

## **Speaking about weeds: Indigenous elders' metaphors for invasive species and their management**

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### ABSTRACT

Our language and metaphors about environmental issues reflect and affect how we perceive and manage them. Discourse on invasive species is dominated by aggressive language of aliens and invasion, which contributes to the use of war-like metaphors to promote combative control. This language has been criticised for undermining scientific objectivity, misleading discourse, and restricting how invasive species are perceived and managed. Calls have been made for alternative metaphors that open up new management possibilities and reconnect with a deeper conservation ethic. Here, we turn to Indigenous perspectives because they are increasingly recognised as offering important and novel voices in invasive species discourse. We examine how Australian Aboriginal elders and land managers (rangers) speak about 'environmental weeds' (the term used to describe invasive plants in Australia) and weed management. Based on qualitative research with five Aboriginal groups in the Kimberley region of Western Australia, our findings indicate that Aboriginal elders speak about weeds through passive, neutral language and prefer metaphors for weed management that focus on health, care and creation. We outline the influence that this language has for how rangers practice weed work and discuss its implications for the mainstream paradigm.

### KEYWORDS

Australian Aboriginal peoples, discourse, environmental health, invasive species, natural and cultural resource management

## INTRODUCTION

Environmental issues cannot speak for themselves - they require people to speak about them and how they should be dealt with. We focus here on the role of metaphors, which enable people to speak about complex, abstract and perplexing issues in terms of common, everyday conceptions (Larson 2011). Rather than providing literal or objective representations, the metaphors people use projects their environmental values onto perceived problems (Mio 1997). This blends actual changes in nature with people's interpretations of these changes (Keulartz 2007), which limits them to representing a particular cultural perspective. As Keulartz and van der Weele (2008: 102) point out, this makes metaphors 'like searchlights that highlight certain aspects and features while blocking out others'. The culturally-embedded nature of metaphors means that people from different backgrounds are likely to speak about environmental issues through different metaphors (or even to relate to the environment primarily through embodied/non-discursive practices, see Ingold 2000), which might illuminate alternative ways of perceiving and managing them.

In this paper, we focus on metaphors about invasive species and how they are managed. Discourse about invasive species is dominated by terms and metaphors that convey nationalistic, aggressive and militaristic meanings (Sagoff 1999; Larson 2007; Keulartz and van der Weele 2008). It is underpinned by language of 'invasions' and 'aliens' that positions invasive species as 'natural enemies' that 'threaten' human and environmental values (Subramaniam, 2001; Chew and Laubichler 2003). This opposition to invasive species

promotes war-like management to ‘battle’ and ‘fight’ against them (Larson 2005). Such terms and metaphors are widely employed by scientists, weed managers and the public, and pervade formal and informal discourse in scientific, land management and public arenas (Chew and Laubichler 2003; Tassin and Kull 2013). They are used sometimes deliberately to promote awareness and management efforts, and other times unconsciously, as their normalisation has made them seem unavoidable (Larson 2005).

While these metaphors may have promoted awareness and management action, they have attracted substantial criticism from social scientists and some invasion ecologists. The basis of this criticism is that these metaphors reflect cultural attitudes rather than actual evidence, yet their normalisation has disguised them as ‘concrete objects’ or natural truths (Chew and Laubichler 2003: 53). Critics suggest that this has undermined scientific objectivity, misled discourse, and restricted how people perceive and manage invasive species (Colautti and MacIsaac 2004; Larson 2005; Keulartz and van der Weele 2008; Davis 2009).

Several scholars thus recommend that we should seek alternative metaphors for invasive species and their management that bypass nationalism, aggression and militarism (Peretti 1998; Keulartz and van der Weele 2008; Larson 2010; Dwyer 2011; Tassin and Kull 2013). They suggest that this might open up new management possibilities that reconnect with a deeper conservation ethic (Larson 2005, 2011; Dwyer 2011).

Different cultures have different ways of perceiving environmental issues and will therefore use different metaphors to speak about them. Like communication about environmental issues in Western cultures, Indigenous cultures are also recognised as using

metaphors to communicate about the environment and how people should engage with it (Evans, 2009). From Australia, where Indigenous metaphors are commonly used in the domains of intercultural communication/education (see Marika-Mununggiritj and Christie 1995, Christie 2001) and natural and cultural resource management, Yunkaporta (2009:15) suggests that ‘Working with metaphors is a point of interface between Aboriginal and non-Aboriginal knowledge systems’ whereby they ‘create the frameworks for powerful transformation processes.’ In the search for alternative metaphors for invasive species, it is therefore sensible to look towards Indigenous cultures that are experiencing this issue.

## INDIGENOUS PEOPLE AND INVASIVE SPECIES

Indigenous people possess detailed knowledge of their local environments. This knowledge is based on long-term and intimate relationships with local environments, which has allowed them to understand and deal with environmental change (Berkes 2009). Notwithstanding the extent to which indigenous cultures have been harmed by colonial practices, over the past several decades this local ecological knowledge has become recognised as providing important insights for environmental research and management (Freeman 1992; Gadgil, et al. 1993; Williams et al. 1993; Berkes 2000).

