PRINCIPLES FOR ENHANCED COLLABORATION BETWEEN LAND AND EMERGENCY MANAGEMENT AGENCIES AND INDIGENOUS PEOPLES

Green paper

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TABLE OF CONTENTS

ACKNOWLEDGMENT OF COUNTRY

We acknowledge all First Nations peoples – of the past, present and future – on whose unceded land this project was undertaken, and on whose lands and waters we aspire to see greater autonomy for First Nations peoples to practice their culture and fulfil their cultural obligations.

GREEN PAPER PURPOSE AND VISION

A green paper is a preliminary report published to stimulate discussion, which details specific issues, and then points out possible courses of action in terms of policy and legislation. This green paper outlines principles for enhanced collaboration between land and emergency management agencies ('agencies') and First Nations peoples in southern Australia. These principles are intended to be of use to any land and emergency management agency.

The vision of the working group that created this green paper is to increase meaningful partnerships between agencies and First Nations peoples which will support the expansion of cultural fire and land management and thereby ultimately support self-determination for First Nations peoples in what is now known as Australia.

We would like to express our profound to the working group participants (see p. 16) who worked so diligently to drafted and re-drafted the principles outlined in this green paper, as well as the staff at Nunkuwarrin Yunti in Adelaide, on Kaurna Country, where we held our final workshop, and Giles Campbell-Wright, who assisted with graphics.

END-USER STATEMENT

Dr Adam Leavesley (lead end-user), *Manager - Prescribed Burning and Research Utilisation, ACT Parks and Conservation Service*

The research team can be rightly proud of what they have brought together in this report. Thank you to all my agency colleagues who contributed their energy and time. I strongly recommend this report to Australian land and fire agencies.

END-USER STATEMENT

1 INTRODUCTION

Several trends have recently converged to create considerable interest in enhancing collaboration in land and emergency management between Government agencies and First Nations peoples in southern Australia. These trends include: a growing number of grassroots First Nations peoples cultural fire and land management projects; increased media interest in these projects and their role in cultural revitalisation; increased policy focus within land and emergency management agencies on reconciliation, collaboration and partnership with First Nations peoples; as well as a range of findings from 2019-2020 bushfire season inquiries that recommend greater collaboration [e.g., 2]. Considering these trends, it should be noted both that there are multiple examples of successful collaboration or partnership relationships between government land and emergency management agencies and First Nations peoples across Australia and that, nonetheless, such forms of collaboration or partnership are not necessarily desired by all First Nations peoples.

To date there is a relative lack of academic research on this topic, however several successful case studies of the reintroduction of cultural fire management in southern Australia have been documented [3-7]. In 2021, state and territory governments across southern Australia were in various stages of engaging with First Nations peoples, with collaborative fire management policy ranging from whole-of-government reform for First Nations peoples' self-determination to piecemeal ad hoc policy with limited resource allocation (Appendix 1). A review of academic and grey literature revealed that there is a range of benefits associated with contemporary First Nations peoples' cultural fire and land management in southern Australia, including cultural, environmental, economic, wildfire management, political/self-determination, social, health and wellbeing benefits (Appendix 2). However, there are many barriers to a more widespread application of cultural fire and land management here and in other contexts (Appendix 3). Despite widespread goodwill and optimism, the revival of cultural fire and land management is highly contingent and generally relies upon routine persuasive labor and fragile intercultural diplomacy rather than robust policies and resourcing commitments [1].

FIG. 1: MAP OF SOUTHEAST AUSTRALIA SHOWING KNOWN CULTURAL FIRE PROJECTS, NATIVE TITLE DETERMINATION AREAS AND TRADITIONAL OWNER RECOGNITION AND SETTLEMENT AGREEMENT AREAS AS AT THE END OF 2019 [FROM 1]. IMAGE: JENNIFER SHEEHAN (CC BY SA 4.0).
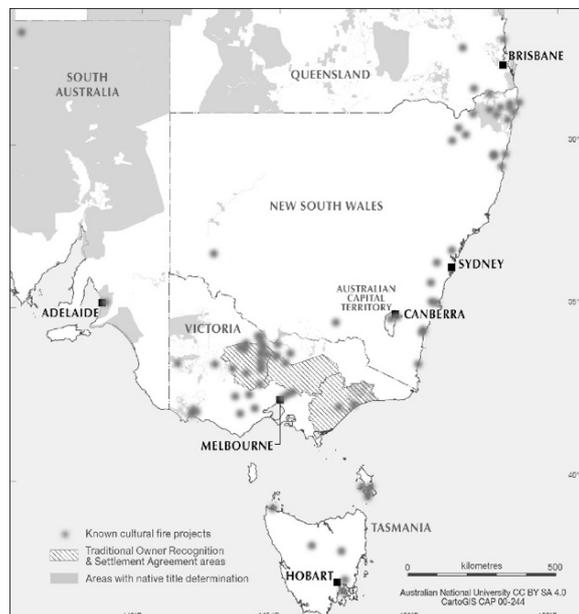
2 PROCESS

The Bushfire and Natural Hazards CRC project, *Hazards, culture and Indigenous communities: principles for enhanced collaboration*, aimed to establish sector-wide structures, principles and networks to foster collaboration between agencies and First Nations peoples. Through the use of established qualitative social science methodology, with a research-action motivation, the research was developed to ensure relevance and utility to the end-user community. The project was centered on social learning and networks and brought people together to meet and work collaboratively. Key participants from agencies were identified and forwarded an invitation to participate in a working group (Table 1) and provided with outputs from previous work undertaken through the *Hazards, culture and Indigenous communities* project [see 8, 9].

