INFLUENCE OF ENVIRONMENTAL GOVERNANCE REGIMES ON THE CAPACITY OF INDIGENOUS PEOPLES TO PARTICIPATE IN CONSERVATION MANAGEMENT

Tom Duncan[1*], Jaramar Villarreal-Rosas[2], Josie Carwardine[3], Stephen T. Garnett[1] and Cathy J. Robinson[3,4]

[*]Corresponding author: thomasalexander.duncan@cdu.edu.au

[1]Research Institute for the Environment and Livelihoods, Charles Darwin University, Casuarina, NT, Australia
[2]School of Earth and Environmental Sciences, The University of Queensland, St Lucia, QLD, Australia
[3]CSIRO Ecoscience Precinct, Dutton Park, QLD, Australia
[4]Northern Institute, Charles Darwin University, Casuarina, NT, Australia

ABSTRACT

A range of international, national and local policy instruments and governance regimes acknowledge Indigenous and local people's knowledge as a key platform for managing biodiversity and ecosystems, but translation of these commitments into negotiation of conservation priorities with appropriately empowered local communities remains inconsistent. Drawing on a review of conservation area management plans in Australian bioregions identified as having high potential for Indigenous engagement in threatened species management, we examined how the potential for local Indigenous communities to pursue their conservation objectives and the extent to which they are involved in management of significant species, cultural heritage and fire is influenced by different environmental governance regimes. We found that there is currently more scope for Indigenous communities to participate in cultural heritage management than in species or fire management, despite evidence that Indigenous communities seek to engage in managing all aspects of their traditional estates. Species management priorities in Indigenous-driven co-governance regime plans centre on culturally significant species rather than threatened species. We conclude that the current potential for local Indigenous communities to participate in conservation management on equitable terms depends upon the establishment of Indigenous-driven co-governance regimes, and argue that improving levels of engagement of Indigenous Peoples in agency governance regimes requires agencies to better recognise Indigenous worldviews in planning conservation approaches. .

Key words: Indigenous Peoples, environmental governance, conservation management, cultural heritage, threatened species

INTRODUCTION

Indigenous Peoples need to play a key role in contemporary conservation planning and management. Much of the world's biodiversity occurs on land inhabited or owned by Indigenous Peoples, including both areas formally dedicated to conservation purposes and land which is outside the conservation estate but nonetheless has significant biodiversity values (Garnett et al., 2018; Oviedo et al., 2000; Renwick et al., 2017; Sobrevila, 2008). In many of these areas, Indigenous Peoples have maintained long and sustainable connections to their environments and have deep knowledge of local social, ecological and cultural contexts (Berkes & Turner, 2006). Partnerships between Indigenous Peoples and agency managers can therefore provide unique opportunities to protect and manage areas with high conservation values effectively (Austin et al., 2018; Moritz et al., 2013).

Engaging Indigenous Peoples in conservation planning and decision-making is also an ethical and legal obligation. The high conservation significance of Indigenous lands has meant that local Indigenous communities have often been disadvantaged by

conservation actions, for example by forced removals from traditional lands to create protected areas or by restrictions to their customary access and resource use (Colchester, 2004; Guha, 2003). Such restrictions have a disproportionate impact on Indigenous Peoples, who often depend on connections to traditional lands and access to natural resources to maintain their cultural and economic livelihoods (Kaimowitz & Sheil, 2007; Langton, 2003) and who often lack the political power to influence the decisions made by governments and conservation organisations (Brosius et al., 1998). Growing awareness of these issues and recognition of the rights of Indigenous Peoples to control and manage traditional lands has increasingly compelled conservation managers to seek collaborations with local Indigenous communities (Colchester, 2004; Schmidt & Peterson, 2009).

Global and national conservation policy and legislative frameworks have set out key expectations detailing why and how Indigenous Peoples have a role to play in the sustainability of our planet. The development of the Conservation Initiative on Human Rights (CIHR), an alliance of global conservation organisations which seeks to improve inclusion of human rights in conservation policy, was triggered partly by the advocacy of Indigenous leaders (Springer & Campese, 2011). Aichi Targets 11 and 18 in the Convention on Biological Diversity Strategic Plan for Biodiversity 2011-2020 (Convention on Biological Diversity, 2010) commit to increasing equity in the management of protected areas and integrating the knowledge and management practices of Indigenous Peoples in biodiversity maintenance objectives respectively. The International Union for the Conservation of Nature (IUCN) recognises that Indigenous Peoples have rights to maintain links to their traditional lands and to participate in planning conservation strategies (Jonas et al., 2014). These policy commitments have resulted in a focus on planning processes and governance structures which attempt to increase Indigenous participation. Changes in the IUCN criteria allowed Indigenous and Community Conserved Areas (ICCAs), defined as areas voluntarily conserved by local or Indigenous communities through customary law, to be considered formally protected areas (Brosius, 2004). The participation of Indigenous communities in the management of protected areas through joint-management and co-management arrangements has become more common in many countries. Protected areas managed by local and Indigenous communities can be as good as (and in some cases better than) state managed areas at conserving biodiversity (Porter-Bolland et al., 2012; Schleicher et al., 2017).

Despite these changes in policy and governance, conservation approaches in many countries are dominated by Western conservation paradigms focused on values such as 'biodiversity', 'threatened species' and 'wilderness' (Adams, 2004; Corrigan et al., 2018), and local Indigenous communities continue to face challenges in participating in conservation management in ways that satisfy their own aspirations and responsibilities (Barbour & Schlesinger, 2012). The conservation objectives of Indigenous Peoples are diverse, but some common themes are discernible. While Western conservation paradigms tend to separate human and natural elements of the landscape, Indigenous conservation approaches often emphasise the importance of dealing with landscapes, people and plants and animals as connected elements of an interdependent system (Roberts et al., 1995; Salmon, 2000). Maintaining cultural and natural values therefore depends on integrated, holistic and adaptive management approaches (Yibarbuk et al., 2001). Recognition of this has led to the adoption of terms that acknowledge the importance of the cultural context in conservation management and are more relevant to Indigenous conservation approaches. For example, the term 'cultural landscapes' has been used to link natural and cultural values, along with the knowledges and practices that sustain them, in protected World Heritage Areas (Carter, 2010). In Australia, local Indigenous communities and their collaborators often use the term 'caring for country' (which can include both land- and sea-scapes) to refer to a relationship of reciprocal care between Indigenous custodians and the land (e.g. Ens et al., 2012; Preuss & Dixon, 2012; Yunupingu & Muller, 2009).

