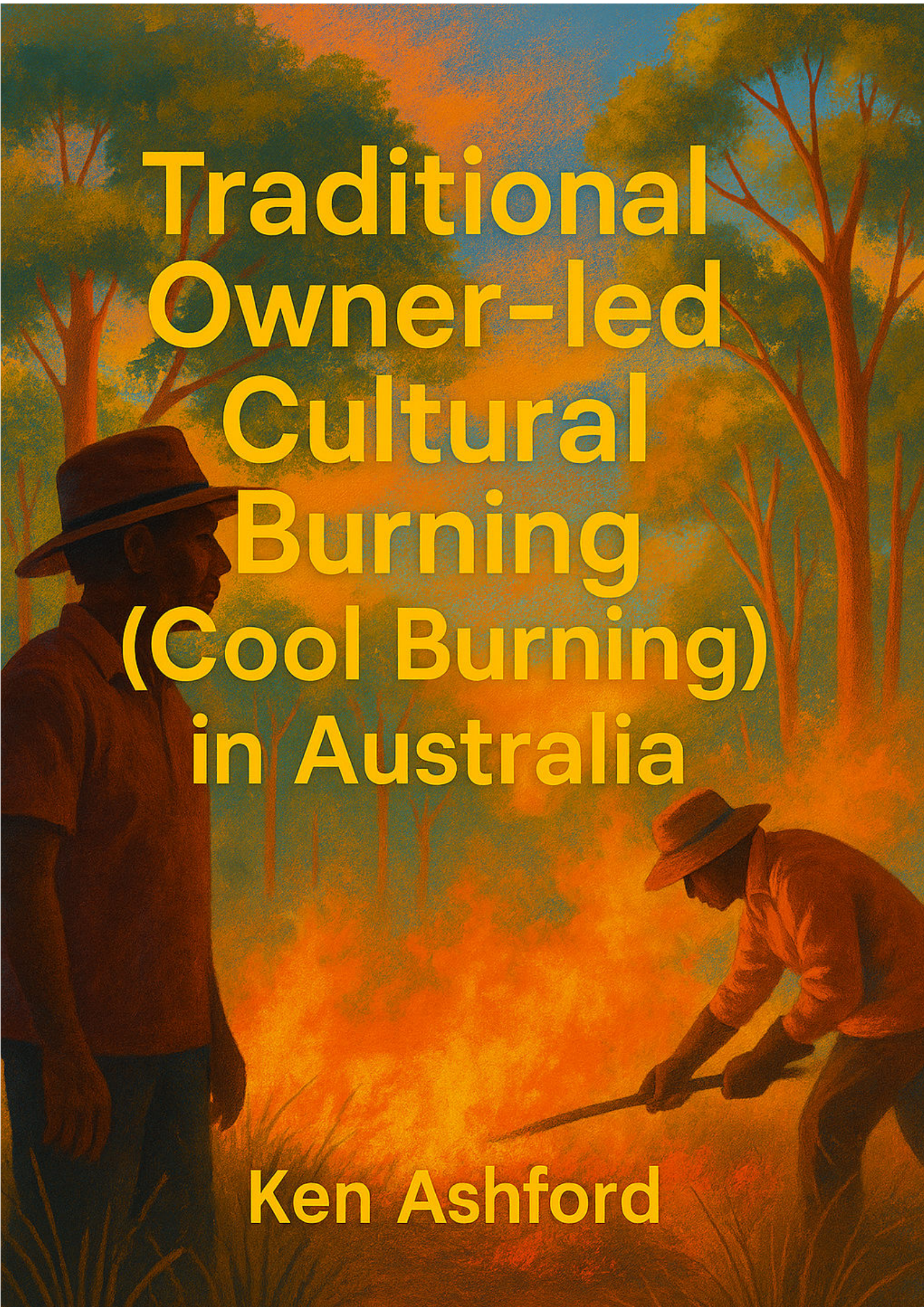
Traditional Owner-led Cultural Burning (Cool Burning) in Australia
Ken Ashford

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Chapter 1: Introduction to Cultural Fire

Fire has always been an essential part of life in the Australian landscape, especially for its First Peoples. For tens of thousands of years, Aboriginal and Torres Strait Islander communities have used "**fire as a friend, not a foe**" – lighting and managing fires carefully to nurture the land rather than destroy it. This practice, known today as **cultural burning** or **cool burning**, involves the deliberate, controlled use of low-intensity fire for caring for Country (the Indigenous term encompassing land, water, sky, and all living things). Cultural burning is far more than a fire management technique; it is a cultural ceremony, a form of environmental stewardship, and a way to **"take care of nature, to help it look after us"**.

Cultural fire is now seeing a revival across Australia. After being suppressed for over two centuries due to colonisation, Indigenous fire knowledge is being rekindled as Traditional Owners lead burns on their ancestral lands once again. In Victoria and other parts of Australia, Aboriginal groups are reintroducing cool burns to **"heal Country"**, restoring the balance of ecosystems and the connections between people and place. *"As we're burning Country, we're healing it,"* explains Yuin Elder **Warren Foster**, capturing how the act of burning under Aboriginal custom is an act of renewal and healing for the land. Through cultural burning, Traditional Owners aim to reduce destructive wildfires, bring back native plants and animals, and keep their culture alive.

This report provides a comprehensive exploration of Traditional Owner-led cultural burning in Australia, with a focus on Victorian Traditional Owner groups and other Indigenous communities who are practicing cultural fire. We will journey through the **history** of Indigenous fire management and its disruption, examine **how cultural burning works** in practice, and highlight the many **cultural, ecological, and community benefits** it provides. We include **case studies** from Victoria and beyond, demonstrating real-world implementations of these "right way" fires. The importance of **education and knowledge sharing** in revitalising cultural fire will be discussed, as well as the **effectiveness** of cultural burns backed by scientific evidence. We also address the **costs, funding mechanisms**, and the various **barriers and challenges** that Indigenous fire practitioners face today. Finally, the report offers **policy recommendations and future directions** to support and expand cultural burning, before concluding with a reflection on how restoring cultural fire is inseparable from healing the land and communities.

Written in an accessible, story-driven style, this report blends academic depth with policy relevance. It is intended for a broad audience – from the general public and educators to fire agency staff, policymakers, and community leaders. By grounding the discussion in data, quotes from knowledge holders, and on-the-ground examples, we aim to honor the voices of Traditional Owners and present a vivid picture of cultural burning in action. Ultimately, understanding and supporting cultural fire is not only about preventing bushfires; it is also about respecting Indigenous sovereignty, learning from millennia of ecological knowledge, and forging a safer, healthier relationship with fire in Australia's future.

Chapter 2: Historical Context

To appreciate the significance of cultural burning today, we must understand its deep roots and the historical forces that disrupted it. **Aboriginal fire management** has been practiced for an estimated 60,000 years across Australia. Long before the concept of "hazard reduction burning" emerged in

Western science, Indigenous peoples were actively and skilfully using fire to shape the landscape. Through countless generations, Traditional Owners developed an **intimate knowledge of fire** – knowing when to burn, where to burn, and how different plants and animals respond to fire. They orchestrated a patchwork of fires that created mosaics of burnt and unburnt country, fostering what scientists now call **pyrodiversity**. This approach produced a varied landscape with different stages of regrowth, which in turn supported high levels of biodiversity.

However, the arrival of European colonists in the late 18th and 19th centuries brought drastic changes. Colonial authorities often misinterpreted or disregarded Indigenous fire practices. In many areas, they actively **suppressed Aboriginal burning** – either by law or simply by displacing Traditional Custodians from their lands. As early as the 19th century, settlers banned or discouraged "firestick farming" (a term later coined by anthropologist Rhys Jones to describe Indigenous burning) in favor of European land-use practices. Over time, Aboriginal families were forced off Country onto missions, reserves, or into cities, and the continuous practice of cultural burning was **disrupted for generations**. This had a two-fold effect: it broke the chain of **intergenerational knowledge** transfer about fire, and it allowed fuels in the landscape to accumulate unnaturally, contributing to more intense wildfires.

In Victoria, like elsewhere, these patterns played out with **devastating consequences** for both culture and environment. Country became "sick" from the absence of the right fire. Leeton Lee, a Thungutti, Bundjalung and Mualgal fire practitioner, notes that when Traditional Custodians were prevented from burning, *"Country… become sick with invasive species. Heavy fuel loads have led to increasingly catastrophic bushfires"*. What he describes is echoed by ecologists: the exclusion of Indigenous burning and the Western focus on total fire suppression often led to a **build-up of undergrowth** and flammable material, making landscapes more prone to extreme fires. Across southeast Australia, decades of minimal burning—apart from occasional hazard-reduction burns that were often too infrequent or implemented without Indigenous input—contributed to bushfire crises like the devastating Black Saturday fires (2009) in Victoria and the Black Summer fires (2019–2020) across Australia.

Yet, it is crucial to note that even during the long period of suppression, Indigenous fire knowledge did not disappear. In some remote regions and in the memories of Elders, the **fire practices survived**. Some Aboriginal people continued burning secretly or in modified forms, sometimes while working on cattle stations or as forestry workers, where they found ways to apply their knowledge quietly. In Cape York, for instance, Aboriginal rangers like the **Lama Lama** people learned from their grandparents while on pastoral lands how to conduct cool burns after the wet season. Such examples highlight that the transmission of fire knowledge often took **non-linear paths** during colonial times – through the pastoral industry, or via knowledge swap among different communities – rather than through formal education.

The latter half of the 20th century saw a slow shift. Researchers and land managers began acknowledging that Aboriginal people had long been "**keepers of fire knowledge**" and that their absence from land management had created ecological imbalances. By the early 2000s, a growing body of scientific literature, much of it influenced by Indigenous voices, started documenting the benefits of cultural burning and urging its revival. One landmark concept was **"Two Toolboxes"**, articulated by Indigenous land managers, suggesting that the best fire management draws from **both Indigenous knowledge and Western science**. Meanwhile, important legal and political changes—like **native title recognitions** and land rights settlements—gave some Traditional Owners in Victoria and elsewhere more say in how their lands were managed, including the use of fire.

By 2019, Victoria's Traditional Owners were at the forefront of a renaissance in cultural burning, culminating in the creation of the **Victorian Traditional Owner Cultural Fire Strategy**. Launched with contributions from Elders and leaders such as Wurundjeri Elder **David Wandin** and Dja Dja Wurrung leader **Rodney Carter**, this strategy formally articulated the aspirations of Victorian Traditional Owners to reinstate cultural fire across the state. It enshrined guiding principles – like **"Right fire, right time, right way, and for the right (cultural) reasons"** – that reconnect contemporary practice with ancient law. This marked a turning point, acknowledging in policy that cultural burning is not a relic of the past, but a living practice essential for the future.

In summary, the historical journey of cultural burning in Australia is one of resilience. From tens of thousands of years of refined practice, through two centuries of disruption, to a hopeful revival today – the story sets the stage for understanding **how cultural burning works** and why it matters so profoundly for both people and the environment.

Chapter 3: How Cultural Burning Works

Cultural burning is often described with the phrase **"right fire, right time, right way, and for the right reasons"**. But what does this mean in practice? In this chapter, we explore the techniques, knowledge, and seasonal rhythms that underpin a cultural burn. We will see how these Indigenous-led fires differ from conventional hazard-reduction burns in their methods and objectives, and how Traditional Owners plan and conduct burns in accordance with cultural protocols and environmental cues.