A series of three workshops ensued. During the first virtual workshop held in March 2021, 20 representatives from state and territory agencies in Victoria, New South Wales, Tasmania, Queensland, the ACT, South Australia and Western Australia provided updates on the current state-of-play for collaborative fire and land management in their jurisdiction. This was followed by extensive discussion of the contemporary opportunities and challenges for creating and sustaining collaborative partnerships between land and emergency management agencies and First Nations communities and, further, the drivers of change in founding or expanding such partnerships. Through these discussions, project team members identified common principles from existing partnerships that might guide agencies in future collaborations.

The second virtual workshop was held in April 2021 and centered on the discussion of three key issues: 1) the development of draft principles for enhanced collaboration between agencies and First Nations communities (see Section 4); 2) the possible development of a formal working group or network for policymakers and practitioners engaged in existing and emerging collaborations (see Appendix 4); and, 3) the most significant drivers of changes in founding or expanding such collaborations (see Section 5).

The third hybrid workshop was held in May 2021 both online and at Nunkuwarrin Yunti in Adelaide, South Australia, on Kaurna Country. This final workshop focused on the revision and refinement of principles and mechanisms for enhanced collaboration between agencies and First Nations communities. Following this workshop, a draft of this green paper was circulated to participants for comment and endorsement.

3 ELEMENTS

This green paper includes two primary elements and three appendices. The two primary elements are:

- **Principles:** these are nine principles for ensuring enhanced collaboration between land and emergency management agencies and First Nations peoples (see Section 4). These principles are all vital and are not presented in order of importance. Rather, they should be understood as interlinked and mutually reinforcing circle of principles that function to center First Nations land and fire management rights and aspirations (see Fig. 3).

- **Mechanisms of change:** these are thirteen mechanisms and levers that have enabled the founding, maintenance, and expansion of cultural fire management initiatives (see Section 5). These mechanisms are described to help inform land and emergency management agency staff and others in supporting and sustaining such initiatives in the future.

The three appendices are:

1. government policies related to contemporary cultural fire and land management in southern Australia, current as of June 2021

2. list of benefits of cultural fire management identified through literature review

3. list of barriers to cultural fire management identified through literature review.

3.1 PRINCIPLES FOR ENHANCED COLLABORATION BETWEEN LAND AND EMERGENCY MANAGEMENT AGENCIES AND FIRST NATIONS PEOPLES

FIG 2: DIAGRAM OF 9 PRINCIPLES FOR ENHANCED COLLABORATION BETWEEN LAND AND EMERGENCY MANAGEMENT AGENCIES AND FIRST NATIONS PEOPLES.

Preamble

Many land and emergency management agencies have only recently begun to acknowledge that they have obligations to work towards partnership with First Nations peoples. These obligations are based on a number of legal, ethical, social and other factors. Legally, First Nations peoples' ownership of and rights to Country are increasingly recognised within land rights laws, meaning that when agencies seek to manage the assets and values of an area, they are often managing lands and waters legally recognised as First Nations peoples' property. Ethically, governments and their agencies have moral obligations to acknowledge and facilitate First Nations peoples' rights to self-determination. When we acknowledge First Nations peoples as the traditional owners of the Country on which we work we are acknowledging our obligations to partner with them, as self-determined peoples, in managing that Country. This ethical obligation is increasingly integrated into agencies' policies and guidelines and

means that, in many instances, First Nations peoples are increasingly engaged as partners in practices and structures of decision-making about Country. Socially, it is apparent from existing research that the use of First Nations peoples' practices and forms of knowledge not only leads to excellent land management outcomes but also a range of benefits for First Nations peoples and others.[1] First Nations peoples' knowledge and practices are their cultural property and if agencies hope to learn from them, they can only do so through equitable and respectful partnership.

Just as these are not the only factors that create obligations on agencies to work towards partnership with First Nations peoples, the following principles are not the only ones that agencies should follow to support and sustain such initiatives. Nonetheless, we present them as recommended principles for agencies to adopt as they seek to ensure First Nations peoples and their rights are supported in established and emerging partnerships.

1. **Equity and social justice:** *Land and emergency management agencies acknowledge First Nations peoples' rights to Country and should actively seek to partner with and enable First Nations peoples to make decisions about their Country.*

   Land and emergency management agencies should develop commitments to go beyond simple acknowledgement of First Nations peoples' rights by actively facilitating those rights. To truly acknowledge First Nations peoples' rights, agencies should create equity in decision-making about Country. This means embedding those rights in policies and processes so that their facilitation is mandatory and appropriately resourcing First Nations peoples to exercise those rights.

2. **Self-determination:** *Land and emergency management agencies should actively support First Nations peoples' self-determination in all aspects of cultural fire and land management.*

   Land and emergency management agencies should actively work towards an end goal of First Nations self-determination in caring for Country and people. This can be pursued in a number of ways; however, agencies often require overarching government policy direction in order to pursue such end goals and, in cases where agencies do and do not have an overarching self-determination framework, different strategies may need to be developed to embed self-determination within policies and procedures. These strategies may include using principles, steering committees or formal agreements that stipulate terms of reference and deliverables. In different contexts, First Nations peoples may or may not want to partner and engage with agencies, and either response is an expression of self-determination.

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[1] See Appendix 2 for a list of relevant research and findings.

3. **Governance:** *Land and emergency management agencies should seek to understand the diversity of First Nations communities and ensure they are partnering with the right people for Country.*

Land and emergency management agencies should seek to engage with the most appropriate representatives of Country while acknowledging that there is diversity within and amongst those representative voices. Multiple First Nations peoples of groups may speak for particular Country from different positions and agencies should build and maintain their own capacity to navigate this diversity appropriately. Appropriate protocols and processes should be established and followed for approaching representatives who have cultural authority to speak for Country.

