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## Two-way Tools, Fire on Country

*Abstract:* This work settles among transdisciplinary perspectives on Anthropocene era Indigenous relations to the settler state, carbon economy, fire and ongoing struggles for Country. Climate change is creating more destructive fires. Indigenous land owners/managers are engaging in the carbon economy through reintroducing nuanced use and management of fire, concomitantly forging greater access to their Country – collectively about 70 per cent of the land area of north Australia is under Savanna Burning (emissions abatement) projects. In the process, Indigenous land managers are reknitting cultural landscapes across borders. Working in the carbon economy requires ‘two-toolbox’ partnerships, incorporating local and Indigenous Knowledge and Western style Science. Fire is a central feature of looking after Country, it is bound by holistic systems of connection, knowledge and belief. Western Knowledge provides emissions accountability needed to access the carbon economy. From the outset of the ranger movement and subsequent engagement with the carbon economy traditional owners have sought firstly to care for their Country, kin and culture. Government support and then carbon dollars have been a means to this end. With the passing of senior cultural leaders core values are increasingly challenged by the need to meet external KPIs and ‘burning for money’. This collaboration produces precious visits to Country, supports on-Country life projects, homelands, refreshes cultural knowledge, language, psychological well-being and resilience. It creates new science, and helps stem global warming. These globally priceless benefits are available only if the state apparatus, policymakers, and industry commentators can loosen an ethnocentric colonial strangle-hold long enough to recognise this mutual value.

Spring and summer of 2019/20 were marked by large-scale bushfires in which a number of people lost their lives, millions of hectares of forest and many homes burned to a cinder, and an estimated three billion native animals perished. ‘NBC News’ reported: “Australian Wildfires declared among the ‘Worst Wildlife Disasters of Modern History’”.<sup>1</sup> Referred to as the megafires, the time is now known as ‘Black Summer’. But this was by no means the first or last summer of uncontrollable bushfires in Australia, and the situation is set to get worse. The intensity and frequency of these big fires, alternating in many places with severe flooding, is arguably a manifestation of climate change impacts. Wildfires have, however, prevailed over the last century.

This was not always the case. Before 1788, a different kind of fire prevailed. Indigenous fire practice created a verdant Australian landscape repeatedly described by early British explorers as an estate like a ‘gentleman’s estate’ or ‘parkland’. Bill Gammage obsessively details expert fire management routines at a continental level used to create precise and reliable abundances of vegetables and game in an environment that is now seen as harsh and forbidding.<sup>2</sup> The epi-present European mythology of an inhospitable land is the foreseeable outcome of destroying Indigenous patterns of caring for Country.

Where Indigenous people were dispossessed of their land, destructive wildfires became the norm. Over the last century, wherever possible, Aboriginal

1 NBC News, 28 July 2020.

2 Cf. Bill Gammage: Fire in 1788; Bill Gammage: The Biggest Estate on Earth.

people have sought to enliven their indissoluble connection to ancestral lands and re-ignite curative fire practices.

Climate change is exacerbating the wildfire scenario and the climate change discussion; gathering public momentum is (slowly) shaping government policy and corporate response. One such response has been the development of markets for greenhouse gas emissions reduction. This has fuelled the reinvigoration of Indigenous burning practice across the north of Australia, by enabling an income for reducing wildfires, which in turn supports more holistic values sought in looking after Country. By engaging in the carbon economy through reintroducing nuanced use and management of fire, Indigenous land owners have forged much greater access to their Country, collectively about 70 per cent of the land area of north Australia, reknitting the cultural landscape across borders. Working in the carbon economy requires partnerships and the incorporation of Western-style science, technology and organisation. To what extent all interests are served in this new way is the focus of this paper. We will discuss key aspects of Indigenous fire management and Western technical knowledge in nascent carbon reduction and abatement projects and some prospects for the future of Indigenous fire on the Indigenous estate.

In order to tell this story as deftly as possible we will briefly describe something of the ingenious underlying principles of fire management deployed by Australian Indigenous people. In section three we discuss how Western knowledge (more precisely new technology) and Indigenous ecological knowledge are combined in a 'two-toolbox' approach. To understand how this collaboration can work, we provide the reader with information about life on-Country and Indigenous Law, that dictate the how, where, when and why, of burning. Section four focuses on the critical dimension of people on-Country and homelands, and the effects of settler state logics. Section five concludes with a discussion of prospects and opportunities.

### ***Fire Management in Indigenous Australia***

Pascoe writes:

the use of fire was so controlled that belts of trees separating grasslands were maintained, and even small copses were allowed to remain in an open plain by the judicious use of back-burning to protect them. The Aborigines were using fire to produce associations between plains, forests and copses. It was planned and managed to enhance returns for their economy.<sup>3</sup>

He describes five principles underlying the Indigenous approach to fire management:

Rotating mosaic pattern which controlled intensity and allowed flora and fauna to survive.

Timing depending on the type of Country to be burnt and the condition of the bush.

Weather type influencing the timing.

3 Bruce Pascoe: *Dark Emu*, p. 172.

Neighbouring clans were made aware of the fire activity.