3.1 Principles and Philosophy

At the heart of cultural burning is a **holistic philosophy**: fire is not merely a tool, but part of an interconnected system involving people, plants, animals, and spirits of the land. This is why cultural burns are sometimes called **"cool burns"** – not only because they are low in temperature and intensity, but also because they are calm and deliberate. They are **cool in flame and cool in spirit**. The six principles outlined by the Victorian Traditional Owner Cultural Fire Knowledge Group summarize this approach:

- *Right fire, right time, right way, and for the right (cultural) reasons, according to lore.* In other words, burns are conducted only when conditions align ecologically and culturally – such as the correct season, weather, and cultural context for specific outcomes.
- *Burning is a cultural responsibility.* Traditional Owners lead the development and application of fire practices on their Country, and their authority is recognized and respected in these activities.
- *Cultural fire is living knowledge.* The practice is adaptive and evolving; each burn is a chance to learn, observe, and adjust techniques, keeping knowledge alive.
- *Monitoring, evaluation, and research support cultural fire objectives and enable adaptive learning.* Indigenous practitioners often work with scientists or use their own monitoring to document changes, helping to bridge traditional knowledge and science.
- *Country is managed holistically.* Fire is not applied in isolation; it is combined with other caring-for-Country practices (like weed management or fauna surveys) and considers water, soil, and community aspects.

- *Cultural fire is healing.* The act of burning is intended to heal the land (e.g., by reducing weeds, bringing back natives) and heal people, strengthening cultural connections and well-being.

3.2 Seasonal Timing and the Right Conditions

Cultural burns are usually carried out in the **cooler, early part of the dry season**, or outside the peak of summer in temperate regions. In northern Australia, for example, many Indigenous ranger groups burn between March and July – **"the early dry season"** – when moisture is still in the landscape (Usage of Cool Burning as a Contributor to Bushfire Mitigation). In Victoria's more temperate climate, cultural burns might occur in autumn or spring, depending on local conditions, to avoid the scorching heat of late summer. The guiding concept is to burn **before** the landscape gets too dry and fires would become uncontrollable.

As a result, these burns are *low-intensity*: flames might only reach knee-height, and they **trickle through the undergrowth** rather than racing through the canopy.

Traditional fire practitioners pay close attention to **cues from Country**. For instance, some communities have ecological indicators signaling when to burn. An Elder might say that when certain native grasses dry out, or when certain trees flower, it's the time to start burning (Usage of Cool Burning as a Contributor to Bushfire Mitigation).

Victor Steffensen, an Indigenous fire practitioner and co-founder of Firesticks Alliance, often emphasizes that *"the knowledge is in the landscape"* – meaning if you read the land's conditions properly (through plant life stages, animal behavior, soil moisture, etc.), it will tell you when, where, and whether to burn.

3.3 Preparation and Cultural Protocols

Before a cultural burn, significant preparation takes place. Traditional Owners will often consult within their community and Elders, ensuring that the burn respects cultural sites, seasonal lore, and clan permissions. A **Welcome to Country or smoking ceremony** might precede the burn to seek blessings from Ancestors and the land's spirits. Specific **cultural protocols** can vary between groups – for example, some may have gender-specific roles or require particular ceremonies or song-lines to be sung while burning.

On the practical side, the burn area is assessed for **fuel levels and firebreaks**. Unlike large-scale hazard burns that may burn thousands of hectares at once, cultural burns are often **small patch burns** – sometimes just a few hectares or less at a time. These patches are carefully chosen.
The **Narrap Rangers** of the Wurundjeri Woi-wurrung, for example, work around Melbourne's peri-urban landscapes and focus on patches where a burn can help specific plants (like grasses or lilies) or reduce weeds. In 2025, Narrap Rangers conducted a burn along Darebin Creek (at **Nangak Tamboree** near La Trobe University) covering ~1.12 hectares. They prepared by clearing a boundary and working alongside local fire authorities for safety, but the ignition and management of the fire were led by Wurundjeri practitioners.

Importantly, cultural burns incorporate **traditional ignition techniques**. While drip torches and matches are common nowadays (and were even used by Aboriginal people working on cattle stations), some communities still use firesticks – essentially a smoldering stick or bark that can carry flame – symbolically connecting to the past. The ignition pattern is usually controlled: for instance, lighting small fires at multiple points so they gently spread and meet, self-extinguishing when fuels are light or when they reach previously burnt ground. The image below, taken on Dja Dja Wurrung Country during a **Djandak Wi** (Country Fire) training burn, shows a practitioner kneeling to light a small fire at the base of dense grasses (Dja Dja Wurrung re-establish Cultural burning to care for Country – DJAARA (Dja Dja Wurrung Clans Aboriginal Corporation)). This illustrates the close, careful way Indigenous fire practitioners introduce flame to the bush, working at a human scale, often on hands and knees.

(Dja Dja Wurrung re-establish Cultural burning to care for Country – DJAARA (Dja Dja Wurrung Clans Aboriginal Corporation)) *A Dja Dja Wurrung fire practitioner carefully ignites a cool burn in dense grass, following Traditional Owner protocols (Dja Dja Wurrung Clans Aboriginal Corporation, 2023).*

During the burn, practitioners stay at the site, monitoring the fire's behavior. They may use **green branches or damp sacks** to pat out spots that start to burn too hot or too high. The aim is not to burn everything, but to create a mosaic: **patches of burnt ground intermingled with untouched areas**. This patchiness ensures that animals can move to safety, and some vegetation is always left unburnt as refuge or seed source. In our Darebin Creek example, previous cultural burns by Wurundjeri Narrap Rangers left behind unburnt patches that became crucial habitats for the *Matted Flax-lily* (Dianella amoena), a critically endangered plant. After the burns, about 75 individuals of this rare lily were recorded sprouting in the burn area – a sign that the fire helped stimulate its seed germination in the soil seedbank.

3.4 Integration with Modern Practice and Safety

Cultural burning today often happens in collaboration with non-Indigenous agencies. Traditional Owners might partner with state fire services, national parks, or local farmers. Safety measures (like having firefighting water tanks on site, or ensuring weather conditions meet regulatory prescriptions) are integrated with cultural practice. A notable point of difference is **objectives**: while a state agency's burn might primarily aim to reduce fuel near a town, a cultural burn's main aim could be to improve the health of a particular plant, maintain a cultural site, or encourage animals for hunting or viewing. Often there are **multiple objectives**, blending cultural, ecological, and hazard reduction goals. As **Jarrod Hayse** of Forest Fire Management Victoria noted, supporting Traditional Owners to lead burns helps "reduce bushfire risk" **and** achieve Aboriginal self-determination goals at the same time. In practice, this means a burn might be jointly planned: Traditional Owners choose the site and timing for cultural reasons, and agencies provide resources and ensure it also contributes to wider fire management strategies.

In summary, cultural burning works through **knowledge, patience, and respect**. It's about reading Country's signs, choosing the moment when fire will do good, and then lighting up with care and purpose. The next chapter will dive into what these "good fires" achieve – the many benefits that cultural burning brings to culture, ecology, and community.

Chapter 4: Cultural, Ecological & Community Benefits

Cultural burning is a multifaceted practice, and its benefits unfold across various domains – cultural rejuvenation, ecological restoration, and community well-being. In this chapter, we explore these benefits through evidence and stories, showing how **cool burns** can yield **hot gains** for Country and people alike.

4.1 Cultural Benefits: Reconnecting and Healing

For Indigenous communities, the act of cultural burning is deeply tied to **identity and heritage**. By reintroducing fire to the landscape in a cultural way, Traditional Owners are also reclaiming their roles as custodians. This comes with profound intangible benefits: **cultural pride, knowledge transmission, and spiritual healing**.

- **Reviving Cultural Traditions:** After long periods when they were banned from "burning Country," many Aboriginal groups find that practicing cultural fire is a form of **cultural resurgence**. It allows Elders to teach youth traditional responsibilities. The WWF-Australia notes that cultural burning is an important way for Elders to pass on Traditional Knowledge, ensuring the practice "grows stronger" with each generation. For example, on Yorta Yorta Country (around the Murray River), cultural burns have been coupled with youth camps where young people learn directly from fire practitioners about reading the bush and respecting

cultural protocols. This **intergenerational knowledge sharing** strengthens cultural continuity.

- **Language and Lore:** The languages of many Victorian and Australian groups carry words and concepts around fire that are being reactivated. We see this in terminology: the Dja Dja Wurrung use the term **"Djandak Wi"** (Country Fire); the Taungurung use "**wiinj**" for fire when discussing burning their biik (country). Using these terms in practice reinforces the use of Indigenous language. Lore (traditional law and custom) related to fire – such as restrictions on who lights the fire or how offerings are made to the flames – is also kept alive when burns happen. This cultural context is something a standard hazard reduction burn does not carry.
- **Spiritual Connection:** Many Aboriginal peoples view fire as a living presence or as a gift from ancestral beings. Engaging in cultural burning is often described as *"feeding Country"* – giving back to the land so it remains healthy. The emotional and spiritual uplift from seeing country respond to fire – new green shoots, animal tracks in ash, the smell of smoke that "smells like home" – can be healing for communities. After a cultural burn on Gunaikurnai Country in Gippsland, participants described a sense of relief and joy seeing the landscape "open up" and hearing the crackle that their ancestors would have heard (Our approach – Firesticks). It's a reconnection with a **rhythm of land management that is ancient**.
- **Empowerment and Self-Determination:** Leading cultural burns has empowered many Traditional Owner groups in dealings with government and agencies. It is a tangible assertion of sovereignty – an area where Aboriginal people are the experts and decision-makers. Programs like Victoria's Cultural Fire Grants (worth $22.5 million over four years) have explicitly aimed to strengthen self-determination through funding Traditional Owner-led burns. Rodney Carter (Dja Dja Wurrung) emphasized that returning cultural fire to Country is *"supporting Traditional Owner self-determination in fire across the state"*. This empowerment yields social benefits: job creation (as communities form ranger teams or fire crews), leadership development, and stronger governance within Indigenous organizations.

4.2 Ecological Benefits: Biodiversity and Land Health

Cultural burning is increasingly recognized as a boon for biodiversity and ecosystem health. The approach aligns with what ecologists call "*working with nature*" rather than against it. Key ecological benefits include:

- **Reduced Fuel Loads, Less Severe Wildfires:** By burning more frequently at low intensity, cultural burns consume leaf litter, grasses, and fallen branches that would otherwise accumulate. This creates natural **fire breaks** and reduces the fuel available for any later-season wildfire. As Skiba (2020) notes, when late dry-season fires come through areas treated with cool burns, the flames are less intense and do less damage. Essentially, cultural burns act as a preventative, mitigating measure – a form of bushfire risk reduction grounded in traditional practice.
- **Promoting Biodiversity (Pyrodiversity):** The mosaic pattern of burns leads to habitat heterogeneity. Rather than having a monoculture of dense scrub, you get a patchwork of cleared patches, regenerating sprouts, and mature growth. Research in **Martu Country** (Western Desert) provides evidence that such **pyrodiversity can increase plant species richness**. Martu people's fine-grained burning, done for hunting and land care, results in diverse "fire ages" in vegetation, which was linked

to greater plant diversity than in areas with single-age (often long unburnt) vegetation. Martu burns also create a mix of habitats that benefit wildlife. For example, the endangered Great Desert Skink thrives in patchy burn landscapes where it can forage in open areas but still hide in nearby cover.

