

SUBMISSION: ROYAL COMMISSION INTO NATIONAL NATURAL DISASTER ARRANGEMENTS

Thank you for the opportunity to provide a submission to the Royal Commission into National Natural Disaster Arrangements.

We acknowledge that the initial driver for the Royal Commission was the horrific 2019/20 bushfire impact across Australia but welcome the implied expansion of the Commission's scope to cover natural disaster arrangements.

NRM Regions Australia is the national representative group of Australia's 54 regional Natural Resource Management (NRM) bodies that cover the continent. Our member organisations work to create sustainable landscapes that support viable communities and industries while protecting Australia's valuable environment and biodiversity; working to deliver social, cultural, economic and environmental objectives. Our members work from the paddock to the national scale to address issues that require a landscape perspective. We do this in partnership with regional communities, local, State/Territory governments and the Australian government.

Our submission outlines the contribution of regional NRM (Natural Resource Management) bodies to natural disaster preparedness (including planning), response, recovery and resilience; each of which impact the other.

We see two key elements as underlying the inquiry's work. Firstly, climate change and the fact that we will be subject to greater extremes, variability, unpredictability and uncertainty – business as usual is not an option. Secondly that resilience will not mean 'bouncing back' to where we were, but rather the capacity to adapt, even transform, while maintaining healthy social and environmental systems (i.e. 'bouncing forward').

Summary - Addressing the Commission's Terms of Reference

(a). the responsibilities of, and coordination between, the Commonwealth and State, Territory and local Governments relating to preparedness for, response to, resilience to, and recovery from, natural disasters, and what should be done to improve these arrangements, including with respect to resource sharing;

In considering this term of reference we ask that you take account of the important contribution of regional NRM bodies, in relation to preparedness, recovery and resilience of Australia's environmental assets and the industries that rely upon them, particularly agriculture. Our regional NRM plans and delivery are one means of integrating policies both vertically (between levels of government) and horizontally (across agencies, even silos, within government). With a participatory approach we also work to incorporate and connect community priorities. We would like to see regional NRM plans being used to improve coordination, and to incorporate an understanding of the dynamic and interconnected nature of the social-ecological system we are working with.

(b). Australia's arrangements for improving resilience and adapting to changing climatic conditions, what actions should be taken to mitigate the impacts of natural disasters, and whether accountability for natural disaster risk management, preparedness, resilience and recovery should be enhanced, including through a nationally consistent accountability and reporting framework and national standards;

It is fundamental that we take into account the latest climate change science and projections in any land-use planning and management. Impacts from climate change will increase.

We also require an adequate understanding of Australia's ecosystems and the impact of climate change, bushfires and other natural disasters on them. Investment in developing a better understanding of these factors is essential.

Regional NRM organisations, with the support of the Australian government, updated their regional plans in 2014 to take account of the latest climate change projections. More recently, regional NRM organisations have been recognised as contributors to the Australian government drought resilience initiative. Building bushfire resilience needs to be integrated with other resilience efforts. Not doing this may negate efforts or worse, create perverse outcomes.

We provide further information below on how regional NRM organisations can assist with natural disaster recovery efforts.

(f). Ways in which Australia could achieve greater national coordination and accountability -through common national standards, rule-making, reporting and data-sharing-with respect to key preparedness and resilience responsibilities, including for the following:

i. land management, including hazard reduction measures.

ii. wildlife management and species conservation, including biodiversity, habitat protection and restoration.

Responsible land management must be informed by current, scaleable, spatial data. Regional NRM organisations in Australia have been calling for a National Environmental Information System that shows trends in environmental assets and health for over a decade. Information about environmental assets is critical and greater priority is needed to be given to data collection. Regional NRM plans (and supporting sub-strategies) use the best available information to plan landscape scale initiatives to protect habitat and important flora and fauna – but this information could be improved.

Retaining healthy diverse vegetation in the landscape is essential for habitat, to reduce soil erosion and prevent the deterioration of water quality. Regional NRM plans identify priority areas within landscapes for protection and for post disaster recovery efforts. Hazard reduction measures need to take account of ecological processes, including the protection of important flora and fauna. Hazard reduction may also create perverse unintentional outcomes such as encouraging inappropriate species. Appropriate land management, including fire regimes, can contribute positively to reducing risk and benefiting the environment.

(g). any ways in which the traditional land and fire management practices of Indigenous Australians could improve Australia's resilience to natural disasters.