Burning was avoided during the growing season of particular plants.<sup>4</sup>

Fire was purposefully managed to control animal and plant communities in order to create reliable abundance and predictability offered by the profusion of diverse environments across the continent. Australia is the second driest landmass on earth and many of its varied animal and plant communities have adapted to, or depend on fire, but more importantly, these complex communities require very precise kinds of fire, at very decisive times and intervals.<sup>5</sup> When to burn grass might hinge on its varied growth from season to season, or on good rains or poor, and so associated tubers, annuals and seed-producing plants might be killed by fire, whilst others in the near vicinity may need fire to flower or to seed. Specifically, no place was ever 'not' managed, and all places were named, owned and referred to as kin.<sup>6</sup>

Bininj Kunwok traditional owners of the Wurrk tradition on the Arnhem land plateau have more than fifty words just for kinds of fire. The Bininj Kunwok detail categories and fine-grained terms encoding kinds of human interaction, affordances and hindrances in relation to fire and Country e.g. 'Bambarr': 'a dead-end gorge or valley where fire can trap kangaroos ready for spearing'.<sup>7</sup> In the article 'The language of fire', Jimmy Kalarriya says

We elders need to teach these young people so they will gain this knowledge, because when we three have died [Bardayal Nadjamerrek, Jimmy Kalarriya, and Peter Biles] then it's up to young people to look after the Country [...] We can work together with non-Aboriginal people so that we use both our Aboriginal language and the English words together.

Narrbenbukkan yawurrinjba bu kabirri-bengkan like ngad maitbi ngarri-danjik ngarri-dowen. Wanjh yawurrinj kabirribolknahnan kun-red. Karri-djarrkdurrkmirri Balanda dorreng, ba Balanda kun-wok bedberre dja ngad ngarri-bulirri kun-wok ngarri-wokdi.<sup>8</sup>

Everywhere on Country people are working to build relationships with the wider society to diminish confiscation of their human rights, their resources, their language and culture, their opportunities and life projects and more recently to slow the rate of global warming. Not to put too fine a point on it, we are witnessing the most recent iteration of the life and death-struggle for the cultural survival of the oldest culture on earth.

### ***Western and Indigenous Knowledge Systems***

In the fields of Indigenous studies and environmental justice, we find discussion of a 'two-toolbox' approach to the mixture of Western science and what has been called variously local knowledge, or Traditional Indigenous Knowledge (TIK) or

4 Cf. *ibid.*, p. 166.

5 Cf. Murray Garde et al.: *The Language of Fire*; Peter Whitehead et al.: *Fire Management Futures*; Jon Altman, Seán Kerins: *People on Country*.

6 Cf. Ian D. Keen: *Metaphor and the Metalanguage*; Frances Morphy: *(Im)mobility*.

7 Murray Garde et al.: *The Language of Fire*.

8 ABC Catalyst 2006 in Murray Garde et al.: *The Language of Fire*.

what we will call Indigenous Ecological Knowledge (IEK).<sup>9</sup> The struggle to find compatibilities is a matter of growing urgency for several reasons. A first step in the process of analysing commensurability is an acknowledgement of the coherence of such knowledge systems in terms of their ontology or worldviews and an understanding of the kind of questions they are posing and trying to answer. The view in Australia in the past has been that IEK is not on par with Western Knowledge Systems in terms of environmental services. This view has been outdated as the complex site-based efficacy of IEK is now being better understood by scientists, and is of key interest to us here, in the space of fire management on a continental level. Combining these two knowledge systems may pave the way to improve action to ameliorate accelerating environmental degradation and to slow the rapid pace of climate change. Perhaps, equally importantly for humanity, it may provide a window into the crucial place of cultural diversity in the struggle to save our planet and to open minds.

Reducing the intensity and frequency of fires in tropical savannas reduces Green House Gas (GHG) emissions, by decreasing overall emissions from fire. Cool fires sequester carbon in woody tissue, forest canopies and larger woody debris left on the ground. Wildfires have become the norm across Australia since colonisation and are intensifying with global warming to create an explosive mixture. Wildfires almost always result in crown fires, killing many mature trees, destroying seed resources and diminishing water resources. Fairly recently Indigenous traditional fire management styles have begun to be re-introduced in some places in order to diminish catastrophic wildfire destruction. This fire management system, unlike unmanaged wildfires, takes the form of patchwork or mosaic burning, mostly cool burning and generally early in the dry season to create fireproof areas that stop wildfires by varying the fuel load available to fire on the ground. Landscape-scale fire research in Northern Australia is looking for ways of delivering multiple benefits in a changing world.<sup>10</sup>

Fire ecologists, Geographic Information System (GIS) experts and other science and technology researchers have developed ways to measure, map and account for GHG and carbon benefits from traditional style burning at landscape scale, and the Australian government has legislated a carbon accounting methodology. The important economic development of the partnership between the Savanna Burning Methodology and an Australian carbon credits scheme allows Australian Carbon Credit Units to be generated and sold, creating much-needed economic relief in the remote and poorest areas of Australia. It has been in the past and is again becoming common practice for Indigenous people across north Australia to burn their Country according to their culture and tradition - in a small but growing number of places now supported by income from the sale of

9 Indigenous Ecological knowledge is one of several ways of defining similar research interests in the field of 'Traditional Knowledge' or 'Traditional Ecological Knowledge'. The term 'traditional' is said to draw attention to the agglomerative aspects of knowledge and so obscures the dynamism and adaptability of such knowledge, cf. Fikret Berkes, Carl Folke, Johan Colding: *Linking Social and Ecological Systems*.

10 Cf. Nancy M. Williams, Graham Baines: *Traditional Ecological Knowledge*.

(Savanna Burning) carbon credits. But there is much more to multiple benefits than a first glance suggests.