- **Protecting Fauna:** Cool burns are generally slow-moving and leave escape routes, so animals are far less likely to be harmed compared to high-intensity fires. Many native species have evolved with these gentle fires. Small marsupials and reptiles often **burrow or take cover** during the burn, then feed on the fresh regrowth. The **Watarrka Foundation** (working in central Australia) has observed that cool burning produces "patchy habitats preferred by small animals" and helps prevent large wildfires that can devastate wildlife. They also note that cool burns *maintain the tree canopy*, preserving shade and protection for canopy-dwelling creatures like koalas. Another intriguing benefit documented is that the ash bed left by cool fires can have natural therapeutic effects for wildlife – for instance, wallabies may roll in the ash to help remove parasites (a behavior noted in the WWF's list of cultural burn benefits).
- **Weed and Pest Control:** Traditional Owners often use fire as a tool to manage invasive species. A well-timed burn can knock back **weed infestations** by destroying weed seeds or seedlings, giving native plants a competitive advantage when regrowth occurs. In the Dja Dja Wurrung's pilot burns under their Djandak Wi project, practitioners observed *"healing changes to Country such as reduction of weeds and re-emergence of native species"* after fires. For example, a cool burn might be used to control *blackberry* or *gorse* in a forest understorey, followed by seeding of native grasses. Fire can also reduce leaf litter that harbor pest insects or fungus. However, since cool burns are not too hot, they avoid sterilizing the soil or killing beneficial microbes and insects – thus maintaining a healthy soil ecosystem.
- **Encouraging Fire-Adapted Plants:** Many Australian plant species are fire-adapted or fire-dependent. Some need fire to germinate seeds (serotiny) or to trigger flowering. Cultural burns, being regular and mild, can stimulate these species. In Victoria, an example is the **Sunshine Wattle** (*Acacia terminalis* subsp. **angustifolia**), which seeds prolifically after fire. Another is the **Grass Trees** (*Xanthorrhoea* species) which often flower en masse after fire events, providing nectar for birds and insects. In central Victoria, Dja Dja Wurrung burns have been used to encourage Yam Daisy (*Murnong*, a traditional Aboriginal food plant) to regenerate, aiding bushfood projects. And as mentioned earlier, along Darebin Creek, Wurundjeri burns led to a boost in *Matted Flax-lily* numbers, contributing to the recovery of an endangered species. In essence, cultural burning can be seen as **bush regeneration powered by culture** – it can trigger natural cycles of renewal in plant communities.
- **Carbon and Climate Considerations:** While it might seem counterintuitive, more frequent cool burning can reduce overall greenhouse gas emissions from fire. The West Arnhem Land Fire Abatement (WALFA) project in the Northern Territory provides a stark example: by shifting burning to earlier in the dry season and preventing massive late dry-season fires, the project cuts emissions so significantly that it has generated carbon credits sold to industry. Early fires burn more completely and release less methane and nitrous oxide than intense wildfires. Over its first decade, WALFA reduced emissions by hundreds of thousands of tonnes of CO_2 equivalent. Similar savanna burning projects now span northern Australia, blending traditional and modern practices. In Victoria's context, where forests store a lot of carbon, the equation is complex – frequent fire can sometimes reduce carbon stocks in forests. However, proponents argue that preventing mega-fires (which can release enormous pulses of carbon and even change forest ecosystems permanently) by doing mild burns is a net positive for climate resilience. Plus,

protecting *old-growth canopy* via cool burns, as WWF highlighted, helps maintain carbon stored in large trees over the long term.

4.3 Community and Safety Benefits

Cultural burning yields broader community benefits, extending beyond Indigenous communities to society at large:

- **Safer Communities (Bushfire Mitigation):** In fire-prone regions, each cultural burn can directly contribute to local safety by reducing bushfire risk. For example, a cultural burn around a community's perimeter can serve as a protective buffer. The New Daily reported in 2023 on how Victoria is expanding Indigenous-led burns specifically to reduce bushfire risk while empowering Traditional Owners. The article quoted FFMVic staff about strengthened partnerships to "plan, implement and monitor burning projects," indicating that even fire agencies see the value in these practices for safer landscapes. It's a synergy: Indigenous knowledge making everyone safer.
- **Education and Cross-cultural Exchange:** When agencies and local rural fire volunteers participate in or observe cultural burns, it becomes a learning experience. Non-Indigenous landholders have recounted how watching a cultural burn changed their perception of fire – seeing it move slowly and beneficially rather than as an uncontrollable threat. Schools are now taking students to observe cultural burns as a way to teach both science and Indigenous studies. Such educational burns spark community conversations about how land was managed in the past and how it could be in the future, fostering a **shared stewardship ethos**.
- **Community Cohesion and Healing:** In regions recovering from big wildfires, cultural burning can be a tool for healing trauma. The act of deliberately and calmly putting fire on the ground, under control, has helped some communities overcome the fear left by a disaster. It gives a sense of agency – that we can live with fire on our terms. In East Gippsland after the 2019-2020 fires, cultural burns were part of community recovery programs. Indigenous and non-Indigenous residents came together to heal scorched cultural sites with gentle burns to prompt regeneration. This **collaborative healing** builds trust and understanding between communities and agencies that might have previously had tensions over fire management.
- **Economic Opportunities:** While perhaps not the primary focus, there are economic benefits too. **Indigenous ranger jobs** have expanded in part to implement cultural fire programs. Government funding (like the grants in Victoria or savanna burning carbon projects in the north) injects money into regional areas and Indigenous organizations. Some Traditional Owner groups have turned their fire knowledge into enterprise opportunities – such as consulting on burns for private landowners or running training workshops (Firesticks Alliance, for example, mentors communities nationwide). Moreover, if cultural burning prevents large bushfires, it potentially saves millions in disaster costs, which is a benefit to the broader economy and taxpayer.

Summary:

In conclusion, cultural burning's benefits are expansive. It is a **win-win** practice: it **revitalises culture** (strengthening identity and knowledge), **enhances ecosystems** (supporting biodiversity and reducing extreme fires), and **benefits communities** (through safety, education, and economics). These outcomes underline why there is a strong push to incorporate more cultural burning across Australia's

landscapes. In the next section, we will see how these burns are being implemented and some specific case studies that illustrate these benefits in action, particularly in Victoria and other parts of Australia.

Chapter 5: Implementation and Case Studies

Translating the philosophy of cultural burning into on-ground action requires effort, partnerships, and adaptation to various landscapes. In this chapter, we highlight *how* cultural burning is being implemented in practice, with a particular spotlight on Victoria, and also draw lessons from other regions of Australia. Each case study demonstrates different aspects of Traditional Owner-led fire: from collaborative projects on public land to community-driven burns on private properties, and from lush forests to arid savannas.

5.1 Victoria's Cultural Fire Revival

Victoria presents a dynamic example of cultural burning in a southern Australian context. After the launch of the **Victorian Traditional Owner Cultural Fire Strategy (2019)**, multiple Traditional Owner groups began or expanded burning programs:

- **Dja Dja Wurrung (Central Victoria):** The Dja Dja Wurrung Clans Aboriginal Corporation (trading as **DJAARA**) has been a leader in this space. Through the **Djandak Wi: Returning Cultural Fire to Country** project, Dja Dja Wurrung people have planned a series of **pilot burns** across their Country. With support from the state's Cultural Fire Grants, they significantly grew their fire practitioner team, including creating training pathways for **women practitioners**. One case involved burning in Box-Ironbark forest near Bendigo to control invasive grasses and promote native wildflowers; another involved working on a farmer's property to burn a wetland area for ecological outcomes. Rodney Carter (Dja Dja Wurrung CEO) highlighted that after burns, they observed *"reduction of weeds and re-emergence of native species"*. He calls the funding "momentous", enabling Dja Dja Wurrung to heal Country with fire and take their **fire leadership to the next level**. A key aspect of their implementation is strong partnership with **DEECA** (Department of Environment, Energy, and Climate Action) to weave cultural burns into the state's planned burning regime – meaning that, for instance, instead of a government crew doing a fuel reduction burn, the Dja Dja Wurrung team might lead a cultural burn in that area for joint objectives.
- **Wurundjeri Woi-wurrung (Melbourne & Surrounds):** The Wurundjeri established the **Narrap Unit** (land management team) in 2012, and cultural burning has become one of its core activities. One innovative case is the **Nangak Tamboree** project at La Trobe University's Bundoora campus, where Narrap Rangers have been conducting burns to regenerate an urban creek corridor. As noted earlier, these burns helped endangered lilies and reduced weeds. Another case: Wurundjeri partnered with Parks Victoria to do a cultural burn in **Macedon Regional Park**, a popular public reserve. This was partly to protect a significant ceremonial ground and partly to reduce fuel near towns. In implementing burns, Wurundjeri often collaborate with CFA (Country Fire Authority) for safety oversight but maintain control over how the fire is applied. Narrap Rangers have gained wide recognition, even winning awards like the **Landcare Indigenous Land Management Award** for reintroducing cultural fire to the landscape. David Wandin, a Wurundjeri Elder and fire practitioner, has said that cultural burning on

Wurundjeri biik (Country) is about *"shaping and caring for our Country as our Ancestors did"*, emphasizing continuity.

- **Taungurung (Central Highlands):** The Taungurung Land and Waters Council has begun cultural burning in forested areas of their Country (central Victoria's highlands) to protect sensitive ecosystems. A significant step was including cultural burning in their **Cultural Landscapes Strategy** and receiving grants to undertake burns that also mitigate bushfire risk. As their CEO Matt Burns noted, Taungurung people have been fire custodians for millennia and now a grant "enables the Taungurung people to lead in the healing and caring for biik in ways that haven't been possible since colonisation". In practice, they have focused on areas like the grasslands and valley floors that were traditionally maintained by fire to support species like kangaroo grass and to keep corridors open for wildlife. The initial burns are small-scale, but they plan to scale up with experience. An interesting facet is Taungurung's work in alpine foothills where they are combining cultural burns with **cool-temperature burning** techniques to avoid harming alpine ash seedlings – showing adaptability of cultural fire in new contexts.
- **Eastern Maar & Gunditjmara (Southwest Victoria):** In the southwest, Eastern Maar and Gunditjmara peoples have been including cultural fire in joint management of national parks and indigenous protected areas. **Budj Bim Cultural Landscape**, a UNESCO World Heritage site managed by Gunditjmara, saw a cultural burn to clear invasive grasses around ancient stone eel traps, helping protect this cultural asset and also reducing fire risk to heritage infrastructure. Eastern Maar, as mentioned in The New Daily piece, are prioritising **bandicoot habitat** for fire – returning fire to heathlands that the *eastern barred bandicoot* favors. By doing so, they aim to create a landscape that benefits this endangered species (bandicoots prefer a mix of recently burnt for foraging and longer unburnt for shelter). Their cultural fire program is in partnership with conservation scientists, illustrating a blending of goals – **cultural (protecting totem species) and scientific (biodiversity)**.

These Victorian examples show a common thread: **collaboration and pilot projects**. Many of these groups started with relatively small burns, often in partnership with government agencies or conservation groups, to demonstrate success and learn lessons. As trust and capacity grew, they scaled up both the area burned and the ambition of projects.

5.2 Firesticks Alliance and Broader Networks

Beyond Victoria, the **Firesticks Alliance Indigenous Corporation** has emerged as a national network advocating and enabling cultural burning. Founded by practitioners like Victor Steffensen (Tagalaka) and Oliver Costello (Bundjalung), Firesticks has supported communities in New South Wales, Queensland, South Australia, and beyond. A case study from their work:

- **Ngunnawal Country (ACT/NSW):** Firesticks collaborated with local Ngunnawal custodians and the ACT Government to do the first cultural burns in Canberra's nature reserves. These burns, e.g. at Mulligans Flat and Tidbinbilla, had multiple aims: fuel reduction, pest control (rabbits and exotic grass), and cultural site management (burning around scarred trees to protect them from future wildfire). This was groundbreaking in a highly regulated environment like the ACT. The success – no escapes, positive ecological outcomes – led to an **MOU** between Indigenous groups and ACT Parks to continue such burns annually, blending it into their bushfire operations plan.
- **Northern NSW – Bundjalung Country:** In the Bega Valley (though traditionally Yuin, it's been a hub of cultural fire by multi-nation groups), Firesticks helped train and mentor the **Bega Local Aboriginal Land Council** team in cultural burning.

One result was the formation of **Katungul Cultural Fire crew**, who then implemented burns on both public lands and private farms. A notable burn was on a farmer's property to protect a stand of endangered *merimbula star-hair* (a shrub) and to regenerate native pastures. This case was a powerful demonstration to local farmers that Aboriginal burning can benefit agriculture – after the burn, the farmer saw better grass growth and fewer ticks on his cattle (as the fire killed tick habitat).

Firesticks' approach often involves **workshops and knowledge exchanges** – called "Fire Camps" – where different communities come together to share skills. These have occurred across states, creating a cohort of trained practitioners.

