eastern Australia, including South

Australia, New South Wales, Victoria and Queensland.

Anyone interested can register a free account at iNaturalist either online or through a free iNaturalist smartphone application (<https://www.inaturalist.org/projects/environment-recovery-project-australian-bushfires-2019-2020>). iNaturalist is a joint initiative of the California Academy of Sciences and the National Geographic Society.

Sign up to the Green Light email to get the planet's most important stories

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 close ups of sprouting trees, grasses, fungi and images of animals.

## Subscription renewal

Just a reminder of the details of direct debits for payment of subscriptions. Fees are \$25.

Account name: Field Nats

BSB: 325 185

Account number: 03545251

Reference: Your name

**Kevin McCue**  
**Treasurer**

## An Oddball experience

As noted in the previous newsletter I have just spent eight days on a bus tour of Mornington Peninsula/Great Ocean Road etc.

After the wondrous trip along the Great Ocean Road we spent two nights in Warrnabool. What I didn't expect was that our hotel was just a short walk to Middle Island.

For those who aren't aware (and I wasn't though I've seen the movie), Middle Island was the subject of a movie where a Mareema dog named Oddball saved a rare penguin colony from extinction by protecting them from marauding foxes.

This was so successful that two Mareemas now live on the island five days a weeks during the breeding season and the population has now expended to 180. The two dogs work there in rotation and are now training two new pups, but I heard that one of the dogs has recently been retired.

On our last day at Warrnabool I again took a walk along the sands close to Middle Island. I heard a dog bark as I approached.

A short time later I saw the dog walk out along the boardwalk then lay down looking forlorn and lonely.



However, I was so thrilled to actually get a photo of one of these wonderful dogs doing such a great service for the preservation of our wild life. I did however feel very sorry for it as it seemed to be so lonely but I guess someone goes out to feed it every day and give it some company.

**Alison Milton**

## Raffle prizes needed

As always, we need prizes for our monthly raffle. This is our only fund-raising event and is funded through members' generous donations, mostly consisting of items no longer needed or wanted at home. Fresh garden produce is also highly prized.

Please go through your cupboards for all those little items you no longer use or want and bring them along to donate as raffle prizes. As the saying goes, 'One man's junk is another man's treasure' (or woman as the case may be), and if you are a gardener with fresh produce to donate, this would be greatly appreciated.



# 'Unprecedented' globally: more than 20% of Australia's forests burnt in bushfires

Researchers' figure contrasts starkly with the proportion of forest burned over such a period on any other continent

Lisa Cox  
25 February 2020

More than 20% of Australia's forests burned during the summer's bushfire catastrophe, a proportion scientists believe is unprecedented globally, according to new research.

Research published in a special edition of *Nature Climate Change* focused on the bushfire crisis finds that 21% of the total area covered by Australian forests – excluding Tasmania – has burnt so far in the 2019–20 bushfire season.

The analysis examined the area of forest burnt on each continent as a proportion of total forest cover in every fire season for the past 20 years.

The 21% figure contrasts dramatically with the proportion of forest burnt in any season on any other continent in that time frame, which for most continents and forest types was 4%–5%.

The one exception was for tropical and subtropical dry broadleaf forests in Asia and Africa, for which the analysis found medians of 8%–9% had been recorded in that 20-year period.

The paper adds that the 21% is likely to be an underestimate because the data have not included fires in Tasmania and Australia's fire season is still going.

"The data point for this year's fires show it stands out completely from all other years for Australia or other countries," the study's

lead author, Matthias Boer, said. "There is just nothing like it out there and we felt confident to call it unprecedented.

"The word unprecedented has been used a lot the last two months. [Our analysis] is the first in the peer-reviewed literature that puts some data behind that."

The *Nature Climate Change* edition features analysis and commentary from some of the world's most respected scientists.

In another paper, scientists Benjamin Sanderson and Rosie Fisher examine some of the factors that have influenced the current fire season and what gaps in knowledge could be addressed to better prepare society for more potentially extreme events in future.

The paper says that in the case of recent events in Australia, "there is no doubt that the record temperatures of the past year would not be possible without anthropogenic influence". It adds that "under a scenario where emissions continue to grow, such a year would be average by 2040 and exceptionally cool by 2060".

Andrew King, a lecturer in climate science at the University of Melbourne, co-authored another piece examining the role of climate variability and drought. He said the consequences of extreme drought, heat and bushfires had been well-documented, but the collection of articles in *Nature Climate Change* was intended to "provide informed commentary on this summer's severe weather".

## Will Australia's wildlife recover from this bushfire season?

There was a lot "we don't fully understand yet", King said. "While we can say with confidence that human-caused climate change has amplified the extreme heatwaves that have been observed this summer, the influence of human-caused climate change on drought and fires in Australia is much harder to disentangle and natural climate variability plays a very large role in both."

He said the climate models used to make projections had "deficiencies in simulating both drought and fire such that we cannot yet provide robust guidance on how these extremes of Australian climate will change as the world continues to warm".

James Collett, a lecturer in psychology at the School of Health and Biomedical Sciences at RMIT University, said the fact the journal had published an issue framed around Australia's disastrous bushfire season "shows just how important an impact the bushfires are having on the global consciousness".

"Australia is now a striking example that is driving international climate change discourse," he said. "We can only hope that the psychological impact of the bushfires contributes to the political, economic, industrial, scientific and social changes necessary to manage climate change and create a sustainable world."