### ***Indigenous Knowledge and Place***

It is critical to understand that, unlike the portable 'toolbox' of science, local site-based Indigenous knowledge, about fire practice, is bonded indissolubly to long histories of ritual, economic and genetic association with a particular tract of Country. This site-based knowledge is inextricably linked to the world view of the local Indigenous people and therefore cannot be transposed, transported or 'outsourced' from elsewhere. Each political, economic, linguistic, and genetic group of people have a continuing connection to distinctive areas of land that go back in time multiple thousands of generations. Recently, human DNA obtained from an archaeological exhumation, dated around 40000 to 50000 years old, was found on examination to present near identical genetic markers to the current traditional owners of that land.<sup>11</sup> The ontological notion of a consubstantial spiritual connection to ancestral Country is the fundamental basis of the Australian Indigenous worldview that constitutes the 'Law'.<sup>12</sup>

This is a very important point, and its implications are not well understood by the broader scientific establishment, governing administration, or mainstream society in general. Local Indigenous links to Country are spiritual connections.<sup>13</sup> The key driver of engagement in savanna burning is a deep unrelenting obligation to care for (familial) Country based on spiritual connection. A person is understood to be linked to their conception site and to the spirit of the ancestors in Country, to those who have gone before, and to those yet to be born, by an indissoluble, consubstantial spiritual link. This connection is not trivial. An Indigenous Australian person's linkage to the spirits of Country is utterly fundamental and as such comprises the ontological basis of their authority to speak for, and to manage their Country. This connection and knowledge of place must be passed on to the next generation. This is a dictum of the 'Law'.

### ***Indigenous Connection and Obligation to Country***

A site-based historical and ontological association with the land underwrites the cultural images, knowledge and ceremonies constituting Indigenous knowledge

- 11 Ray Tobler et al., Aboriginal mitogenomes reveal 50,000 years of regionalism in Australia, demonstrate what Indigenous people have always said about their ongoing and elemental connection to their land, so is it so surprising that Aboriginal mitogenomes reveal 50000 years of locality based genetic and cultural continuity in Australia?
- 12 In the Eucharist of catholic doctrine, the notion of consubstantiality affirms the idea of essential sameness, i.e., the bread and the wine of the Eucharist ritual are elementally the same as, of *the same substance as*, the body and blood of Christ.
- 13 All organisms affect their environments, but the uniquely human conscious construction of meaning in the interaction with environments produces the culturally defined images, languages and significances that produce key ecological relations.

systems. The Law contains, among other things, the practices linked to managing the land, and intimate local fire knowledge enshrined in ancestral edict. Laurie Baymarrwaja, a Yolŋu elder from North East Arnhem Land, explains in Yan-nhaŋu, the ancestral language of the Crocodile Islands:

Why do we burn saltwater Country? It's the law!

Always watching the Country and listening to the winds, we must follow the knowledge of the ancestral spirits when we burn. Don't burn anytime or anywhere but with the law. These are signs of the ancestors for the rangers to follow in their burning as they care for the (Crocodile) islands.

Dhabiya naŋapuluma dhulmiyama wangalaŋa limalama? Wanhaba ŋupanaba romnha! Binmunu wanha napuluma bayŋu ŋupanba rom ŋatjiliyanjumu. Binmunu wanha yana bayŋu garrana bilyanaŋurranha ga nhama wangala. Nhunu gurrku rom ŋupanaba burthalagu dhulmiyamagu. Rulka dhunŋulyun babalaway. Walirrmiri dukuyu numunku rangersgu djamagu dhulmiyamagu bayŋu mana nyininha.<sup>14</sup>

Indeed, mythological narratives, ritual and ecological relations comprise a powerful ideational system at the heart of Yan-nhaŋu life. This system produces the actual physical behaviour by which ecological relations are determined. In this way, the practices and symbols of human ecological relations reveal deeper metaphysical themes.<sup>15</sup> The anthropologist Ian Keen describes how 'ancestral laws' shaped the organization of human and ecological relations in four primary ways: Firstly, they framed the regional orders of law that provided the foundations of social order. Second, they were implicated in the ownership and control of access to land and waters and their resources. Third, people believed, on the basis of these doctrines, that they could tap ancestral and magical powers to enhance the supply of resources. And fourth, many economic rights, obligations, prerogatives, and prohibitions were framed explicitly in terms of ancestral law.<sup>16</sup> For Yolŋu people these cosmological doctrines are understood to be the endowment of the ancestor spirits.<sup>17</sup> This locality-based ancestral law, often called 'the dreaming', is consistent across Indigenous Australia.

There is also an intricate relationship between Land-Language-People that complexifies the study of Indigenous Australian societies and languages. In Australia, Indigenous language ideology postulates that a group's ancestrally endowed language is directly related to their inherited land.<sup>18</sup> Stanner characterises the relationship to land as inherently spiritual as he observes

place was the source of a person's life-force, and he or she was inseparably connected with it. This indissoluble connection of person and place by means of a spiritual link externally manifest in land as an outward and visible sign.<sup>19</sup>

Linguist Francis Morphy describes how a clan's language is closely bound to a "pre-existing ancestral geography".<sup>20</sup> The method of investment of a language

14 Laurie Baymarrwaja to Bentley James, p.c., 1999.

15 Cf. Roy Ellen: *Environment, Subsistence and System*, p. 206.

16 Cf. Ian D. Keen: *Aboriginal Economy and Society on the Threshold of Colonisation*, p. 210.

17 Cf. Frances Morphy: *Dajpu, a Yolŋu Dialect*; Ian D. Keen: *Definitions of Kin*.

18 Cf. William E. H. Stanner: *The Daly River Tribes*; Ronald M. Berndt: *Ceremonial Exchange in Western Arnhem Land*; Geoffrey Bagshaw: *Gapu Dhulway, Gapu Maramba*; Ian D. Keen: *Aboriginal Economy and Society on the Threshold of Colonisation*; Bentley James, Laurie Baymarrwaja: *Yan-nhaŋu Atlas and Illustrated Dictionary of the Crocodile Islands*.