Indigenous people are increasingly coming in contact with invasive species. In many circumstances this has affected their traditional ways of living. Despite these effects, there are very few studies of Indigenous perspectives about invasive species and their effects - save a small number of studies that are situated on the margins of research into their social and cultural dimensions (Pfeiffer and Voeks 2008). Some studies have sought to redress this

marginalisation by investigating Indigenous peoples' perceptions and responses to invasive species. As examples, Norgaard (2007) emphasised the significance of Indigenous perspectives in her analysis of the 'politics of invasive weeds' in rural California and Bhattacharyya and Larson (2014) investigated the relationship between Indigenous people and 'wild' or 'feral' horses in British Columbia, Canada. However, the bulk of this type of work has occurred in Australia. Rose (1995) investigated Aboriginal perceptions of 'invasive' and 'feral' animals in the central desert area. Robinson et al. (2005) contrasted Aboriginal and mainstream attitudes about introduced animals in Kakadu National Park. Trigger (2006, 2008) focused on the links between concepts of nativeness and belonging to explore Aboriginal perceptions of introduced species. More recently Barbour and Schlesinger (2012), Smith (2013), Bach (2015) and Martin and Trigger (2015) have all investigated Aboriginal people's relationships to and perceptions of non-native and invasive plants and animals in northern Australia.

These studies indicate that Indigenous people hold nuanced and unique perspectives about invasive species. They emphasise the cultural relativity of the current invasive species paradigm and in many cases offer alternative ways of perceiving, speaking about and managing these issues. As such, they urge for the inclusion of more indigenous voices in invasive species discourse.

This leaves us at a point where calls for alternative metaphors for invasive species and their management meet calls for the inclusion of Aboriginal voices in invasive species discourse. In this paper we respond by looking at how Australian Aboriginal people in the Kimberley region of Western Australia speak about invasive plants, which are categorised as 'environmental weeds' in that context. Specifically, we ask the following questions: i) what

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language and metaphors do rangers and elders use to describe environmental weeds and their management?, ii) how have these alternative metaphors influenced the way that rangers carry out weed work?, and iii) what does this tell us about alternatives to the existing paradigm?

## STUDY CONTEXT

### *Environmental weeds in Australia*

The term ‘environmental weeds’ is used in Australia to describe invasive plant species that occur in natural and conservation areas (Williams and West 2000; DPaW 2013). Although definitions for environmental weeds vary, they are generally classified as such because they possess one or more of the following characteristics: they are non-native, they are invasive, and they affect the ecosystem in which they are established (Adair and Groves 1998; Csurhes and Edwards 1998; CALM 1999). Environmental weeds discourse and management in Australia is closely connected to the field of invasion ecology (Williams and West 2000, Kull and Rangan 2015). As such it echoes many of the same militaristic and aggressive metaphors that dominate wider invasive species discourse, which has promoted combative measures such as ‘wars’ to control them (Dwyer 2011). Environmental weed control represents one of the largest components of environmental management in northern Australia, which is increasingly being undertaken by Aboriginal Australians as they become involved in formal land management (CALM 1999; Storrs et al. 1999; Cowie 2007).

### *Aboriginal land management in Australia*

Over the past three decades Aboriginal Australians have become formally recognised as the traditional custodians of their ancestral lands and have begun to regain ownership of

them. This recognition and the lengthy struggles that led to it have reasserted the customary and legislative rights of these groups to manage their country according to cultural obligations (Young et al. 2001, Altman 2012). This has resulted in the development of a formalised Aboriginal natural and cultural resource management (NCRM) sector (Young et al. 2001, Kerins 2008). The majority of this land management is undertaken by groups of local Aboriginal people known as ‘rangers’. The work that these rangers do is guided by traditional knowledge that has been shared with them by their community’s knowledge holders, who are commonly known as ‘elders’. Rangers carry out their work through a mixture of modern conservation practice, which they have learned through formal land management training, and the traditional knowledge that their elders have shared with them.

As such, Aboriginal NCRM is an intercultural space that brings together Aboriginal and non-Aboriginal perspectives and interests in land management. Although this space is recognised as being politically contested, it is widely lauded for providing an arena for intercultural knowledge sharing and practical land management cooperation (Kerins 2008, Altman and Kerins 2012). This has been recognised by the Federal Government, which now contributes the majority of funding for ranger groups through the ‘Working on Country’ and ‘Indigenous Protected Area’ programs. This financial and organisational support has increased the number and capacity of ranger groups, particularly in parts of northern Australia, including the Kimberley region of Western Australia.

#### *The Kimberley and Kimberley Aboriginal people*

‘The Kimberley’ is an area of around 420,000 square kilometres located in the northern part of Western Australia (Figure 1). It is geologically, climatically and ecologically

diverse and comprises distinct tropical, savannah and desert areas. It is remote and largely ecologically ‘intact’, which makes it an area of high conservation value. However, environmental weeds present an increasingly large problem in the Kimberley as human activities, including pastoralism, tourism and resource extraction/processing, have increased the number and volume of environmental weeds that are established there (DEC 2011).

Aboriginal people are now formally recognised as the traditional owners of around 70% of the Kimberley (KLC 2013), which puts them in control of managing significant environmental and cultural assets on their country. Our research was undertaken with Aboriginal people belonging to Bardi-Jawi, Bunuba, Nyikina Mangala, Ngurrara and Wunggurr-Wilinggin country in the west and central Kimberley (Figure 2). Each of these groups has formed a ranger group consisting of between six and ten local Aboriginal people.

Environmental weeds are among the most significant land management problems for Kimberley Aboriginal rangers. Each ranger group involved in this project spends between 15 and 40 per cent of their time carrying out weed work (Bach 2015). Because ranger work is supposed to be guided by local Aboriginal knowledge, the rangers seek the wisdom of their elders to direct how weeds should be managed (Duff 2012). This has encouraged Aboriginal elders to develop and use their own metaphors to speak about weeds and weed management.

## METHODS

Any research with Aboriginal people requires careful engagement (Schnierer and Woods 1998). Beyond official ethical requirements, researchers must be aware of the cultural politics embedded in Indigenous/non-Indigenous relationships (Barbour and Schlesinger

2012). Research must therefore adopt a continuously reflexive approach, which moves slowly and is receptive to the requirements of local people (Ward 2002). This paper partly comes through such careful engagement, in that it responds to several elders who recognised that they spoke about weeds and weed management differently from non-Indigenous weed managers and wondered what this might mean for how rangers might manage them.

Field data for this project was collected as part of research into Aboriginal perspectives of weeds and weed management in the Kimberley. Time in the field totalled 15 months, which was spread across six visits between 2011 and 2015. Language and metaphors were central to understanding people's perspectives about weeds and therefore constituted a significant part of data collection, crosschecking and analysis.

Fieldwork used qualitative research methods of participant observation and semi-structured or non-structured interviews. Participant observation took up the bulk of time in the field. It involved accompanying the five ranger groups as they planned, performed and reviewed their weed work. This provided a rich multi-sited ethnographic picture of the lived experience of Aboriginal weed work. Observations were recorded by comprehensive field notes, photos and a field diary.

Interviews were conducted with Aboriginal rangers and elders. In this paper, we use the term 'elders' to refer to community members that are senior knowledge holders in their community and who have the cultural authority to speak on behalf of their people. We recognise that the category of 'elders' is somewhat problematic, as it is partly the result of an intercultural imaginary that separates 'elders' from 'non-elders', which casts elders as specialists whose views are authentically 'aboriginal' (Martin 2011). Although no such

dichotomy actually exists, 'elder' is the dominant term used by Aboriginal people (particularly those employed as rangers) to identify those members of their community they look to for knowledge about country and how it should be managed. Although some rangers are also considered elders by their communities and some of the elders have formerly been employed as rangers, we split these two groups in order to identify those that are employed and have received formal land management training (rangers) and those that are meant to inform how this management occurs (elders).

All interviews were conducted in English because the vast majority of participants were competent English speakers. Terms from the local languages did not form part of discussions about weedy metaphors, either formally or informally. Rather unfortunately, local Aboriginal languages are not particularly strong or widely used by the groups that we worked with. This is particularly the case when Aboriginal people are speaking to non-Aboriginal (non-linguistic) researchers, where English is predominantly used. The major language other than English that is spoken by Aboriginal people in the Kimberley is Australian Aboriginal 'Kriol' (an Aboriginal-English creole), which did not yield any words or metaphors for weeds or their management – although this was not specifically explored.

Interviews with rangers (n = 32) occurred individually while interviews with elders (n = 38) occurred individually or in groups. Every interview with elders was assisted by a local ranger. This ensured that interviews followed cultural protocol and that the knowledge shared by elders could be directly and immediately relayed to the ranger group.

Interviews asked open-ended questions in order to minimise the risk of leading the participants to provide particular answers or use particular language. Interviews were not

recorded because the majority of elders would not consent to it. Instead, notes taken during the interviews provided the raw data for this project. Despite interviews being conducted in English, some words have unique or subtly different meanings in local Aboriginal contexts. Therefore all notes were cross-checked with rangers after the interviews to ensure the accuracy of interpretations and to minimize any possible misunderstandings.

Data analysis involved manually coding the notes taken from field observations and interviews. Coding involved separating these notes according to participant groups (elders or rangers) and discussion topics (whether they were speaking about the origins, behaviours, impacts or management of weeds). From these individual data sets, we coded the repetition of particular words and metaphors to identify common themes.

## RANGERS' WEED MANAGEMENT AND METAPHORS

Despite the fact that Aboriginal ranger programs are supposed to be guided by Aboriginal perspectives, rangers in the Kimberley predominantly manage environmental weeds according to the mainstream ecological paradigm (Duff 2012; Bach 2015). For the majority of their weed management projects, the rangers adopt species-based approaches that target environmental weeds that have been classified as such by mainstream weed management agencies. This contrasts to the rest of their work, which the rangers base on traditional knowledge and customary obligations that they have learned from their elders. Although there is no space here to discuss why environmental weeds are managed differently, it has been attributed elsewhere to the dominance of mainstream environmental weed management practice (Barbour and Schlesinger 2012; Duff 2012; Smith 2013; Bach 2015).

This influence is reflected in the language that rangers use to speak about weeds and weed management. Rangers commonly used the terms ‘alien’, ‘invasive’ and ‘invader’ to describe weeds and used the terms ‘damage’ and ‘harm’ to describe the changes they cause. Rangers also employed militaristic and aggressive language to speak about their weed work. Specifically, they used combative metaphors such as ‘smashing’, ‘destroying’, ‘beating’, ‘hammering’ and ‘attacking’ to describe their weed management, which was spoken about as a ‘strategy’, a ‘fight’, a ‘battle’ and even an ‘all-out assault’ (Figure 3).

It is unclear how this language has entered the rangers’ vernacular, but is at least partly attributable to their training and their association with non-Indigenous weed management agencies. Every ranger must undergo training before they can control weeds, which is undertaken as a component of a mainstream conservation and land management accreditation. Rangers reported that they are taught to be aggressive in their weed work, which suggests that much of the combative language they use has been learned through this training.

Every ranger group conducts a portion of their weed control for mainstream environmental management agencies through fee-for-service contracts. Militant language and metaphors have permeated through these associations. One example is the ‘Derby Declares War on Weeds’ project launched by a shire council in the west Kimberley that was primarily undertaken by the Wungurr Rangers. Another example is the West Kimberley Rubber Vine Eradication Project (WKRVEP), which aimed to eradicate Rubber Vine (*Cryptostegia grandiflora*) from the lower Fitzroy River. The project was organised by a non-Indigenous weed management group and employed Nyikina Mangala rangers who reported that they

were given direct orders ‘to search and destroy Rubber Vine’, which was frequently referred to as ‘attacking the enemy’.

Rangers also used this oppositional language when they spoke about the outcomes of their weed work. They often framed their success or failure in oppositional terms to the weeds, where the presence of certain weeds meant that they were ‘losing’ or had ‘failed’. Referring to management of Passionfruit Vine (*Passiflora foetida*), a Bunuba ranger explained that ‘We can’t beat it, it’s everywhere’. During a weed work review, a Bardi-Jawi ranger evaluated his group’s outcomes by saying that ‘We’re losing in all of the communities.’ Likewise, another Bardi-Jawi ranger summed up the group’s control of Coffee Bush (*Leucaena leucocephala*) by proclaiming that ‘We’ll never win this one! It’s unbeatable.’ It became clear through weed management reviews that these losses made rangers feel as though their work was futile, which negatively affected their motivation and performance.

## ELDERS SPEAKING ABOUT WEEDS

In contrast to the rangers, elders did not use militaristic, aggressive or combative language to describe environmental weeds or how they should be managed. This section outlines the language and metaphors they used to describe a weed’s origins, behaviours, ecological impacts and management.

### *Considering origins*

Elders commonly used the term ‘introduced’ to describe any plant that they understood to have arrived on their country since British colonisation. It was purely

descriptive and did not attribute any value, whether positive or negative, to the plant. The term ‘introduced’ instead highlighted a plant’s entanglement with humans and human activities. That a weed had been introduced commonly provoked curiosity and discussion among elders, which prompted a number of questions about the weed’s relationship to humans: ‘From where was it introduced?’, ‘Who introduced it?’, ‘When did they introduce it?’, ‘Why did they introduce it?’, ‘Do people still like it or use it?’, and ‘How did it become a weed?’.

Elders also used the term ‘*kartiya* plant’ to describe introduced plants. *Kartiya* is a Kimberley Aboriginal term that is used most commonly to describe non-Aboriginal people, but can also refer to non-Aboriginal objects, language, and concepts. The term is not derogatory, but is a way of marking something from elsewhere. In terms of plants, the term was used in two ways: i) to mark a plant as non-local, and ii) to suggest that *kartiya* humans had brought the plant to that country.

A weed’s status as introduced or *kartiya* influenced, but did not underpin, the belonging granted to it by elders. Although most weeds were recognised as introduced or *kartiya* plants, some were still considered to ‘belong on’ or ‘belong to’ particular sites or types of country. Elders suggested that this is because ‘belonging’ can develop over time. They addressed this directly by observing that nothing could ever come to belong if nativeness or localness was its absolute arbiter. To highlight this point some used the analogy of *kartiya* people who now live and belong in the Kimberley, as a Wunggurr-Wilinggin elder pointed out, ‘*Kartiya* belong here now too, all here together now’.

### *Considering behaviour*

Elders most commonly used the word ‘cheeky’ to describe the behaviour of environmental weeds. Cheeky was used in two ways: first, to describe plants that spread quickly, and second, to describe plants that are a nuisance. Cheeky could refer to both native and introduced plants and did not convey automatic dislike, although elders frequently pointed out that if plants were cheeky in the wrong place then this could be bad and needed to be ‘watched’.

Grasses and vines were most commonly considered cheeky because they can spread without anyone noticing. Referring to the vine Siratro (*Macroptilium atropurpureum*) around an important water place on Bardi-Jawi country, an elder explained that ‘that vine is cheeky ... [one] can’t look away from it, otherwise it might get too close to the water and choke it, make it sick’. Although not listed as weeds, both Soap Wattle (*Acacia colei*) and Speargrass (*Sorghum plumosum*) were frequently described as cheeky by Bardi-Jawi elders who noticed that they grew and spread quickly after grading along road verges (and after fires in the case of the latter species). Although Soap Wattle is well-liked and culturally important as wood for making spears, elders still considered it ‘cheeky’. Passionfruit Vine was mentioned as cheeky in a positive sense as many elders noticed that it spreads quickly and its fruit is a popular source of food for people and animals. Weeds with prickles were also described as cheeky because they are a nuisance and stick to people (and animals) who brush against them.

### *Considering effects*

Elders used the framework of ‘healthy country’ to consider a weed’s impact. The Aboriginal English term ‘country’ describes all of the sentient and non-sentient parts of the

world and the interactions between them. The concept of healthy country describes the proper functioning of these interactions according to Aboriginal Law. Through this framework the effect of a weed was judged in terms of whether it positively, negatively or neutrally affected the health of country.

Elders are acutely aware of the effects of environmental weeds on country, though they were most frequently considered to be neutral. To describe these changes, they used the words ‘changed’, ‘different’ and ‘not the same’. These words merely marked that these weeds had altered country, rather than whether they were judged to be good nor bad. If elders did apply a value to one of these changes they did so carefully and explained their judgement and its significance in terms of the health of country.

Elders most commonly spoke about country that was negatively impacted by weeds as being ‘sick’. Country could be made ‘sick’ by environmental weeds in a number of different ways. The most common impacts included: restricting human access to country; affecting fresh-water sites, cultural sites, or traditional burning practices; and inhibiting the transfer of language and culture to children. Elders sometimes used the word ‘choked’ to describe sick parts of country, a term that usually signified that people and animals could not travel through the country because weeds had overgrown it (Figure 4). Most elders emphasised that the health of country was linked to the health of people and culture. Sick country could directly lead to poor health in humans. As such, elders frequently mentioned that they felt ‘sick’ and ‘sad’ when they saw a particular site or part of country that had been negatively affected by weeds.

Country that was affected by weeds was also described as ‘down’. Although this could be interpreted in the same way as sick, it instead signified the prolonged absence of people from a place. Given that it is a crucial part of Aboriginal culture for people to be on country and to visit important sites, the presence of weeds was sometimes interpreted as symptomatic of humans not performing their responsibilities (such as speaking to spirits and burning at these places).

A number of elders used positive metaphors to describe the effects of weeds. This was particularly the case on country that has been overgrazed by cattle, where weeds ‘protect’ and ‘cover’ country from erosion and barrenness. An elder who had spent his youth as a cattle musterer commented that without Mimosa Bush (*Acacia farnesiana*) and Rubber Bush (*Calotropis procera*) growing around the northern edge of the Great Sandy Desert ‘[there would be] nothing out there on cattle country ... These plants protect country... without them, nothing, just dirt’.

### *Considering weed management*

Elders suggest that the point of ranger work is to ‘look after country’ and to ‘care for country’. These phrases highlight the intimate stewardship that underpins Aboriginal people’s connection to country and they therefor recur across Aboriginal natural and cultural resource management in Australia. Indeed, caring for country has gained such popularity that it is now employed by Aboriginal and non-Aboriginal groups alike, including Federal Government agencies, conservation organisations and regional Aboriginal NCRM bodies (Kerins 2008).

Elders in the Kimberley view weed work as an integral part of ‘caring for country’ or ‘looking after country’. Specifically, the role of weed work was to look after and care for

country that had become sick because of weeds. Although country was sick, elders did not consider this an illness that should be fought. Instead, they used language to invoke more generous care. This led to metaphors for weed work that focus directly on improving the health of country. In particular, elders spoke about how weed work should ‘protect’, ‘keep’, ‘bring up’, or ‘bring back’ healthy country. They also suggested that weed work should ‘make it better’, ‘make it healthy’, ‘help it’ and, less frequently, ‘heal’ it.

## MANAGEMENT OUTCOMES

### *Rangers confronting militarism*

Most rangers were aware of the combative language and metaphors that they use to talk about their weed work. Even though they acknowledged that they used this language, about half of them were critical of it. These rangers recognised that their language about weed work affects how they manage weeds and that the aggressive and combative metaphors that they use do not correspond with the metaphors used by elders.

The gulf between how rangers and elders speak about weeds and weed management causes tension for rangers. On the ground, this tension sometimes leads to speaking about weed management militaristically and at other times through more passive health-focussed terms. Rangers increasingly attempt to negotiate this tension by confronting their own militaristic language and aligning their weed work with the metaphors that the elders use.

For example, while preparing a presentation for a national weeds workshop with the first author of this paper, one Wunggurr ranger suggested that the title of our presentation be changed from ‘Controlling weeds on country...’ to ‘Caring for healthy country...’. He felt

that this shifted its focus towards the effects that weed work has for country and away from killing weeds, stressing that this aligned more closely with his and his elders' vision for weed work.

The Nyikina Mangala Rangers involved in the WKRVEP said that its combative language of 'search and destroy' and 'attacking the enemy' did not align with how they viewed weed work. A senior ranger suggested that these metaphors missed the point of weed work, which was to 'make...country healthy again, not just kill lots of the same plant'. In response, the rangers subverted their orders to only 'attack' Rubber Vine and instead conducted traditional burning and killed a number of weeds they considered bad for the health of country. This took more time, but aligned with their vision of 'making country healthy again'.

At the end of a weed work review for the Bardi-Jawi rangers', a ranger aired his frustration with how the group had been talking about 'destroying' and 'smashing' plants. He suggested that this language had influenced their approach and had caused them to lose sight of the reasons behind their work – which was 'to look after country'. He felt that they should change the language they use, which might change their approach: 'We want to 'create', rather than destroy ... we always seem to be destroying with weed work.'

In 2014, funding became available for ranger groups through a new Federal Government environmental initiative called the 'Green Army' (see DotE 2016). Speaking more recently to a Bardi-Jawi ranger about this he pointed out that the "'Green Army' fits with weeds, the war on weeds and all that. But we're not an army, we don't want to do it like that.'

We see from these examples that rangers seek to align their weeds work more closely with the language and metaphors of their elders. The following section discusses how shifts in metaphors towards promoting health have produced shifts in management.

### *Promoting health*

The vast majority of weed management inescapably involves killing plants. It kills certain species to promote the growth of others. Many mainstream environmental weed managers would therefore suggest that they are promoting ecosystem health through their militaristic removal of environmental weeds. In practice, weed work that is informed by a metaphor of ‘restoring health’ or ‘promoting healthy country’ involves killing plants just like the militaristic metaphor would encourage. However, while mainstream metaphors focus on combat and destruction, the elders’ metaphors of restoring health focus on its positive outcomes.

This shift is significant in terms of the rangers’ weed management. Rangers found that it allowed them to be more judicious about where and how they did their weed work, it emphasised the connection between weed work and their other activities, and it redefined ‘success’ to emphasise their achievements rather than their failures.

Every ranger group had at least one weed work site that they had chosen ‘because there are weeds there’. At these sites the rangers usually described their work as a waste of time. They attributed the selection of these sites to a focus on killing weeds. This focus directed the rangers to where there were weeds, rather than where they could make the biggest difference to the health of country. In contrast, where the rangers framed their weed work as promoting

health, they selected sites where they could see a direct link between killing plants and promoting healthy country.

A focus on health allowed rangers to ask whether or not killing weeds was the right response to promote it. Rangers felt that militaristic metaphors for weeds narrowed their focus toward killing weeds, regardless of the context. In other words, if an environmental weed is present at a site, it should be killed. However a focus on healthy country meant that they would first ask ‘what is making the place sick?’ without immediately blaming the weeds. This led the rangers to adopt other management approaches at sites where weeds had formerly been targeted. These alternatives included implementing a more regular burning regime, restoring normal flow in a stream, reducing landscape disturbance by four-wheel drives and restricting tourist access to sites. Rangers felt that these were more effective ways of improving health, which avoided the tendency to automatically blame, target and kill weeds.

The oppositional stance created by the ‘war on weeds’ means that success is defined by the removal of particular species from a prescribed area. By this measure, none of the ranger groups involved in this project felt that they have undertaken successful weed management. A ranger suggested that as long as the oppositional framing that dictates the ‘success’ and ‘failure’ of weed work exists, they will always feel as though they are ‘losing’ and ‘not getting anything done.’ This creates enormous frustration for rangers who frequently see weed work as meaningless and futile. This frustration fosters a lack of motivation, which in turn results in inconsistent effort and poor management. In contrast, a focus on restoring ‘health’ allowed rangers to see the positive outcomes of their work and redefine their success by these outcomes. For example, some Buffel Grass (*Cenchrus biflorus*) remained after weed work at the site of freshwater spring in the desert. Two rangers therefore considered this work

to be a failure. However another pointed out that because the grass was no longer in the spring itself, this part of country was now significantly healthier and their work there should be considered a success. As he put it, ‘we do lots, we just don’t always see it’.

Militaristic and aggressive metaphors have contributed to a separation between weed work and other ranger activities. This separation has occurred both conceptually and practically. Rangers suggested that while they were able to think about their other work as connected to caring for country and promoting health, weed work was different. They also noted that while they often integrate other activities, weed work is usually undertaken by itself. Although there are a number of reasons for this pattern, three ranger groups explicitly linked this separation to the fact that they do not use the same language to speak about weed work as they do their other work. These same ranger groups mentioned that an emphasis on weed work that promotes healthy country connected it to their other duties, allowed them to derive greater satisfaction from it, and encouraged them to do a better job.

Rangers mentioned that promoting health opened up space for the creative side of weed work. Combined with the stronger links to other aspects of ranger work mentioned above, rangers are beginning to see the creative possibilities of their work. For the Bardi-Jawi rangers this has led to ‘weed projects’ that combine a number of healthy country outcomes beyond weed management, such as replanting local bush fruits and involving the community to teach young people about culture. It also allowed two ranger groups to experiment with traditional burning regimes as a form of weed control.

Focussing on health encouraged rangers to link their weed work to promoting health among people. At least four rangers linked healthier country brought through weed work to the

improved health of certain elders who were the custodians of that country. One of these, a Wunggurr-Wilinggin ranger, told me about weed work on his ancestral country: ‘we gotta look after our old people...makes the hard work easier when we think about it like that’.

### *Bypassing alien invasions*

Instead of ‘aliens’ and ‘invasion’, elders used terms such as ‘introduced’, ‘*kartiya*’ and ‘cheeky’ to describe the origins and behaviours of environmental weeds. These more neutral terms shift the focus from the weeds as the enemy to their broader context, particularly their entanglements with humans. Although this shift did not manifest in substantial changes to the rangers’ weed work as it did for the focus on health, it did contribute to some changes.

In particular, the shift away from the ‘enemy’ mentality emphasised that weeds should be thought about and managed as a part of their human and social context. This refocused weed work from an attack on the weeds themselves towards the processes that are responsible for allowing weeds to spread and make country unhealthy. For two ranger groups, this meant creating better car parks for tourists and erecting bollards in order to stop four-wheel drives from entering sensitive areas, which had been recognised as directly spreading weeds and causing landscape disturbance that allowed weeds to establish. For two other ranger groups this led to speaking to local people about reducing fires near roads, which had contributed to the spread and establishment of weedy grasses into new areas.

The term ‘cheeky’ contributed to one ranger group reducing their control efforts on Passionfruit Vine. By recognising it as cheeky, rather than invasive, it allowed them to see that although it was spreading, it did not pose a significant problem. One ranger even

suggested that its cheekiness was a good thing because it meant more food for people and animals.

## CONCLUSION

Aboriginal elders use alternative metaphors for environmental weeds and weed management that bypass alien invasion and militarism. Where and when rangers adopt these metaphors to guide management, it produces alternative approaches to weed control that connect it to other place-focused land management activities and shift its focus from killing plants to promoting the health of country. Speaking about weeds and weed management differently therefore contributes to invasive species discourse in three ways. First, it reinforces the argument that the language and metaphors used to describe invasive species are culturally produced. Second, it shows that alternative metaphors exist that bypass the current nationalistic, militaristic and aggressive paradigm. Finally, it reveals that different metaphors produce new possibilities for thinking about and managing environmental weeds and invasive species.