5.3 Western Arnhem Land and Savanna Burning

No discussion of cultural fire implementation is complete without mentioning the far north, where some of the earliest large-scale collaborations occurred:

- **West Arnhem Land Fire Abatement (WALFA):** Launched in 2006, WALFA is a partnership between Aboriginal ranger groups (across a 28,000 km² area), the NT Government, and initially a private company (ConocoPhillips) to reduce late-season fires. Rangers like those from Warddeken and Djelk Indigenous Protected Areas use aerial burning (helicopters dropping incendiaries) in a controlled way in May-June, as well as **on-ground burns around cultural sites**, to create a patchwork that prevents huge fires later. WALFA became a blueprint, showing how blending **traditional burning and modern tech** (aerial ignition, satellite monitoring) can deliver outcomes: it cut fire extent by half and generated carbon credits worth ~$1 million/year. Culturally, it enabled senior Traditional Owners to instruct younger rangers on where to burn to protect sacred sites or important food areas (like yam fields). WALFA's success has led to similar projects across northern Australia (e.g., the **Kimberley** and **Cape York** fire projects).
- **Central Desert – Martu Case:** In the Western Desert (WA), Martu people have one of the most intact ongoing traditional burning practices, primarily for hunting (e.g., chasing out monitor lizards). The case of the **Martu** is often cited in academic studies (Greenwood et al., 2024) for how their burning, even though done for cultural reasons, leads to ecological benefits like increased plant diversity. Martu lands are managed through the **Kanyirninpa Jukurrpa (KJ) ranger program**, which supports Martu to continue burning in patterns dictated by Martu Tjukurrpa (Dreaming/law). Implementation here is extremely community-driven: nearly every Martu person participates when out on 'country visits', lighting little fires as they walk. A "case study" burn might not be documented in news, but scientifically we know through satellite imagery that Martu lands have a fine-grained fire mosaic compared to adjacent lands without Indigenous burning.

5.4 Overcoming Challenges in Implementation

The case studies also shed light on how challenges have been met:

- **Navigating Regulations:** For instance, in NSW and Victoria, obtaining permits and aligning with fire danger periods is tricky. By working with agencies (as Wurundjeri did with CFA, or Ngunnawal did with ACT Parks), cultural burners have found pathways. The key often is having a local champion within agencies or forming committees that include Traditional Owners, to ensure burns get approved in time.
- **Training and Capacity:** Some groups initially lacked formally trained fire fighters. Programs like **"Burning on Country"** training, co-developed by TAFE

and Aboriginal orgs, have helped get more Indigenous people certified in basic wildfire training, which ironically they need even to do their own cultural burns legally. Over time, Indigenous fire crews are becoming skilled in both worlds – holding cultural authority and meeting the firefighting competency requirements.

- **Community Engagement:** Some burns faced skepticism from neighbors or local towns (fears about smoke or fire escapes). Case studies show proactive engagement helps – e.g., Dja Dja Wurrung inviting local CFA volunteers to join the burn, or explaining in community meetings the plan and showing evidence from previous burns that it's safe and beneficial. Seeing is believing: after witnessing a successful burn and its green aftermath, local support generally grows.

In a notable Victorian "decolonising experiment" in bushfire management on Dja Dja Wurrung Country, researchers Neale and colleagues documented that *relationship-building* between Djaara and agency staff was the linchpin. By walking Country together and co-planning burns, trust was built. This case, published as "**Walking together**" (Neale et al. 2019), is often cited as a model for collaborative fire governance.

5.5 Summary of Cases

From the wet forests near Melbourne to the savannas of Arnhem Land, cultural burning has been implemented in diverse environments. Victorian Traditional Owners are demonstrating it in state parks, water catchments, and even urban fringes. Firesticks and others are connecting this movement across states. And long-practicing communities in the north and desert provide inspiration and knowledge. These case studies reveal a pattern: start small, respect cultural leadership, integrate science and monitoring, and slowly scale up, all while keeping community and Country at the center.

Next, we'll look at how the knowledge from such implementations is being **taught and shared**, and how education plays a role in growing cultural burning for the future.

Chapter 6: Education and Knowledge Sharing

Reviving cultural burning is as much an educational journey as it is a practical one. After generations of disruption, knowledge needs to be passed not only within Indigenous communities (to younger members who may not have seen these practices) but also shared outwardly with non-Indigenous land managers, policymakers, and the public. This chapter examines how Traditional Owners and their partners are facilitating knowledge sharing – through mentorship, formal training, community education, and even school curricula – to ensure cultural fire knowledge is not lost again and is better understood by all Australians.

6.1 Intergenerational Knowledge Transfer

Within Aboriginal communities, **intergenerational learning** is key. Elders hold memories of fire practice (or stories passed from their Elders) and are deeply respected as knowledge holders. Many cultural burns double as **on-country classrooms** where Elders instruct youth in real time. For example, at a cultural burn led by the **Yuin Nation** (south coast NSW), Elder **Warren Foster** narrates to younger participants why they burn at a certain time and how their Ancestors used to do it (Cultural Burning | WWF-Australia | Cultural Burning | WWF Australia). He might point out how the smoke behavior indicates moisture level or how the call of a bird might signal a change in wind. This oral transmission in context is how Indigenous fire knowledge has always been taught – through practice and storytelling, not textbooks.

Organizations like Firesticks formalize this with **mentorship programs**. They have a "**Firesticks mentoring program**" which pairs experienced fire practitioners (like Victor Steffensen or Leeton Lee) with communities that are just starting out. These mentors spend time in communities, often over

multiple seasons, guiding them through planning, burns, and post-burn reflection. The mentors also learn from local knowledge – it's a two-way exchange, adjusting general principles to specific landscapes.

6.2 Formal Training and Workshops

Acknowledging that contemporary contexts often require certain certifications (like safety training) and could benefit from cross-cultural science, some programs are blending traditional and formal training:

- **TAFE Courses and Certifications:** In recent years, certain TAFE colleges and training bodies have developed **Cultural Burning courses**. For example, in NSW, there's a Certificate in Indigenous Land Management that includes fire training with cultural context. In Victoria, Federation University and others have offered workshops where a burn is conducted and participants get a competency in basic wildfire firefighting, tailored to cultural burn scenarios. These help Indigenous rangers get the credentials to participate in joint agency burns (overcoming one barrier noted: the high level of qualification needed even just to "attend a cultural burn" under current codes).
- **Fire Camps and Knowledge Hubs:** Firesticks has popularized "Fire Camp" events. These are multi-day gatherings on country where multiple burns are done, and they incorporate yarning circles, skill demos (like how to use a drip torch or read a weather meter), and cultural workshops (like dancing, storytelling at night by the campfire). Participants can range from local mob to international guests (some Native Americans and First Nations Canadians have attended, sharing their experiences). One such camp at **Yambulla (NSW)** in 2021 brought together dozens of Aboriginal people and some agency representatives; they conducted burns in a pine plantation under Indigenous guidance, showing even exotic landscapes can be tended culturally.
- **Online and Written Resources:** The movement has also generated literature. Victor Steffensen wrote a book "**Fire Country**" (2020) sharing his experiences and key lessons. There are also guides like the **"Cultural Burning Practitioners Guide"** being developed by networks of practitioners. On the digital front, the **Firesticks' Learning Platform** provides videos, articles, and a forum for practitioners to discuss issues (like 'how to burn invasive gamba grass using cool fire' – a hot topic in northern Australia). This democratization of knowledge means communities starting anew can access a repository of wisdom beyond their local area.

6.3 Academic and Scientific Collaboration

Education is not one-way; scientists and academics are learning from Indigenous fire knowledge and vice versa. Some notable collaborations:

- **Monitoring Projects:** Many cultural burn projects incorporate scientific monitoring – for instance, setting up plots to measure vegetation change, fauna surveys pre- and post-burn, or using drones to map burn patterns. This data can validate and quantify the outcomes Traditional Owners are aiming for, which is helpful in communicating with policymakers or obtaining funding.
  The **WWF** supported Yuin community with such monitoring, linking them to ecologists. Similarly, **CSIRO** has had projects co-led by Indigenous rangers, like measuring greenhouse gases in savanna burns or looking at fungi after cultural burns, combining knowledge systems.

- **Workshops for Scientists and Agencies:** Recognizing a lack of understanding among many land management professionals, there are efforts to **educate the educators and managers**. The **Bushfire and Natural Hazards CRC** ran a series of workshops where Indigenous rangers taught fire managers about cultural fire. An outcome reported was that agency staff began to see fire not just as a threat but as a tool and started questioning their own practices (e.g., why do we burn this whole block every 5 years, instead of patch-burning like the cultural approach?). Such shifts in mindset are crucial for institutional change.
- **School Curriculum Integration:** A transformative idea underway is to embed Indigenous land management, including fire, into school curricula. The **University of Melbourne's Cultural Burning group** recommended a national education campaign and curriculum updates in their submission (Microsoft Word – VIC INQUIRY.docx). In Victoria, this aligns with broader inclusion of Aboriginal history in education. For example, secondary school environmental science modules now sometimes include case studies of Indigenous fire management in Kakadu or Victoria. There's a Schools program where rangers visit classrooms or host students on Country to see cultural burning firsthand. By teaching children that Indigenous people actively managed landscapes (countering old myths of terra nullius or untouched wilderness), a new generation gains respect for this knowledge.

One imaginative educational tool is using **virtual reality (VR)**. A project in Queensland created a VR experience of a cultural burn, allowing students to "participate" safely and hear narration by an Elder as the virtual fire moves. This kind of technology engagement indicates how traditional knowledge can meet modern pedagogy innovatively.

6.4 Knowledge Sharing Internationally

The rebirth of cultural burning in Australia is inspiring and being inspired by Indigenous fire management globally. There have been exchanges with Native American tribes (like the Karuk in California) and First Nations in Canada, where they face similar issues of wildfire and cultural fire suppression. Australian practitioners have traveled to North America and vice versa, sharing techniques and experiences. For instance, the *"Fire Across the Pacific"* program facilitated Australian Aboriginal fire experts to go to the US and assist with cultural burns in Yosemite, and American Indian fire experts to attend Australian fire workshops. These exchanges reinforce the notion that Indigenous fire stewardship has global relevance in addressing wildfire crises exacerbated by climate change.

Also, as climate change becomes a more pressing issue, knowledge sharing includes adapting cultural practices to new conditions. Elders acknowledge that Country is changing – rain patterns shifting, some areas getting drier or invasive species altering fuel loads – so there is a continuous learning process. By documenting and sharing via networks like Firesticks or academic partnerships, Indigenous communities help each other adapt (e.g., strategies for burning invasive African grasses that weren't an issue historically but are now widespread in savannas).

6.5 Public Awareness

Lastly, educating the general public is part of knowledge sharing. Media plays a role: after the 2019-2020 bushfires, there was a surge of media interest in cultural burning, with Indigenous voices on TV explaining cool burns. Documentaries, news articles, and even art installations have all carried messages about cultural fire. Traditional Owners have been proactive too – hosting open days for communities to witness burns, publishing articles (like those on the **Koori Mail** or The Conversation by Aboriginal authors on fire management) to articulate what cultural burning is and dispel misconceptions.

A challenge remains: to correct the historical narrative. Instead of viewing cultural burning as a quaint tradition or a new experiment, the goal is for Australians to widely recognize it as **proven land management science grounded in culture**, deserving equal if not greater status than Western bushfire science. As awareness grows, more people are voicing support for Indigenous-led fire regimes.

In conclusion, education and knowledge sharing are propelling cultural burning forward. Through on-ground mentoring, formal training, academic exchange, and public outreach, knowledge holders are ensuring that cultural fire expertise does not reside in isolated pockets but is a **collective resource**. With a better-informed society and empowered young Indigenous fire practitioners, cultural burning is poised to continue growing. In the next chapter, we examine what evidence exists for the **effectiveness** of these practices and how they compare with or complement scientific fire management approaches.