The capacity to form socially equitable conservation partnerships that help local Indigenous communities to protect and maintain these values can be enhanced by analysis of the dimensions of equity and their relationship to conservation planning and governance (Moreaux et al., 2018; Schreckenberg et al., 2016). In a discussion of equity in Payments for Environmental Services (PES), McDermott et al. (2013) identify three dimensions of equity as integral to the delivery of benefits to all participants. 'Distributional equity', is concerned with the distribution of costs, benefits and risks among partners. 'Procedural equity' involves recognising and including partners in planning and decision-making processes. 'Contextual equity' entails recognition that the institutional and political context in which participation occurs favours some participants more than others, and that this can enable or limit their capacities to engage in and benefit from environmental management. For example, some conservation

collaborations have been criticised for incorporating Indigenous knowledge or labour to increase the effectiveness of agency conservation objectives but not taking into account the aspirations of Indigenous partners (Barbour & Schlesinger, 2012). While such partnerships might deliver distributive equity (e.g. through the economic benefits of Indigenous employment), they fail to recognise the importance of procedural equity. Conversely, in instances where local Indigenous communities have gained access to procedural equity by transforming institutional structures and compelling agencies to include Indigenous participation in decision-making, they have gained benefits which include greater control over traditional lands and resources (Lane & Hibbard, 2005). Whether or not different aspects of equity are included in collaborative conservation management planning processes can therefore act as an indicator of the success of current efforts to engage Indigenous Peoples in conservation, as well as identify the governance structures that promote equitable collaborations.

The aim of this paper is to compare the influence different environmental governance regimes have on the scope and focus of local Indigenous community engagement. We do this by using a sample of Australian conservation planning documents to explore three subsidiary research objectives: (1) to compare levels of Indigenous engagement in conservation management under different governance regimes; (2) to examine agency expectations of Indigenous roles in collaborative management; and (3) to compare stated management priorities for species that are considered important (e.g. threatened species, culturally important species) under different governance regimes.

RESEARCH CONTEXT AND METHODS

Australia is an appropriate country in which to base our case study because local Indigenous communities play a crucial role in conservation management, under a variety of governance regimes and geographic settings (Hill et al., 2012; Renwick et al., 2017). Conservation legislation and policy, including the Biodiversity Conservation Strategy 2010-2030 (Natural Resource Management Ministerial Council, 2010), the *Environment Protection and Biodiversity Conservation Act* 1999, and the National Threatened Species Strategy (Department of the Environment and Energy, 2010), commits to Indigenous engagement in conservation management. Realisation in the mid-1990s that inclusion of Indigenous lands was crucial to developing a representative National Reserve System led to the establishment of Indigenous Protected Areas, which

now make up nearly half of all land managed for conservation purposes (Renwick et al., 2017). Local Indigenous communities can also be included in governance structures through joint management of state and national conservation areas. However, most conservation areas in Australia continue to be managed exclusively under state, territory or national governance regimes.

Our investigation builds on previous research by Renwick et al. (2017) which identifies Australian bioregions with high potential for Indigenous engagement in threatened species management, based on overlap between Indigenous land tenure and occurrence of threatened species. The bioregions in each Australian state or territory with the highest potential for engagement were used as our sample, because we considered that in such areas contrasts in the conservation values and priorities of government agencies and prospective Indigenous collaborators would be most apparent. These areas also contain species which are important to local Indigenous communities for a range of cultural and utilitarian reasons. The remainder of this article will use the neutral term 'significant species' to denote those plants and animals which are perceived to be important irrespective of the world view of those valuing them. The amount of Indigenous land tenure types in each bioregion is included in the Supplementary Information.

We then identified conservation areas within these bioregions using a national database of conservation areas (Department of the Environment and Energy, 2014), and conducted online searches to locate available management plans for each formal conservation area. Our criteria for inclusion of plans in the analysis were documents that described conservation values of a defined area and identified strategies to protect or improve those values (generally called 'Plans of Management' or 'Healthy Country Plans'). While sample bioregions also included areas under management regimes which may provide beneficial conservation outcomes but are not listed as formal conservation areas (e.g. some Indigenous land tenures), these were not identifiable from the database used and were therefore not included in the analysis. We used these documents as our data source because they (1) describe the governance structures under which management takes place; (2) list the roles and responsibilities held by the governance body and any relevant partners or stakeholders, including evidence of collaboration or intent to collaborate in management, and (3) list the perceived conservation values and priorities in the area covered by the plan and evidence of conflicts and

synergies in the perspectives of governance partners. We acknowledge that our data sources state intentions and commitments and so do not necessarily correspond to actual implementation of management actions and levels of participation in the conservation areas discussed, and do not allow a deeper analysis of the barriers Indigenous people face in engaging in conservation partnerships. Further research to illuminate these constraints would involve interviews, preferably by Indigenous researchers, and other on-ground investigation.

Analysis of management plans

We categorised publicly available conservation management plans according to publication date and governance regime. We used the typology of Hill et al. (2012) as the basis for our governance categorisation because it classifies Indigenous engagement into four categories defined by the relative degree of power-sharing between Indigenous and government agency partners, and although based on Australian contexts, is also applicable to international collaborations.

1. Indigenous governed collaborations (Indigenous collaborations) that are initiated by Indigenous actors, with decision-making and planning shared between an alliance of Indigenous organisations. Such plans would also need to have been entered into the database of conservation areas defined by agency legislation from which we obtained our list of areas for which plans might be available.

2. Indigenous-driven co-governance regimes (Indigenous co-governance) that are often created within government legislative structures, but retain high levels of Indigenous control over decision-making and planning within those structures. The most common manifestation of this governance regime in Australia are Indigenous Protected Areas (IPAs).

3. Agency-driven co-governance models (agency co-governance) that are created within existing planning regimes. These governance arrangements recognise Indigenous rights but decisions are framed on agency definitions of
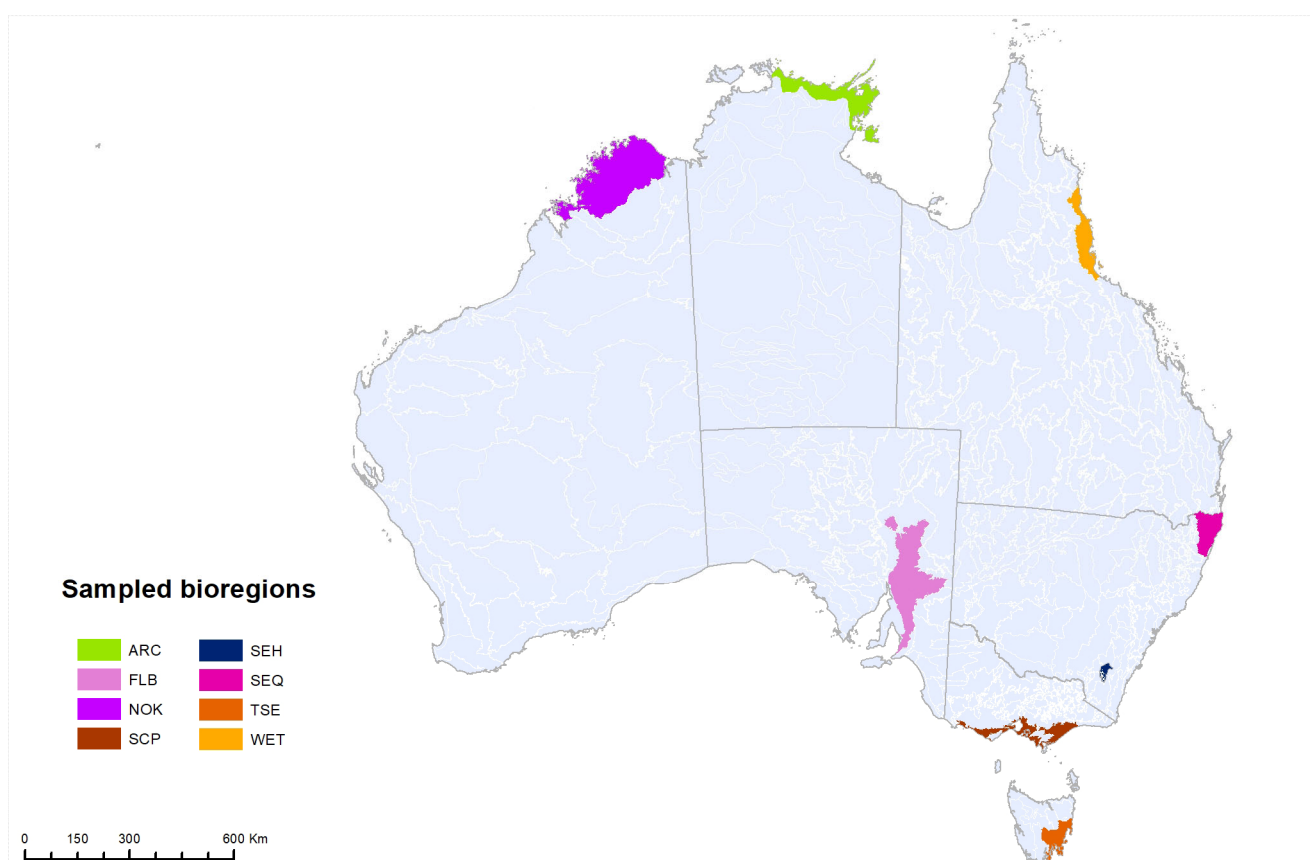

Figure 1. Sample bioregions from which conservation management plans were reviewed (ARC = Arnhem Coast, FLB = Flinders Lofty Block, NOK = Northern Kimberley, SCP = South East Coastal Plain, SEH = South Eastern Highlands, SEQ = South Eastern Queensland, TSE = Tasmanian South East, WET = Wet Tropics)

those rights. In Australia, these include conservation areas managed under formal joint-management agreements.

4. Agency governance regimes (agency governance) engage with Indigenous groups as stakeholders rather than a group with a distinct political status or right to planning and decision-making. These are legally-declared conservation areas with no formal structures to include local Indigenous communities in governance.

A summary review of plans across governance regimes identified three general categories in which management was focused, present in most plans as a specific section: significant species, fire and cultural heritage. These categories were chosen to compare levels of engagement because both agencies and local Indigenous communities commonly describe them as a management focus, but with different conservation objectives (e.g. Kaimowitz & Sheil, 2007; Roberts et al., 1995; Suchet, 2002). Text searches were undertaken in each plan using a list of search terms to identify (a) whether plans committed to management of significant species, fire and cultural heritage, and (b) if so, whether plans included evidence of Indigenous engagement in each management theme. We categorised levels of engagement into three classes to differentiate between intended and actual engagement: 'absent', if there was evidence for management for that theme being undertaken, but no mention of engagement with local Indigenous communities; 'aspirational', where a commitment or intention to engage with Indigenous groups was stated but there was no evidence that active participation was occurring; and 'active', where there

was evidence that Indigenous groups were actively involved in management of that category. To maximise consistency between the two authors involved in the review process, an initial trial review of one plan was undertaken independently by each reviewer, and the results compared for agreement. Both reviewers defined plans consistently in all criteria. Throughout the review process, excerpts of the evidence used by each reviewer to classify the level of engagement were recorded, and any instances of ambiguity or uncertainty resolved through discussion between the reviewers. These excerpts also provided an additional source of qualitative evidence of the values and priorities articulated under different governance approaches.

RESULTS

In total, 128 management plans were available for review from the eight sample bioregions: 107 were from agency governance regime plans, 10 were from agency co-governance regimes, and 11 were from Indigenous co-governance regimes. There were no Indigenous collaboration regimes identified in our data set, but this may be an artefact of our sampling procedure as such collaborations may not be listed in the databases we interrogated. There were no publicly available management plans for most conservation areas in our case study area, and reviewed plans were unlikely to be representative of governance approaches in a bioregion.

Engagement, management focus and agency expectations

All plans analysed included commitments to manage significant species, but a small number of plans failed to consider fire (10) or cultural heritage (six) (Figure 2).

Cycad species are significant cultural and food plants in some parts of Australia © Tom Duncan
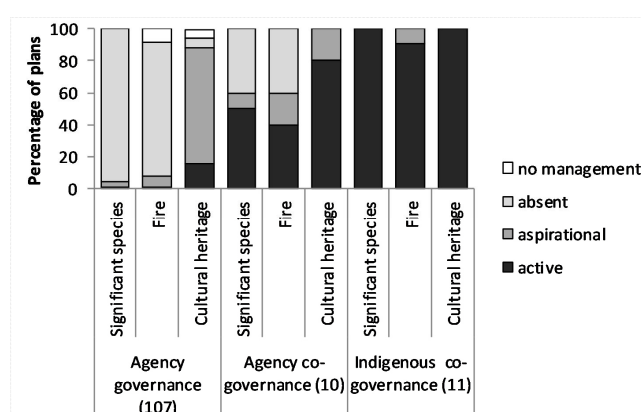

Figure 2. Commitment to Indigenous engagement in significant species, fire and cultural heritage management in conservation plans prepared for conservation areas under three types of governance regime in Australian regions with high potential for Indigenous involvement (bracketed figures are the number of plans analysed).

Table 1. Management objectives and roles for Indigenous collaborators in agency governance regime plans

Plan	Indigenous role	Quote
Devil Bend Natural Features Reserve Management Plan (2010)	contribute knowledge to agency-defined fauna management objectives	"reflect Indigenous knowledge of fauna in management practices where practical."
Macleod Morass and Jones Bay Wildlife Reserves Management Plan (2005)	contribute knowledge to agency-defined fauna management objectives	"encourage research into Indigenous peoples' folklore and customs relating to fauna of the planning area… reflect and integrate knowledge gained in all management programs."
The Parks and Reserves of the Northern Richmond Range Management Plan (2005)	contribute to fire management planning within the context of cultural heritage management	"involve representatives of local Aboriginal people in the preparation of fire management strategies to ensure that fire management activities do not impact on Aboriginal sites and/or places of significance."
Yuraygir National Park and Yuraygir State Conservation Area Plan of Management (2003)	contribute to fire management planning within the context of cultural heritage management	"ensure local Aboriginal communities are involved in the development of fire management strategies … to protect Aboriginal cultural heritage values."

Indigenous engagement in agency governance regimes was generally associated with cultural heritage management, with little scope for participation in fire management and even less so in significant species management. For each of the three management categories in agency governance regime plans, engagement was more likely to be an aspiration than to be actively occurring.

Qualitative analysis of the few agency governance regime plans which commit to Indigenous engagement in significant species and fire management show that roles of Indigenous partners were generally limited to inclusion of knowledge to improve management of agency-defined values (Table 1). In other cases, Indigenous roles were confined to management of areas perceived to be of legitimate interest to local Indigenous communities, such as the potential impacts of fire on cultural heritage sites.

In most cases, qualitative analysis of cultural heritage management sections agreed with quantitative findings indicating higher rates of Indigenous participation. Compared to significant species and fire management sections, cultural heritage sections of plans tended to use more inclusive language, with terms such as 'cooperation' and 'partnerships' more commonly used. Defined roles were more specific, and some plans cited an intention to formalise partnerships in cultural heritage management. However, aspirations to engage Indigenous partners were more common than active

participation, and the language used to describe engagement was often vague and non-committal. For example, local Indigenous communities were said to have had "an input into decisions affecting their interests" (Brook Islands National Park Management Plan 1999) and were "encouraged to assist" in protection of cultural heritage (Ballina Nature Reserve Management Plan 2003). Other plans imply that Indigenous perceptions of values and priorities are ultimately subordinate to those of the agency, by committing to "provide opportunities for Aboriginal communities to participate in the protection and management of Aboriginal sites within the Reserve, consistent with the objectives and strategies in this plan" (Cudgen Nature Reserve Management Plan 1998).

Agency co-governance regime plans showed higher levels of engagement in significant species and fire management than agency governance regimes, but active engagement was reported in less than half such plans. In comparison to agency governance regimes, agency co-governance regimes appeared to have been more actively engaged with Indigenous groups in cultural heritage management. Some agency co-governance regime plans were explicit about the importance of involving Indigenous partners in all three management categories and linked this to maintaining cultural health. For example, the Gunaikurnai Whole of Country Plan (2015) states: "We want to be actively managing the water, fire, wildlife and biodiversity on our Country, and helping others to… do this in a culturally appropriate way."

All reviewed Indigenous co-governance approach plans described active management being undertaken in all three management categories, apart from one plan in which fire management remained an aspiration. Management targets in these plans included 'saltwater fish', 'native animals', 'food and medicine plants', 'right-way fire', and 'healthy fire'. In these plans, the roles of Indigenous partners were much more than just custodians of culturally significant sites, because management of significant species and fire were described as major concerns.

Significant species

In Indigenous co-governance plans, where species were identified as targets for management, it was generally as plants and animals or groups of plants and animals with cultural significance (Table 2).

Threatened species were generally not considered management priorities in Indigenous co-governance plans. Where threatened species were considered significant, it was because they also happened to be culturally significant species (e.g. Dugong *Dugong*

Table 2. Significant species named as management targets and cultural significance in Indigenous co-governance conservation plans

Plan	Significant species	Cultural significance and management protocols
Dambimangari Healthy Country Plan	Turtle and Dugong	"Jurluwarra (Saltwater-turtle) and warliny (Dugong) are important to Dambimangari people as an important food source." "We have many traditional stories for jurluwarra and warliny and their cultural use is interwoven with our traditional lifestyles."
	Whales and dolphins	"There are stories about the whales and creation of our coastline in our culture."
	Native animals for food	"All the animals have their own songs and stories; some have their images in caves or in stone arrangements."
	Bush fruit and bush medicine	"All the plants on our country are important for Dambimangari people. We use them for tucker, medicine, tools, weapons, arts and crafts."
	Wulumarany (freshwater turtles)	"Young people are not allowed to eat wulumarany until their back has been scratched by these tortoises."
Balanggarra Healthy Country Plan 2012-2022	Native animals	"When we talk about Native Animals in this Plan, we are talking about animals Balanggarra people were hunting traditionally in the past and animals that have cultural significance for Balanggarra." "We are only hunting for our traditionally important animals when it is the right season."
Wunambal Gaambera Healthy Country Plan	Aamba (kangaroos and wallabies) and other meat foods	"When we talk about aamba and how we should look after them we are also talking about other meat foods found in the moree (savanna woodland)."
Djelk Healthy Country Plan	Culturally important plants and animals	"Many of these species have special cultural significance as totems or dreaming species and many other species we use for bush tucker, medicine, tools and for art and craft."
Dhimurru Indigenous Protected Area Management Plan	Bäru (Estuarine Crocodile *Crocodylus porosus*)	"Hunting or killing Bäru is governed by strict customs that are managed by the clans that are custodians of the principal myth narrative."

dugon, marine turtles and Northern Quoll *Dasyurus hallucatus*), and this was stated as the motivating factor in listing them as management priorities. Use of plants and animals for food, medicine and materials was linked to maintaining cultural heritage, and was in turn prescribed by customary laws and knowledge associated with cultural health, for example by undertaking rituals to ensure populations of plant and animal species remain healthy.

Similarly, threats to plants and animals were often perceived within the wider cultural context rather than ecological changes. Changes in social networks were given as the reason that odor (Dugong) have become more difficult to hunt in the Bardi Jawi Healthy Country Plan (2013):

> Hunters are often approached by relatives in Broome and further afield for a share of meat from country for their families. This has widened the distribution circle and put more pressure on skilful hunters (and the species).

Where threatened species were mentioned in Indigenous co-governance plans, it was sometimes made explicit that they were not a management priority, but were likely to benefit from conservation actions aimed at other values. For example, the Dambimangari Healthy Country Plan 2012-2022 (2012) lists nine management priorities focused on culturally important plants, animals, places and burning practices, then states "while we are looking after our nine most important things we are looking after these threatened species." In this plan, 'collaborative' research focused on threatened species was seen to disempower Indigenous partners, because their participation was limited to contributing knowledge to benefit Western conservation objectives, rather than involvement in initial decisions about which conservation values research should focus on:

> Dambimangari Rangers have worked with WWF and marine scientists to find out how many of these dolphins there are and if they are a threatened species. Our traditional knowledge of the tides, currents and seas help us when we are looking for jigeedany [dolphins] and we have learned how to record our sightings from the scientists. In the past, our Rangers worked with Western scientists who were studying dolphins. We would like them to be more involved with researchers in joint projects that are meaningful for us as well.

Conservation areas such as Kakadu National Park are important cultural landscapes sustaining species that are significant to both Indigenous and agency managers © Tom Duncan

Estuarine crocodile *Crocodylus porosus* is a culturally significant species in parts of northern Australia © Tom Duncan

In agency co-governance regime plans, significant species were generally threatened species, and Indigenous participation was often not mentioned in management strategies. Some plans also included culturally significant species and prioritised recovery of species that are both culturally significant and threatened species (Ikara-Flinders Ranges National Park Management Plan 2017). Others gave Indigenous partners greater control in significant species management by requiring the consent of Indigenous partners before permits to research particular species were approved (Vulkathunha-Gammon Ranges National Park 2006). One plan explicitly emphasised the importance of considering biodiversity as one element of a cultural landscape: "Biodiversity, including threatened species and natural resources, [was] recorded as a component of the cultural landscape and management of these assets was considered as part of the management of the cultural landscape" (Border Ranges Rainforest Biodiversity Management Plan 2010).

DISCUSSION
Our results show that agencies and local Indigenous communities differ in their perceptions of conservation values and their respective roles in managing those values. Agencies perceive clearly defined boundaries between cultural heritage, significant species and fire

management, and the currently low engagement rates of local Indigenous communities in the latter two categories might be explained by agencies perceiving cultural heritage to be the most important focus of Indigenous participation. This would align with Western conservation paradigms which generally perceive 'nature' and 'culture' as separable constructs with their own values and associated management strategies (Harmon, 2007), and 'cultural heritage' as pertaining exclusively to particular sites or artefacts considered to have static, historical significance (Jackson, 2006). Carter (2010) argues that these perceptions remove cultural meaning and force local Indigenous communities to conform to agency and scientific discourses in conservation management.

Local Indigenous communities perceive their role in conservation management as much more than protection of particular cultural heritage sites, with maintenance of cultural heritage values encompassing the wider cultural landscape and associated indicators of cultural health, such as language or transmission of knowledge (Smyth & Beeron, 2001; Venn & Quiggin, 2006). For Indigenous Peoples, the ability to sustain cultural landscapes relies on the capacity to participate in all aspects of conservation management. Managing fire and significant species are cultural responsibilities which cannot be separated from other elements of the

environment (Garibaldi & Turner, 2004; Lynam et al., 2007; McGregor et al., 2010; Yibarbuk et al., 2001). Agency planning regimes that allow local Indigenous communities a role in one management area while excluding them from other areas can therefore be seen as a barrier to exercising their cultural rights and responsibilities (Langton, 2009). The impact of this marginalisation can be exacerbated because 'natural' elements are often prioritised over 'cultural' elements in protected area management (Hill et al., 1999). Governance structures which impede local Indigenous communities from undertaking holistic conservation management may also limit the capacity of agency-managed areas to achieve their own conservation objectives. In many cases, Indigenous land management practices have been described as synergistic with those of Western conservation managers, even where the stated objectives of land management are different from Indigenous perspectives. For example, Indigenous fire managers in Australia have a range of motives for carrying out burning activities, but do not necessarily identify maintenance of biodiversity among them (Yibarbuk et al., 2001). Nonetheless, these fire regimes have been associated with high levels of biodiversity and Western conservation managers seek to emulate Indigenous fire management practices in some conservation areas (Franklin et al., 2008).

Even where agencies do seek to engage Indigenous collaborators in management of significant species and fire, our results show that participation can be restricted in agency governance and (to a lesser extent) agency co-governance regimes to contributing knowledge and labour to fulfil agency-defined conservation objectives. While participation on these terms can be viewed positively by the local Indigenous communities involved (e.g. Brennan et al., 2012; Hoffmann et al., 2012), researchers have argued that separating Indigenous knowledge systems from Indigenous conservation objectives repudiates the validity of the knowledge systems and leads to subjugation rather than empowerment of local Indigenous communities (Coombes, 2007; Hill et al., 1999). In our case study, analysis of plans shows that, while Indigenous co-governance structures increase the capacity of Indigenous partners to control aspects of what type of knowledge is sought and how it is used in management, in some cases research activities in these conservation areas were still based on Western conservation values of questionable relevance to Indigenous collaborators. Even where co-management regimes are developed that give Indigenous collaborators greater power in decision -making, the institutional structures in which planning takes place can nonetheless give precedence to agency

worldviews and knowledge systems (Nadasdy, 2005). This shows that even where Indigenous collaborators benefit from access to procedural equity, the institutional and political context in which management occurs can act to marginalise Indigenous conservation worldviews.

Differences in the perception of significant species suggest that the existing political and legislative context in which threatened species are prioritised for management may also limit Indigenous autonomy in defining conservation values. Agency regime plans generally identify biodiversity values aligned with those in international and national policy and legislation. In Australia, these mechanisms have long required Indigenous values to be considered in biodiversity management. For example, Australia's Threatened Species Strategy outlines the importance of working with local Indigenous communities and incorporating their knowledge to conserve threatened species, and includes commitments to prioritise management of threatened species that are also culturally important (Department of the Environment, 2010). While these commitments devolve some level of control in planning to Indigenous peoples, they also operate within a conservation paradigm with implicit assumptions about which elements of biodiversity are most important. Because the conservation value has been defined on Western terms as 'threatened species', Indigenous autonomy is confined to operating within this construct.

This presents potential challenges to Indigenous conservation paradigms. Classificatory systems among cultures vary, so the plant or animal that is defined as a discrete entity (i.e. a 'species') under Western taxonomic systems and in legislation may be defined differently by local Indigenous communities (Puruntatameri et al., 2001). By definition, threatened species are rare and may not be observed frequently or even known by local Indigenous communities (Garnett & Woinarski, 2007). According to Rose (1995, p.92), singling out particular species for management attention may in itself be a problem, because "ethics and value judgements which support playing favourites with some species over others do not fit easily into the Aboriginal world view". In our case study, Indigenous co-governance regimes represented better opportunities for local Indigenous communities to access the procedural equity that allowed them to define which species or groups of species were significant than agency governance or agency co-governance regimes. Similar opportunities have been noted elsewhere in Australia. Indigenous land managers in a central Australian IPA were able to prioritise management of culturally important game animals despite the fact that they were of little

Local Indigenous communities seek to engage in management of cultural heritage, significant species and fire © Tom Duncan

significance to Western conservationists because they were considered 'common' (Wilson & Woodrow, 2009). In contrast, in the management plan for a jointly managed National Park, agency perceptions of Banteng *Bos javanicus* as a 'feral' species which may damage biodiversity values took precedence over the values of Indigenous collaborators, who considered Banteng to be a significant species and legitimate element of the cultural landscape (deKoninck, 2005).

Even in cases where there is consensus between Indigenous and agency conservation managers about which species are management priorities, the types of conservation actions considered appropriate often differ. Indigenous Peoples often consider the taking of significant species for food, medicine or other uses as essential to sustaining the existence of that species and the health of the wider cultural landscape (Davies et al., 1999; Roberts et al., 1995). Because global and national conservation legislation and policy often emphasise the need to 'protect' significant species, as do agency governance regimes in our sample bioregions, this presents a potential point of conflict in co-governance

partnerships. The likelihood of conflict increases when the species being used as a resource is also a threatened species (Nursey-Bray, 2009).

CONCLUSIONS

Our case study demonstrates that despite international policy commitments, agency conservation planning processes often consider Indigenous participation outside of cultural heritage management to be limited to inclusion of Indigenous labour or knowledge to achieve agency conservation objectives. Our results suggest that Indigenous co-governance regimes currently provide better opportunities for local Indigenous communities to access procedural equity than the other governance regimes considered in our analysis. One of the positive implications of our research is that, given the significant amount of land in Australia designated as Indigenous Protected Areas (Renwick et al., 2017), Indigenous communities are likely to have authority in management of a significant (and increasing) proportion of the nation's conservation estate.

Indigenous co-governance regimes are an essential component in lifting rates of Indigenous engagement

and enhancing equity in governance, but successfully achieving the commitments set out in policy will also require other changes to be made. Governments are likely to continue to hold responsibility for most conservation management in the future, and the capacity for Indigenous Peoples to participate in Indigenous co-governance regimes depends strongly on short-term and unpredictable levels of government funding (Davies et al., 2013; Langton et al., 2005). In settings outside Australia, the potential to develop Indigenous co-governance regimes relies on advantageous political and social contexts and secure land tenure, preconditions which are unevenly distributed.

Local Indigenous communities have used innovative methods to overcome these challenges and shape the planning discourse in agency planning regimes. For example, Hill et al. (1999) describe how a local Indigenous community withheld knowledge from collaborators and used development of a fire protocol to gain power and extend their participation in fire and significant species management. In another case, a local Indigenous community transformed the discourse surrounding cultural heritage listing to include an integrated notion of biocultural diversity (Hill et al., 2011). In these instances, local Indigenous communities were able to use a greater share of procedural equity to assert at least some of their aspirations for conservation management despite not having the benefits that an Indigenous co-governance regime planning structure provides.

There is also an onus on agencies to incorporate the structural and attitudinal changes likely to lead to increased equity into their planning regimes. According to Adams (2004, p.8), this requires a willingness to recognise the institutional and conceptual constraints under which Indigenous peoples currently participate:

> If however, the only real meeting places are created 'after' Aboriginal people have regained rights to land, the potential is limited: this perpetuates the situation where Aboriginal people 'force' others to the negotiating table by law or judicial decision. It is processes of structural and attitudinal change which are necessary to create the opportunity for new meeting places – recognition spaces – across the landscape.

Our research suggests that these 'meeting places' remain elusive in agency governance regime conservation areas in Australia, and emphasises the need for innovative conservation management practices that may help to bridge the gap between policy commitments and recognition of Indigenous Peoples' conservation priorities. Potentially useful approaches include an emphasis on monitoring cultural well-being along with biodiversity (Caillon et al., 2017), consideration of the planning structures used in IPA plans, which emphasise linkages between people, places and plants and animals (Davies et al., 2013), and far greater emphasis on following respectful and culturally appropriate process when negotiating joint management (Stacey et al., 2013). Conceptual shifts which begin to see Western knowledge systems as being incorporated into long established and situated Indigenous management practices, rather than Western conservation management 'bringing in' Indigenous knowledges, may also be useful in developing more equitable collaborative spaces (Muir et al., 2010). It is through applying these structural and attitudinal changes in combination with Indigenous governance structures that recognition of Indigenous rights in conservation management will be ultimately realised.

SUPPLEMENTARY ONLINE MATERIAL
Indigenous land tenure in sample bioregions (provided by Ian Leiper)

ABOUT THE AUTHORS
Tom Duncan is a final year PhD candidate at Charles Darwin University, Darwin. His current project explores Indigenous engagement in management of significant species by comparing the conservation priorities of Indigenous landowners, conservation scientists and legislators. Some of his other research interests include investigation of the conservation benefits of ecotourism, integration of social and cultural benefits into conservation programs, and restoration of cultural landscapes.

Jaramar Villarreal-Rosas is a second year PhD candidate at The University of Queensland. Her current project explores the influence of land use change in the distribution of ecosystem services across a range of beneficiaries and how to prioritise conservation actions to ensure benefits of ecosystem services are distributed equitably, in Queensland, Australia. Jaramar's MEnvMan thesis involved understanding the effects of environmental degradation in the livelihoods of indigenous people in Mexico. She integrates spatial

analysis, decision science, and theories that explain people's values and perceptions of nature to explore pathways to achieve on-ground positive outcomes for biodiversity and local communities.

Josie Carwardine is a research scientist at Australia's national science agency, the CSIRO (Commonwealth Scientific and Industrial Research Organisation). Josie's research applies decision science approaches to highlight the resources needed to meet biodiversity goals and to identify the most effective, efficient and rigorous actions for conservation programs, offset schemes and protected areas. Her goal is to help governments, NGOs and the private sector protect and enhance the survival of threatened species and ecosystems, while considering the broader cultural, economic and social values held by people.

Stephen Garnett is Professor of Conservation and Sustainable Livelihoods at Charles Darwin University. He has worked for 40 years in a wide range of fields related to the conservation of biodiversity, particularly in tropical Australia and south-east Asia, as well as having a deep interest in the role Indigenous people play in conservation and natural resource management. Having lived and work with Indigenous people in several communities, he is acutely aware of the diversity of world views held and how this drives priorities for local action.

Cathy Robinson is the Research Director for the Northern Australia Research Alliance and has worked for over twenty years on research that catalyses Indigenous-led approaches to achieve sustainable environmental management options and solutions. She has published over 70 academic publications and enjoys applying her expertise as a member on the Australian Expert Assessment Group for the IUCN Green List of Protected Areas.

REFERENCES

Adams, M. (2004). Negotiating nature: collaboration and conflict between Aboriginal and conservation interests in New South Wales, Australia. *Australian Journal of Environmental Education* 20, 3-11.

Austin, B.J., Robinson, C.J., Fitzsimons, J.A., Sandford, M., Ens, E.J., Macdonald, J.M., Hockings, M., Hinchley, D.G., McDonald, F.B., Corrigan, C., Kennett, R., Hunter-Xenie, H. and Garnett, S.T. (2018). Integrated Measures of Indigenous Land and Sea Management Effectiveness: Challenges and Opportunities for Improved Conservation Partnerships in Australia. *Conservation and Society* 16, 372-384.

Barbour, W. and Schlesinger, C. (2012). Who's the boss? Post-colonialism, ecological research and conservation management on Australian Indigenous lands. *Ecological Management & Restoration* 13, 36-41.

Berkes, F. and Turner, N.J. (2006). Knowledge, learning and the evolution of conservation practice for Social-Ecological System resilience. *Human Ecology* 34, 479-494.

Brennan, K.E.C., Twigg, P.J., Watson, A., Pennington, A., Sumner, J., Davis, R., Jackson, J., Brooks, B., Grant, F. and Underwood, R. (2012). Cross-cultural systematic biological surveys in Australia's Western Desert. *Ecological Management & Restoration* 13, 72-80.

Brosius, J.P. (2004). Indigenous Peoples and protected areas at the World Parks Congress. *Conservation Biology* 18, 609-612.

Brosius, J.P., Tsing, A.L. and Zerner, C. (1998). Representing communities: Histories and politics of community-based natural resource management. *Society & Natural Resources* 11, 157-168.

Caillon, S., Cullman, G., Verschuuren, B. and Sterling, E.J. (2017). Moving beyond the human–nature dichotomy through biocultural approaches: including ecological well-being in resilience indicators. *Ecology and Society* 22.

Carter, J. (2010). Displacing Indigenous cultural landscapes: the naturalistic gaze at Fraser Island World Heritage Area. *Geographical Research* 48, 398-410.

Colchester, M. (2004). Conservation policy and indigenous peoples. *Environmental Science & Policy* 7, 145-153.

Convention on Biological Diversity (2010). *Strategic Plan for Biodiversity 2011-2020*, Conference of the Parties to the Convention on Biological Diversity, Nagoya, Japan.

Coombes, B. (2007). Postcolonial Conservation and Kiekie Harvests at Morere New Zealand ? Abstracting Indigenous Knowledge from Indigenous Polities. *Geographical Research* 45, 186-193.

Corrigan, C., Robinson, C.J., Burgess, N.D., Kingston, N. and Hockings, M. (2018). Global review of social indicators used in protected area management evaluation. *Conservation Letters* 11(2), 1-9.

Davies, J., Higginbottom, K., Noack, D., Ross, H. and Young, E. (1999). *Sustaining Eden: Indigenous community wildlife management in Australia*. London: International Institute for Environment and Development.

Davies, J., Hill, R., Walsh, F., Sandford, M., Smyth, D. and Holmes, M. (2013). Innovation in management plans for community conserved areas: experiences from Australian Indigenous Protected Areas. *Ecology and Society* 18, 14.

deKoninck, V. (2005). Joint management of banteng (*Bos javanicus*) in a contested cultural landscape: observations and implications. *Human Dimensions of Wildlife* 10, 123-135.

Department of the Environment and Energy (2010). *Threatened Species Strategy*. Australian Government.

Department of the Environment and Energy (2014). CAPAD: protected area data. Australian Government.

Ens, E.J., Finlayson, M., Preuss, K., Jackson, S. and Holcombe, S. (2012). Australian approaches for managing 'country' using Indigenous and non-Indigenous knowledge. *Ecological Management & Restoration* 13, 100-107.

Franklin, D.C., Petty, A.M., Williamson, G.J., Brook, B.W. and Bowman, D.M. (2008). Monitoring contrasting land management in the savanna landscapes of northern Australia. *Environmental Management* 41, 501-515.

Garibaldi, A. and Turner, N. (2004). Cultural keystone species: implications for ecological conservation and restoration. *Ecology and Society* 9, 1.

Garnett, S.T., Burgess, N.D., Fa, J.E., Fernández-Llamazares, Á., Molnár, Z., Robinson, C.J., Watson, J.E.M., Zander, K.K., Austin, B., Brondizio, E.S., Collier, N.F., Duncan, T., Ellis, E., Geyle, H., Jackson, M.V., Jonas, H., Malmer, P., McGowan, B., Sivongxay, A. and Leiper, I. (2018). A spatial overview of the global importance of Indigenous lands for conservation. *Nature Sustainability* 1, 369-374.