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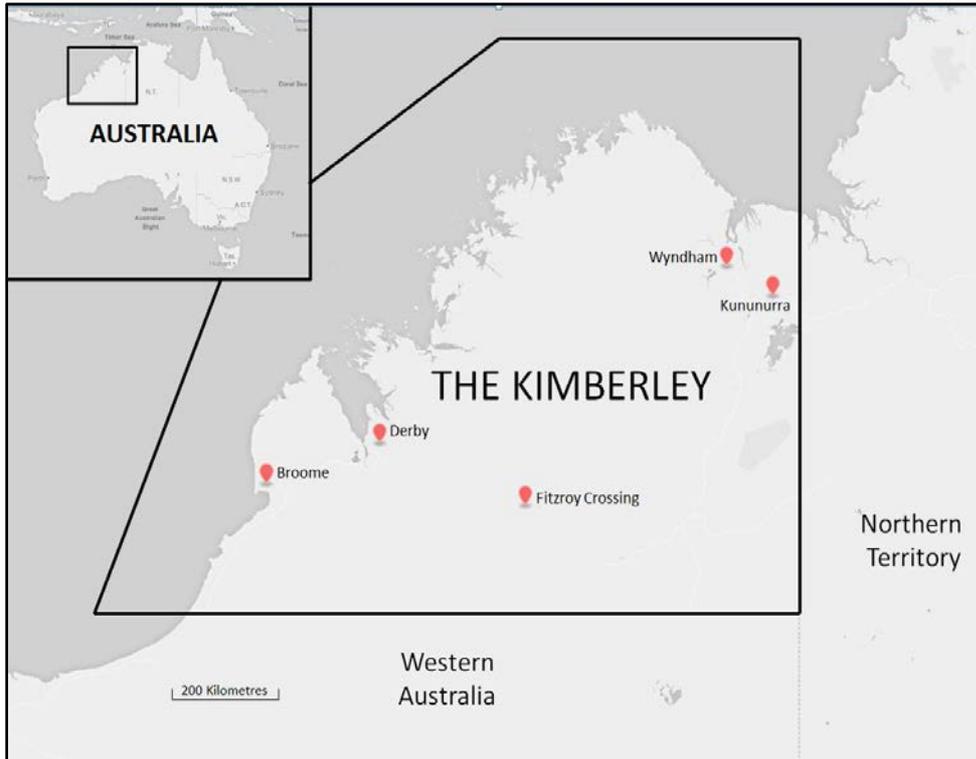
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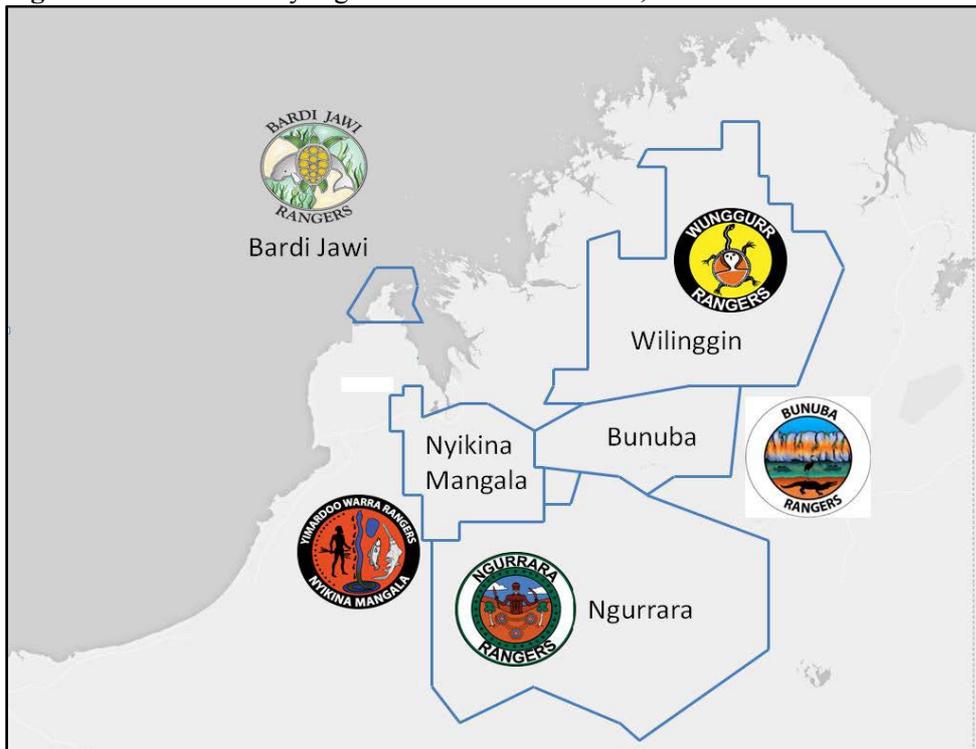
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## FIGURES



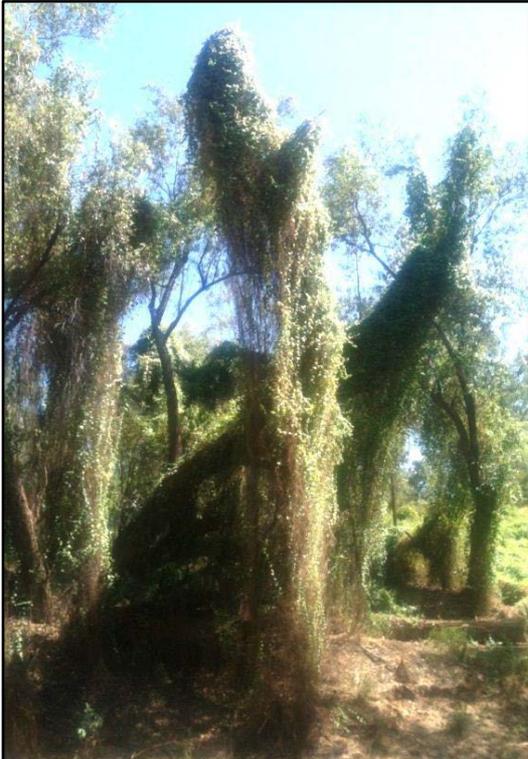
**Figure 1.** The Kimberley region of Western Australia, with main towns indicated.



**Figure 2.** The traditional country belonging to the Aboriginal groups participating in the study



**Figure 3.** An Aboriginal Ranger dressed for ‘all-out-assault’ on Coffee Bush on the Dampier Peninsula to north of Broome.



**Figure 4.** An example of Bunuba country that is ‘sick’ and ‘choked’ by weeds near the town of Fitzroy Crossing.