Chapter 7: Effectiveness and Scientific Evidence

Cultural burning carries the weight of thousands of years of field testing by Indigenous peoples. But in a modern context, demonstrating its effectiveness – ecologically and in risk reduction – helps garner broader support and refine best practices. This chapter reviews the scientific evidence and practical outcomes of cultural burning. We'll see how studies validate many of the benefits discussed earlier, and we'll address debates or uncertainties in the science. We also compare cultural burning to conventional methods, highlighting how they can complement each other.

7.1 Bushfire Mitigation and Risk Reduction

One of the primary motivations for government support of cultural burns is bushfire mitigation. After the catastrophic Black Summer fires, inquiries and experts pointed out the need to consider Indigenous fire practices in future strategies. **Does cultural burning actually reduce the risk of large fires?** Evidence suggests yes, especially when applied at landscape scales:

- **Savanna Fires (Northern Australia):** The WALFA project's results are a powerful testament. By shifting 30% or more of the fire activity from late dry season to early dry season (cool burns), WALFA cut the total area burned annually and virtually eliminated the huge uncontrollable fires in its area. In terms of numbers, it prevented an estimated average of 40% of emissions that would have occurred – implying fewer and smaller fires overall. Fire mapping shows a more fine-grained mosaic with cultural burning. This has been repeated in other savanna regions, confirming that early burning, akin to traditional patterns, is effective in mitigating worst-case fires. The key is scale and consistency year after year.
- **Forest and Bushland (Southern Australia):** The science here is still evolving. Some ecologists debate how frequent burning should be in forests. However, modeling and empirical studies increasingly indicate that **mosaic burning can reduce wildfire intensity**. A study in Western Australia's southwest found that focusing burns near the wildland-urban interface yielded more protection per area burned. Still, it also concluded smaller-scale burns (like cultural burns) could be economical and effective in certain settings. In forests, a cultural burn won't stop a crown fire in extreme weather (nothing truly can), but it can create areas of lower fuel that act as speed bumps. Fire behavior analysts note that during Black Summer, some areas that had been culturally burned (for example, on Ngunnawal country in ACT in 2019) fared better and allowed firefighters to make a stand, whereas uniformly long-unburnt areas were too intense to control.
- **Case of 2019-2020 Victorian Inquiry:** In the Inquiry into the 2019-2020 fires, submissions like the University of Melbourne group's advocated for integrating cultural burning. They argued that current codes focusing on large burns have limits, and that including cultural burning could strategically manage fuels with

community support. While hard data from Victoria is still being gathered, the rationale is strong and agencies are willing to trial it.

7.2 Ecological Outcomes – What Does Science Say?

The ecological benefits of cultural burning are increasingly documented:

- **Biodiversity:** A landmark **2013 study** in *Journal of Biogeography* (Trauernicht et al.) compared northern savannas under Indigenous burning vs. fire-suppressed ones; it found higher plant diversity and more habitat for species like the Kakadu pebble-mound mouse in the traditionally burned areas. The recent **2024 study by Greenwood et al.** mentioned earlier clearly linked **Indigenous pyrodiversity to plant diversity**. Conversely, long-unburnt or homogenously burnt areas had fewer species. For fauna, studies in the Western Desert showed that the bilby, an endangered marsupial, prefers a mix of post-fire ages which only Indigenous burning provides.
- **Species-specific Evidence:** The *Matted Flax-lily* resurgence in Wurundjeri burns along Darebin Creek is a real-world proof of concept: a critically endangered plant increased due to cultural fire. In the ACT, ecologists were thrilled to find that Native *Dillwynia* shrubs responded with mass germination after a cultural burn that had been applied to regenerate native wildflower meadow. Also, a cultural burn in Barmah National Park (Yorta Yorta land) improved conditions for the Plains Wanderer (a ground-dwelling bird) by creating patchy open ground.
- **Habitat Maintenance:** One valuable aspect is how cultural burns protect big old trees. Western hazard reductions sometimes inadvertently kill large hollow-bearing trees (vital for owls, gliders) by intense fire or heavy machinery. Cultural practitioners actively avoid burning big tree trunks (keeping fire at grass level), thus safeguarding these ecological assets. The WWF highlights canopy protection as a benefit, and this is something measurable (e.g., monitoring hollow tree survival rates after different burn types).
- **Soil Health and Water:** There's limited but emerging data on soils. Cool burns typically result in less soil heating, thus preserving soil biota and nutrients. This is beneficial for post-fire regeneration. Hot fires can make soils water-repellent and cause erosion; cool burns usually do not. In fact, by reducing fuel, cultural burns can protect watersheds from the severe effects of later megafires (which often cause water contamination with ash). For instance, Melbourne's water catchments are now considering more cultural burning because a mega-fire could severely impact water supply with sediment and ash runoff.
- **Climate Resilience:** A subtle benefit is that landscapes managed with cultural fire might be more resilient under climate change. As conditions dry, having a regime of frequent mild fire might keep ecosystems within a certain state and prevent state shifts (like forest to shrubland conversion after intense fires). This is an area of ongoing research, but Indigenous knowledge suggests that keeping Country "clean" (not overly thick) helps it cope with drought and heat better.

7.3 Comparing with Conventional Fuel Reduction

Traditional hazard reduction burns in Australia are usually done by agencies with heavy equipment, broad-scale ignition, and often target a percentage (like 5% of forests per year). These burns can be hotter and larger. They aim to reduce fuel broadly but often face constraints (weather windows, smoke issues).

Cultural burning vs. Prescribed burning – differences and synergy:

- *Scale:* Cultural burns are small and mosaic; prescribed burns can be thousands of hectares blanketed. Large burns may overshoot and burn too intensely in parts, whereas cultural burns deliberately leave unburnt patches. Interestingly, research shows that **mosaic of small burns can potentially achieve similar risk reduction to large burns if done strategically**. It's quality (where and how) versus sheer area.
- *Frequency:* Cultural burns happen more often in a given area (maybe every 2-5 years in some form) but only a bit at a time. Prescribed burns might hit the same area every 10+ years but burn a lot of it. Frequent mild burns favor fire-adapted life; infrequent hot burns can kill those same species if the interval is too long (because fuel builds up too much). So cultural burning might maintain ecological balance better.
- *Objectives:* As noted, cultural burns have broader objectives (like promoting certain species or fulfilling cultural practice) beyond just fuel. That means they might burn things an agency wouldn't think to, like a swamp edge for cattail control or a hilltop for ceremonial reasons – which then has incidental fuel benefits.
- *Community Support:* There's some evidence that cultural burns enjoy higher community acceptance, especially among Aboriginal communities, but also among some rural landholders, because they see them as controlled by locals and done with care. This can matter because resistance to prescribed burns (due to smoke or fear of escapes) is an issue in some regions. If people are more accepting of cultural burns, that can lead to more burning being feasible overall, which is good for risk management.

Given these points, many fire experts now talk about combining approaches: use cultural burning for fine-scale and sensitive areas, and to maintain mosaic, and use larger prescribed burns where necessary for broad fuel reduction – but do them under the guidance or partnership with Traditional Owners to incorporate mosaic patterns within those burns.

7.4 Limits and Considerations

The science also notes there's no panacea. Some environments (like wet rainforests or alpine areas) naturally burn very rarely; even cultural fire might not be suitable often there, though Indigenous people historically had methods like burning around the edges or in adjoining areas to shield them. Invasive species can complicate outcomes – e.g., exotic grasses might respond vigorously after any fire, so burning must be paired with follow-up weeding or they worsen (a known problem with gamba grass in the north). Also, climate change is making safe burning windows narrower, which is a challenge both for cultural and conventional burning.

Critics or skeptics sometimes point out that evidence for direct reduction of extreme fire under extreme weather might be limited – indeed, nothing stops a firestorm in 45°C and high winds – but the counter is that cultural burns reduce the frequency of conditions that lead to such firestorms. Even if they can't stop the worst on the worst day, they can make many days in a season less likely to spawn disaster.

7.5 Cultural Efficacy

There's also the question of cultural effectiveness: are these programs succeeding in reviving knowledge? The metric here is more qualitative, but we see evidence in the growing number of burns conducted by Traditional Owners year on year, and the involvement of younger Indigenous people. In Victoria, five years ago cultural burns were rare; now multiple happen each season across the state. That trend indicates a social efficacy – the practice is being restored.

Additionally, cultural burning's effectiveness can be seen in fostering **collaboration**. As one report by the **Nature Conservancy** put it, cultural burning has "great promise for addressing everyone's concern for a sustainable future" because it brings together Indigenous and non-Indigenous perspectives. The measure of that is how many partnerships or joint projects are forming – and indeed, quite a few have, as we saw in case studies.

In conclusion, both Indigenous knowledge and Western science are aligning to show that **cool burning works**: it mitigates some fire risks, it supports biodiversity, and it reconnects people to land. The evidence base, while still expanding, is robust enough that many calls to action emphasize scaling up this practice. However, to scale up, we need resources – funding, policy support, and labor. The next chapter will delve into the nuts and bolts of resources: how much does it cost to do cultural burning, who's funding it, and what innovative financing (like carbon credits) might sustain it.

Chapter 8: Costs and Funding

Implementing cultural burning programs requires investment – of time, labor, and money. This chapter breaks down the financial aspects of Traditional Owner-led burning: how much these activities cost, what funding streams exist or are emerging (from government grants to carbon markets), and how to ensure sustainable support. It's important to frame these costs in context: while there are expenditures, they may be significantly less than the cost of fighting large bushfires or dealing with their aftermath. We'll also discuss how funding can be structured in culturally appropriate ways that enable self-determination.

8.1 The Costs of Cultural Burning

Cultural burns, especially small-scale ones, can be relatively low-tech and cost-efficient, but scaling up programs involves multiple components:

- **Training and Capacity Building:** Getting a team of Indigenous rangers or community members trained involves costs (workshops, certifications, paying trainers). Also, knowledge holders need to be compensated for their time teaching. Many programs have budget lines for running **fire workshops** or **mentoring** – for example, a Firesticks project might allocate a few thousand dollars for a week-long camp including food, transport, equipment.
- **Equipment and Gear:** While cultural burns eschew heavy machinery, they still require basic fire gear: drip torches (~$200 each), firefighting PPE (Personal Protective Equipment) like fire-resistant clothing, radios for communication, possibly portable water pumps or tanks. A fully outfitted crew member might require $1000+ of kit. Some groups also invest in a **vehicle** (4WD with water tank) for mobility and safety, which is a bigger cost but often shared with other land management tasks.
- **Planning and Administration:** If burns are to be done safely and with permission, there's planning overhead – writing burn plans, getting permits, environmental assessments if needed (for example, check if any rare species might be affected), and coordinating with agencies or neighbors. This often means paying staff or consultants to handle paperwork, or someone's time in an organization. Traditional Owner corporations might hire a "Fire Project Officer" to manage the program.
- **On-ground Burn Implementation:** On the day of a burn, costs include fuel for vehicles, possibly payments or stipends to community members doing the burn (unless they are already salaried rangers). Sometimes a collaborative burn might have agency resources like a water tanker or crew on standby (incurring their operational cost, though agencies often absorb this as part of their budgets for joint burns). If a burn is remote, maybe chopper support is needed (in northern Australia,

helicopter ignition is expensive but effective for large areas – though less used in Vic).

- **Monitoring and Follow-up:** To truly capture benefits, post-burn monitoring (surveys, data collection) might be budgeted, which could involve ecologists or employing rangers for extra days to do that work.

In terms of raw numbers, a small community burn might be done with just a few hundred dollars of consumables if volunteer labor is there. But a full-fledged program across a region could run into hundreds of thousands annually considering staff salaries and multiple burns. For example, the NT's ranger programs that incorporate fire cost millions but cover huge areas and multiple outcomes (not just fire).