Regional NRM bodies work closely with indigenous communities in preparing regional plans and developing projects that either protect important cultural sites or build on traditional knowledge to achieve NRM outcomes – for example indigenous fire management practices. Much more could be done to support, share and apply Indigenous knowledge appropriately across Australian landscapes (and all land uses). We would be keen to work further with Indigenous organisations and our other stakeholders to support this goal for the benefit of people and environment.

NRM regional bodies - Preparedness and planning, response, recovery, review and resilience to natural disasters

As shown below NRM regional bodies contribute to natural disaster management in many ways.

Preparedness and planning

All regional NRM bodies prepare landscape scale, natural resource management plans through an integrated approach that recognises how natural resource management issues are linked. For example, how protecting Australia's threatened flora and fauna requires us to address land and water management practices and deal with other threatening processes such as loss of vegetation, weed and feral animal impacts. The landscape scale allows us to address issues such as habitat and wildlife corridors at an appropriate scale whilst engaging with all land managers (i.e. farmers, indigenous communities, as well as public land managers).

Regional NRM plans guide investment from governments (for example, the Australian government's National Landcare Program) in natural resource management. These investments cover a range of activities designed to protect and enhance our natural resources and include: extension and education, research and development, infrastructure, different approaches to providing financial incentives (grants, market-based approaches etc), support for community group efforts such as landcare. The aim is to identify the optimal mix of activities that address the regions' NRM challenges and recognise each region's different social, economic and environmental characteristics.

Three core objectives underpin NRM plans across the country (Ryan et al 2013):

- The plans take a long view into the future. They recognise that landscape change can be slow, but that clear guidance is needed on the priority actions that need to be taken now.
- The plans are highly integrative. They involve all land uses and their socio-economic values across their regional landscapes, and they take into account the ecological interactions that influence natural resource outcomes. They are different but complementary to single industry, issue or resource plans.
- The plans work with broad stakeholder and community involvement to reflect local knowledge and aspirations, gain local credibility, commit local organisations to a role in implementation and empower local communities to be involved. They seek to align interests and opportunities across multiple scales.

Many plans use an 'assets based' approach in which biodiversity, land, water and people are used as the classifying principle. The approach then considers pressures and threats to those assets and following appropriate prioritisation methods (that take account of national, state and regional priorities) identify investment opportunities. Some have evolved to adopt a true resilience approach based on delivery within social-ecological systems.

In 2014 the Australian government provided funding to regional NRM bodies to update regional NRM plans to take account of latest climate change data. A unique feature of this approach was harnessing scientific expertise from R&D organisations, universities and others, at a multi-regional landscape scale. We have a good overview of future climate change impacts and the strategic actions required to mitigate some of those impacts on biodiversity.

We note that one of the findings of Victoria's 2009 Bushfire Royal Commission was:

"To ensure continuing environmental protection, the State needs to improve its understanding of the effects of different fire regimes on flora and fauna. The Commission proposes that DSE expand its data collection on the effects of prescribed burning and bushfire on biodiversity. Maintenance and extension of data collection on

Victoria's flora and fauna assets has not been a high priority. It needs to be improved so that more informed and scientifically-based decision making can accompany the development of prescribed-burning regimes that meet conservation objectives as well as accommodating bushfire safety considerations".

We support this recommendation and continue to advocate for better monitoring of the condition of all our natural resources (see later section covering "Review" for more information).

NRM investments interact with bushfire mitigation efforts. One example is revegetation programs. These are important for land management and for habitat protection and restoration. They are becoming more so as we deal with the impacts of climate change through the development of landscape scale wildlife corridors. Planning for these projects needs to take account of bushfire risk, but conversely bushfire mitigation efforts such as fuel reduction burning needs to be cognisant of revegetation efforts.

We recognise that controlled burning has ecological as well as bushfire mitigation benefits. We have supported the adoption, where appropriate, of indigenous cool fire, mosaic burning regimes.

Considerations for the Royal Commission

- Recognition that regional NRM planning is an integral part of Australia's natural disaster preparedness and recovery system
- Regional NRM plans being used to improve coordination, and to incorporate an understanding of the dynamic interconnected system we are working within.
- The integrated regional NRM planning approach allows for regional and indigenous community input into the complex issue of balancing biodiversity asset protection with bushfire mitigation.

Response

Immediate response to natural disasters is appropriately handled by other agencies. But our members provide an important support role.

As regionally based organisations, NRM bodies release staff to assist with emergency response. In some regions where we have extensive Geographical Information Systems (GIS) capacity we provide advice to emergency responders on critical NRM assets under threat – the Commission might consider how this capacity can be increased across Australia.