# Want to help save wildlife after the fires? You can do it in your own backyard

Holly Kirk, Brendan Wintle, Casey Visintin, Freya Thomas, Georgia Garrard, Kirsten Parris, Kylie Soanes, Pia Lentini, Sarah Bekessy: 25 February 2020

People living in cities far from the unprecedented bushfires this summer may feel they can do little more to help beyond donating to organisations that support affected wildlife. But this is not necessarily the case: ten of the 113 top-priority threatened animal species most affected by the fires have populations in and around Australian cities and towns. Conserving these populations is now even more critical for the survival of these species.

Here we provide various practical tips on things people can do in their own backyards and neighbourhoods to help some of the species hit hard by the fires.

Wildlife may arrive in your neighbourhood in search of resources lost to fire or drought in their ranges. Cities can become ecological traps, as they draw animals towards sub-optimal habitats or even death from threats such as cats and cars. But by providing the right resources, removing threats and connecting your backyard to surrounding habitat, you can turn your property into a refuge, not a trap.

The fires killed an estimated 1 billion animals and Australia's threatened species list is likely to expand dramatically. As is often the case, the impacts on invertebrates have been largely ignored so far.

## Thinking outside the animal box

Despite the focus on animals, it is plants, making up 1,336 of the 1,790 species listed as threatened, that have been hit hardest. Early estimates are that the fires had severe impacts on 272 threatened plant species. Of these, 100 are thought to have had more than half of their remaining range burnt.

The impacts on individual plant species is profoundly saddening, but the impacts on whole ecosystems can be even more catastrophic. Repeated fires in quick succession in fire-sensitive ecosystems, such as alpine-ash forests, can lead to loss of the keystone tree species. These trees are unable to mature and set seed in less than 20 years.

Losing the dominant trees leads to radical changes that drive many other species to extinction in an extinction cascade. Other badly

impacted ecosystems include relics of ancient rainforests, which might not survive the deadly combination of drought and fire.

You can help by growing plants that are indigenous to your local area. Look for an indigenous nursery near you that can provide advice on their care.

## Providing for urban wildlife

Planting native species in your backyard is also the best way to provide food for visiting wildlife. Many species feed on flower nectar, or on the insects the vegetation attracts. Putting out dishes of fruit or bird feeders can be useful for some species, but the best way to provide extra food for all is by gardening.

Plants also provide shelter and nest sites, so think twice about removing vegetation, leaf litter and dead wood. Fire risk can be managed by selecting species that are fire-suppressing.

Urban gardens also provide water for many thirsty creatures. If you put out a container of water, place rocks and branches inside so small critters can escape if they fall in.

Backyard ponds can provide useful habitat for some frog species, particularly if you live near a stream or wetland. Please don't add goldfish!

The best frog ponds have plants at the edges and emerging from the water, providing calling sites for males and shelter for all.

Piles of rocks in the garden form important shelters for lizards and small mammals.

## Reducing threats

When driving, think about killing your speed rather than wildlife – especially while populations are moving out of fire-affected areas in search of food. Slowing down can greatly reduce animal strikes.

With the loss of huge areas of forest, species like grey-headed flying foxes will need to supplement their diet with fruit from our backyards. Unfortunately, they risk being entangled in tree netting. If you have fruit trees, consider sharing with wildlife by removing nets, or using fine mesh bags to cover only select bunches or branches.

## Living with the new visitors

People have different levels of knowledge about our native wildlife, and some will be more affected by new wildlife visitors than others. Some of these critters are small and quiet. Others are more conspicuous and may even be considered a nuisance.

Try to discuss what you are seeing and experiencing with your neighbours. When you can, provide information that might ease their concerns, but also be sympathetic if noisy or smelly residents move in. It is important to tolerate and co-exist with wildlife, by acknowledging they might not conform to neighbourly conventions.

Given the unprecedented extent and intensity of these fires, it is difficult for scientists to predict how wildlife will respond and what might show up where. This is especially the case for species, like the regent honeyeater, that migrate in response to changing resources. New data will be invaluable in helping us understand and plan for future events like these.

If you do see an animal that seems unusual, you can report it through citizen-science schemes such as iNaturalist. If an animal is injured or in distress it's best to contact a wildlife rescue organisation such as Wildlife Victoria or WIRES (NSW).

## Resources

[How to help birds after the fires](#)

[Other threatened species in cities](#)

[Wildlife-friendly fencing](#)

[Record your bird sightings](#)

[Record your frog sightings](#)

[Record other urban wildlife](#)

*Editor's note: I noted that the resources referred to above mostly relate to Victorian systems. Our own Canberra Nature Map is an equally good resource to report sightings (and sounds) of local wildlife.*



Field Naturalists' Association of Canberra Inc.

### Who are the Field Naturalists?

The Field Naturalists' Association of Canberra (FNAC) was formed in 1981. Our aim is to foster interest in natural history by means of meetings and regular field outings. Meetings are usually held on the first Thursday of each month. Outings range from weekend rambles to long weekends away. Activities are advertised in our monthly newsletter. We emphasise informality and the enjoyment of nature. New members are always welcome. If you wish to join FNAC, please fill in the member application below and send it in with your subscription to the FNAC Treasurer at the address below.

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**Newsletter Editor:** [editor@fieldnatsact.com](mailto:editor@fieldnatsact.com)



**Monthly meeting venue:** Jan Anderson Seminar Room, R. N. Robertson Building, Biology Place, Australian National University

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**MEMBERSHIP APPLICATION OR RENEWAL**

Family name: ..... First name: .....

If a family membership, please include the first names of other members of the family:

.....

Postal address: .....

Suburb: ..... State: ..... Postcode: ..... Home phone: .....

Work phone: ..... Email address: .....

Subscription enclosed: \$.....(Single/Family \$25) Donation: \$.....

How did you hear about FNAC? Please circle: FRIEND? OTHER? Please specify: