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## No ordinary company: Arnhem Land Fire Abatement (Northern Territory) Limited

Jon Altman<sup>a</sup>, Jennifer Ansell<sup>b</sup> and Dean Yibarbuk<sup>c</sup>

<sup>a</sup>School of Regulation and Global Governance, The Australian National University, Canberra, Australia;

<sup>b</sup>Arnhem Land Fire Abatement (Northern Territory) Limited, Darwin, Australia; <sup>c</sup>Kabulwarnamy, Arnhem Land, Australia

### ABSTRACT

Arnhem Land Fire Abatement (Northern Territory) Limited (ALFA) is a non-profit company established to make a financial return from savanna fire management. It operates as a charitable entity to ensure that its earnings benefit the Aboriginal landowners of Arnhem Land, many living in deep poverty. ALFA is unusual because it must operate at the intersection of Western and customary domains. It catalyses and supports the carbon emission avoidance activities of Aboriginal ranger groups and traditional landowners, who deploy customary and Western fire-management approaches at a large regional scale. Simultaneously, ALFA manages the Australian Carbon Credit Units that it earns, either selling them under contract to the Australian government or to corporate purchasers, or saving them for later sale. In this article we examine the first five years of ALFA since its establishment in 2015 – its origins and more recent history, its achievements and its governance. We then examine several climatic, financial, environmental and politico-cultural challenges that it faces operating in the Australian carbon and conservation economies. We show from diverse perspectives how, during a late-capitalist period of extreme climatic uncertainty, ALFA has evolved into an established model of sustainable postcolonial possibility, as ‘no ordinary’ company.

### KEYWORDS

Carbon emissions reduction; Aboriginal land rights; savanna burning; corporate governance; postcolonial possibilities

### Preamble

In early March 2020 the directors of Arnhem Land Fire Abatement (Northern Territory) Limited (ALFA) met in person in Darwin. Coordinating the logistics for a meeting of ALFA’s 16 directors, each living in a different remote Aboriginal community in Arnhem Land, is a herculean task at the best of times. The March 2020 meeting finalised the company’s budgets and contracts for the upcoming fire season, covering the 80,000 sq. km of sparsely settled Aboriginal-owned land in Arnhem Land subject to savanna fire management for carbon emissions avoidance. Then COVID-19 pandemic restrictions were imposed, and Arnhem Land was designated a restricted biosecurity zone. ALFA’s annual pre-season fire planning meeting was cancelled and replaced by fortnightly Zoom meetings between directors and staff and Aboriginal ranger groups.

Planning and consultation with traditional landowners were completed as usual and early prescribed burning commenced in April 2020.

The COVID-19 pandemic has not been the only influence on our perspectives as we have collaborated on writing this article. Earlier, on 21 October 2019, as we sat in Darwin in air-conditioned comfort, the city sweltered at over 38 degrees Celsius, the 2nd hottest October day on documented record, highlighting the emerging reality of global warming.<sup>1</sup> We looked intently and nervously at the North Australia Fire Information (NAFI) website as Aboriginal rangers in Arnhem Land struggled in real time to manage late dry-season wildfires that would cost ALFA valuable carbon credits.<sup>2</sup>

The 2019 fire season was one of the most challenging in recent memory for northern, and then subsequently for southern, Australia.<sup>3</sup> In January 2020, 186,000 sq. km of south-eastern Australia was scorched by the Black Summer bushfire disaster and Australia's Top End experienced its second below average wet season in a row, with some of the lowest rainfalls in 80 years of official record keeping.<sup>4</sup> Rapid global warming is an increasing risk for ALFA and its core goal of producing and selling commodified carbon emission reductions. The 2020 fire season will also be challenging as ALFA looks to generate enough carbon credits to meet its multiyear contractual obligations that provide the income stream needed to fund its ongoing fire-management operations.

In March 2020, just before the domestic closure of air travel, we met in person in Melbourne, as one co-author, Dean Yibarbuk, a director of ALFA, made a presentation at the Fire Forum convened by the Institute of Postcolonial Studies,<sup>5</sup> and as ALFA's CEO, Jennifer Ansell, conducted meetings with Melbourne-based carbon brokers. There is growing interest nationally in how and why Aboriginal people burn their country and whether this generates co-benefits for the environment (or 'Country'), for species, the climate and people. This interest has grown with climate change and global warming, and with scientific evidence that seasonal burning practices that accord with Aboriginal tradition reduce greenhouse gas emissions.<sup>6</sup> Following the catastrophic bushfires in south-east Australia, a Royal Commission into National Natural Disaster Arrangements has sought expert evidence, with one of its terms of reference highlighting 'traditional' burning by Aboriginal and Torres Strait Islander peoples.

## Introduction

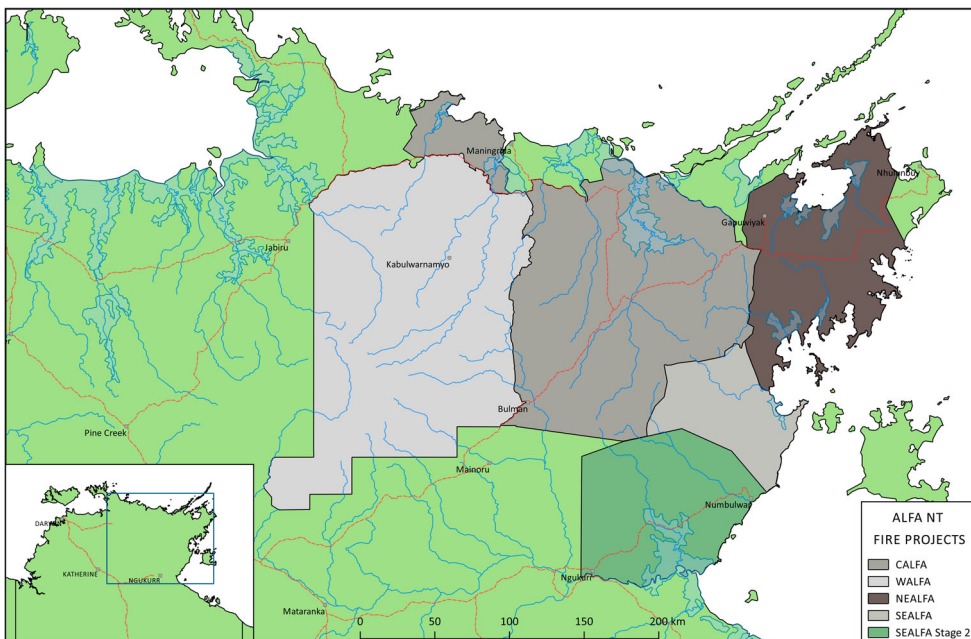
This article relates the story of ALFA, an Aboriginal-owned non-profit carbon business. ALFA was initially established by the traditional landowners of Arnhem Land, in northern Australia, in 2013. ALFA's main aims are to support planned savanna fire management across Arnhem Land and simultaneously to commercially manage and market the remunerated carbon emission reductions this activity generates. ALFA's primary objective, as formally documented in its constitution, is to protect, preserve and care for the environment through abatement of greenhouse gas emissions by means of bushfire-management activities. It has other objects focused on biodiversity conservation, alongside charitable objectives to improve the wellbeing of people with traditional Aboriginal connection to its project areas, alleviating poverty and assisting in education.

The company was established by community-based Aboriginal ranger groups in west Arnhem Land. As in many other areas of northern Australia, Aboriginal ranger groups operate across Arnhem Land to deliver natural and cultural resource management

services; some operate in declared Indigenous Protected Areas, and all use fire management as a landscape-management technique.<sup>7</sup> After extensive consultation with all land-owning groups in the proposed fire project areas, ALFA was granted the legal right to undertake fire management for the purpose of generating and selling carbon credits. Such consultation and agreement are required by the *Aboriginal Land Rights (Northern Territory) Act 1976*. Membership of ALFA is open to any traditional owner of land where ALFA operates. As such, it is at once an alliance and a collaboration between traditional owners and their affiliated Aboriginal ranger group contracted by ALFA to coordinate fire management in accordance with landowner directions.

Nine Aboriginal ranger groups, consisting of traditional owners and their families, undertake all operational aspects of the landscape-scale fire management that occurs in five ALFA project areas. The spatial extent of these projects is illustrated in [Figure 1](#) and the names of Aboriginal ranger groups are provided in [Table 1](#).

ALFA operates as a complex intercultural broker.<sup>8</sup> It initially mediates between the Aboriginal ranger groups, which are contracted to manage fire over their area of operations, in accordance with landowner directions to generate carbon credits. This requires considerable governance and coordination effort across a massive region with limited infrastructure. ALFA then engages with the Australian government's Clean Energy Regulator in a legislated validation process to convert measured and independently verified emission reductions into saleable Australian Carbon Credit Units (ACCUs). Finally, it enters the carbon market, either selling these units to the Emissions Reduction Fund (ERF) or in other markets.<sup>9</sup> Alternatively, ALFA can retain ACCUs in a bank-like



**Figure 1.** Map of ALFA fire project areas (CALFA: Central Arnhem Land Fire Abatement; WALFA: West Arnhem Land Fire Abatement; NEALFA: North East Arnhem Land Fire Abatement; SEALFA: South East Arnhem Land Fire Abatement).

**Table 1.** The five ALFA fire projects registered as eligible offset projects.

Project	Area (sq. km)	Aboriginal ranger groups	Date of carbon trading registration
WALFA	28,000	Warddeken, Bawinanga/Djelk, Mimal, Jawoyn, Adjumarllal	December 2014
CALFA	26,000	Bawinanga/Djelk, Mimal, Arafura Swamp Rangers	December 2014
SEALFA	5,000	Yugul Mangi, Numbulwar Numbarindi	August 2015
SEALFA 2	10,000	Yugul Mangi, Numbulwar Numbarindi	January 2016
NEALFA	11,000	Yirralka	November 2016

Note: the distinction between SEALFA and SEALFA2 refers to the latter being below the 1000 mm per annum rainfall region and subject to a different emission reduction methodology. But the two areas are contiguous, and both are managed by the same two ranger groups.

institution called the Australian National Registry of Emissions Units (ANREU). This tripartite set of highly techno-bureaucratic activities undertaken by ALFA is mandated by Australia's Carbon Farming Initiative legislation of 2011, which created ACCUs as a form of property and crypto commodity.<sup>10</sup>

We begin by very briefly reflecting on three phases in regional fire history. The first is the precolonial period, which saw the use of fire by Aboriginal people to manage the highly flammable Arnhem Land tropical environment. This was followed by a settler colonial period of domination when Arnhem Land was gazetted a reserve, missions and government settlements were established, and such burning practices were actively discouraged by state authorities and so declined. The third period can be conceptualised as postcolonial. This period began when Aboriginal people were granted exclusive ownership of their lands and natural resources (except sub-surface minerals) under land rights law. These new property rights have been reiterated and reinforced by the *Native Title Act 1993*, passed as the statutory response to the High Court Mabo judgment of 1992. The immediate antecedent to ALFA was a globally pioneering endeavour called the West Arnhem Land Fire Abatement (WALFA) project, initiated in the late 1990s, which both piloted carbon emission reductions from savanna burning and advocated for these to be legally recognised. WALFA entered a voluntary agreement with the multinational corporation Conoco Phillips to abate 100,000 tonnes of carbon emissions a year from 2006. Subsequently, after passage of the *Carbon Credits (Carbon Farming Initiative) Act, 2011*, WALFA incorporated as WALFA Ltd, in 2013, and then, as it expanded its operations eastwards across Arnhem Land, its name changed to ALFA, in 2015.<sup>11</sup>

Next, we explore the operations of ALFA and its performance as it expanded its ambit from western to central Arnhem Land and then to southeast and northeast Arnhem Land. We illustrate how ALFA's corporate form and participatory governance allow it to navigate a complex institutional and political environment, and how much of this ability was framed from the earlier experiences of its founders with Aboriginal organisations and environmental enterprises in Arnhem Land. We also reflect on its ongoing attentiveness to build the capacity of its directors to face the many challenges that have emerged.

The authors of this article come from diverse backgrounds: the social sciences, biological sciences and Indigenous fire ecology. As the notes on contributors indicate, we have long associations with each other and with the issues raised. And as our disclosure statement indicates, we openly acknowledge that we are champions of ALFA and the savanna-burning activities that it sponsors and underwrites. Our narrative gives ALFA legal

personality in places, but we are keen to avoid providing some uncritical hagiography of the company. Hence under the broad rubric ‘challenges’, we discuss some of the risks, threats, concerns and critiques of the company’s activities that are emerging. We also outline the steps that ALFA has taken to address those challenges.

Finally, we combine our diverse perspectives to provide an analysis of ALFA as ‘no ordinary’ company, borrowing the title of Nonie Sharp’s book *No Ordinary Judgement* about the long struggle for the recognition of native title that resulted in the successful Mabo High Court judgment.<sup>12</sup> We deploy this idiom to reflect the long struggle, like Mabo, of nearly a decade for the carbon reduction outcomes from controlled savanna burning to be legally recognised; and our view that traditional owners should be empowered to exercise their native title rights and interests to determine how their land is managed postcolonially. We end by reflecting on the symbiotic relationship between savanna burning to reduce carbon emissions and generate income and the growing Caring for Country environmental movement across Arnhem Land. Despite the precarity of the present period and the many challenges ALFA faces, it has proven to be ‘no ordinary’ company, successfully engaging with one very distinct postcolonial possibility.

### The genesis and ancestry of ALFA: one history, three phases

Terrestrial Arnhem Land is a highly flammable region of nearly 100,000 sq. km. In the nineteenth century much of the region was explored by European colonists and parts of it temporarily occupied by commercial cattle enterprises that failed and were then abandoned.<sup>13</sup> It was only in the twentieth century that state and missionary colonisation occurred, along the coastal and terrestrial borders of Arnhem Land, with the interior largely left for continued Aboriginal occupation and use. Even as government policy sought to centralise people in missions and government settlements for assimilation, small groups continued to manage the environment and its natural resources by deploying customary seasonal fire regimes, ‘the *Wurrk* (bushfire) tradition’. Dean Yibarbuk outlines this tradition in a short 1998 essay and in a jointly authored article in 2001.<sup>14</sup> A decade later, linguist Murray Garde collaborated with eight senior Aboriginal interlocutors in dialects of the west Arnhem Land regional pan-dialectal language Bininj Kunwok to provide a comprehensive account of the language of landscape burning on the Arnhem Land Plateau and adjoining savanna woodlands and grasslands.<sup>15</sup> At the core of pre-colonial deployment of fire to manage the environment was the annual seasonal cycle.

To simplify considerably and focus on west Arnhem, the region whose lingua franca and practices we know best and where the emissions reduction initiative began, the annual cycle is divided into six seasons, which have some correspondence to the Anglo-Australian dry and wet seasons: *yekke* (early dry), *wurrkeng* (cool mid dry/fire season) and *kurrung* (late dry) followed by *kunumeleng* (early wet/first rains), *kudjawk* (mid wet monsoon) and *bangkerreng* (late wet/last rains).<sup>16</sup> Customary burning was and continues to be undertaken by people primarily in the early- and mid-dry season as they traverse the landscape igniting fires that generally go out overnight. Such fires create a patchily burnt landscape and natural firebreaks that limit the extent of destructive wildfires in the hot late-dry season when lightning strikes can ignite non-anthropogenic burning. Any such wildfire is only extinguished as it travels into an area with

reduced fuel loads (through earlier burning) or by the onset of monsoonal wet seasons, a fire-free period. The story of the seasonal cycle, fire and the regeneration of vegetation and biodiversity is one that has been related in the scientific and ecological literature many times in recent years.<sup>17</sup>

The colonial period was followed by a change of government policy from the early 1970s. This policy shift to a form of self-determination saw the passage of land rights law and the provision of some limited support for groups seeking to reoccupy their ancestral lands – what became known as the homelands movement. These shifts in approach are open to various interpretations that we will not debate here<sup>18</sup>: We see them as a form of partial decolonisation in a remote region that opened up some new possibilities – forms of intercultural living informed by extant Aboriginal norms and values that emerged even while Aboriginal people remained deeply encapsulated within the juridical and political dominance of the settler colonial state. Repopulation of outstations in some regions demonstrated how the landscape could be managed by people using fire. Conversely, continual depopulation of other regions, especially the massive and relatively inaccessible Arnhem Land Plateau, showed that environmentally destructive wildfires had become a recurring annual seasonal event. This contrast was clearly apparent to Aboriginal landowners when visiting their depopulated estates, and to Western fire ecologists viewing the landscape both on the ground and using remote satellite imagery. Simultaneously, there was growing Aboriginal concern about environmental threats to their repossessed lands from invasive feral animals and exotic weeds. An Aboriginal-led environmental movement, Caring for Country, spread across Arnhem Land (and elsewhere where land was reoccupied) and community-based Aboriginal ranger groups were established from the 1990s.<sup>19</sup> In their management plans each group identifies prescribed burning as a means to manage the environment, and uncontrolled wildfires as a serious threat to biodiversity.

From the late 1990s the West Arnhem Fire Abatement (WALFA) project was established to reduce destructive wildfires in the depopulated Arnhem Land Plateau and surrounding areas. This project was a collaboration between Western scientists, five emerging Aboriginal ranger groups (the WALFA partners in Table 1) and traditional owners. It was initially sponsored by the Natural Heritage Trust, the Tropical Savannas Management Cooperative Research Centre (TSM-CRC) (1995–2009) based at Charles Darwin University, and the new Caring for Country Unit within the Northern Land Council, an Aboriginal statutory authority with responsibilities for managing Aboriginal land in the Top End of the Northern Territory. Research by fire ecologists demonstrated the potential commercial value of carbon abatement that would emerge if Australia was to ratify the Kyoto Protocol. A detailed history of this decade-long development of the globally pioneering WALFA project has been documented elsewhere in a comprehensive volume.<sup>20</sup> This collaboration was predicated primarily on the marrying of remote sensing techniques for measuring emissions reduction with the on-the-ground practice of Aboriginal ranger groups (complemented by the activities of outstation residents) in contemporary burning of the landscape based on seasonality. The customary basis of this fire regime had its foundations in ‘the *Wurrk* (bushfire) tradition’ of west Arnhem Land, as outlined above.<sup>21</sup>

Peter Cooke uses the theoretical construct of ‘social capital’ to explain how over a decade a network of like-minded people laboured to alter the widely held view of

Aboriginal fire management as ‘anarchic pyromania’. Instead that network sought to create a public understanding that early dry season managed burning reduces intensive and uncontrolled wildfires during the late dry season, thus contributing to both biodiversity conservation and carbon emissions reduction.<sup>22</sup> This perspective was promoted by Darwin-based scientific researchers working in collaboration with experienced Aboriginal fire ecologists such as co-author Dean Yibarbuk. It was vigorously marketed to conservation-minded sections of the political and bureaucratic apparatus in Darwin and Canberra and the wider scientific community in an effort to alter perceptions. The crucial role of the decade-long WALFA experiment was, as Cooke notes, ‘the bonding collaborations between blacks and whites working together in the “big laboratory” of Arnhem Land to create the science of fire, fuel loads, and vegetation communities that led to the acceptance of the savanna burning methodologies’.<sup>23</sup> Not to be overlooked, an essential element of this bonding occurred in the Aboriginal domain as traditional owners of numerous discrete land estates voluntarily conjoined their lands into a joined-up savanna-burning environmental commons, initially in West Arnhem.

The energy company ConocoPhillips was developed a plant in Darwin to liquefy natural gas for export and, in exchange for a licence to operate, was required by the Northern Territory government to fund an environmental project to offset its industrial carbon emissions. The company took the risk to select the yet unproven WALFA project as that offset project. From 2006, Darwin Liquefied Natural Gas (DLNG) committed to providing long-term funding of \$1 million per annum (indexed for inflation) under the West Arnhem Fire Management Agreement (WAFMA) to five ranger groups (see [Table 1](#)) to underwrite the cost of maintaining annual controlled burning across 28,000 sq. km of western Arnhem Land. In exchange, the ranger groups were required to generate a minimum annual greenhouse gas reduction of 100,000 tons CO<sub>2</sub> equivalent, against an earlier 10-year calculated baseline, for a 17-year contract period.

WALFA demonstrated what is achievable from a Western scientific carbon accounting perspective. But more significantly, it allowed Aboriginal ranger groups to trial such a project, an opportunity they embraced, thus proving to themselves and others that they could reinstate fire regimes on a landscape scale if financially resourced to do so. Five years later, the Australian government introduced the *Carbon Credits (Carbon Farming Initiative) Act, 2011*, an emissions trading scheme for the creation and trade of a virtual or crypto commodity called an Australian Carbon Credit Unit (ACCU), which is deemed the equivalent of one tonne of carbon dioxide. Now there was a market instrument created for the generation and sale of carbon. At that time, WALFA had already been operating for over five years. The operations of WALFA were the precursor to the official acceptance in 2012<sup>24</sup> by the Australian government of the savanna burning methodology that has since led to the proliferation of over 70 registered savanna-burning projects across tropical north Australia.

### **ALFA’s operations, governance and management: the first five years**

It is straightforward to say that the current ALFA evolved from WALFA; it is far more difficult to track that transformation in the evolving institutional arrangements of the highly politicised climate change debates and ever-changing carbon-trading environment in Australia between 2007 and 2014.



Accompanying the introduction of carbon legislation in 2011, the Australian government established the Indigenous Carbon Farming Fund to assist Indigenous groups to develop and register projects under the *Carbon Farming Initiative Act*. Warddeken Land Management Limited lodged a successful application in 2013 on behalf of the five WALFA partners to fund business and project development activities to assist the formal commercialisation and expansion of WALFA's activity. The WALFA partners wished to maintain the integrity of the WALFA project as well as the relationship between WALFA and DLNG. One requirement of the legislation was that a Recognised Offsets Entity be the legal holder of ACCUs created by the WALFA project. Early meeting notes record the shared vision to create a single and separate legal entity to undertake the future administration and business elements of carbon-trading activity on behalf of all the WALFA partner organisations. Also articulated was the need for such an entity to focus on '*bininj* to *bininj*' (Aboriginal to Aboriginal) communication. Legal compliance required formalisation and completion of land use agreements between the new legal entity and Aboriginal traditional owners under s. 19 of the *Aboriginal Land Rights Act*. This in turn required extensive consultation with landowners, undertaken by a WALFA-appointed team, and staff of the Northern Land Council, to ensure that the new entity was vested with the legal right to undertake fire management for the purpose of generating and selling carbon.

In late 2013 WALFA Ltd was registered as a company limited by guarantee under the Australian Securities and Investment Commission; and in 2015 its name was changed to ALFA to reflect its geographic expansion. This non-profit company was also registered as a charity with the Australian Charities and Not for Profits Commission with tightly defined objectives that required it to allocate its income to meet annual operational costs of fire management in the first instance. Surplus income earned by Aboriginal ranger groups could be allocated to meet other land-management goals, but no cash payments could be made to individuals.

The membership of ALFA is open to any Aboriginal adult who has customary responsibility for the land in its project areas under traditional law. Members are divided into eight membership classes or wards, determined by their Aboriginal ranger group's geographic areas of operations, as illustrated in [Figure 1](#) and outlined in [Table 1](#).<sup>25</sup> Each ward elects two directors to the ALFA Board and so the strategic direction and management of the company are effectively the responsibility of these 16 directors. Directors who can self-nominate or be nominated by members of their ward are elected for three years. A number of these wards correspond to the jurisdictions of Indigenous Protected Areas (IPAs) that have been incorporated into the Australian National Reserve System for their outstanding environmental values. Almost all the ALFA project areas are either within the Warddeken, Djelk, Yirralka and South East Arnhem Land IPAs or in two proposed IPAs (Mimal and Arafura Swamp) that are in the consultation phase and will likely be declared in 2021. In a recent analysis of the management plans of all the Aboriginal ranger groups that are members of ALFA, it was shown that managing the natural environment and biodiversity with seasonal savanna burning is a priority for all Aboriginal ranger groups.<sup>26</sup> But funding from government and non-government sources does not properly cover the high cost of such savanna burning, which requires thousands of kilometres of ground and aerial prescribed burning to be undertaken annually. The annual savanna fire management that occurs in Arnhem Land is resourced through engagement with the carbon market and the savanna burning methodology.

ALFA contracts nine Aboriginal ranger groups to undertake the fire management intended to deliver carbon emissions reductions. This activity in turn generates the carbon credits that, when sold, finance the next round of annual contracted fire management that creates Aboriginal employment. Each ranger group produces a Fire Management Plan for its area and signs a contract with ALFA with an agreed budget for operations. The process is transparent to and agreed by the Board of Directors. Each group then gets a percentage of operational funds up front with additional payments on meeting agreed reporting milestones. The process for generating the carbon credits units requires highly technical calculations. These are undertaken by ALFA using an innovative online programme, the Savanna Burning Abatement Tool (SavBAT). SavBat automates complex Geographical Information Systems (GIS) calculations integrating data from remotely sensed seasonal fire-scar maps, a validated vegetation map of each project area, and information provided by Aboriginal ranger groups on their early dry season prescribed burning. This information is included in an annual Projects Offsets Report and must be audited independently on completion by an auditor listed on the Clean Energy's Regulators Register of Greenhouse and Energy Auditors, before the Clean Energy Regulator allocates ACCUs.

ALFA's operational performance in its first five years can be assessed using many metrics. We focus here on financial performance as summarised in Table 2; and on its ACCU (carbon credit) balance sheet as summarised in Table 3. The two are closely correlated. Other more qualitative metrics that reflects local perceptions of environmental outcomes could also be used.<sup>27</sup>

In Table 2 it is evident that while ALFA's income has fluctuated it has retained sufficient cash reserves to cover its expenditures, which include operational and grant funding to Aboriginal ranger groups, as well maintenance of a buffer (held in ACCUs and cash) equivalent to one year's future contractual commitment. On top of this, each project makes a contribution to the company's operational costs, which mainly consists of a small staff establishment; the direct costs of governance, such as regular board meetings; governance training, which has been contracted in since the company's establishment; and commissioning of independent verification of the company's calculations of carbon reduction, as required under the Carbon Farming Initiative. The total annual costs of running the company are less than 10 per cent of its income.

Of fundamental importance to the company's early ability to operate was the securing of ACCUs for retrospective abatements back to 2011, credited to ALFA in 2015 as a Recognised Offset Entity under one of the earlier iterations of the Savanna Burning Methodology. These retrospective credits recognised the carbon abatement created by

**Table 2.** ALFA total income, expenditure and profit/loss 2015–2019.

Year FY	Income (\$m)	Expenditure (\$m)	Net result (\$m)
2015*	\$7.4	5.6	+\$1.763
2016	\$0.4	0.7	−\$0.3
2017**	\$6.9	7.5	−\$0.6
2018**	\$10.7	10.5	+\$0.2
2019**	\$5.5	6.3	−\$0.8
Total	\$30.9	30.6	+0.2

\*FY 2015 earnings include retrospective abatements to 2011.

\*\* Inclusive of annual payments made under the 2006 WAFMA agreement.

**Table 3.** ALFA's ACCUs verified and ERF commitments 2015–2019.

Year FY	Total ALFA ACCUs	ALFA ACCUs delivered to the ERF	% of total delivered to ERF
2015	635,939*	0	0
2016	402,625	0	0
2017	819,528	204,000	25
2018	810,755	320,000	39
2019	348,347	230,000	66
Total	3,017,194	754,000	25

\* includes retrospective abatements to 2011.

the ALFA projects in the time since the passing of the CFI legislation and prior to project registrations. In enabling projects to backdate their baselines and project start dates, the Australian government both recognised and adequately allowed for the time needed to undertake governance and business development, as well as the extensive consultations needed to gain the free, prior and informed consent of all traditional owner groups in Arnhem Land. In the case of WALFA, it took almost four years to transition to a CFI-compliant entity. The retrospective carbon credits were sold at a premium price under the Labor government of Julia Gillard and its Emissions Trading Scheme. This income provided the critically important upfront capital base for the company in the 2014/15 financial year, which covered the initial operating funding of savanna burning by Aboriginal ranger groups.

Table 3 summarises information about ALFA's total accreditation of carbon credits, distinguishing commitments under 10-year contracts to the Emissions Reduction Fund and carbon credits that can be sold to other markets. Annual accredited carbon credits fluctuate markedly (between 348,347 and 819,528 ACCUs) depending on climatic conditions and the performance of Aboriginal ranger groups. However, in no year to date has ALFA been in danger of facing a shortfall in meeting its long-term contractual obligations to Conoco Phillips and the ERF, as evident when comparing columns 2 and 3 from 2017 in Table 3.

The extent of ALFA's operations year by year can be readily observed remotely on the easily accessible Northern Australia Fire Information website. But more concretely, ALFA's recent narrative annual report for the calendar year 2019 provides grounded information on the activities of each Aboriginal ranger group, as well as the totality of their efforts.<sup>28</sup> It is reported quantitatively, that during the 2019 fire season, 14,326 km of early dry season ground burning using vehicles was undertaken, as well as 52,417 km of early dry season aerial burning deploying incendiaries. In respect of aerial burning, 177 traditional owners of the country being burnt accompanied helicopter pilots and Aboriginal rangers to direct the effort in accord with their local knowledge and customary authority. Ranger work in the late dry season focused on wildfire suppression, with 97 wildfires being fought in 2019, requiring nearly 10,000 personnel hours and using a variety of fire-fighting tactics. Owing to unusual highly localised climatic conditions, a record 53 of these wildfires were located just within the Warddeken region (Arnhem Land Plateau), and were being ignited by lightning till year's end. All this activity is recorded by rangers using Cybertracker software, Global Positioning System (GPS) way points, flight records, data sheets and work diaries. Further research revealing the points of view of traditional owners on these practices and their socio-environmental impacts is currently underway.

ALFA has been successful in meeting its contractual obligations in the last five years owing to its sound and participatory governance model and astute management. At the heart of its success is a constitution that is skilfully and collaboratively designed for purpose. Its drafters were individuals well-versed in managing Aboriginal corporations and cognisant of the need to adhere to principles of self-determination and project ownership to ensure that key Aboriginal traditional owners were deeply engaged in the design of their company. As with the earlier WALFA, a combination of committed Indigenous and non-Indigenous conservation and business entrepreneurs crafted a constitution carefully designed to avoid any pitfalls around financial management and corporate governance. Indeed, the multiple regulatory regimes under which ALFA operates, including the Australian Securities and Investment Commission, the Australian Charities and Not for Profit Commission and the Clean Energy Regulator impose multiple levels of external accountability that require a high level of company discipline and compliance vigilance.

Of critical importance is the inclusiveness of the company offering membership to any traditional owner within its 80,000 sq. km area of operation. As noted earlier, membership nomination requires affiliation with one of eight membership classes or wards demarcated by the jurisdictions of each Aboriginal ranger groups. And each membership ward must elect two directors to the board. ALFA has an Aboriginal board representative of all its areas of operations – a devolved ‘bridging’ form of social capital<sup>29</sup> across a considerable geographic jurisdiction. The ALFA area of operations can be conceptualised as a carbon commons that has resulted from the traditional owners of Arnhem Land combining their clan estates, each held under a restricted common property regime, and binding them to a common purpose.<sup>30</sup> Such collaboration at once recognises the need for joined-up Western forms of company governance alongside the enduring customary pressures for localism and regional representation – especially as traditional owners of each membership ward use different Aboriginal languages or dialects and have diverse forms of social organisation. One of the co-authors, Dean Yibarbuk, is a member of one region (although he has traditional ownership rights in another) and would be reluctant to speak for traditional owners of others, in accord with extant Aboriginal custom. But such representation across the region is of crucial importance given that the five project areas (and nine Aboriginal ranger groups) are contiguous, and effective savanna burning for emission avoidance requires collaboration and cooperation in planning and execution.

ALFA’s commitment to sound participatory governance<sup>31</sup> has seen it engage a long-term associate, Paul Josif, the principal of Savvy Community Development Consulting, to facilitate all its board meetings; and to engage in an ongoing programme of capacity building. A detailed Policies and Procedures Manual provides comprehensive guidance to directors, not just in relation to their roles and responsibilities but also about the division of responsibilities between directors and management, and between directors and each Aboriginal ranger group. The directors focus on strategic direction, leadership and the culture and values of the organisation while the CEO is delegated authority to run the company. Anything that sits outside of business as usual – such as new projects, new partners and long-term financial agreements – is subject to resolution by the board.

Considerable attention is focused on financial management and income distribution. The former sees operational and grant funding closely linked to commitments made in annual fire-management plans and the requirement to provide reporting information to

ALFA in a timely manner. The latter varies between projects and is dependent on whether the project is a collaborative project (that is, where there is more than one ranger group operating a single project). For WALFA and CALFA (with five and three partners respectively) the income is distributed in accordance with a formula that accounts for each group's contribution to baseline emissions. To date all these distributions from ALFA have occurred amicably, without any recourse to dispute resolution.

All involved in the ALFA project are cognisant of the reality of 'two laws' or 'two ways' that permeates and complicates all aspects of politics in contemporary Arnhem Land<sup>32</sup> – there are numerous overlapping institutional and jurisdictional spheres across a plethora of functional areas, with conservation and carbon emissions avoidance being just two. Even ALFA's five project areas and nine Aboriginal ranger groups take a variety of corporate forms, with the one critically important commonality being that all of Arnhem Land is Aboriginal-owned and subject to management rights and responsibilities that accord with extant Aboriginal tradition and recognised in land rights and native title laws. And so, in all its activities, ALFA, as 'no ordinary' company, must continually traverse two domains.

ALFA manages this difficult task in part by delegating authority for much of its Western 'business' and carbon accounting work to its CEO, a co-author of this article. With science qualifications in ecology and natural resource management and a long history of engagement with many of the ranger groups in Arnhem Land, she supports the company in three crucial tasks: the management and reporting of information systems for the verification of emission reductions; the marketing of ACCUs; and, most importantly, the maintenance of governance relationships within the ALFA membership. The stability that ALFA has enjoyed in its small staff establishment over the last five years has been important. Jointly, the board and management have pursued a prudent, low-risk strategy that has seen it bed down as a company in an emerging industry in which the 'rules of the game' remain volatile. ALFA is no ordinary company because it has taken entrepreneurial initiative beyond business as usual: without ALFA and the level of fire management it underwrites there would be limited improvement in today's historically high emissions from unmanaged wildfires, and traditional landowners would have missed out on the opportunity to manage savanna burning on their lands to earn carbon credits. In the process, ALFA's activities have arguably made Arnhem Land a net exporter of carbon credits, well beyond the carbon emissions generated by its estimated 18,000 Aboriginal and 4,000 non-Aboriginal residents.<sup>33</sup>

## Emerging challenges

When ALFA was being established it was required to develop a business plan for consultations with traditional owners when seeking their free, prior and informed consent. The plan was prepared by interim CEO Ian Munro, who identified four threats and six risks.<sup>34</sup> Five years on some of these threats and risks remain, and new concerns and critiques of prescribed fire management in the tropical savanna have emerged. We group these under four headings: climatic, financial, environmental and politico-cultural challenges.

On *climatic challenges*, in the past 13 years, Australian governments have overseen the development of two very different emissions reduction schemes. The first, which operated from 2011 to 2014, was an emissions trading scheme, funded by polluters. The

second is an emissions reduction or avoidance scheme, operating since 2014, and funded by taxpayers. The aim of both is to avoid emissions and help Australia meet its Kyoto and now Paris targets and so assist in addressing the looming crisis of global warming. It is paradoxical that during ALFA's first five years of operation, as it has reduced emissions by over 3 million tonnes of carbon dioxide equivalents, northern Australia has experienced rising temperatures that are predicted to escalate.<sup>35</sup> We recognise climate change will generate additional challenges for Aboriginal ranger groups, especially in the costly and labour-intensive task of wildfire suppression during the late dry season. The last two years demonstrate that under increasingly challenging climatic conditions fire management becomes even more critical as a landscape-management tool. With escalating global warming and seasonal unpredictability, fire management will inevitably prove more resource intensive, and more costly to manage.

We note in passing that the climatic challenge could be exacerbated by the risk that exotic weeds, like the tall, dense and highly inflammable gamba grass (*Andropogon gayanus*), pose for fire management.<sup>36</sup> Exotic weed infestations threaten the burning practice informed by customary ecological knowledge that predates such invasive species. Ensuring that project areas remain exotic weed free is an ongoing and critical challenge requiring continual vigilance by Aboriginal ranger groups.

These threats could combine to create a *financial challenge* for the company. This is especially the case as returns from the sale of carbon credits already fail to match the total economic cost of their production. ALFA contracts existing Aboriginal ranger groups to undertake the on-ground activities of prescribed burning and wildfire suppression with the cost of the operation of functional remote ranger bases largely underwritten by the Australian government's Indigenous rangers programme<sup>37</sup> and a range of other sources, including environmental philanthropy. The emission reductions additionality that ALFA can deliver, funded by its operational allocations, is thus cross-subsidised by the Aboriginal ranger groups. Savanna burning delivers real and permanent avoided carbon emissions. But this is an expensive eligible activity that requires resource-intensive annual work (mainly owing to the necessary use of vehicles and helicopters) compared to other approved methods. Unfortunately, the market price for ACCUs, including issuance from the reverse auction (lowest-bid) Emissions Reduction Fund, does not reflect the relatively high cost of working in remote and rugged environments. There is an ongoing risk for ALFA that the escalating marginal cost of producing ACCUs owing to changes in seasonality, global warming and vegetation will exceed the income generated from their sale, especially under current lowest-cost abatement policies.

ALFA's operations reduce carbon emissions and deliver an environmental good in terms of climate change mitigation. The *environmental challenge* for savanna burning is somewhat differently based on an expectation that biodiversity benefits are also generated. Marcus Barber and Sue Jackson have recently undertaken a comprehensive review of the literature, identifying and categorising co-benefits generated by Indigenous environmental-management programs in Australia.<sup>38</sup> Their analysis proposes a framework that includes environmental; health and well-being; social; cultural; political; and economic co-benefit categories. We do not propose to undertake a comprehensive analysis here of co-benefits from savanna burning. But we note that there is a clear expectation embedded in ALFA's constitution that its carbon reduction activities will generate environmental, biodiversity, cultural, socioeconomic and educational co-benefits.<sup>39</sup>

A recent article by ALFA and Aboriginal ranger groups analyses the fire-management aspirations of traditional owners as interpreted by these groups (who all include land-owners).<sup>40</sup> These aspirations are drawn from management plans and are summarised as a desire to continue the healthy fire management of country; see fewer wildfires; protect biodiversity; protect culturally important sites; maintain and transfer knowledge; and create carbon abatements. This indicates that for Aboriginal ranger groups, carbon avoidance is a lower order priority than other goals; and that the reduction of carbon emissions is seen as a means to an end rather than an end in itself. This matches ALFA's goals.

Another article by biological scientists asks whether savanna burning for emissions reduction is compatible with biodiversity conservation.<sup>41</sup> The authors argue that biodiversity co-benefits from environmental management with fire in the tropical savanna biome are assumed rather than demonstrated. They suggest that far better accounting is required of how biodiversity is responding to changed fire management undertaken on a regular annual basis to ensure that there are no unintended consequences, which they term 'bioperversity'. It is noteworthy that while making these observations, these authors accept that late dry season wildfires are destructive, with poor outcomes for country and biodiversity. But with wildfires now largely reduced through the implementation of fire-management regimes across much of northern Australia, these scientists are now advocating for more nuanced analyses of the effects of annual fires. Several solutions are proposed, including better monitoring of species likely to be impacted by fire timing, and the protection of fire-sensitive vegetation from annual burning.

We do not seek to comprehensively address such concerns here but make three observations. First, we concur that greater biodiversity monitoring would allow for better accounting of the environmental impact of savanna burning. But such monitoring is expensive and rarely funded by government. We are all too aware of this as two of us are currently involved in fund-raising efforts for the *mayh* (animal species) monitoring project being undertaken on the Arnhem Land Escarpment by Warddeken Land Management Limited. This project addresses the broader question of whether Warddeken's resource management strategies (including prescribed burning) are impacting positively on biodiversity.<sup>42</sup> Early results are promising. Warddeken's leadership in this area might see more widespread monitoring practice for all undertaking savanna burning.

Second, we note that the fire history data on the North Australia Fire Information site clearly shows what happens in the tropical savanna without planned burning. Indeed, it was on the back of evidence of late dry season wildfires, especially in uninhabited areas, that the case for the rigorous savanna burning methodology was based. In relation to ALFA's fire projects, there is no empirical evidence that savanna burning for carbon credits is having unintended negative consequences. The relevant counterfactual question is, what would be the impact of annual wildfires without prescribed burning? The historic baselines provide the answer – unacceptably high destruction of biodiversity.

Third, we caution that diplomacy is needed in raising such difficult questions to avoid reigniting debates between Aboriginal landowners and environmentalists that have historically marred relations between them.<sup>43</sup> There is something a little colonial in emphasising these legitimate concerns from a Western scientific context without adequate regard to the views of Aboriginal ranger groups. We say this at the same time as being acutely aware that in the Arnhem Land context it has been collaborations between

Western scientists and Indigenous landowners and practical ecologists over many years that has resulted in the pioneering savanna burning methodology. It is inequitable, in our view, to sheet home the onerous and expensive burden of proving biodiversity ‘co-benefits’ from savanna burning to under-resourced Aboriginal ranger groups.

Finally, we turn to what we term *politico-cultural challenges*, the possibility that traditional landowners will become disaffected with savanna-burning projects. We note at the outset that extensive and expensive consultations were conducted with key members of about 300 land-owning groups to garner their free, prior and informed consent to savanna burning on their land. This process was overseen by legal and anthropological staff of the Northern Land Council and consent was provided for a period of seven plus seven years, with some projects now into the second period. We also note that the membership of ALFA is open to all traditional owners of project areas. And while ALFA has the exclusive rights to claim carbon credits for project areas, it has no authority to challenge the right of traditional owners to burn their country for customary or other purposes. As a rule, the seasonal burning by the traditional owners of occupied landscapes is complementary to the fire programs of ranger groups. But this is not always the case, as demonstrated with some of the fires lit in October 2019 by traditional owners on their country (referred to in the preamble).

It is important to recognise the rare instances of dissent. Some landowners believe that the outcomes from aerial incendiary burning are inferior to outcomes from fine-scale seasonal ground burning that replicates pre-colonial practice. We concur that the social, cultural and environmental benefits of being on country are enhanced with labour-intensive ground burning undertaken by walking, but this requires year-round occupation of the land and walking considerable distances to create fire lines. The unfortunate reality is that such an approach on its own is currently impractical over the 80,000 sq. km of Arnhem Land.

Some dissent might reflect intergenerational tensions over authority between senior landowners and a younger generation of Aboriginal rangers; or customary tensions between the valorisation of landowner autonomy, the highly valued right to do as one wishes on one’s land, and the contemporary need for planned burning to be undertaken seasonally. Elodie Fache and Bernard Moizo, for example, report tensions between the Yugul Mangi Rangers and traditional landowners in southeast Arnhem Land over perceived inappropriate prescribed burning.<sup>44</sup> But their reporting predated the establishment, with traditional owner approval, of the South East Arnhem Land registered project.

Coming from an anthropological perspective and focusing on ‘power relations and ambivalences’, Fache and Moizo raise a similar question as the Western biological scientists and some traditional owners, asking if contemporary burning regimes contribute to positive ecological outcomes, ‘caring for country’. In their research they also trouble the idea that while contemporary savanna burning is informed by traditional knowledge and practice, it is operationalised in a very different postcolonial context of global warming, climate change and a carbon economy. This is an issue that also concerns some traditional owners: to what extent is tradition embedded in contemporary fire regimes that are highly dependent on modern technology? A response to such concerns is proposed in considering similar issues raised by Aaron Petty, Vanessa deKoninck and Ben Orlove, whose research in Kakadu National Park indicates that traditional owners feel marginalised by fire-management regimes dominated by Western scientific and



technocratic discourse. With specific reference to WALFA, they ask if Aboriginal ranger groups will be able to retain control and some degree of autonomy over fire-management programs committed to meet emissions reductions underwritten by a funding model measured by complex emission accounting methods.<sup>45</sup>

The answers are twofold. First, ALFA's highly participatory governance model recognises that individual traditional owner groups retain primary and autonomous rights on their clan estates. Ultimately, any traditional owner group can exercise their statutorily guaranteed customary right to burn. Traditional owner groups also direct their affiliated Aboriginal ranger programs in terms of appropriate fire management on individual estates. If traditional owners are disaffected, they can activate dispute resolution mechanisms in ALFA's constitution and/or exercise their legal right not to renew s.19 land use agreements at the completion of the current agreement period. To date there is no indication that this will happen. Second, in planning processes, ALFA and Aboriginal ranger groups clearly manage the commodification of savanna burning; such controlled commodification is evident in the conservative limits that have been set on current long-term sales contracts.

### **ALFA as postcolonial possibility: three perspectives**

Arnhem Land is an unusual jurisdiction in the Australian settler colonial context. Its nearly 100,000 sq. km is all Aboriginal owned, and over 80 per cent of the population is Aboriginal. Despite this exclusive land ownership, Indigenous people in this region are still living in deep poverty by the standards of the encapsulating society and economy, with over 50 per cent of the population recently estimated to live below the poverty line.<sup>46</sup> But this land has high environmental values; and extractive forms of capitalism only operate at the western and eastern extremities of Arnhem Land, a uranium mine to the west due for closure in 2021, and bauxite mines to the east at Gove due for closure in the next decade. The coverage of almost all of Arnhem Land by Indigenous Protected Areas attests to the region's high conservation values according to global criteria, which in turn raises questions about how these values might be converted into livelihood benefits that accord with the aspirations of landowners. While in the Australian context Aboriginal landowners residing in Arnhem Land lack political sovereignty, they do exercise a degree of economic jurisdiction, represented by their property rights in the land and natural resources; and statutory regimes are in place requiring traditional owners' consent to any development. In our view, such economic jurisdiction opens a degree of postcolonial possibility, with one such possibility represented by the carbon farming activities of ALFA. In the past five years ALFA has earned \$31 million through the sale of a 'crypto' commodity, ACCUs, to the Australian government and in other carbon markets. Almost all of ALFA's income has been provided to Aboriginal ranger groups to create new jobs and facilitate enhanced savanna-burning regimes. We make these comments for two reasons. First, ALFA is an exemplar of how Aboriginal property rights in emission avoidance can be financialised by a wholly owned Aboriginal company. Second, we note that while ALFA's operations represent a form of postcolonial possibility, they alone will not provide the solution to the livelihood needs of all – carbon reduction will be just one activity in a suite if there is to be a significant impact on contemporary poverty.

ALFA's performance to date, and prospects, can be assessed according to several perspectives beyond that of financial viability, the dominant metric applied to for-profit companies. We seek to briefly provide three alternative perspectives on postcolonial possibility from Indigenous, ecological and developmental standpoints that reflect our diverse expertise (see Notes on Contributors).

The Indigenous perspective indicates that the membership and board of ALFA and the Aboriginal ranger group partners with whom the company contracts and collaborates are highly supportive of its activities. ALFA revenue facilitates the management of country with fire, especially empty country that has experienced landscape-scale destructive wildfires. For example, the early resourcing of WALFA from the corporate sector provided funds that facilitated the repopulation of what had been termed 'orphaned' country. The emotion that the term 'orphaned' evokes reflects Aboriginal sadness for country that is abandoned and unloved in the highly relational worldview of the *Bininj* people. Orphaned country is uncared for and unkempt country, while involvement in savanna burning affords an opportunity to 'care for country' with judicious seasonal burning. As people who now live on and visit country, many Aboriginal landowners, especially those working as rangers, have deep ecological and local experiential knowledge of the many co-benefits generated by prescribed burning. Earnings from the sale of ACCUs facilitate employment and residence on country, and provide future pathways that will see the transfer of ecological knowledge from the current generation to the next. This is an imperative for many who saw Indigenous forms of ecological knowledge jeopardised during the disempowering colonial era. ALFA today is empowering contemporary Aboriginal values and aspirations to retain the cultural and environmental values of the land using an age-old tool, managed fire, as well as new tools for landscape burning and fire suppression. ALFA's 'fire money' also funds essential programs and equipment that assist broader environmental work, such as weed control, which also helps manage wildfires.

From a Western ecological perspective, fire management in Arnhem Land resourced through ALFA's engagement with the carbon industry, has successfully addressed the prevalence of hot, widespread and destructive wildfires in the landscape – a threat to the environmental assets of northern Australia recognised in both Aboriginal and Western science knowledge systems.<sup>47</sup> A significant challenge for the future will be maintenance and continued improvement in fire management, particularly in the face of climate change. Climate change projections in northern Australia include an increase in the number of extreme heat days alongside an increase in the intensity and frequency of droughts, changes to freshwater availability and a loss of freshwater ecosystems.<sup>48</sup> All these impacts will have considerable effects on fire behaviour in the landscapes in which the savanna-burning projects operate, and will likely make landscape-scale fire management more challenging and resource intensive. However, it will be more critical than ever for fire management to persist and adapt to these changing conditions to support the resilience of natural systems in response to climate change. In the longer term, governments may need to more realistically underwrite the escalating costs of such activities or price ACCUs differentially to more accurately reflect the cost of their production.

The successful operation of the savanna-burning projects in Arnhem Land, and the development of the Aboriginal carbon industry more broadly, clearly illustrate an environmental-management opportunity. In under ten years, engagement with this

opportunity has grown not only within Arnhem Land but across Aboriginal and non-Aboriginal land in northern Australia.<sup>49</sup> Are there other possibilities for ALFA to engage in continued modifications of carbon accounting methods, as well as the development of other environmental market-based instruments to effect and maintain positive environmental change? Regarding emissions reduction, recent policy discussions and analysis of future opportunities focus around making existing industries more energy efficient, and this is indeed important. However, there are also opportunities for emissions avoidance that are not covered by approved methodologies. For example, the reduction of feral ungulate animal herds (like buffalo) in northern Australia would create significant opportunities for emissions reduction as well as improvements in environmental condition.<sup>50</sup> However, the emissions from feral animal herds are not currently included in Australia's National Greenhouse Gas Inventory. Specifically, in relation to savanna burning, there are also existing and additional sequestration methodologies recognising and accounting for the carbon storage in dead organic matter and living biomass associated with changed fire regimes away from wildfires. It is estimated that these methods could considerably increase the supply of carbon credits to registered fire projects.<sup>51</sup>

From the perspective of Indigenous-led development, and given the ongoing failure of mainstream forms of development to meet the livelihood needs of people in Arnhem Land, ALFA's activities represent an important alternative. Here we see people deploying their land ownership and native title rights and interests for the wellbeing of individuals, families and communities. This exercise of rights is predicated on carbon credits being legally recognised as a form of property, and an Indigenous-owned and -controlled company being entrusted with the monopoly right to engage in savanna burning in the interests of its members. Twenty years ago, an ALFA-like project was already being promoted as an important element of hybrid forms of productive economy that deploy customary knowledge and rights alongside engagement with the state and the market.<sup>52</sup> Initially WALFA engaged with multinational corporation ConocoPhillips on an offsets basis. Later, the Australian government came to the party. This slow process has allowed Aboriginal stakeholders in ALFA to incrementally engage with the controlled commodification of carbon credits, now sold into several markets. ALFA's developmental success has been based on an active collaboration between landowners, Aboriginal ranger groups and non-Indigenous science experts and entrepreneurs. While ALFA will not be the sole source of livelihoods for all landowners in Arnhem Land, it is making a positive difference. Fundamental to its operations to date is a corporate structure carefully crafted to ensure the commitment of income to environmental goals. The specific Indigenous form of participatory governance that guides ALFA's operations, always cognisant of landowner authority, is fundamental to its ability to support forms of Aboriginal-led development focused on conservation.

## Conclusion

We began this article with a preamble that reflected on recent evidence of rapid climate change and the 2020 Black Summer bushfires in southeast Australia; it is estimated that 650 million to 1.2 billion tonnes of carbon dioxide were added into the atmosphere by these bushfires to Australia's annual emissions of 531 million tonnes.<sup>53</sup> ALFA at best

is reducing measured emissions by 800,000 tonnes per annum and its future sequestration activities might add several times that amount in recognised carbon storage. This is a fraction of what is needed to avert climate disaster, but it is a contribution by an Aboriginal-owned company commodifying savanna burning in a controlled way, and deploying a mix of customary Aboriginal expertise in conjunction with late-capitalist technology to manage fire and monitor outcomes. Postcolonial possibility emerges from the ability of this ‘no ordinary’ company to build upon the ‘no ordinary judgment’<sup>54</sup> of the High Court in *Mabo* and earlier land rights law to generate environmental, social, cultural and economic benefit for its members. ALFA does this by organising the carefully planned production and sale of a recently recognised legal form of property: ‘carbon credits’. Despite the unprecedented uncertainties of the present and the many challenges it faces, ALFA is an actually existing and quite extraordinary company. It benefits from an emerging postcolonial possibility in the form of payment for savanna burning that it has been instrumental in developing, establishing and now successfully operating in twenty-first-century Australia.

## Notes

1. Available at: <https://www.9news.com.au/national/darwin-has-second-hottest-day-at-38-2c/02715498-52fa-44c5-8352-dd625d06c20f> (accessed 20 May 2020).
2. The North Australia Fire Information site was developed by Peter Jacklyn of Charles Darwin University as a ‘real time’ fire tracking tool, providing satellite maps of active fires and comprehensive information on fire history over the past 20 years across the north. See <https://www.firenorth.org.au/nafi3/> (accessed 20 May 2020).
3. Jennifer Ansell ‘Challenging 2019 Fire Season: ALFA NT’, *Land Rights News Northern Edition*, December 2019/January 2020. Available at: <https://www.nlc.org.au/uploads/pdfs/LRN-WEB-DEC-2019.pdf> (accessed 10 June 2020).
4. Available at: <https://www.abc.net.au/news/2020-04-24/dry-in-the-top-end-of-australia-and-rain-expected-in-the-south/12172258> (accessed 20 May 2020).
5. See recording at [https://www.youtube.com/watch?v=6L\\_KAZqNWKQ&feature=emb\\_title](https://www.youtube.com/watch?v=6L_KAZqNWKQ&feature=emb_title) (accessed 20 May 2020).
6. Jeremy Russell-Smith, Peter Whitehead and Peter Cooke (eds), *Culture, Ecology and Economy of Fire Management in Northern Australian Savannas: Rekindling the Wurrk Tradition*, Melbourne: CSIRO Publishing, 2009.
7. Jon Altman and Sean Kerins (eds), *People on Country, Vital Landscapes, Indigenous Futures*, Sydney: The Federation Press, 2012.
8. The term ‘intercultural’ is used to reflect that contemporary Aboriginal social norms, even in remote Arnhem Land, comprise a mix of customary and Western social norms and values. See Melinda Hinkson and Ben Smith, ‘Introduction: Conceptual Moves Towards an Intercultural Analysis’, *Oceania* 75(3), 2005, pp 157–166.
9. There are currently five markets: the ERF; the secondary market (selling to someone else to fill their ERF contract); the safeguard mechanism, any polluters that go over their safeguard baseline; the voluntary market; and to companies stockpiling.
10. Section 150 of the *Carbon Credits (Carbon Farming Initiative) Act 2011 (CFI Act 2011)*. This section resolves long-standing questions about who holds property rights in carbon abated.
11. Originally WALFA was conceived by scientists at the Darwin-based Tropical Savanna Management Cooperative Research Centre as an Arnhem Land-wide project to abate a minimum 300,000 tonnes of carbon annually. But after failing to garner support from the Australian Greenhouse Office, the project was spatially scaled back and instead sought to attract corporate support.

12. Nonie Sharp, *No Ordinary Judgment: Mabo, the Murray Islanders Land Case*, Canberra: Aboriginal Studies Press, 1996.
13. There was diverse contact experience across this massive region. In southern Arnhem Land and in the gulf country that borders the pastoral zone there was considerable frontier violence, as outlined in Tony Roberts in *Frontier Justice: A History of the Gulf Country to 1900*, Brisbane: University of Queensland Press, 2005.
14. Dean Yibarbuk, 'Notes on Traditional Use of Fire in Upper Cadell River', in Marcia Langton (ed.), *Burning Issues: Emerging Environmental Issues for Aboriginal People in Northern Australia*, Darwin: Centre for Indigenous Natural and Cultural Resource Management, Northern Territory University, 1998, pp 1–6. 1998 and Dean Yibarbuk, Peter Whitehead, Jeremy Russell-Smith, Donna Jackson, Charles Godjuwa, Alaric Fisher, Peter Cooke, David Choquenot and David Bowman, 'Fire Ecology and Aboriginal Land Management in Central Arnhem Land, Northern Australia: A Tradition of Ecosystem Management', *Journal of Biogeography* 28, 2001, pp 325–344.
15. Murray Garde in collaboration with Bardayal Lofty Nadjamerrek, Mary Kolkkiwarra, Jimmy Kalarriya, Jack Djandjomerr, Bill Birriyabirriya, Ruby Bilindja, Mick Kubarkku and Peter Biless 'The Language of Fire: Seasonality, Resources and Landscape Burning on the Arnhem Land Plateau' in Jeremy Russell-Smith, Peter Whitehead and Peter Cooke (eds), *Culture, Ecology and Economy of Fire Management in Northern Australian Savannas: Rekindling the Wurrk Tradition*, Melbourne: CSIRO Publishing, 2009, pp. 85–164.
16. Garde et al. 'The Language of Fire', p 95; Chris Haynes, 'The Pattern and Ecology of Manwag: Traditional Aboriginal Fire regimes in North-central Arnhem Land', *Proceedings of the Ecological Society of Australia*, 13, 1985, pp 203–214; Jon Altman, *Hunter-Gatherers Today: An Aboriginal Economy in North Australia*, Canberra: Australian Institute of Aboriginal Studies, 1987, p 25.
17. Jeremy Russell-Smith, Peter Whitehead and Peter Cooke, *Culture, Ecology and Economy of Fire Management in Northern Australian Savannas*.
18. See Nicolas Peterson and Fred Myers (eds), *Experiments in Self-Determination: Histories of the Outstation Movement in Australia*, Canberra: ANU Press, 2016.
19. For Indigenous and non-Indigenous perspectives on this movement, see Jon Altman and Sean Kerins *People on Country*.
20. Russell-Smith, Whitehead and Cooke *Culture, Ecology and Economy of Fire Management in Northern Australian Savannas*. The three co-editors were key proponents of WALFA, with fire ecologist Jeremy Russell-Smith; biological scientist Peter Whitehead; and Peter Cooke, who initiated the Caring for Country Unit at the Northern Land Council.
21. For another historical accounts, see Aboriginal and Torres Strait Islander Social Justice Commissioner, 'Study: Western Arnhem Land Fire Management', in *Native Title Report 2007*, Report No. 2, Sydney: Human Rights commission, 2008, pp 257–275.
22. Peter Cooke, 'Social Capital and the Creation of an Innovative Environmental and Cultural Enterprise in Arnhem Land', in Jeremy Russell-Smith, Glenn James, Howard Pedersen and Kamaljit Sangha (eds), *Sustainable Land Sector Development in Northern Australia: Indigenous Rights, Aspirations and Cultural Responsibilities*, Boca Raton, FL: CRC Press, 2019, pp 120–123.
23. Cooke, 'Social Capital', p 121.
24. Carbon Credits (CFI) (Reduction of Greenhouse Gas Emissions through Early Dry Season Savanna Burning – 1.1) Methodology Determination in 2013 by the Gillard government and then the Carbon Credits (CFI – Savanna Fire Management – Emissions Avoidance) Methodology Determination in 2015 by the Abbott government.
25. A minor difference is the SEALFA IPA that has two Aboriginal ranger groups and so the membership class is the IPA jurisdiction not the area delineated by the operational jurisdiction as is the case with the other seven Aboriginal ranger groups.
26. Jennifer Ansell, Jay Evans, Adjumarllal Rangers, Arafura Swamp Rangers, Djelk Rangers, Jawoyn Rangers, Mimal Rangers, Numbulwar Numburindji Rangers, Warddeken Rangers, Yirralka Rangers and Yugul Mangi Rangers 'Contemporary Aboriginal Savanna

- Burning Projects in Arnhem Land: A Regional Description and Analysis of the Fire Management Aspirations of Traditional Owners', *International Journal of Wildland Fire* 29, 2020 pp 371–385.
27. See Ansell et al., 'Contemporary Aboriginal Savanna Burning Projects'.
  28. Arnhem Land Fire Abatement (NT) Limited, *Annual Report 2019*, Darwin: ALFA, 2020.
  29. Robert Putnam, *Bowling Alone*. New York: Simon and Schuster Paperbacks, 2000.
  30. The Arnhem Land Aboriginal Land Trust is an unusual form of inalienable freehold title whereby traditional owners of patrilineal clan estates have primary collective authority over what happens on their land. We use the term 'limited common property' in the sense that insiders can exclude outsiders but insider rights are held in common. See Carol Rose, 'Economic Claims and the Challenges of New Property', in Katherine Verdery and Caroline Humphrey (eds), *Property in Question: Value Transformation in the Global Economy*, Oxford: Berg, 2004, pp 275–295.
  31. For an extended discussion of participatory governance models, see Joel Krupa, Lindsay Galbraith and Sarah Burch, 'Participatory and Multi-level Governance: Applications to Aboriginal Renewable Energy Projects', *Local Environment* 20(1), 2015, pp 81–101.
  32. See, for example, Nancy Williams, *Two Laws: Managing Disputes in a Contemporary Aboriginal Community*, Canberra: Australian Institute of Aboriginal Studies, 1987.
  33. A third, which receives little attention, is that the carbon abatement activity of the producer groups in the ALFA consortium more than offsets all of Arnhem Land's non-industrial anthropogenic carbon emissions by an estimated 20,000 people, even when calculated using the average Australian per capita carbon footprint of about 26 tonnes per capita per annum.
  34. Ian Munro, 'ALFA (NT) Limited Business Plan 2015–2019', unpublished consultancy report, Darwin: ALFA, 2014.
  35. Elizabeth Hanna and Mark Ogge, *Cooked with Gas, Extreme Heat in Darwin*, Canberra: The Australia Institute, 2018. Available at: <https://www.tai.org.au/sites/default/files/P510%20Cooked%20with%20gas%20-%20Darwin%20days%20over%2035C%20FINAL.pdf> (accessed 10 June 2020).
  36. Tim Neale and Jennifer Macdonald, 'Permits to Weed: Weeds, Slow Violence and the Extractive Future of Northern Australia', *Australian Geographer* 50(4), 2019, pp 417–433.
  37. The Working on Country program was launched by the Australian government in 2007 and provides funds for the wages of Indigenous rangers especially in Indigenous Protected Areas. For some reason, since 2019 the name of the program has changed to the bland Indigenous Ranger Projects. See <https://www.niaa.gov.au/indigenous-affairs/environment/indigenous-rangers-working-country> (accessed 28 May 2020).
  38. Marcus Barber and Sue Jackson, 'Identifying and Categorising Cobenefits in State-supported Australian Indigenous Environmental Management Programs: International Research Implications', *Ecology and Society* 22(2), 2017, DOI: 10.5751/ES-09114-220211.
  39. Paragraphs 5.1 to 5.5 of the Constitution of ALFA (NT) Limited, a company limited by guarantee under the *Corporations Act 2001*.
  40. Ansell et al. 'Contemporary Aboriginal Savanna Burning Projects'.
  41. Ben Corey, Alan Andersen, Sarah Legge, John Woinarski, Ian Radford and Justin Perry, 'Better Biodiversity Accounting is Needed to Prevent Bioperversity and Maximize Cobenefits from Savanna Burning', *Conservation Letters*, 2019, DOI: 10.1111/conl.12685.
  42. Warddeken Land Management Limited, *Annual Report 2018–19*, Darwin: Warddeken Land Management Limited, 2020.
  43. See Eve Vincent and Tim Neale (eds), *Unstable Relations: Indigenous People and Environmentalism in Contemporary Australia*, Perth: UWA Press, 2016.
  44. Elodie Fache and Bernard Moizo, 'Do Burning Practices Contribute to Caring for Country? Contemporary Uses of Fire for Conservation Purposes in Indigenous Australia', *Journal of Ethnobiology* 35(1), 2015, pp 163–182.
  45. Aaron Petty, Vanessa deKoning and Ben Orlove 'Cleaning, Protecting or Abating? Making Indigenous Fire Management "Work" in Northern Australia', *Journal of Ethnobiology* 35(1), 2015, pp 140–162.

46. Francis Markham and Nicholas Biddle, 'Income, Poverty and Inequality', *CAEPR 2016 Census Paper No. 2*, 2018. Available at: [https://caepr.cass.anu.edu.au/sites/default/files/docs/CAEPR\\_Census\\_Paper\\_2.pdf](https://caepr.cass.anu.edu.au/sites/default/files/docs/CAEPR_Census_Paper_2.pdf) (accessed 10 June 2020).
47. See, for example, Garde et al., 'The Language of Fire', and Jay Evans and Jeremy Russell-Smith 'Delivering Effective Savanna Fire Management for Defined Biodiversity Conservation Outcomes: An Arnhem Land Case Study', *International Journal of Wildland Fire* 29 (5), 2020, pp. 386–400.
48. CSIRO and Bureau of Meteorology 2015, *Climate Change in Australia Information for Australia's Natural Resource Management Regions: Technical Report*, CSIRO and Bureau of Meteorology, Australia.
49. Commonwealth of Australia 'Emissions Reduction Fund Project Register'. Available at: <http://www.cleanenergyregulator.gov.au/ERF/project-and-contracts-registers/project-register> (accessed 16 June 2020).
50. North Australian Land and Sea Management Alliance 'Abatement of Methane Emissions from Enteric Fermentation in Feral Buffalo, *Bubalus Bubalis*, by Sustained Reduction of Populations in North Australian Savannas', submitted as a draft methodology under the Carbon Farming Initiative, Darwin, January 2014.
51. Peter Whitehead, Brett Murphy, Jay Evans, Cameron Yates, Andrew Edwards, Harry McDermott, Dominique Lynch, and Jeremy Russell-Smith, 'Recruitment, Growth and Mortality of Savanna Trees in Northern Australia: The Effects of Fire Regimes on Living Biomass', *Ecological Monographs* (in revision), 2020.
52. Jon Altman 'Sustainable Development Options on Aboriginal Land: The Hybrid Economy in the Twenty-first Century', *Discussion Paper 226/2001*, Canberra: Centre for Aboriginal Economic Policy Research, the Australian National University, 2001.
53. Lesley Hughes, Will Steffen, Greg Mullins, Annika Dean, Ella Weisbrot and Martin Rice, 'Summer of Crisis Climate Council of Australia Limited, 2020. Available at: <https://www.climatecouncil.org.au/wp-content/uploads/2020/03/Crisis-Summer-Report-200311.pdf> (accessed 10 June 2020).
54. Sharp, *No Ordinary Judgment*.

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## Disclosure statement

The authors have known each other and collaborated on a diversity of projects for several decades. Jon Altman is a foundation director of the Karrkad-Kanjdi Trust that benefits from the operations of ALFA. Jennifer Ansell is the CEO of ALFA; the company pays her a salary. Dean Yibarbuk is the Chair of Warddeken Land Management Limited and deputy chair of the Karrkad-Kanjdi Trust, both of which benefit from the operations of ALFA, and is a member and director of ALFA. Conversely, the Karrkad-Kanjdi Trust financially supports three of the participating Aboriginal ranger groups in two of ALFA's five project areas. In March 2020 the ALFA board endorsed our collaboration in this research, but some information we have accessed remains subject to ALFA's confidential information policy.

## Notes on contributors

*Jon Altman* is an economic anthropologist who is currently an emeritus professor at the School of Regulation and Global Governance at the Australian National University. Jon has worked with

Aboriginal landowners in western Arnhem Land for over 40 years, focusing his research on livelihood possibilities in regional ‘hybrid’ economies that people might exercise as they struggle for forms of postcolonial autonomy while encapsulated within the Australian settler colonial state. His research engages with landowner aspirations to create alternative forms of conservation economy and with the regulatory, governance and resourcing challenges that they must overcome.

*Jennifer Ansell* was appointed CEO of ALFA in 2015. Jennifer has a background in ecology, natural resource management, and community and business development. For the last 20 years, Jennifer has been living in the Top End of the Northern Territory and working with Aboriginal ranger groups and traditional owners on a diverse array of projects, including participatory ecological research, healthy country planning and wildlife enterprise development, as well as social and enterprise opportunities for Aboriginal women. She completed a PhD through Charles Darwin University in 2007 that examined the sustainability of harvesting timber for the Aboriginal art industry in central Arnhem Land.

*Dean Yibarbuk* is a respected Aboriginal fire ecologist of long-standing repute. He was born on Gurrgoni country (Andirridjalaba patri-clan) prior to permanent colonial incursion into central Arnhem Land. Dean is a champion of Indigenous-controlled management of fire and biodiversity. In the early 1990s Dean was the driving force behind the formation of the Djelk community rangers in Maningrida; in the early 2000s, he shifted his focus to the largely depopulated Arnhem Land Escarpment and assisted in the formation of Warddeken Land Management Limited and the West Arnhem Land Fire Abatement project, as well as the establishment of the remote community of Kabulwarnamyo.