Considerations for the Royal Commission

- Can regional NRM organisations help provide information about priority environmental assets to the response effort?
- Should Australia invest in a regional network of GIS hubs that brings together information about priority NRM assets that should be considered in natural disaster response and recovery?

Recovery

Immediate recovery responses obviously vary depending on the nature of the natural disaster. Regional NRM organisations recovery efforts are far reaching and differ between jurisdictions but in general they cover:

Bushfires

- Working closely with State and Territory governments' recovery programs

- Immediate pest animal and weed control
- Coordinating volunteer and community group landscape and wildlife protection efforts
- Restoration of habitat and protection of remaining habitat
- Supporting regeneration or revegetation if necessary
- Planning and implementing soil erosion and sediment control works
- Advising or managing fire affected areas to enhance regeneration, such as informed “cleanup”
- Replacement of infrastructure such as fencing to protect waterways and other environmental assets
- Native pasture re-establishment
- Mapping of fire impact
- Assisting farmers with stock management, feeding and watering
- Helping with biosecurity issues

Flooding

NRM regions roles vary across jurisdictions in response to flood management and recovery with some regional NRM organisations being responsible for floodplain management (such as in Victoria) and therefore providing a direct response to post flood recovery efforts.

But our national network provides the opportunity to share skills and knowledge between the 54 regional NRM organisations. For example, following the 2010-11 Queensland floods, Queensland regional NRM bodies sought support from other regions by sharing skilled staff.

Additional roles we seek to play in assisting recovery include:

Sharing skills. Our national NRM regions network employ staff with a range of skills/expertise (ecological, hydrological and agricultural etc). Setting up mechanisms that facilitate sharing of skills/experience across Australia can also greatly assist with recovery efforts. This could involve written material, webinars, sharing actual personnel.

Telling the story. Supporting people affected by the fires and those working on recovery is essential. Sharing stories about what is happening can assist with breaking down a sense of isolation and build social capital.

Learning from the past. Bushfire and other natural disaster recovery efforts affect different parts of Australia at different times. Regional NRM organisations support these efforts as required. There is also an opportunity to increase the efficiency of the response and effectiveness of preparedness and resilience by developing a coordinated hub that provides case-studies, facts sheets and other information about previous recovery efforts helping to learn from earlier efforts, build resilience and to share information on current programs.

Looking to the future. The current bushfires present a range of challenges for future investment by the Australian Government and others in NRM. How robust are regional landscape NRM plans to major natural disasters? Do local scale projects have risk management strategies in place to deal with bushfire and other disasters – how did they work in the fire affected regions? Drought and bushfires go hand in hand, can we improve the connection between drought resilience planning and bushfire recovery planning? Do we need bushfire recovery protocols for NRM regions? It would benefit NRM regions to work with others to address these and other questions.

Considerations for the Royal Commission

- Bushfire recovery would be assisted by building upon existing processes.

Review

Monitoring of Australia’s biodiversity and environmental health has been inadequate.

Since 2010 NRM Regions Australia has been strongly advocating for monitoring, evaluation and information systems to provide evidence to assist with adaptive planning and appreciate the complexity of this.

In 2010, the annual national NRM Regions Chairs' Forum agreed that resource condition monitoring was vitally important for "accountability, priority setting, improving effectiveness of investment and intervention, being answerable to ANAO, to funders and to communities and to understand trends and identify emerging issues"

The Chairs felt strongly about this topic and made the distinction between the collection of data through resource condition monitoring and the aggregation and presentation of this through a set of national environmental accounts. Chairs committed to a national resource condition monitoring system and pursuing the development of a set of a National Environmental Accounts presenting this to the then NRM Ministerial Council of COAG (there was an emphatic willingness to participate in trials based upon principles that have been established by the Wentworth Group of Concerned Scientists).

To strengthen our adaptive planning and implementation NRM Regions Australia has been a strong advocate for a set of national environmental accounts that can demonstrate outcomes from the investments of all governments in NRM. We have partnered with the Wentworth Group of Concerned Scientists in running a Regional Environmental Accounts trial (2012-2015) (see: <http://nrmregionsaustralia.com.au/regional-environmental-accounts/>) and more recently we have been engaging with the Australian Government on the development the *Environmental Economic Accounting: A Common National Approach Strategy and Action Plan*.

A national spatial overview of environmental condition and trends is an increasingly critical need. NRM Regions Australia has been working with Geoscience Australia on developing tools to assist with regional NRM planning.

We note the 2016 SOE report commented that:

"Australian governments and NRM bodies that manage biodiversity are now considering the adoption of environmental accounting that includes trend and condition reporting for environmental assets, to better evaluate the status of our natural capital and better assess the return on investment in the environment.

More and more biodiversity management in any location involves a co-investment of multiple partners, and therefore reporting needs to move to measurements that report on the outcome of the total investment" (Creswell et al, 2017).

Considerations for the Royal Commission

- There is strong evidence that Australia's monitoring of the condition of its NRM assets is inadequate. Renewed efforts are now underway, but this requires a strong commitment from governments and a willingness to invest in data capture – which can be very expensive.
- The Royal Commission could consider adding its support to a greater investment in monitoring the health of Australia's biodiversity assets to support groups responsible for the protection and recovery of those assets.

Resilience

Building community and environmental resilience helps with natural disaster recovery. The principles of resilience apply to our human and environmental systems and include:

- high diversity and variability
- being modular (not over-connected or under-connected)
- responding quickly to disturbance (having tight feedbacks)
- having reserves - biophysical (seed banks), social (memory), financial, technical
- fostering learning, innovation, novelty
- social capital (trust, leadership, social networks)

A 2018 study highlighted the importance of natural resource management in improving resilience to drought (Brown, K & Schirmer, J, 2018). It found one of the most important actions was helping farmers to plan for and manage risk. Other activities that can help farmers cope better with drought include control of feral animals, improved water use efficiency, and supporting graziers to manage groundcover and build feed reserves.

Considerations for the Royal Commission

- Bushfire recovery would be greatly assisted by enhancing community resilience.
- We suggest that bushfire recovery be one element of a landscape resilience planning framework and that the Royal Commission consider how the current efforts to build resilience through other areas of government can complement bushfire resilience – joined-up-government.

[**Contact** – Kate Andrews, EO NRM Regions Australia - kate@nrmregionsaustralia.com.au]

References

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Cresswell ID & Murphy HT (2017). *Australia State of the Environment 2016: biodiversity*, independent report to the Australian Government Minister for the Environment and Energy, Australian Government Department of the Environment and Energy, Canberra.

Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) report, approved at the 7th session of the IPBES Plenary April 2019

Ryan S, O'Neill D, Chrystal J and McKee J (2013) *Regional NRM Planning in Australia. What is it? Where is it heading?* National NRM Regions Working Group, Canberra.

<http://nrmregionsaustralia.com.au/wp-content/uploads/2017/09/Regional-NRM-Planning-final-draft-February-2014.pdf>

Attachment – Examples of NRM regional activities

Below are only a scattering of examples of the diversity of work undertaken by Regional NRM bodies around the country.

South Australia

Adelaide and Mount Lofty Ranges NRM

Bushfire recovery resources for landholders were developed and [made available online](#) following the 2019/20 bushfires. On ground works examples include Cudlee Creek restoration and recovery work following the Pinery fire (2015).

Pinery fire: The Pinery fire came through mid-harvest in 2015 and burnt crops and stubble across 82,500 ha in ~5 hours. Consequently, one of the biggest land management issues was soil stabilisation. With no groundcover in the area, loss of top soil and sand drift became of significant concern. Natural Resources AMLR addressed this with PIRSA and local agricultural bureaus, by spreading clay onto sandier areas across the landscape. This video shows the soil stabilisation technique applied before seeding in late April/early May 2016.

Cudlee creek habitat restoration: Woodland bird species devastated by the [Cudlee Creek bushfire](#) will get a \$1.2 million boost thanks to a new habitat restoration program. Adelaide and Mt Lofty Ranges NRM Board is coordinating the project which will focus on restoring open grassy woodlands, which are important for declining bird species such as the Brown Treecreeper and Diamond Firetail. The board will work closely with Trees For Life which is engaged to deliver the tree plantings. The project will provide native tree seedlings, stock proof tree guards, labour costs, maintenance for plantings and capacity to engage landholders.

Kangaroo Island NRM

Natural Resources Kangaroo Island have been developing a Kangaroo Island Bushfire Recovery Plan (with input from the Department for Environment and Water, the National Environmental Science Program, the KI Bushfire Recovery Committee Environment and Natural Resources Reference Group, environmental Non-Government Organisations (eNGOs) and research organisations). [A new Wildlife and Habitat Bushfire Recovery Program 2019-20 to 2020-21 has been developed.](#)

New South Wales

Local Land Services NSW

‘Livestock planning in a bushfire’ resources online:

https://www.youtube.com/watch?v=4dBm2g_t6E4

Curated bushfire recovery video playlist:

https://www.youtube.com/playlist?list=PLbeXAYbNsB_GQRc9HR2d0SMqtplzFuVaA

Native vegetation management bushfire resources: <https://www.ils.nsw.gov.au/news-and-events/news/nw-news/2019/managing-native-vegetation-before,-during-and-after-bushfires>

Supporting our neighbours – public land boundary fencing program: The NSW Government committed \$209 million to help bushfire-affected landholders with the cost of rebuilding boundary fences adjoining public lands. Private landholders who share a boundary with public land and were impacted by the Northern and Southern fires of late 2019 and early 2020 are eligible to receive up to

\$5,000 per kilometre to contribute to the replacement of damaged boundary fences. [LLS NSW will be administering this project.](#)

South East LLS

Staff from Bega demonstrated different methods and materials that can be used to control post fire inputs into waterways. These measures are a critical step in protecting aquatic habitats such as saltmarsh and seagrass beds and oyster leases. Training was delivered to Local Aboriginal Land Councils in Mogo and Batemans Bay, other contractors, Local Land Services staff and Eurobodalla Shire Council staff. Three teams have gone on to work in the Clyde and Deua Catchments.

Greater Sydney LLS

Wildlife recovery guide (nestbox building)

https://greatersydney.lls.nsw.gov.au/data/assets/pdf_file/0006/656610/GS-LLS-Wildlife-Nest-Box-10-2017-Accessible.pdf

Queensland

Terrain NRM

Disaster recovery following floods. \$2.1 million disaster recovery project at nine sites across the Wet Tropics in northern Queensland. Terrain NRM is managing the project, with eligible works jointly funded by the Commonwealth and Queensland governments under the Disaster Recovery Funding Arrangements.

Reef Catchments

Australian and Queensland Government funding has been provided through the Natural Disaster Relief and Recovery Program (NDRRA). Recovery projects have a long-term goal to help build a landscape more equipped to withstand and recover from any natural disasters of the future. After Cyclone Debbie (2017) and associated floodwaters caused widespread destruction throughout the region, Reef Catchments focused on remediating priority sites. Remediation included a combination of bank profiling, log jam structures, pile fields, rock reinforcement and revegetation and [were completed in 2019.](#)

Tasmania

NRM North

Agricultural Landscape Rehabilitation Scheme: The Tasmanian Government, in partnership with Tasmania's NRM Regional Bodies, coordinated the Agricultural Landscape Rehabilitation Scheme to support recovery efforts after serious flooding. NRM North handled the administration of the scheme and in association with other NRM groups became the central point of contact for accepting expressions of interest, assessment, making funding offers, and providing access to funds. Funding assisted flood-affected landowners and communities through projects to rehabilitate land and stream systems damaged as a result of the June 2016 floods. The focus of the program was to restore the capacity of the primary production sector and reduce impacts of future floods on productive land.

NRM South

Bushfire recovery resources – revegetation guide <http://nrmregionsaustralia.com.au/wp-content/uploads/2020/01/BIGG-Recovery-after-Bushfire-Information-Sheet.pdf>

Western Australia

South Coast NRM

South Coast NRM developed [a Fire and Biodiversity guide](#) to provide both urban and rural landholders and managers with information to help balance the conservation of biodiversity with the need to be fire safe.

Victoria

Goulburn Broken CMA

Following the 2009 Black Saturday Bushfires, Goulburn Broken Catchment Management Authority (GBCMA) and local Landcare groups worked closely to support the recovery of the community and the natural environment. Immediately after the fire, members of the Upper Goulburn Landcare Network and the GBCMA met to discuss how to best approach fire recovery activities. With the Department of Primary Industries, they were the first to engage with the community to begin the job of assessing the impact and reinstating critical assets.

Port Phillip & Westernport CMA

Information on bushfire recovery on private land from the 2009 fires (video series).

<https://www.youtube.com/playlist?list=PLxYlkLRfmZ47rLC-J4lpdUeaGwXPVjdcE>

Northern Territory

Territory NRM

Large, out of control fires can have a damaging impact on native plants, animals, significant sites and pastoral production. TNRM supports coordinated fire management to protect biodiversity, maximise production and abate greenhouse gas emissions. In the Western Top End, [a collaborative fire management plan has been put in place](#). This region is a complex area home to a variety of stakeholders with different land tenures and ways of using the land. This plan, created following extensive engagement, set up a structure for planning and logistics, facilitating communication between Aboriginal ranger groups and pastoral neighbours; training and support for aerial burning and collecting data.