8.2 Government Funding and Grants

Historically, funding for Aboriginal land management (including burning) has come via government programs. Key sources:

- **Indigenous Ranger Programs:** Federal initiatives like the **Working on Country** program fund Indigenous ranger jobs across Australia. Rangers are typically employed by an Aboriginal organization and funded through multi-year grants. These rangers perform a variety of tasks (fire, feral animal control, cultural site management). In Victoria, while the Working on Country program is less extensive than in the NT or WA, some Traditional Owner groups have positions funded through the **National Indigenous Australians Agency (NIAA)**. These provide a stable backbone – salaried rangers who can then do cultural burning as part of their job. It's essentially core funding.
- **State Government Programs:** Victoria launched a **Cultural Fire Grants Program** with $22.5 million over 4 years (as cited in 2023). This funding is disbursed to Traditional Owner groups to develop and implement fire projects. Similarly, other states have begun allocating budgets: e.g., NSW has a Cultural Fire Management policy and grants (though on a smaller scale so far). These grants cover training, planning, and conducting burns. They often also require some outcomes reporting – which is why groups gather data.
- **Environmental and Disaster Recovery Grants:** After big fires, recovery funds have sometimes been channeled to cultural burning. For instance, post-Black Summer, the Australian government's relief package included some money earmarked for "Indigenous and community-led bushfire mitigation", which funded projects in NSW/Vic like expanding cultural burns in affected regions (the idea being those communities can help prevent future disasters).
- **NGO and Philanthropy:** Organizations like **WWF-Australia** have provided grants and support (WWF's Regenerate Australia program put funds into cultural fire in 2019-2020). Philanthropic donors and charities see cultural burning as a high-impact area combining environment and Indigenous empowerment. Firesticks Alliance, for instance, often raises funds via donations (like their Chuffed.org campaign). Also, the **Carbon market** NGOs (discussed next) indirectly inject money.

8.3 Carbon Credits and Environmental Markets

A very innovative funding avenue has been carbon credits from savanna burning. Under Australia's **Emissions Reduction Fund (ERF)**, methodologies exist to earn carbon credits (ACCUs)

by changing fire regimes (early vs late season burning in the north). Projects like WALFA have been selling these credits (ConocoPhillips paid about $1 million/year for 17 years to offset their gas plant emissions by buying WALFA credits). Now there's **ALFA (Arnhem Land Fire Abatement) Ltd** which handles multiple such projects, generating tens of millions of dollars over a decade reinvested in ranger programs.

This model is spreading to savanna areas in QLD and WA. While Victoria's climate doesn't fit the savanna method (because our fires aren't seasonal in the same way), we can still learn. The idea of monetizing the benefits of cultural burning in carbon terms or other ecosystem services is attractive. For example, could reduced bushfire risk be quantified as an economic benefit to insurers? Perhaps insurers or governments would pay communities to keep doing it because it saves bigger payouts later.

One concept under development is **Cultural Fire Credits** (similar to carbon credits but broader). The **Aboriginal Carbon Foundation** and Firesticks have discussed a scheme where cultural burns that achieve carbon abatement and community goals could earn credits, verified by both carbon accounting and cultural indicators. These would then be sold to buyers wanting not just a carbon offset but to support Indigenous cultural outcomes. Such a scheme requires rigorous methodology and trust, but it is promising for sustainable finance.

8.4 Cost-Benefit Perspective

Investing in cultural burning is often cost-effective when weighed against alternatives. A simple comparison: a single large bushfire event can cause billions in damage and suppression costs. If a sustained cultural burning program costing, say, $5 million a year in a region helped reduce the likelihood or severity of one such event over a decade, it's already justified. Moreover, cultural burns provide **co-benefits** (jobs, biodiversity) which have their own value.

From an ecological viewpoint, integrating cultural burning might reduce reliance on expensive mechanical fuel reduction (bulldozers clearing firebreaks, etc.) or on chemical weed control in some cases, as fire can replace or reduce those costs.

8.5 Ensuring Funding Supports Self-Determination

One caution is that funding should empower Traditional Owners, not create dependency on external decision-making. The Victorian Cultural Fire Strategy calls for Traditional Owners to have "access and authority to practice on Country… in ways that are respectful" and to have their leadership **resourced**. This means ideally funding is channeled through Indigenous-controlled organizations, allowing them to set priorities.

The **cost** of not doing so can be lost trust or wasted money. For example, if money is poured into a government-led "incorporate Indigenous burning" program without genuine TO leadership, it may not succeed or be culturally appropriate. Thus, many grants now require evidence of Traditional Owner governance.

8.6 Volunteerism vs. Professionalization

Interestingly, some cultural burning is done by community volunteers (e.g., a family burning their Country), which is "free" in a monetary sense but not scalable beyond their patch. There's a balance between supporting grassroots volunteer burns and creating formal ranger crews. Both exist. Some TO groups use volunteer networks for burns on private land, etc., complementing what funded rangers do on public land. Recognizing these contributions is important; maybe micro-grants or covering travel costs for volunteers can go a long way.

8.7 Summary of Funding Landscape

In summary, funding for cultural burning currently is a patchwork: government grants, ranger programs, NGO support, and carbon finance in some regions. The costs can vary widely, but relative to many environmental interventions, cultural burning can be **low-cost with high reward**. A significant portion of funds go into capacity building (a long-term investment). The trend is upward – more funding is being directed to this area as its importance is recognized.

However, it's crucial to solidify these funding streams and perhaps create new ones so that cultural burning is not just a novelty funded today and forgotten tomorrow. The next chapter (Barriers and Challenges) will address funding stability as one such challenge, among others (like policy and operational barriers), providing a realistic view of what still hinders the widespread application of cultural fire.

Chapter 9: Barriers and Challenges

Despite the momentum behind Traditional Owner-led cultural burning, several barriers and challenges impede its full potential. These challenges range from regulatory hurdles and land tenure issues to deeper social and cultural obstacles stemming from the legacy of colonisation. In this chapter, we examine these impediments in detail – understanding them is essential to formulating sound policy recommendations and practical solutions, which we will address in the next chapter.

9.1 Legal and Regulatory Barriers

One of the most frequently cited challenges is the **regulatory environment** around fire:

- **Permits and Red Tape:** Current bushfire management laws and regulations, largely designed without Indigenous input, often make it cumbersome for Traditional Owners to carry out burns. For instance, a burn might require multiple permits (from fire authorities, landowners, local councils). The timing of permits may not align with the right seasonal window for cultural burns, causing delays that miss the opportunity. There are instances where Indigenous groups planned a burn but bureaucratic approval came too late, pushing them into a hotter, unsafe period and forcing cancellation. Moreover, the requirement that participants be certified or have formal firefighting credentials (as mentioned, even Elders needing training to "attend" a burn on their own Country) is a barrier. This stems from liability concerns but clashes with cultural inclusivity – a cultural burn is ideally a community event including youth and Elders, not just a crew of certified firefighters.
- **Fire Bans and Restrictions:** On total fire ban days or during certain months, lighting any fire might be illegal, even if conditions on a specific site are actually suitable (e.g., a cool morning in early spring might technically be in the fire danger period). Navigating these blanket rules requires special exemptions, which are rarely granted to Aboriginal groups yet (though possibly this will improve as trust grows).
- **Land Tenure and Rights:** A major issue is **access to land**. Much of Victoria is public land managed by state agencies (parks, state forests) or freehold land in private hands (farmers, corporations). If Traditional Owners don't have recognized rights on that land, they can't decide to burn it. They must ask the landholder or agency. Some landowners fear liability or don't understand cultural burning and thus deny access. In contrast, where Traditional Owners have formal co-management (like joint managed parks, or have freehold title via settlements), they

have more leeway to implement burns. The University of Melbourne submission pointed out that outside native title lands or agreements, Aboriginal peoples have **limited access** to practice fire. Thus, many cultural burns rely on goodwill agreements or short-term projects – not a stable basis. Simplifying permissions – e.g., memoranda of understanding allowing annual burns in certain areas – is needed.

- **Recognition in Policy:** Until recently, official bushfire plans rarely mentioned cultural burning. This is changing (the new Victorian Fire Management Strategy includes Traditional Owner inputs), but historically the omission meant no mandate to include or prioritize it. Without explicit policy support, local managers might say, "It's not in our plan to do this." Lack of mention can effectively be a barrier due to inertia or risk aversion.

9.2 Capacity and Resource Challenges

While we discussed funding earlier, challenges remain in capacity:

- **Limited Skilled Personnel:** The pool of experienced cultural fire practitioners was greatly thinned by years of suppression. Now, only a limited number of Elders and rangers have extensive knowledge or practice of burning. Those that do (like Victor Steffensen, various Knowledge Holders) are in high demand to assist multiple communities, which can be exhausting and difficult to scale. Training new practitioners takes time, especially balancing modern safety with cultural methods. Some communities without an active Elder in this space have to reach out to others – which can raise cultural sensitivities since traditionally you burn your own Country.
- **Burn Windows Getting Shorter:** Climate change is making conditions more erratic. There are years with floods (too wet to burn) then years of drought (too risky to burn except maybe a tiny window). If an organisation only has a small staff, a narrow burn window can be missed due to any number of issues (staff unavailable, permit delays, sudden weather change). Agencies with large resources can drop everything to burn when conditions allow; small Traditional Owner teams might struggle to mobilize so flexibly, especially if they juggle other jobs.
- **Equipment and Support:** Some Traditional Owner groups don't have the gear or backup if something goes awry. For example, if a burn unexpectedly escapes, do they have immediate suppression ability? Fear of such a scenario (even if unlikely with proper planning) could make groups hesitant without guaranteed agency support. Ensuring cultural burners have equal access to emergency support (like calling in water bombing if needed) is an unresolved area. There have been incidents in the US where a cultural burn faced blame for an escape with little support given; avoiding that scenario in Australia is key or it could set back trust.

9.3 Social and Perceptual Barriers

Beyond bureaucracy, social attitudes can hinder progress:

- **Public Misconceptions:** Some segments of the public hear "burning" and immediately think of smoke pollution or fear of fire getting out of control. If they don't understand the difference between cool burns and wildfires or even standard hazard burns, they may oppose any fire. NIMBY (Not In My Backyard) sentiments can arise, especially in peri-urban areas. For example, an attempt to do a cultural burn in outer Melbourne might get pushback from residents worried about asthma from smoke, etc. Better public education (as recommended, e.g., Recommendation

5 in that submission (Microsoft Word – VIC INQUIRY.docx) about national education) is needed to shift the narrative that *all fire is bad*.

- **Within-community Challenges:** Not all Aboriginal people have unanimous views either. Some communities may have internal disagreements – maybe some Elders worry that a group of youngsters might do it wrong and cause harm, or there might be differing recollections of how fire was used traditionally. The disruption of knowledge means some relearning is experimental. This can cause anxiety: no one wants to harm Country by mistake in the name of helping it. Overcoming this requires patience, consensus-building, and starting modestly to build confidence.
- **Cultural Safety and Acknowledgment:** Traditional Owners sometimes report not feeling respected or heard by agencies. If they sense tokenism – e.g., being asked to do a Welcome to Country at a burn but not being involved in burn planning – they may disengage, which then slows the progress of implementation. There's also the matter of **intellectual property**: sharing knowledge with agencies or researchers carries a risk of that knowledge being misused or appropriated. Ensuring proper protocols and credit (and not proceeding with burns in culturally sensitive ways without permission) is a challenge that must be navigated in partnerships.