19 William E. H. Stanner: *On Aboriginal Religion*, p. 2.

20 Frances Morphy: *(Im)mobility*, p. 366.

in the people and the land is recorded in a complex and profound body of creation myths, i.e. foundational myths in which the ancestors are believed to create the topography and endow it with language, as an integral part of the cosmogonic act of creating the land and seascape.<sup>21</sup> Those inheriting possession of the ancestral geography also inherit the language. The owner group and their 'ritual managers' retain the authority to speak about, for, and share details of this language with outsiders, e.g. researchers. This elemental connection between Land-Language-People is not just associative but a profound and binding ontological reality.

These foundational laws, remembered in the songs and stories of the ancestors, are uniquely fixed in the language of the ancestors. The following is a translation of a rare recording of the Yan-nhanju song of the winds, these winds, linked to seasonal burning of the islands and the spirit ancestor called the 'Gurrimirriṅu', were sung by the elder Laurie Baymarrwanja:

When lira ṅanka (north west wind) blows the Gurrimirriṅu lights a grass fire at Gurriba. When we see this smoke, it reminds us that we must light up the Country. He, as always, the Gurrimirriṅu [...] sings the song, my song, [...] lights fire on the islands [...] tells us of the people before [...] tells of the way of Gurrimirriṅu.

Lira ṅanka dhuptana marragalbiyanay ga marradumbarramaw gurru dhulmiyama mulmu dhambananiṅ burthara dhakal nhanku Gurriba. Lima nhama Gurrimirriṅuju ṅawurru lima nhambaka wangalanga gurru dhulmiyama mulmu dhambananiṅ. Gurrimirriṅu manikay [...] ṅarraku (manikay) binwanha [...] da [...] da [...] gurtha gurru gama, buthara nhanju butharanhara nhanju [...] runu-runu dhakal dhakal dhapaniyina.<sup>22</sup>

For Indigenous people in Australia, the obligation to care for Country *is* based on the notion of never-ending ancestral laws in essence linked to life on Country. These elemental connections are created by countless generations of adherence to an ancestrally inherited, kin-based view of the world. A view that rests on enduring links to a pre-existing network of ancestral sites, associated spiritual entities and the residues of their essences and power on their Country.<sup>23</sup> The notions of universal kinship, pre-existing ancestral geography and the potent locality-based nature of ancestral language provide the ontological bedrock of life on Country.<sup>24</sup> It is these foundational notions that underwrite shared practices across Indigenous Australian societies. For Indigenous people from different groups, speaking different languages, everything, spirit, land and language, is understood to be ancestrally inherited. That is why the spirit of the people and the land are inseparable.<sup>25</sup> Consequently, it is *the people of the land, and sea, who must burn the Country*.

21 Cf. W. Lloyd Warner: A Black Civilization; Nancy M. Williams: The Nature of 'Permission'.

22 Sound Recording Murrunga Laurie Baymarrwanja (Gurtha-Fire-Galiwin'ku 1 April 1997, 21 mins) author's collection.

23 Cf. Frances Morphy: Invisible to the State.

24 Cf. Bentley James, Melanie A. Brück, Dany Adone: Yan-nhangu Language of the Crocodile Islands.

25 It is of no surprise then that the notion of ancestral language is so crucial to cultural survival and the first thing the settler state moves to destroy. In *Vanishing Voices*, Daniel Nettle and Suzanne Romaine demonstrate that Australia is still leading the world in the destruction of Indigenous languages.

### ***Creating Opportunity through Collaboration***

In the early 1990s senior Indigenous land owners in West Arnhem Land and ecological scientists began working on a significant challenge facing Indigenous people living in far-off diasporas. Namely, how to support a return to homelands and to facilitate ways to reduce the destructive wildfire regime, that had become the norm since custodians of those homelands had been dislocated to distant Aboriginal towns. Indigenous land owners had the nuanced and holistic knowledge of Country and fire technologies to re-introduce effective traditional burning practices (typically early dry season patchwork burns tailored to different vegetation types etc.). Their non-Indigenous collaborators brought an understanding of potential carbon offset opportunities and the science and technologies to measure abated emissions from replacing wildfire with 'cooler' managed fires and the means to develop mechanisms to formally account for abated greenhouse gases. This began a long-term collaboration to refine this opportunity, return to Country and convert the carbon/GHG benefits to cash through offset agreements and then in the marketplace.

Given the similarity of the biome across north Australia and correspondences in Indigenous local knowledge and incentives around re-igniting fire management on homelands, the opportunity has spread to Western Australia and Queensland, generating around \$40mil per year. Indeed, the successful collaborative model of traditional knowledge holders (TKH), science and policy practitioners has now been introduced to Indigenous peoples in other parts of the global sub-tropical savannas (e.g. southern Africa, Brazil, and parts of Indonesia). These TKH et al. are now developing their own version of Savannah burning to achieve similar cultural, environmental and economic outcomes and returns.<sup>26</sup>

### ***The Ranger Movement and Realising the Opportunity***

There are currently multiple similar fire programs operating successfully in Northern Australia. Those operations range from conducting landowner consultation and planning, implementation of on-ground and aerial ignition burning, to fighting wildfires, an area in which Indigenous land managers are at the forefront. Indigenous land managers have also been leading the development of savanna-burning initiatives, which combine the Traditional Ecological Knowledge with Western technology and knowledge to reduce GHG emissions. This 'refreshed' and 'collaborative knowledge' about fire is then shared across Country to reduce destructive late-season wildfires.

Ranger programs have become the preferred vehicle for the delivery of carbon abatement programs on Country. Compromises are often required between the management of local ranger group-operated fire programs and senior traditional owners' assertions of authority and specific interests over the care and use of

26 Cf. Jeremy Russell-Smith et al.: Culture, Ecology and Economy of Savanna Fire Management in Northern Australia; Peter Whitehead et al.: Fire Management Futures.



their customary estates. For example, end-of-dry-season fires used for hunting may reduce income from credit production because of the 'methodology' used for Savanna Burning (SB prescribes no burning after the end of July). Further complexity in managing all the partners and players in this space (researchers, regulators, investors, and other community groups) requires culturally appropriate, high-level governance mechanisms and skills: not always easy to find and secure. The overall development of this Indigenous-led Savanna Burning activity, however, is an overwhelming success, delivering many tangible benefits to Indigenous communities and traditional owners. Practical meaningful dividends include jobs, and the reinvigoration of knowledge forms, and importantly, deeper access to Country and spiritual attachment associated with familial landscapes. The emerging cooperative fire space is providing important substantial and sustainable opportunities for physical and cultural survival.

In the recent period of funding available for Ranger programs to enact practices to limit carbon emissions, there is revived assistance for the regeneration of knowledge linked to Country and its management (less so for direct outcomes for languages). More broadly, across the Northern Territory, Indigenous knowledge and skills are being rekindled in light of the depopulation of the landscape and the demise of the homelands. The continuity of Indigenous knowledge and skills linked to fire management practices are only but emphatically constrained by the number of people that live on Country. Also, those people currently on Country may or may not have been part of a generation that traditionally 'hunted and gathered' their resources, in the last twenty to forty years (given that everyone a generation ago on all those homelands interreacted daily with traditional activity). Today, participants in carbon abatement projects possess various levels of knowledge about fire, with younger people often having much to learn. Continuity in residence and interaction with Country, elders and sacred sites is necessary to maintain 'connection' and meet obligations to cultural responsibilities. Obligations to cultural, linguistic and metaphysical values improve biodiversity. As homelands are pivotal to this work they need support from scientists and policy makers. Across society we must engage and celebrate the expertise of this rare cultural knowledge. This cultural ensemble is providing a raft of services to the nation for no cost.

Modern programs are currently developed to map out how to do carbon science on Country with the new mix of Indigenous and scientific ways of burning Country. Science is influencing and helping continue practices of traditional fire burning with vital outcomes in the production of a fertile environment, rehabilitation of degraded bioregions, livestock damage, weeds, pests, and the reduction of greenhouse gases. Importantly, scientists are providing descriptive and quantitative models for measuring the impact of different seasonal burning and its intensity. Methodologies for measuring the dynamics of various vegetation types, burning rates, timing and intensity of fires, and ranges of composition and structure are necessary so that a catalogue of the fire sensitivity of various plant species can be mapped. Furthermore, remote sensing technology (GIS) has allowed scientists to be able to map where fires have been and the patterns of fire regimes. The integration of relevant information into large databases, consequent

interpretation and communication of such information to broader policy-making instruments is having a real influence on carbon abatement project stability. One of the great successes of modern fire management is the methods for estimating the emissions from Savannah fire burning.<sup>27</sup>

The benefit of such scientific methodology and technological practice produces more refined environmental management and measurement tools which increasingly improve the confidence with which estimates of the offsets for fire-related activity can be produced and integrated into the commercial markets. Such capability facilitates the identification of new potential sites where reductions in emissions are possible and can lead to new markets and regional remote prosperity. This two-way methodology, the marriage of modern Western and Indigenous knowledge systems, provides a body of associated practices and social, cultural and economic systems that promote the ability, in some places, for Indigenous people to return to live on their homelands. Accelerating the setting up of Ranger programs is tentatively attracting support from government and private investors. What is important for the revival of key criteria for Indigenous people, is the authentic commitment to cultural practices and engagement with familial landscapes, enhancing their Indigenous worldview on their Country.

### ***The Contribution of Science, Technology, Economy and Policy***

The Western ontological perspective emphasises the importance of continuity in quality data gathering and research. The rational coordination of linkages with local, regional and national Indigenous organisations, and the negotiations between and within such Indigenous organisations must aim to avert potential conflicts of interest and enhance the ease of information sharing. In 2008, a key Indigenous organisation, the North Australian Indigenous Land and Sea Management Alliance Incorporated (NAILSMA), an Indigenous knowledge and science sharing platform, facilitated meetings with North Australian Indigenous land councils, philanthropic organisations and businesses, examining research governance and planning for engaging with a carbon economy, across the top end of Australia (including West Australia in the Northern Territory and Queensland). Insights gained from this critically important platform for the trading of Indigenous knowledge ideas, technology and how they work together, put new working groups in the carbon space into a better position to engage.

Within the associated industries and opportunities developed in the carbon abatement space, there is the need for institutions that can create and network collaboration across the particularly broad and disparate geographical and political domains of North Australia. As the fire and carbon industry grows it will be more important to address issues of property rights, decisions about eligibility and partnership, with comprehensive dispute resolution mechanisms. These complex land ownership, multiple needs and disparate ideological perspectives,

27 Cf. Jeremy Russell-Smith et al.: Culture, Ecology and Economy of Savanna Fire Management in Northern Australia; Peter Whitehead et al.: Fire Management Futures.

will need to be harmonised. Structures need to be put in place to manage disputes. More broadly, institutions must be developed to engage with governments, industry, philanthropic groups and others, to validate the performance and quality of this work. The NAILSMA organisation is particularly well placed to intersect with this space although it is not yet well enough resourced to coordinate the entire space.

There is a strong need for governmental institutions to re-imagine the role of remote Australia as a key player in the management of the national greenhouse gas emission profile. It is time to clarify the roles of the Australian government and private sector investors and potential purchasers of environmental services. An untapped resource exists in new generations of Indigenous people engaging with the land they own that can be operationalised with proper cooperation. Unfortunately, an ideologically driven and uncooperative administration prevails.

### ***Why Engage in the Carbon Economy?***

The struggle of Indigenous people to conserve, rehabilitate and re-invigorate the metaphysical links of their ancestral inheritance is of world-wide significance. From the perspective of cultural, linguistic, biophysical and climate change mediation this work is crucial. This ancestrally inherited system of seasonal life activities was the cultural background from which Savanna Burning activities emerged – part of the seasonal round of caring for and living on Country. People are committed to the struggle to retain and rejuvenate the whole system of cultural and linguistic practices around living on Country and celebrating the gifts of the ancestors. Activities that deliver carbon offsets are ostensibly the same activities that deliver holistic well-being to their practitioners, their families and their Country. The carbon outcome creates the income that supports these ongoing beneficial activities. There is long-term prospect in this system that supports people, land and life projects. Sustainable projects with the proper reverence for life and Country. The implications of which are positive for more than just the intergenerational transmission of language and culture but for the entire planet.

### ***Benefits and Co-Benefits***

As mentioned, there are opportunities through engagement in this carbon economy to value-add to the GHG emissions outcomes in the form of what non-Indigenous players tend to describe as co-benefits, such as increased employment and income, biodiversity benefits, water quality, health outcomes, strengthening kin and cultural systems. Indigenous people consider such benefits as core benefits – promoting their ownership of land, providing rights to control projects that respect their laws, people and their traditions, paying due attention to the spirits of Country and helping educate the wider society to accept their world

views. Re-introducing traditional style fire/land management is now used to promote regional and remote prosperity through the sale of carbon credits – a unique opportunity to achieve significant outcomes of mutual benefit to Indigenous and non-Indigenous society, encouraging settler society institutions and policy makers to include savanna burning practice in the mainstream economy. Few other Indigenous-led activities have been so successful.

### ***Local Cultures and the Drivers of Participation***

Emerging Savanna Burning projects, following the SB Methodology, allow Indigenous fire managers to use their knowledge of fuel types and the dynamics of seasonal burning etc. (e.g., when grasses are cured enough to burn at low intensity, where to start fires, how to create mosaic breaks in the landscape) to lower carbon emissions from the wildfire baseline. This fire knowledge is now heavily discussed within the context of Australian landscape fire. However, as previously mentioned, for Indigenous people in the north of Australia, non-Indigenous interest in the carbon economy and climate change mitigation per se were not the main drivers for this re-introduction of traditional style burning practices to savanna woodlands.

It was the opportunity to re-engage with cultural landscapes and practices of care for Country, opportunity to care for spiritual obligations to ancestral sites of significance, and to pass this law onto a new generation growing up in the footsteps of the ancestors. This is most often stated by Indigenous land owners as the key driver to engage in savanna burning activities. Indigenous land owners have repeatedly spoken about the core principles that frame their interests and decisions about Country. Settler state threats to these core values may be increased by interactions with a carbon economy. The question is then, can these principles survive the cross-cultural engagements of the carbon economy?

To know the answer, it is necessary to develop an approach to monitoring activities and tools based on traditional owner values as such cross-cultural engagements with Indigenous enterprise. The traditional owners we have spoken to in the North of Australia emphasise local values in their decision making and planning. This emphasis on core local values gives confidence in balancing donor, market and other 'outside' interests and values in the way they manage enterprise. Care and continuity for these core areas is a critical driver of participation for the future. In brief we have grouped these values into five broad areas: Connection, Identity, Knowledge, Power, and Seasonality. These are not definitive categories but resonate with Indigenous land managers' core interests as interpreted locally. They are considered important local values to be maintained and enhanced, particularly in cross-cultural, e.g. business, governmental institutions, for setting goals and monitoring the condition of these core areas as they are passed on to new generations. We summarise these value sets as follows

- *connection* – often expressed in terms of one's place in networks of kin, by implication also to specific inherited customary land estates. This establishes obligations and responsibilities, protocols governing relationships

in local and even wider networks of people and Country. Social organisation and rules for behaviour for example depend on such connectivity. Competence with and respect for this is inherently valuable and by extension appropriate connection to non-Indigenous society is of measurable value.

- *identity* – a value with many and varied qualities, but often expressed in relation to one's own language, ancestry, 'dreamings', affiliation to Country and community which in turn underpins confidence and authority to act locally and in wider society.
- *knowledge/skill* – local and traditional knowledge systems enable effective management of land and sea Country, connecting the physical, social and spiritual world. This knowledge foundation generates confidence to take on Western style knowledge and skill, enhancing adaptive capacity to, for example, participate in the wider contemporary economy.
- *power/empowerment* – the extent to which Aboriginal people feel able to draw on spiritual affiliation, apply customary, local and acquired knowledge to decision-making, and to manage their interests locally and further afield is a strong expression of empowerment and authority.
- *seasonality* – knowledge of and synchronicity with the land and its seasonal cycles is a strong demonstration of health and adaptability of Indigenous societies. The dominant influence of seasonal patterns and processes on life is reflected in the social and spiritual systems.

It is these core values and their associated practices that traditional owners are struggling to enhance and pass on to the next generations. This potent historical and elemental connection to Country and burning, drive participation and the potential of burning. Collaboration from the science sector, environmentalists and economic drivers from carbon economy entrepreneurs are prominent and well evidenced. This diverse ensemble of characters is working hard to achieve the enormous opportunity and dire need for carbon abatement. The challenge now appears to be the persistent ideologically driven settler state logics and comiserate disunity of administrative arrangements that have haunted Indigenous enterprise in Australia since colonisation. Examples of how these settler values continue to intersect with the life projects of Indigenous people in the domains of health, education, legal, economic, spiritual and political domains are frustrating and ubiquitous. A telling example in the North of Australia is the homelands movement of Arnhem Land in the Northern Territory.

### ***Homelands, the Significance of Living on Country and Settler State Logics***

In the early 1970s a vibrant and powerful movement of Indigenous land owners decisively moved away from the ex-missions and settlements (relics of colonial occupation) and back to their traditional Country across Arnhem Land in remote Australia. A wholly Indigenous movement emerged partially in response to two

distinctive and related Settler State policies, the 'White Australia' policy, and Aboriginal 'Assimilation' policies.<sup>28</sup> The thrust of the homelands movement is to replenish the profound metaphysical links, practices and knowledge of spirit in Country, to re-engage with cultural landscapes, to care for kin and Country, and the critical intergenerational transmission of these spiritual obligations to ancestral sites of significance. Spiritual practice is at the very heart of relations to land and the 'Law'. The homelands movement remains a powerful symbol at the enduring frontier of Indigenous resistance and the fight to hold the Country. Importantly for us here, it is within these core practices of spiritual and ecological knowledge that fire knowledge is embedded.

Altman observes that in the Northern Territory alone, in the 1990s, some 10 000 Indigenous people were dependent on homelands with more than 40 000 people connected to them.<sup>29</sup> This is 30 per cent of the Northern Territory's, and a substantial proportion of North of Australia's Indigenous population.<sup>30</sup> Starting in the 1970s, the high-water mark of Australia's recognition of Indigenous land rights, the government at that time provided some funding stream to homelands.<sup>31</sup>

This funding diminished to near nothing during the 1990s and barely remains.<sup>32</sup> Homelands are places where Indigenous knowledge is embedded in the intricate web of relations linked to residence on land and the daily rounds of activity.<sup>33</sup> In continuity with the pattern of tens of thousands of years people continue to reside on their traditional lands in small family groups with their partners and children. Daily activities are organised around economic activities dealing with traditional kinds of living on the land; men, women and children, going out to hunt and collect various seasonally available resources and burn Country in ways they have done following the pattern of the ancestors. Some modern technologies are used to support that project, i.e., access to the motor car, rifles, solar lighting, bore water etc. as residence on Country is critical to the intergenerational transmission of culture and language.

Among the benefits of homelands are the reduction of chronic overcrowding and social tension in larger communities, improved wellbeing through reinforcing engagement and responsibilities to Country and family, maintaining community networks and social structure, and strengthening identity.<sup>34</sup> Elders often

28 White Australia policy allowed only 'white' migrants from Britain, and assimilation focused on absorbing Aboriginal people into white society through the process of removing children from their families and to destroy Aboriginal society.

29 Cf. Jon C. Altman: *The Indigenous Hybrid Economy. A Realistic Sustainable Option for Remote Communities?*

30 Cf. Amnesty International: *There's No Place Like Homelands*.

31 A homeland is populated by one or two related family groups living together on their Country care for kin, family and ancestral connections unlike communities which are colonial artifacts where many clans were coerced and forced to work.

32 Altman et al. say, "the estimated 500 outstations/homelands, with approximately 10 000 people associated with them and another 40 000 people linked to outstations/homelands" are being stripped of support, Jon Altman et al.: *Why the Northern Territory Government needs to support Outstations/Homelands in the Aboriginal Northern Territory and National Interest*, p. 2.

33 Cf. Robyn McDermott et al.: *Beneficial Impact of the Homelands Movement on Health Outcomes in Central Australian Aborigines*.

34 Cf. Jon C. Altman et al.: *Policy Research Why the Northern Territory Government Needs to Support Outstations/Homelands in the Aboriginal, NT and National Interest*, p. 1.

refer to the health benefits of living close to sacred sites.<sup>35</sup> The critical point is the underlying pattern of people's culture supporting continuity of linguistic types, child-old age care, religious observance, conservation, education, socialisation and arts on Country. All of this is not supported by the state. It is squandering the enormous opportunity and value inherent in the system. These crucial cultural goods and services are provided at virtually no cost by homelands people for the collective benefit of all Australians.<sup>36</sup>

This exceptional system of local connection captured in the language of place and linked to sites and activity on Country comprise the library of, and the medium for intergenerational transmission of the culture of the land.<sup>37</sup> These distinct metaphysical links cannot be replaced with the English language, and therefore land owners' urgent desire to speak their languages.

During the 1990s the opportunity for people to live on their homelands gradually disappeared. Along with dysfunctional agency coordination, unfunded policy, dismantling of useful programs like the Community Development Employment Program (CDEP), punitive programs aimed at 'normalising' Indigenous life worlds undermining the fragile homelands infrastructure.<sup>38</sup> Compulsory English only education was mandated by the Northern Territory education department. In 2007, John Howard's government Intervention introduced a series of measures undermining Aboriginal rights.<sup>39</sup> Homelands children were denied education on the homelands and parents forced to move away into chronically overcrowded community housing.<sup>40</sup> The systemic logic of the Settler State and its disunified administrative functions continue to weaken Indigenous opportunities to pass on their local cultural values, language and inheritance and destroy their economic and political opportunities.

Timid and indecisive investment by the settler state in the carbon economy is following the same ideological patterns as mentioned previously. Land owners are forced to accept significantly diminished opportunities to access Country, inadequate, over governed, and underfunded community services and compromised

35 Bentley James worked on homeland for 25 years. Elders often told him about the spiritual and energetic powers of revivification present in the vicinity of sacred sites.

36 Cf. Glenn James, Bentley James: Saltwater Burning.

37 Decline in the significance of language use and identification impacts a younger generation unfamiliar with their homelands. Homeland life provides strong links of Language to Country.

38 Cf. Jon C. Altman et al.: Policy Research Why the Northern Territory Government Needs to Support Outstations/Homelands in the Aboriginal, NT and National Interest.

39 The health and protection of children was a key justification for the 2007 intervention, but no evaluative framework nor intention, of measuring its effectiveness was made in its 400 odd pages. Its bulk is focused on land tenure changes. Its genocidal intent is now plainly visible, as Pat Anderson, one of the authors of the report, stated publicly that none of the recommendations of the 'Little Children are Sacred' report have been enacted. She correctly predicted, as did others, that the Government's response will result in more children being abused, more domestic violence, higher levels of substance abuse, lower levels of educational attainment, greater marginalisation of the Aboriginal people from broader Australia, worse health outcomes, higher suicide rates and worse employment participation rates. She was correct.

40 Aboriginal Housing Office: National Partnership Agreement in Remote Indigenous Housing.

ability to interact with their Country.<sup>41</sup> These same fiery land owners are resisting cultural annihilation by creatively using the opportunities, like ranger programs and access to a carbon economy, to forward the spirit and practice of their Law on Country. The fledgling carbon economy may well be the last chance they have for the revivification of the homelands and more broadly enhancement of the environmental and cultural values of the Indigenous estate. So where does that leave the extensive historical value and potential continuities in Australia's Indigenous burning practices, engagement with global warming and opportunities to alleviate Indigenous disadvantage more broadly?

### ***Conclusion, Connection, Obligation and the Opportunity to Educate Wider Society***

As we have seen, the key for Indigenous people is the opportunity to re-engage with cultural landscapes and obligations to care for Country. Indigenous opportunities to forward the spirit and practice of the law on Country is of global significance to the history of all mankind. Ancestral connection to Country is a key driver of engagement in savanna burning, a deep unrelenting obligation to care for kin and Country. The ancestrally inherited land, language, songs, dances, ceremonies, and traditions of the people on Country are understood to be elementally connected to them in every way, materially and spiritually. The cultures here engendered over tens of thousands of years of intimate coexistence with the spirit of Country producing culture, language and religious observance in the only known and reliable blueprint for survival in this place. This is a priceless inheritance for all mankind, a jewel of human invention and ingenuity. We must make a wider world aware of the danger of its imminent destruction by ill-considered decisions taken in the settler state institutions. How to shift this ponderous ideologically driven settler logics is a question we cannot answer here but we can look at the opportunities and prospects.

### ***The Scope and Prospects for the Sector***

The Indigenous estate covers more than 20 per cent of the continent comprised of globally significant cultural values and biodiversity. The values created by Indigenous fire management systems have been in operation before 1788.<sup>42</sup> The

41 Closing the Gap in the Northern Territory Monitoring Report January – June 2011, as foreshadowed, school enrolment and attendance has declined from 64.5 per cent in February 2009 to 62.7 per cent in February 2011, despite rapid population growth. Income support recipients have increased from just on 20000 in June 2009 to nearly 24000 in June 2011. Reports of child abuse in Northern Territory Emergency Response (NTER) communities have increased from 174 in 2007–08 to 272 in 2010–11; as have domestic violence reported incidents, from 1612 to 2968. Suicide/self-harm incidents have increased from 109 in 2007–08 to 227 in 2010–11 in NTER communities.

42 Cf. Bill Gammage: *Fire in 1788*; Jon C. Altman et al.: *Policy Research Why the Northern Territory Government Needs to Support Outstations/Homelands in the Aboriginal, NT and National Interest*.



Savanna Burning land management sector currently extends right across the north of Australia. In the near future the collaboration between Indigenous and Western knowledge systems will extend this into Australia's rangelands (between 400 and 600 mm annual rainfall). Other Methodologies are planned to capture sequestration in different rainfall zones and a broader move towards ecosystem services is emerging.

At an organisational level, fire practitioners (often Indigenous rangers) are supported in various ways by a fledgeling second tier of Indigenous organisations, offering various services to the sector. This is set to grow and strengthen in the future, maturing the sector in Indigenous hands (albeit within the policy, law and market mechanisms allowed by the State) and creating a well-connected and a more secure sector, which promotes grass roots, local autonomy, and decision-making on Country by traditional owners.

### ***Two-way Partnerships onto the Future***

As previously mentioned, Indigenous peoples have indissoluble connection to their customary estates. The collaboration between Traditional Owners and skilled partners in the Savanna Burning space is born out of the holistic features of this connectivity and the science and technology from the broader society. From early beginnings based on respect, trust and good will, the burgeoning Indigenous Savanna Burning sector, now worth tens of millions of dollars a year has had to grow on a realisation of common interest where cultural traditions of caring for Country, climate change mitigation and the (carbon) economy momentarily go hand in hand. The sector has proven to be highly successful, maturing support mechanisms around it like cooperative marketing, insurance, developmental support for new projects, industry lobbying, communications and PR, national fora, bespoke monitoring and evaluation models.

The science partnership continues as this carbon-based fire management economy develops new methodologies that account for carbon and GHG benefits in other biomes, and from other outcomes from traditional-style fire management (e.g. Carbon Sequestration mentioned above). The future of this dynamic collaboration with many partners is challenged by the need to secure the opportunity for Indigenous engagement in this economy on their own terms, allowing fire and land managers to grow their cultural knowledge and well-being as well as enjoying the financial advantages.

To this end, the sector, having started with carbon mitigation through fire management, seeks to push the perception of common value across cultures beyond fire and carbon into the more encompassing delivery of Ecosystem Services like biodiversity benefits, water quality, erosion control, feral animal and weed control, natural hazard risk reduction. A deepening collaborative effort is emerging to generate the measures, the methodologies, the policy shifts and markets that will allow a much broader appreciation for the culture, knowledge, skill and connectivity that Indigenous people hold with their land and support for on-Country life projects, including homelands.

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