4. **Resourcing:** *Land and emergency management agencies should provide adequate, dedicated resources to enable meaningful partnerships with First Nations peoples so that they can fulfil their obligations to look after Country.*

Land and emergency management agencies should resource collaborations between themselves and First Nations peoples, acknowledging that agencies and their employees typically operate at a significant financial, legal and institutional advantage to First Nations peoples. Further, agencies should resource collaborative activities and relationships without seeking to absorb First Nations partners and collaborators, appropriate their knowledge, or create dependencies. This issue relates closely to the issue of how to create new governance structures within or alongside agencies to support these collaborations.

5. **Respectful learning:** *Land and emergency management agencies should work to respectfully learn about and enable cultural fire and land management approaches as First Nations peoples see fit, while implementing processes to protect First Nations peoples' cultural and intellectual property.*

First Nations peoples' culture, knowledge and practices have developed over an evolutionary time frame across the Australian continent. This continuum of knowledge, practice and culture can be revitalised even in heavily colonised social-ecological contexts such as southern Australia. Land and emergency management agencies should make space to allow First Nations peoples to use and develop their cultural fire and land management knowledge and practices. Western and First Nations knowledge systems can work together to improve outcomes; however, agencies need to observe appropriate protocols to ensure that First Nations' Cultural and Intellectual Property is protected.

6. **Re-regulating fire and land:** *Land and emergency management agencies should reform, revise and adapt fire and land management processes, policies, regulations, and legislation to maximise the opportunities for First Nations peoples' participation in cultural fire activities.*

    Land and emergency management agencies should remove regulatory barriers to First Nations peoples' engagement in cultural fire and land management practice. Regulations regarding documentation, approvals, training, safety and physical fitness often currently act as a brake on First Nations peoples' rights and aspirations in this domain. Such regulations need to be progressively revisited and altered as appropriate to ensure key members of First Nations communities (e.g., Elders, children, women) are able participate in cultural fire activities. Agencies also need to actively engage with First Nations peoples to enable them to overcome barriers to cultural fire and land management on public and private land such as legal liability and insurance.

7. **Education and cultural safety:** *Land and emergency management agencies should create an organisational culture that respects and celebrates diversity, including First Nations peoples' culture, knowledge, and practices.*

    Land and emergency management agencies have their own cultures and these cultures have sometimes been characterised by specific issues of racial discrimination as well as forms of unconscious bias and gender and class discrimination found in Australian society generally. There are many components to creating an environment that is culturally safe for First Nations peoples, however core goals include committing to eliminating racial discrimination and increasing shared respect, shared meaning and shared knowledge. To meet these goals agencies should ensure staff are increasing their knowledge of First Nations peoples' culture, knowledge and practices as well as increasing their knowledge of how their own cultural values, knowledge and practices are formed.

8. **Accountability:** *Land and emergency management agencies should establish, improve, and report appropriate and effective measures of their success in partnership initiatives with First Nations peoples.*

    Land and emergency management agencies both generally demonstrate the adage that "you manage what you measure" and many currently measure few to no indicators in relation to their cultural fire and land partnerships. In order to create greater accountability and support growth in these partnership relationships, agencies should establish and publicly report on quantifiable indicators of their own success, including those developed through reconciliation and diversity planning. These indicators should be developed in collaboration with First Nations partners and improved periodically as agencies and First Nations partners deem appropriate.

9. **Research:** *Land and emergency management agencies should support the research agendas of First Nations peoples.*

Land and emergency management agencies hold significant established roles in relation to the commissioning, conduct and guidance of new research. Historically, they have supported research that aligns with government concepts, methods and goals, or those of external parties such as university researchers, rather than the concepts, methods and goals of First Nations peoples. Given their prominence as research providers and supporters, agencies should ensure they are supporting research that is directed by First Nations peoples and partners with First Nations communities.

3.2 MECHANISMS OF CHANGE

Through project workshops and discussions, the project working group identified a number of key mechanisms and levers that have enabled the founding, maintenance and expansion of cultural fire management initiatives. These mechanisms are described below to help inform land and emergency management agency staff and others in supporting and sustaining such initiatives in the future.

1. Mechanisms external to agencies:

o Whole-of-government reform: overarching reforms towards supporting First Nations self-determination have provided some land and emergency management agencies with justification, guidance and resources for cultural fire and land partnership initiatives. However, agencies are themselves stakeholders in such reform processes rather than leaders; they are therefore unable to control this driver though they can support and utilise it. For example, in 2020, the Coalition of Aboriginal and Torres Strait Islander Peak Organisations and all Australian Governments signed a new 'Closing the Gap' agreement to address quantitative disparities between First Nations peoples and others. Included in this agreement is the aim to increase by 15% the total landmass subject to Aboriginal and Torres Strait Islander people's legal rights or interests before 2030 [2]. This would increase the area where agencies and First Nations peoples would be able to leverage these rights for cultural fire initiatives.

o Legislative changes: relevant legislation (i.e., cultural heritage laws, environmental management laws, First Nations land rights laws) and legal agreements (e.g. native title and settlement agreements, Traditional Owner settlement agreements, Indigenous Land Use Agreements) have proven similarly important for justifying and resourcing certain initiatives. Legislation and policy that supports increasing First Nations land ownership, and access and decision-making rights (such as co-management agreements) are also important drivers.

o Post-event inquiries: post-event inquiries convened or commissioned by state or federal governments [e.g. 3, 4-6] have sometimes

investigated issues relating to First Nations cultural fire and land management and relevant made recommendations. These inquiries and their recommendations interact with policy and legislative changes to increase public and political pressure on agencies to demonstrate support for cultural fire and land management.