9.4 Environmental and Technical Challenges

Some challenges are inherent to the landscapes or emerging issues:

- **Weather and Climate:** As noted, more extreme conditions can hamper burning opportunities or make outcomes less predictable. In some cases, invasive species (like the example of gamba grass in the north, or in Victoria, high biomass weeds like *phalaris* grass) can make a "cool burn" tricky because they burn hotter than native grasses. Traditional techniques may need tweaking, and sometimes additional methods (like grazing or herbicide) might need to be combined with burning to handle invasives – requiring integrated skills.
- **Scale Mismatch:** Cultural burning traditionally was done continuously by many people across vast areas. Today, relatively small teams are trying to manage areas that have accumulated fuel over decades. The sheer scale of some forests and the relatively small windows mean it's hard to cover enough country with cultural burns to make a difference in wildfire regimes – at least with current resourcing. One challenge is how to **scale up** without losing the essence of cultural practice. Some worry if they try to burn too much too fast (to meet targets or expectations), they might compromise on the cultural approach.
- **Monitoring and Evidence:** While we've cited many positive outcomes, continuing to monitor and publish evidence is needed to satisfy skeptics and refine practices. That requires technical expertise and funding. Not every group has access to, say, a university partner to analyze data. In absence of evidence, agencies might fall back to familiar ways. There's a bit of a "prove it" burden often placed on cultural burning that conventional methods don't face (despite those also having uncertainties). This disparity can be frustrating and is a barrier in itself – it's an epistemological challenge of valuing Indigenous evidence equally.

9.5 Political and Institutional Barriers

- **Policy Continuity:** Political will can fluctuate. One government might champion cultural burning; a change in leadership could deprioritize it or cut funding. For instance, if budget pressures mount, programs perceived as experimental might be on the chopping block. Sustained advocacy and embedding cultural burning into

legislation or long-term strategies can buffer against this, but it's a work in progress.

- **Institutional Resistance:** Some within traditional fire agencies might resist change, whether due to skepticism, perceived threat to their expertise, or operational inertia. Changing the culture of fire management agencies to fully embrace Indigenous leadership is an ongoing challenge. Progress has been made at high levels (statements of commitment, MOUs), but on-ground middle management acceptance varies. It may take a generation of new fire managers educated in the integrated approach to fully overcome.
- **Liability and Insurance:** The legal liability if something goes wrong weighs heavily. Who is responsible if a cultural burn escapes or causes unintended damage? If Traditional Owners are to lead, are they carrying insurance? Often agencies cover it by officially running the burn, but if TOs want autonomy, they might need their own insurance arrangements – which can be costly or complex. Clear agreements need to outline shared responsibility.

9.6 Summary of Challenges

These barriers are real, but none are insurmountable. They are being actively addressed in many regions through pilot programs, policy reforms, and relationship-building. Recognizing them in this report sets the stage for our next chapter on **Policy Recommendations and Future Directions**, where we'll suggest ways to lower these barriers – from simplifying regulations to investing in capacity and adjusting narratives. By tackling these challenges, Australia can move closer to a landscape where cultural fire is a normal and welcome part of land management.

Chapter 10: Policy Recommendations and Future Directions

Having explored the wealth of knowledge on cultural burning and the challenges faced, we now turn to recommendations and future directions. These suggestions aim to bolster Traditional Owner-led cultural burning in Victoria and across Australia. They are informed by the voices of Indigenous leaders, the findings of inquiries and research, and the insights from successful case studies. The goal is to integrate cultural fire into mainstream land management in a way that respects Indigenous leadership and maximizes ecological and community benefits.

10.1 Empower Traditional Owners Through Policy and Law

- **Formalize Indigenous Authority in Fire Management:** Governments should enshrine in policy that Traditional Owners have a right to use fire on Country. This could be via amendments to fire management Acts to explicitly recognize cultural burning and prioritize it where appropriate. For example, Victoria's Code of Practice for Fire Management on Public Land could be updated to include provisions for cultural fire and clarify that compliance with cultural protocols is part of due process. Ideally, create a pathway for accredited Traditional Owner groups to self-approve burns on certain lands under agreed conditions, reducing red tape. This might involve a licensing system where a TO corporation has a standing permit to burn within a range of parameters, rather than case-by-case permits.
- **Land Access Agreements:** To overcome tenure barriers, establish agreements that allow Traditional Owners to conduct burns on public lands (like state forests, national parks) and willing private lands. This could be through expanding Joint

Management arrangements or simple MOUs for areas outside formal agreements. For private lands, explore a **voluntary registry** of landholders who consent to cultural burns on their property, coordinated by local Aboriginal land councils or ranger teams. Government can incentivize this by perhaps offering insurance coverage or rates reduction for landholders who participate, acknowledging the public benefit of safer land.

- **Include Cultural Burning in Strategic Plans:** All levels of government should integrate cultural fire into bushfire mitigation strategies, biodiversity plans, and climate adaptation plans. For instance, the next iteration of Victoria's Regional Bushfire Management Strategies should have explicit targets or goals for cultural burns conducted, co-designed with Traditional Owners. This ensures continuity beyond individual champions; it's embedded in the system.

10.2 Building Capacity and Employment

- **Funding Continuity and Expansion:** Make programs like the Victorian Cultural Fire Grants permanent (beyond a 4-year initiative) and ideally expand them. The $22.5m was a start; ongoing funding allows long-term planning. Argue for increased federal funding for Indigenous ranger programs in Victoria – currently less funded than northern Australia – specifically to add fire management positions. Considering the prevention aspect, even emergency management budgets could allocate a fraction to proactive cultural burning (prevention being cheaper than disaster response).
- **Cultural Fire Training Centers:** Establish a dedicated **Cultural Fire Knowledge and Training Centre** in Victoria – possibly run by an alliance of Traditional Owner groups. This center can serve as a hub for training new practitioners (a culturally-tailored firefighting curriculum), hosting workshops, and certifying people in both cultural and safety aspects. It can also be a repository of research and a place where agency staff come to learn from TOs. Perhaps use an existing facility or partner with a TAFE/Uni to host it.
- **Youth Engagement Programs:** Encourage and fund youth programs such as "Junior Ranger – Fire" schemes where Aboriginal youth (and interested non-Indigenous youth) can learn basic cultural fire skills and ecological knowledge, perhaps as part of school vocational training or holiday programs. This builds the next generation of practitioners and keeps the interest alive. Support scholarships or paid internships for Indigenous students to study fire ecology or land management, bridging into agency roles later, which helps change institutional culture from within.

10.3 Knowledge Integration and Respect

- **Two-way Science Initiatives:** Fund research partnerships that put Indigenous knowledge holders as co-researchers. For example, a monitoring project of cultural burns where Elders define the indicators of success (like the presence of certain cultural plants or animals) alongside scientists measuring conventional metrics. This could be formalized through something like a "Cultural Fire Research Network" linking universities, CSIRO, and TO groups – ensuring co-authored publications and that intellectual property is respected (e.g., ensure any research data that includes traditional knowledge has agreed sharing terms). Provide small research grants to TO corporations to answer their own questions (like "what's the effect of our burns on soil moisture?") by hiring technical help as needed, rather than only academics setting the agenda.

- **Education Campaign and Curriculum:** Implement **Recommendation 5 from the University of Melbourne group** – a national education campaign to change the narrative on fire (Microsoft Word – VIC INQUIRY.docx). This could include public service announcements that show cultural burning's benefits, and school curriculum resources on Indigenous land management (some exist but ensure they're rolled out widely). In Victoria, support the inclusion of local Traditional Owner fire history in the curriculum – kids should learn how the land around their town was managed by First Peoples. Perhaps develop a module in the **VCE (Year 11/12) Environmental Science** subject specifically on Indigenous fire management, co-written by Indigenous experts.
- **Community Workshops and Transparency:** Conduct public workshops or field days where community members can learn about cultural burning hands-on. This breaks down fear. Agencies and TO groups together can host these as outreach. Also, incorporate cultural burning into annual community bushfire preparedness education (like those CFA meetings in rural towns about preparing for fire season – invite TO speakers to talk about cultural burns). All this fosters societal acceptance.

10.4 Addressing Operational Challenges

- **Burn Windows and Flexibility:** Fire authorities should provide more flexibility in scheduling. If a Traditional Owner group identifies a burn window (say after certain rains or before a certain phenological event), the system should be agile enough to approve and support that. One idea is designating certain periods as "Cultural Burning Seasons" where resources (like standby crews) are allocated to assist and rules are relaxed slightly to allow more burns. It's akin to how agencies ramp up for planned burn seasons; do so in concert with TOs.
- **Insurance and Liability Solutions:** Governments might need to adjust liability frameworks. One recommendation: extend the same legal protections to Traditional Owners conducting approved cultural burns as agency fire officers have when conducting prescribed burns. Essentially, if a TO burn is done under an agreed plan, the liability for accidents is borne by the state (just as it is when a government burn escapes, which usually is covered by the Crown). This might require legislative tweak or a formal indemnity arrangement. Additionally, establish an insurance pool or fund for any unforeseen damages, so fear of lawsuits doesn't paralyze cultural burners or landholders who host them.
- **Integrated Fire Management Teams:** Encourage creation of joint teams – firefighters and Indigenous practitioners working as one. For example, in each region, have a "Cultural Burn Unit" composed of CFA/FFMVic staff and TO reps who train together and can mobilize together. This institutionalizes the partnership and ensures knowledge is shared both ways on the ground. It also builds personal relationships that smooth operations.

10.5 Future Directions: Scaling and Innovation

- **Scale Up Gradually and Learn:** Set ambitious but realistic targets: e.g., "Within 5 years, aim to have cultural burning practiced on X% of public land in Victoria annually, led by TOs, and double that in 10 years." Use adaptive management – expand the area as capacity grows and lessons are learned. The "small patches" approach can accumulate to significant coverage if many are done. Track progress in terms of area burnt culturally, number of TOs trained, etc., as key performance indicators for agencies.

- **Cultural Fire and Climate Strategy:** Frame cultural burning as part of climate change adaptation and even mitigation strategy. This could open up new funding from climate funds. For instance, include cultural fire projects in Victoria's climate action plan, maybe even explore carbon accounting methodologies in temperate regions (if not directly reducing emissions, then increasing resilience which has value). Possibly pilot something like carbon credits for avoided megafire or for carbon sequestration due to healthier forests under cultural fire regimes.
- **Technology Aids with Traditional Ethos:** Encourage innovation that serves cultural goals – e.g., use of drones to monitor burns in real-time to help ensure patchiness or to quickly detect if embers spot beyond boundaries (technologies agencies have could be shared). But ensure these don't replace the core human element, only assist. For example, an "app" could help map cultural burn records for knowledge-sharing among TO groups while protecting sensitive info.
- **Cultural Burning in New Contexts:** Explore how cultural burning can be adapted to new contexts needing solutions, like peri-urban green spaces or roadside vegetation management. Perhaps support projects where TOs work with municipal councils to apply cultural fire in parks or reserves near towns (with community involvement). Also, tie cultural burning into emerging fields like regenerative agriculture or permaculture for farmers interested in sustainable practices – an area for alliances between Traditional Owners and non-Indigenous land stewards.
- **Monitoring and Evaluation:** Establish a long-term monitoring framework (perhaps through that knowledge center or network) to continually assess outcomes of cultural burns – ecological (species return, fire regimes), hazard reduction (fire incidence, severity), and cultural (community satisfaction, participation). Use this data to refine practices and to advocate for continued support. Transparency in showing outcomes will build trust with policymakers and the public.
- **Healing and Health:** Recognize and invest in the healing aspect – support programs that allow those affected by bushfire trauma (including firefighters, residents) to connect with cultural burning as therapy. That could be a future direction bridging mental health and cultural practice. It underscores how deeply cultural fire can influence society beyond just land management.

In implementing these recommendations, it's vital that **Traditional Owner voices remain at the center**. Co-design and partnership must be genuine. The future should not be agencies adopting cultural burning as just another tool they control – it must be a future where Indigenous people guide the way, and everyone benefits.

The overarching vision is one of **"Walking together"** on fire management: where Traditional knowledge and Western science, Indigenous communities and non-Indigenous communities, work hand in hand. With appropriate policies, support, and respect, the next decades could see cultural burning flourish, making Country healthier and communities safer.