o Public expectations: shifting public expectations regarding the roles and rights of First Nations communities in land ownership and management have increased public and political pressure on agencies to support First Nations engagement in land and fire management. These expectations have clearly been buoyed by positive news media coverage and popular press books [e.g. 7] publicising the benefits of First Nations peoples' fire and land management knowledge and practices.

o Clear governance: it is often more straightforward for agencies to interact and collaborate with First Nations governance institutions that have a legally-defined representative mandate and are structured similarly to themselves or private companies. However, for a variety of reasons, such mandates and structures may not always be simple [8]. Agencies can provide support to clarify governing arrangements of First Nations communities in order to develop coherent, consistent and equitable policy approaches.

o Economic drivers: for example, recovery from COVID-19 pandemic and natural disasters. The economic impacts of the pandemic have led to many state and territory governments seeking to support employment, sometimes focusing their efforts in regional areas and amongst First Nations peoples. First Nations peoples' employment outcomes of cultural fire and land management initiatives mean they may be well-positioned to attract such support.

2. Mechanisms agencies have influence over:

o Demonstration cases: demonstrations of on-ground achievement and success in a particular First Nations land or fire management initiative have often provided convincing evidence to scale-up that initiative's methods or structure. These demonstration cases have been successfully publicised through news media, social media and agency reports (e.g., Annual Reports) to create and sustain investment in collaborations within and outside agencies.

o Personal contact: face-to-face meetings between First Nations land and fire management leaders and senior agency and governmental actors (e.g., executives, fire chiefs, ministers) have helped create and sustain significant personal investment by the latter in First Nations land or fire management initiatives. Given that in several cases such personal investment has led to a corresponding institutional investment in initiatives, it is evidently advantageous for agency staff to work to connect their leadership with relevant First Nations leaders.

o Translation: drawing the interest and understanding of a range of stakeholders in collaboration requires translation between different

settings, including between the language of on-ground First Nations practitioners and community members and the language of agency policy executives and financial decision-makers. In many instances, values or ideas may be shared but their expression may not. In order to start and sustain collaborative initiatives, agency staff may have to work to ensure the purpose, aims and outcomes of collaborative initiatives are being translated into terms that make sense to the different parties involved.

o Mentoring: mentoring amongst First Nations groups and between First Nations and non-Indigenous staff is important to sustaining and expanding cultural fire and land management initiatives. Initiatives create opportunities for First Nations peoples to develop cultural learning pathways, foster practitioner networks and share knowledge, each of which subsequently support further engagement.

o Networking and exchange: related to mentoring, agencies have had a role in growing and sustaining collaborative initiatives by helping facilitate networking between and amongst First Nations and non-Indigenous staff, as well as between staff and First Nations and non-Indigenous communities (e.g., Indigenous land trusts, conservation groups, etc.). This networking may take the form of cultural burns, planning days, conferences and other community engagement events organised or sponsored by agencies. Such events provide important occasions for individuals to meet and exchange information, forming interpersonal and inter-institutional relationships that often prove vital to negotiating the challenges of partnership and collaboration.

o Bushfire risk: cultural fire and land management practices such as cultural burning typically alter the mass, type and structure of biomass (i.e., "fuels") in a landscape. Such practices may thereby reduce the amount of fuel available to burn during bushfire seasons and therefore mitigate the risks of impactful fires, an outcome that is also one of the key objectives of land and fire management agencies. While agencies may seek to support cultural fire and land management practices on the basis that they reduce bushfire risks, nonetheless, the objectives of practices such as cultural burning are different to those of government agencies and should not be conflated.

o Biodiversity management: similarly, cultural fire and land management practices such as cultural burning alter the mass, type and structure of biomass in a given ecosystem to enhance its biodiversity, an outcome that is again also one of the key objectives of land and fire management agencies. While agencies may seek to support cultural fire and land management practices on the basis that they increase biodiversity, nonetheless, the objectives of practices such as cultural burning are different to those of government agencies and should not be conflated.

o Climate change: First Nations peoples' land and fire management practices have been proven to abate and sequester carbon

emissions in northern Australia and other contexts, leading to various co-benefits such as economic, social and environmental benefits. Opportunities to abate and sequester carbon emissions using First Nations peoples' land and fire management in southern Australia, and achieve similar co-benefits, have been discussed in multiple forums over the past decade and could be explored further through resourcing and research. Additionally, anthropogenic climate change is leading to more frequent and severe fires, increasing the urgency to use a diversity of approaches. Cultural fire and land management provides potential opportunities for climate adaptive landscape management that agencies can actively investigate and support.

4 CONCLUSION AND RECOMMENDATIONS

This green paper has been a product of the Bushfire and Natural Hazards CRC project, *Hazards, culture and Indigenous communities: principles for enhanced collaboration*. The project was informed by subject matter experts and a broad working group of participants and end-users, representing agencies from across southern Australia. The principles presented here are intended to provide a basis for agencies wishing to develop or improve their relationships, processes, policies, regulations and legislation relating to collaboration with First Nations peoples through cultural fire and land management. Furthermore, the mechanisms described in this document outline drivers and actions that have proved successful in enhancing collaboration between agencies and First Nations peoples.

The working group recommends that government land and emergency management agencies:

a) *adopt these principles*

b) *work to implement associated actions*

c) *develop a whole of sector position that supports the principles outlined in this green paper*

d) *collaborate to establish a national network that meets the needs of fire and land management agency staff engaged in cultural fire and land initiatives.*

Further, we call for *leadership within agencies and Ministries to* **promote and support collaboration and partnership** *between agencies and First Nations peoples*.

5 WORKING GROUP PARTICIPANTS

State	Participant	Role	Organisation	Title
SA	Mike Wouters	End-user	DEW SA	Manager, Fire Knowledge & Mapping
SA	Aidan Galpin	End-user	DEW SA	Fire Management Officer – Planning
SA	Meryl Schiller	End-user	DEW SA	Aboriginal Workforce and Reconciliation Coordinator
WA	Tim McNaught	End-user	DFES WA	Director, Office of Bushfire Risk Management
WA	Wayne Davis	End-user	DFES WA	Traditional Fire Programs Coordinator
WA	Bec Pianta	End-user	DFES WA	Manager Knowledge and Engagement
ACT	Adam Leavesley	End-user	ACT PCS	Fire Management Officer
ACT	Dean Freeman	End-user	ACT PCS	Aboriginal Fire Management Officer
ACT	Bhiamie Williamson	Subject matter expert	Australian National University	Research Fellow
QLD	Susan Scott	End-user	QPWS	Manager, Enhanced Fire Management Project
TAS	Bridget Dwyer	End-user	Tasmania PWS	Reserve Management Policy Officer
TAS	Jason Williams	End-user	Tasmania PWS	Cultural Burning Project Officer
VIC	Scott Falconer	End-user	DELWP	Assistant Chief Fire Officer, Loddon-Mallee
VIC	Samuel Daly	End-user	DELWP	Senior Project Officer
VIC	Simone Blair	End-user	DELWP	Manager, Forest and Fire Management Planning
VIC	Mike Nurse	Subject matter expert	Taungurung Land and Waters Council	Director, Cultural and Natural Resource Management Policy and Programs
VIC	David Nugent	End-user	Parks Vic	Director Fire, Environment, Land and Water
VIC	Daniel Idczak	End-user	CFA	Vegetation Management Team Leader
VIC	Mick Sherwen	End-user	CFA	State-wide Cultural Heritage Advisor
VIC	Trent Nelson	End-user	DELWP	Regional Cultural Fire & Heritage Coordinator
NSW	Elle Daly	End-user	RFS NSW	Aboriginal Programs Coordinator
NSW	Jamie Bertram	End-user	RFS NSW	Community Protection Planning and Neighbourhood Safer Places Officer
NSW	Jake Kinred	End-user	NSW DPIE	Policy, Aboriginal Strategy and Outcomes
NSW	Noel Webster	End-user	NSW DPIE	Aboriginal Strategy and Outcomes
NSW	Mal Ridges	End-user	NSW DPIE	Team Leader, Cultural Science
NSW	Phil Paterson	End-user	RFS NSW	Environment Officer (Hotspots)

TABLE 1: LIST OF WORKING GROUP PARTICIPANTS REPRESENTING VARIOUS AGENCIES ACROSS SOUTHERN AUSTRALIA.

6 DEFINITIONS

Term	Definition
Agencies	Government agencies, usually those primarily involved in the work of natural hazards and land management.
Bushfire	Unplanned vegetation fire. A generic term which includes grass fires, forest fires and scrub fires both with and without a suppression objective [9].
Country	'Country' is a word First Nations peoples use to generally describe their homelands, although it has a much broader meaning than just territory. Country connects people with places, through multi-layered multi-species and sentient kinship relationships, that are also known through and expressed as ethical and cultural domains, including knowledge systems, laws, and reciprocal relations of care. People live within and with Country [10].
Cultural burning	'Cultural burning', a term frequently used in southern Australia, is defined as 'burning practices developed by First Nations people to enhance the health of the land and its people' and is used to describe the application of fire [11].
Cultural fire management	First Nations peoples' 'cultural fire management' encompasses broader cultural practices, values, heritage, and land management activities [12-15]. The primary purpose of First Nations peoples cultural fire management often focuses on the maintenance of cultural protocol, ceremony, Lore (traditional First Nations peoples law) and responsibility for Country with the desired outcome to maintain the health of Country including plants, animals, soil, water and weather [16].
Cultural safety	An environment that is spiritually, socially, and emotionally safe, as well as physically safe for people; where there is no assault challenge or denial of their identity, of who they are and what they need. It is about shared respect, shared meaning, shared knowledge and experience of learning together [17, 18]. Cultural safety demands actions that recognise, respect, and nurture the unique cultural identity of a person and safely meets their needs, expectations, and rights.
Fire management	All activities associated with the management of fire prone land, including the use of fire to meet land management goals and objectives [9].
First Nations People	'First Nations' identifies specific political-legal groups of people, as distinct to an Aboriginal or Indigenous identity. First Nations have territorial and self-determination rights, whether formally recognised by the Australia government or not. The term 'peoples' also signifies a political-legal entity. For example, as expressed through governance norms, territories and internal memberships [10].
Indigenous Cultural and Intellectual Property (ICIP)	Based on the right to self-determination, ICIP rights are Indigenous People's rights to their heritage and culture. Heritage includes all aspects of cultural practices, traditional knowledge, and resources and knowledge systems developed by Indigenous people as part of their Indigenous identity [19].
Self determination	The ability of First Nations peoples people and their communities to make decisions over their own lives and to have greater sovereignty or authority over the lands that may have been taken from them through colonisation [10]