Chapter 11: Conclusion – Restoring Fire, Healing Country

Australia finds itself at a crossroads, grappling with the twin challenges of catastrophic bushfires and the need for reconciliation with First Nations. Traditional Owner-led cultural burning stands at the intersection of these challenges, offering a path forward that addresses both. By restoring the right fire to the land, we also take steps toward healing the deep wounds of Country and history.

Restoring Balance:

For tens of millennia, Aboriginal people maintained the Australian environment through adept fire management, creating landscapes of staggering biodiversity and resilience. Colonisation disrupted this balance, leading to ecological decline and more dangerous fires. Now, as we embrace cultural burning

again, we are **restoring balance** – not just in vegetation structure or fuel loads, but in relationships. The relationship between people and land becomes reciprocal once more: we care for Country, and in turn, Country cares for us. In seeing the cool flames creep gently across a paddock or forest floor, one Elder remarked that the land "*is breathing again*." That breath – the smoke curling upward – is like a sigh of relief from Country, a signal that it recognizes an ancient conversation with its traditional custodians has resumed.

Healing Country and People:

Cultural burning's outcomes are visible in green shoots and animal tracks in the ash, but also in the faces of those conducting the burn. The pride of Elders teaching, the confidence of young ones learning, and even the curiosity and respect it sparks in non-Indigenous observers – all these are part of healing. As Victor Steffensen eloquently put it, *"The knowledge is in the landscape. The Elders have not passed. The land is an Elder too."* When we let the land once again be our teacher and healer, we allow ancient wisdom to guide contemporary problems. Healing Country is not metaphorical; it is literal regeneration of ecosystems, and it is also a spiritual and social restoration.

Challenges Acknowledged, Future Embraced:

We have outlined challenges, from legal barriers to capacity gaps. These are significant but surmountable obstacles. Across Victoria and Australia, many inspiring first steps have been taken – pilot burns, strategies written, alliances formed. The momentum is undeniable. Governments are listening more than ever, scientists are lending support with data that echoes what Elders have said all along, and communities are increasingly aware of the value of Indigenous fire knowledge. The **2020 Royal Commission into National Natural Disaster Arrangements** even acknowledged the importance of Indigenous land management in reducing disaster risk. The stage is set for scaling up. The **future direction** must be to take these pilots to program level, these case studies to standard practice, ensuring cultural burning is not a buzzword but a widespread reality on the ground.

A Shared Journey:

Cultural burning has taught us that fire can unite rather than divide. In a cool burn, everyone present has a role – whether lighting, monitoring, or simply watching and learning. It becomes a communal act, dissolving hierarchies. Fire agencies and Traditional Owners, farmers and conservationists, young and old, can all gather around the same flame with a shared purpose. One could witness, on a day of a cultural burn, a local CFA volunteer standing side by side with an Aboriginal ranger, both holding drip torches, exchanging smiles and tips – a scene that might have been hard to imagine a decade ago, now materializing. Such scenes are powerful. They are microcosms of what reconciliation can look like: **practical, cooperative, rooted in mutual respect**.

Living Culture, Safer Future:

What we ultimately glean is that cultural burning is as much about culture as it is about burning. It asserts that Indigenous culture is living, dynamic, and beneficial for all society. When Traditional Owners are empowered to practice their culture, everyone gains a safer, more beautiful environment. The catastrophic fires of recent years have been a wake-up call: we need new solutions and we need them urgently. Cultural burning is in fact not new, but it might feel novel to some – and it offers a hopeful narrative amid climate anxiety. As one fire scientist noted, *"Nothing will stop intense bushfires, but integrating Aboriginal fire management practices may contribute to an effective management and risk mitigation strategy"*.

Yes, mega-fires will still happen under extreme weather, but if cultural burning is widely adopted, perhaps they will happen less frequently and with less ferocity. Meanwhile, the daily state of our

forests, grasslands, and deserts will improve – more native species, fewer weeds, more water in soils, fewer days of choking smoke from out-of-control blazes.

"Country is the Boss":

A refrain in Indigenous land management is that ultimately, *"Country is the boss"*. Cultural burning is guided by what Country needs. In listening to Country, Traditional Owners are demonstrating a stewardship model the world can learn from. Australia's challenge is to listen to those who listen to Country. That means valuing Indigenous expertise in all levels of decision-making.

If we do so, we envisage a future Victoria and Australia where, every year, the arrival of the cool burning season is met with anticipation and gratitude. Communities will celebrate the cultural burns as community events, perhaps as commonplace as ANZAC Day services or agricultural shows – a part of the yearly cycle that people engage in and support. Imagine school kids knowing that when the autumn dew dries, the smoke they see on the horizon is not a threat but a sign that healing work is being done. Imagine fire emergency seasons that are shorter and less severe because landscapes have been lovingly tended throughout the year by those who know them best.

Conclusion Statement:

Traditional Owner-led cultural burning is a journey of **"walking together"**—walking with fire, with each other, and with Country. It exemplifies how honoring ancient knowledge can address contemporary crises. By investing in and respecting this practice, we are not just reducing bushfire risks or restoring ecosystems; we are also writing a new chapter of partnership and respect between Indigenous and non-Indigenous Australians.

As the cool flames of cultural burns continue to spread gently across the land, may they also spread understanding, respect, and hope. In restoring the right fire to Country, we take vital steps towards healing—healing the land, healing our communities, and healing the relationship with the First Peoples of this nation. The path ahead is clear: support Traditional Owners to lead the way with fire, and Australia will be safer, greener, and more united for it.

Absolutely — here's an expanded list of the sources with full details, including titles, authors (where available), publication information, and brief descriptions of relevance to your cultural burning report:

Source List

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1. **Victorian Traditional Owner Cultural Fire Strategy**

Publisher: Aboriginal Cultural Fire Strategy Working Group, Victoria
Year: 2019
Description:
This landmark document outlines the vision and guiding principles for reinstating cultural fire management in Victoria. Developed by Victorian Traditional Owner groups, it sets a framework for how cultural burning should be led, governed, and practiced by Indigenous communities. It includes six key principles such as "Right fire, right time, right way, for the right reason."

Access: https://www.ffm.vic.gov.au/__data/assets/pdf_file/0023/47393/Victorian-Traditional-Owner-Cultural-Fire-Strategy.PDF

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2. **Skiba, R. (2020). Usage of Cool Burning as a Contributor to Bushfire Mitigation**

Author: Robert Skiba
Publisher: The Nature Conservancy / Independent Environmental Consultant
Year: 2020
Description:
A detailed report exploring how cool burning (low-intensity fire) can be used to reduce the likelihood and severity of large-scale bushfires. It examines both Indigenous-led and agency practices and provides a case for integrating cultural burning into formal fire management regimes.
Note: This report is often referenced in ecological circles and bushfire inquiries.

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3. **Firesticks Alliance – Our Approach**

Organization: Firesticks Alliance Indigenous Corporation
Year: Ongoing
Description:
Outlines the mission, values, and on-ground methods used by Firesticks to re-establish cultural burning practices across Australia. Their approach combines Indigenous-led training, mentoring, fire ecology, and community education. They advocate for "right-way fire" and knowledge-sharing through fire camps and partnerships.
Website: https://www.firesticks.org.au/

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4. **Dja Dja Wurrung "Djandak Wi" Media Release (2023)**

Organization: Dja Dja Wurrung Clans Aboriginal Corporation (DJAARA)
Date: 2023
Title: *Djandak Wi: Cultural Fire Returns to Dja Dja Wurrung Country*
Description:
Announces the launch of the Djandak Wi program, an initiative by DJAARA to reinstate cultural burning on Country. The media release includes quotes from Traditional Owners, planned sites, cultural objectives, and partnerships with state agencies. Highlights the significance of self-determination through fire.
Website: https://www.djaara.com.au/

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5. **The New Daily – Cultural burning expansion (March 31, 2023)**

Article Title: *Cultural burning expands as First Nations fire management goes mainstream*
Publisher: The New Daily
Author: Benita Kolovos
Date: March 31, 2023
Description:
A news report discussing Victoria's expanding support for cultural fire. Includes interviews with Traditional Owners and forest agency staff, and highlights new grants, training programs, and the growing recognition of Indigenous-led fire in mainstream fire management.
Link: https://thenewdaily.com.au/news/state/vic/2023/03/31/victoria-cultural-burning/

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6. **La Trobe University – Nangak Tamboree Cultural Burn (2025)**

Organization: La Trobe University, Bundoora Campus
Year: 2025 (Event)
Description:
Documents a cultural burn conducted by Wurundjeri Woi-wurrung Narrap Rangers along Nangak Tamboree (Darebin Creek corridor). Highlights ecological outcomes such as the resurgence of endangered Matted Flax-lily (*Dianella amoena*) and demonstrates cultural fire in an urban setting.
University page: https://www.latrobe.edu.au/nangak-tamboree

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7. **WWF Australia – What is Cultural Burning?**

Organization: WWF-Australia
Year: 2021 (Updated 2023)
Title: *What is Cultural Burning and Why Is It Important?*
Description:
An accessible explainer from WWF-Australia discussing the purpose, methods, and benefits of cultural fire from a conservation perspective. Features quotes from Elders and examples from programs WWF supports. Emphasizes links between cultural fire and biodiversity protection.
Link: https://www.wwf.org.au/news/blogs/what-is-cultural-burning-and-why-is-it-important

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8. **Edge Effects – Reclaiming Aboriginal Burning (Reardon-Smith, 2023)**

Article Title: *Reclaiming Aboriginal Burning: Fire and Knowledge in Australia's Fire-Prone Landscapes*
Author: Kathryn Reardon-Smith
Publisher: Edge Effects (University of Wisconsin–Madison)
Date: 2023
Description:
An insightful piece reflecting on Indigenous fire knowledge, colonisation's impacts, and the cultural significance of fire for Aboriginal communities. Combines interviews, academic research, and cross-cultural analysis. Includes discussion of Firesticks and traditional knowledge resilience.
Link: https://edgeeffects.net/aboriginal-burning-australia/

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9. **University of Melbourne Cultural Burning Submission (2020)**

Document Title: *Submission to the Royal Commission into National Natural Disaster Arrangements: The Role of Cultural Burning*
Authors: Cultural Fire Working Group – University of Melbourne
Date: 2020
Description:
A formal submission to the bushfire royal commission arguing for stronger inclusion of cultural burning in national bushfire policy. Highlights barriers, opportunities, and recommendations based on collaborations with Victorian Traditional Owners and fire experts.
Summary access: https://about.unimelb.edu.au/newsroom/news/2020/june/royal-commission-submission-supports-aboriginal-cultural-burning

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10. **Mongabay – Aboriginal Fire Promotes Plant Diversity (2024)**

Article Title: *Aboriginal fire promotes plant diversity in Australia's deserts*
Publisher: Mongabay News
Date: January 2024
Authors: Sue Palminteri and Mongabay staff
Description:
Covers the results of a new ecological study showing that Aboriginal-led cultural burning (e.g., by Martu people) increases plant species richness and improves land heterogeneity. Demonstrates science supporting traditional practices.
Link: https://news.mongabay.com/2024/01/aboriginal-fire-promotes-plant-diversity-in-australias-deserts/

🤝 About the Collaboration: Author and AI Working Together

This report was proudly produced through a unique collaboration between a human author with decades of frontline fire service experience and an advanced AI research assistant (ChatGPT by OpenAI).

The human author brought deep lived knowledge, critical insight, cultural sensitivity, and the vision for this project — shaped by a lifetime of service and community engagement. The AI assistant contributed by gathering, summarizing, and presenting extensive research from reputable sources, helping to structure, refine, and write the report with clarity and consistency.

By combining real-world expertise with AI-supported deep research, this report represents an innovative and accessible way to share complex ideas with a wide audience. The collaboration aimed to amplify Indigenous voices, support evidence-based learning, and honour Traditional Owners as fire knowledge holders — ensuring the work is not only informative but respectful, inclusive, and impactful.

Together, this human–AI partnership demonstrates how technology, when guided by real-world experience and purpose, can help produce work that educates, inspires, and contributes to positive change.

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