6 DEFINITIONS

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APPENDIX 1

Government	Policy	Reference
New South Wales State Government	NPWS Cultural Fire Management Policy	Office of Environment and Heritage (2016)
	FR [Fire & Rescue] NSW Cultural Burning Management Policy	Fire & Rescue NSW (2017)
	Draft Aboriginal Communities Engagement Strategy NSW	NSW Rural Fire Service (2018)
Australian Capital Territory Government	ACT Aboriginal Fire Management Plan	ACT Government (2015)
	Aboriginal Cultural Guidelines for Fuel and Fire Management Operations in the ACT	Williamson (2015)
Victoria State Government	The Victorian Traditional Owner Cultural Fire Strategy	The Victorian Traditional Owner Cultural Fire Knowledge Group (2019)
	CFA Koori Inclusion Action Plan (2014-2019), CFA Aboriginal Engagement Guidelines	Country Fire Authority (2015, 2018)
	Pupangarli Marnmarnepu 'Owning Our Future': Aboriginal Self-Determination Reform Strategy 2020-2025	Department of Environment (2019)
Queensland State Government	Queensland Parks and Wildlife Service Operational Policy: Fire management partnerships with Traditional Owners on protected areas	Queensland Parks and Wildlife Service (2012)
	The Gurra Gurra Framework 2020–2026	Department of Environment and Science (2020)
Tasmanian Government	The Tasmanian Parks and Wildlife Service is developing an Aboriginal Cultural Burning policy, due to be completed in 2021.	Dwyer (2020)
South Australian Government	Witjira Waru Pulka (Fire) Management Strategy	Witjira National Park Co-management Board (2018)
	Reconciliation Action Plan 2017-2019	South Australian Government (2019)
	Department for Environment and Water Fire Management Program Statement of Intent	Department for Environment and Water (2019)
Western Australian Government	A Path Forward: Developing the Western Australian Government's Aboriginal Empowerment Strategy	Department of the Premier and Cabinet [21]
Council of Australian Governments	National Bushfire Management Policy Statement for Forests and Rangelands	Forest Fire Management Group (2014)
AFAC	National Position on Prescribed Burning	AFAC (2016)

Australian governments and the Coalition of Aboriginal and Torres Strait Islander Peak Organisations	National Agreement on Closing the Gap	Australian governments and the Coalition of Aboriginal and Torres Strait Islander Peak Organisations (2020)

GOVERNMENT POLICIES RELATED TO CONTEMPORARY CULTURAL FIRE MANAGEMENT IN SOUTHERN AUSTRALIA [FROM 20].

APPENDIX 2

Benefit Type	Description	References
Cultural	Cultural benefits include maintenance and transfer of knowledge, such as : • Intergenerational and intragenerational transfer of cultural knowledge and practice • Increasing, refining, developing and using (cultural and ecological) knowledge and First Nations languages • Cultural fire management can facilitate increased access to Country and stimulate renewal or increased application of cultural practices such as: • Linking people with natural resource production for food and other cultural practices • Re-engaging with Country as caretakers and cultural knowledge holders • Protection and maintenance of cultural values can include: • Protection of cultural heritage • Conservation of culturally-significant species and ecosystems • The practice of cultural fire management can be viewed as fulfilling cultural responsibilities within a broader Indigenous cosmology focussed on kinship and relationality: • Giving back to Country • Awakening identities.	Hill [22]; [14], Smith, Weir [23], Robertson [24]; Darug Ngurra, Dadd [25]; Weir and Freeman [26]; McKemey and Patterson [27];. McKemey, Ens [28].
Social	Social benefits can include those experienced within the Aboriginal community such as: • Positive feelings of self-esteem, empowerment, pride, connection and a sense of belonging for local Aboriginal people • Getting away from negative feelings associated with racism and bigotry • Feeling free and relaxed. • Between cultures, other benefits have been noted: • Intercultural learning • The building of knowledge networks and social capital (e.g., via regional fire workshops, success of ranger groups) • Developing and strengthening partnerships between First Nations and non-Indigenous organisations • Receiving greater public awareness and increased recognition of the roles of First Nations fire managers • Education and training opportunities for non-Indigenous managers to learn about First Nations cultural fire management. • Empowerment of women through an increased understanding of the importance of women's fire knowledge.	Maclean, Robinson [14], Spurway [29];Darug Ngurra, Dadd [25], McKemey, Patterson [30]; Weir and Freeman [26].
Economic	Opportunities for First Nations business development, employment and training in roles related to caring for Country. Opportunities for designated First Nations positions in government agencies, including access to senior government positions.	Lehman [31]; Maclean, Robinson [14], Robinson, Barber [32]; Neale, Carter [33].

	Increased family income, meaningful employment, connection with Country for families and communities. Potential savings in weed control, native pasture growth, carbon abatement, reduced wildfire fighting costs, protection of assets, including infrastructure and neighbouring farming properties. Future boosts to the regional economy from improved biodiversity and tourism.	
Ecological/ environmental	For some, fire is considered to be critical to the health of Country. Cultural fires regenerate the bush and heal the land, leading to the restoration of healthy environments. Cultural fire has been used to protect threatened species and their habitat, to manage native woody vegetation and seed banks, as a tool against the dieback of vegetation and to protect RAMSAR wetlands from wildfire. The nature of cultural fire is often described to provide benefits through lower intensity cool vs hot burns, and mosaic, patch burns vs hectare-wide burns. Cultural burns generally use less chemicals than other burning methods. Cultural fire is often managed at a local, place-based scale. Cool burns maintain important microclimates in the ecosystem by protecting the canopy and root systems of plants. Cultural burning has been demonstrated to achieve a broad range of objectives encompassing conservation and knowledge and capacity development for First Nations rangers and non-Indigenous scientists.	Lindenmayer, Crane [34]; Spurway [29]; Darug Ngurra, Dadd [25]; Weir [35] Kerr [36] Eriksen and Hankins [37] Maclean, Robinson [14] Robertson [24] Weir and Freeman [26] Mason, Robertson [38] Bardsley, Prowse [39] Robinson, Barber [32]
Wildfire management	Cultural burning has been proposed as one technique for risk mitigation through the reduction of fuel loads and strategic burning to protect values and infrastructure.	Mason, Robertson [38] Robertson [24] Weir and Freeman [26] McKemey, Patterson [30] Weir, Sutton [15] Spurway [29] McKemey, Rangers [40] Mason, Robertson [38] Neale, Weir [41] Weir [35]
Health and wellbeing	Health and wellbeing benefits related to cultural fire management include: - Alleviation of mental and physical health issues through exercise, improved nutrition, access to Country - Opportunities for healing Country, healing people, and healing fraught relationships at the same time. Investments in First Nations peoples' engagements with bushfire management should be seen as supportive of their mental and physical wellbeing and, thereby, supportive of their resilience to natural disasters.	Eriksen and Hankins [37], Burgess, Johnston [42] Maclean, Robinson [14] Darug Ngurra, Dadd [25] Weir and Freeman [26] Neale, Weir [41]
Political (self-determination)	Several studies have described how First Nations cultural fire management leads to improvements in relationships, reconciliation, reciprocity, social justice and self-determination. For example: - Respecting First Nations peoples' legal, cultural and human rights provides opportunities for greater understanding of underpinning relationships between people and Country and for addressing First Nations economic and social development - Increased inclusion, collaboration, authority and autonomy for First Nations groups through introduction of formal agreements, financial arrangements and legal obligations builds the governance capacity of First Nations individuals and communities - Opportunities for truth and reconciliation between First Nations and non-Indigenous parties that are vital to facilitate societal healing - Cultural fire management demonstrates inequalities in whose fire management is authorised, funded, and taught and therefore the current inequities between First Nations and non-Indigenous parties.	Hill [22] Mason, Robertson [38] Darug Ngurra, Dadd [25] Neale, Carter [33] McKemey, Patterson [30] Weir and Freeman [26] Neale, Weir [41], Neale [43] Weir, Sutton [15]

LIST OF BENEFITS OF CULTURAL FIRE MANAGEMENT IDENTIFIED THROUGH LITERATURE REVIEW [ADAPTED FROM 20].

APPENDIX 3

Barrier	Examples	References
Lack of recognition of First Nations knowledge and land management practices	Lack of meaningful recognition of First Nations knowledge by authorities, scientific community and/or organisations, including lack of: • support for meaningful engagement; • support for implementation and self-determination; • understanding of benefits; • cultural literacy (including First Nations peoples' understandings of fire); • recognition of structural and institutional racism Privileging "Western" or government methods and epistemologies, including: reliance on Western learning pathways; reliance on narrow quantitative measures of success (e.g., biodiversity metrics); reliance on Western written sources over First Nations sources (e.g., oral history) Use of "deficit" model of First Nations peoples, including: representing First Nations fire practices in terms of "loss" or "disappearance"; representing First Nations peoples as unknowing, lacking expertise or vulnerable	Robinson, Barber [32] Kerr [36] Cary, Lindenmayer [44] Eriksen and Hankins [37] Darug Ngurra, Dadd [25] Spurway [29] Smith, Weir [23]
Partnerships and agreements	Lack of formal partnerships used as reason for government agencies to delay collaboration or disengage Formal or 'in principle' recognition not paired with appropriate implementation plans and/or resources to empower First Nations fire knowledge holders and fire managers Formal or 'in principle' recognition not paired with appropriate implementation plans and/or resources to support agency cultural change	Tamarind Planning [45] Robinson, Barber [32]
Access to land	First Nations people excluded from practicing cultural burning on ancestral Country	Kerr [36]
Training requirements	Government training requirements and regulation exclude knowledgeable Elders, children and others from participation and often distract from cultural burning pathways and practices being self-determining Burden of 'one way' where First Nations people are required to gain a range of certifications from fire agencies, but no reciprocal obligation on agency staff	Kerr [36] Smith, Weir [23] Neale, Weir [41]
Knowledge	The First Nations 'toolbox' containing traditional ecological knowledge and customary law is not well represented in fire management. Our challenge is to devise the 'bridging tools' between First Nations and non-Indigenous toolboxes that would make the integration of information and knowledge from various sources work well. Integration of actionable knowledge from First Nations and other traditional sources into natural hazard management remains difficult, due to: • lack of spatial fit between First Nations knowledge and governance (local, Country) and agency knowledge and governance (regional, statewide); • lack of support for First Nations people to be "on Country" maintaining practice; • lack of consistency in available knowledge of cultural fire management (i.e., robust in place, less robust in others); • misunderstandings amongst agency staff and others in regard to cultural fire management	Whelan [46] Lindenmayer [47] Robinson, Barber [32] Bardsley, Prowse [39] Weir and Freeman [26] Tamarind Planning [45]

Lack of trust	Lack of cross-cultural trust between First Nations and non-Indigenous peoples, particularly due to historical mistreatment of First Nations peoples and their knowledge by: • settler government agencies; • academic research and researchers.	Smith, Weir [23] Thomassin, Neale [48] Neale, Carter [33]
Power	The legacy of colonial constructs of power, based on the oppression of First Nations peoples and privilege of colonising peoples, leads to centralisation of power (including authority over fire use) and resources (including to practice fire use). The creation of effective collaborations continues to be held back by: • persistent racist misrepresentations, tropes and asymmetric relationships; • persistent colonial norms of fire as hazardous, and suppression or firefighting as primary response; • retention of decision-making authority at different scales of management by government organisations; • lack of support for First Nations leadership within governance structures and for independent governance structures • lack of frameworks for equitable resource and benefit sharing with First Nations parties. Formalising cultural fire worked to disempower some First Nations participants, in alerting them to the scope and complexity of fire legislation and by formalizing their previously informal/unregulated burning.	Eriksen and Hankins [37] Robinson, Barber [32] Langton [49] Smith, Weir [23] Thomassin, Neale [48] Weir and Freeman [26] Tamarind Planning [45]
Altered landscapes and climates	Landscapes are now substantially modified (e.g., weed invasion) from those managed by First Nations peoples' ancestors. The Earth's climate is also now substantially modified from that in which First Nations peoples' ancestors managed fire in the landscape. Current fire management efforts are primarily driven by the virtual certainty that global warming will increase extreme fire weather and lengthen fire weather seasons. The revitalisation of cultural fire management is therefore occurring, and will continue to occur, in ecological and climatic contexts without precolonial analogues.	Lindenmayer [47] Robinson, Barber [32]
Appropriate protocols for cultural sites and knowledge	Agencies often lack protocols for: • access and management of culturally significant sites prior to, during and after burning operations; • access to, storage of and sharing First Nations knowledge in culturally appropriate ways; • supporting First Nations knowledge in ways that enable self-determination and prevent extraction or exploitation.	Eriksen and Hankins [37] Lindenmayer [47]
Ecological understanding	Ecologists have emphasised that all burning practices need to be carefully tailored to the specific features of the ecosystem they are intended to protect. In particular, there is ongoing debate about how certain aspects of fire regimes—such as fire frequency, extent, intensity and seasonality—interact with critical ecosystems and biota, meaning some ecologists (and or the broader community) dispute the need for more landscape fire. First Nations peoples typically lack relevant scientific data about cultural burning and its benefits to biodiversity, risk to human life and property, and other management goals in order to fully participate in these debates.	Neale, Carter [33] Robinson, Barber [32] [50]
Application of cultural burning techniques	First Nations knowledge is not a toolbox or recipe book to be strictly followed, but rather an ethos of understanding, respecting and living with the environment. There is a persistent misunderstanding of the ways in which cultural fire management is: • dynamic and adaptive; • culturally embedded in kinship relations that determine rights and responsibilities;	Thomassin, Neale [48] Lindenmayer (2003) Eriksen & Hankins (2014) Robinson et al. (2016) Maclean et al. (2018) Neale et al. (2019) Lehman (2001)

	• specific to different Country and therefore not easily scalable; • not a panacea for contemporary bushfire problems created by colonial land and fire management; • not something First Nations peoples may be willing or able to implement in the near future, due to the dominance of settler government, removal from Country, ecological changes, and other continuing impacts of colonisation.	
Legislation and regulation	State legislation and regulation often continues to impede First Nations cultural fire practices, including through: • tight, complicated and potentially confusing rules and regulations to administer fire management (e.g., fire use permits, approvals on different tenures), particularly in areas featuring high concentrations of public and private assets • confusing and changing array of government agencies involved in fire and land management • agency employees lacking resources and/or guidance for engagement with First Nations peoples, misunderstanding relevant legislation and regulations, or passively or actively oppose cultural fire • lack of support to assist First Nations peoples in negotiating these barriers.	Maclean, Robinson [14] Neale, Carter [33] Weir and Freeman [26] Tamarind Planning [45] Robinson et al. (2016) Zander (2018) Smith et al. (2018) Hill (2003) Neale, Weir [41]
Resources	First Nations peoples' governance institutions are typically unfunded, or underfunded, operating within socio-economically disadvantaged communities that bear extensive consultation responsibilities and legal liabilities. It has been difficult to secure long-term support for necessary resources including: • resources for training and employing fire officers • opportunities to share knowledge about good fire management practices with neighbouring groups • scientific and technical expertise to manage fire for different purposes. There is a need for the development of appropriate economic models to support First Nations peoples' fire management and their autonomy.	Smith, Weir [23], Robinson, Barber [32] Neale [43] Thomassin et al. (2019) Neale et al. (2019)
Weather	Balancing weather windows and conditions can make it difficult to schedule First Nations fire management activities.	Zander [51]
Capacity	Two of the most frequently mentioned barriers to First Nations fire management were lack of capacity and availability of fire managers and high turn-over rate; and lack of volunteers and participation from community. There was a need for improved equipment, more advanced training and more frequent experience on fire grounds.	Zander (2018) Tamarind Planning [45]
Wildfire risk	Fire management agencies in southern Australia operate within a context that has significant potential for intense and extreme fires. The period since settler invasion began has involved massive, complex, and ongoing social and ecological changes, one cumulative effect of which dramatic rises in wildfire frequency and intensity. Human migration into peri-urban interfaces is continuing to amplify wildfire's human impacts. It is important to recognise that climate change scenarios modelled by CSIRO and others predict that more extreme events will occur more often. This will shape both the condition of Country as well as the management goals of publics and agencies.	Neale, Carter [33] Hill [22]
Public perceptions	Some sectors of the public oppose all or most landscape burning, including cultural fire management activities, whereas others are highly optimistic about the benefits of such activities. There is potential for both scepticism and optimism to act as a barrier.	Lehman (2001) Neale et al. (2019)
Lack of performance indicators	Where "you manage what you measure", the general lack of performance indicators in relation to First Nations communities are an obstacle to improved outcomes. In partnership with representative First Nations bodies, agencies should identify and publicly report on clear and quantifiable indicators of their performance in collaborating with First Nations communities	Neale, Weir [41]

Lack of relevant research	There is a lack of peer-reviewed research regarding contemporary First Nations peoples' engagement in bushfire management in southeast Australia, including cultural burning. This lack of regionally specific research is an obstacle to First Nations peoples and their fire management aspirations, as agencies look to peer-reviewed research for both guidance and justification in activities.	Neale, Weir [41]

LIST OF BARRIERS TO CULTURAL FIRE MANAGEMENT [ADAPTED FROM 20].