Garnett, S.T. and Woinarski, J. (2007). A case for Indigenous threatened species management. In: M. Luckert, B.M. Campbell, J.T. Gorman and S.T. Harnett (Eds.), *Investing in Indigenous Natural Resource Management*, pp. 95-96.

Guha, R. (2003). The authoritarian biologist and the arrogance of anti-humanism: wildlife conservation in the Third World. In: V.K. Saberwal and M. Rangarajan (Eds.), *Battles Over Nature: Science and Politics of Conservation*, pp. 139-157. Delhi: Permanent Black.

Harmon, D. (2007). A bridge over the chasm: finding ways to achieve integrated natural and cultural heritage conservation. *International Journal of Heritage Studies* 13, 380-392.

Hill, R., Baird, A. and Buchanan, D. (1999). Aborigines and fire in the Wet Tropics of Queensland, Australia: ecosystem management across cultures. *Society & Natural Resources* 12, 205-223.

Hill, R., Cullen-Unsworth, L., Talbot, L. and McIntyre-Tamwoy, S. (2011). Empowering Indigenous peoples' biocultural diversity through World Heritage cultural landscapes: a case study from the Australian humid tropical forests. *Aboriginal Policy Research Consortium International*.

Hill, R., Grant, C., George, M., Robinson, C.J., Jackson, S. and Abel, N. (2012). A typology of indigenous engagement in Australian environmental management: implications for knowledge integration and social-ecological system sustainability. *Ecology and Society* 17, 1-17.

Hoffmann, B.D., Roeger, S., Wise, P., Dermer, J., Yunupingu, B., Lacey, D., Yunupingu, D., Marika, B., Marika, M. and Panton, B. (2012). Achieving highly successful multiple agency collaborations in a cross-cultural environment: experiences and lessons from Dhimurru Aboriginal Corporation and partners. *Ecological Management & Restoration* 13, 42-50.

Jackson, S. (2006). Compartmentalising culture: the articulation and consideration of Indigenous values in water resource management. *Australian Geographer* 37, 19-31.

Jonas, H., Roe, D. and Dilke, A. (2014). *Human rights standards for conservation, Part II: Which international standards apply to conservation initiatives?*, IIED Discussion Paper. London: International Institute for Environment and Development.

Kaimowitz, D. and Sheil, D. (2007). Conserving what and for whom? Why conservation should help meet basic human needs in the tropics. *Biotropica* 39, 567-574.

Lane, M.B. and Hibbard, M. (2005). Doing it for themselves: Transformative planning by Indigenous Peoples. *Journal of Planning Education and Research* 25, 172-184.

Langton, M. (2003). The 'wild', the market and the native: Indigenous People face new forms of global colonization. In: W. Adams and M. Mulligan (Eds.), *Decolonizing Nature: Strategies for Conservation in a Post-colonial Era,* pp. 79-107. London: Earthscan.

Langton, M. (2009). Emerging environmental issues for Indigenous Peoples in northern Australia. In: E. Barbieri-Masini (Ed.), *Quality of Human Resources: Gender and Indigenous Peoples*. Oxford: United Nations Educational, Scientific and Cultural Organization.

Langton, M., Palmer, L. and Ma Rhea, Z. (2005). Community-oriented protected areas for Indigenous Peoples and local communities. *Journal of Political Ecology* 12, 23-50.

Lynam, T., De Jong, W., Sheil, D., Kusumanto, T. and Evans, K. (2007). A review of tools for incorporating community knowledge, preferences, and values into decision making in natural resources management. *Ecology and Society* 12.

McDermott, M., Mahanty, S. and Schreckenberg, K. (2013). Examining equity: A multidimensional framework for assessing equity in payments for ecosystem services. *Environmental Science & Policy* 33, 416-427.

McGregor, S., Lawson, V., Christophersen, P., Kennett, R., Boyden, J., Bayliss, P., Liedloff, A., McKaige, B. and Andersen, A.N. (2010). Indigenous wetland burning: Conserving natural and cultural resources in Australia's World Heritage-listed Kakadu National Park. *Human Ecology* 38, 721-729.

Moreaux, C., Zafra-Calvo, N., Vansteelant, N.G., Wicander, S. and Burgess, N.D. (2018). Can existing assessment tools be used to track equity in protected area management under Aichi Target 11? *Biological Conservation* 224, 242-247.

Moritz, C., Ens, E.J., Potter, S. and Catullo, R. (2013). The Australian monsoonal tropics: An opportunity to protect unique biodiversity and secure benefits for Aboriginal communities. *Pacific Conservation Biology* 19, 343-355.

Muir, C., Rose, D. and Sullivan, P. (2010). From the other side of the knowledge frontier: Indigenous knowledge, social–ecological relationships and new perspectives. *The Rangeland Journal* 32, 259-265.

Nadasdy, P. (2005). The anti-politics of TEK: The institutionalization of co-management discourse and practice. *Anthropologica* 47, 215-232.

Natural Resource Management Ministerial Council (2010). *Australia's Biodiversity Conservation Strategy 2010-2030*. Canberra: Australian Government.

Nursey-Bray, M. (2009). A guugu yimmithir bam wii: Ngawiya and girrbithi: Hunting, planning and management along the Great Barrier Reef, Australia. *Geoforum* 40, 442-453.

Oviedo, G., Maffi, L. and Larsen, P.B. (2000). *Indigenous and traditional Peoples of the world and ecoregion conservation*. Gland, Switzerland: World Wide Fund for Nature.

Porter-Bolland, L., Ellis, E.A., Guariguata, M.R., Ruiz-Mallén, I., Negrete-Yankelevich, S. and Reyes-García, V. (2012). Community managed forests and forest protected areas: An assessment of their conservation effectiveness across the tropics. *Forest Ecology and Management* 268, 6-17.

Preuss, K. and Dixon, M. (2012). 'Looking after country two-ways': Insights into Indigenous community-based conservation from the Southern Tanami. *Ecological Management & Restoration* 13, 2-15.

Puruntatameri, J., Puruntatameri, R., Pangiraminni, A., Burak, L., Tipuamantymirri, C., Tipakalippa, M., Puruntatameri, J., Puruntatameri, P., Pupangamirri, J.B. and Kerinaiua, R. (2001). *Tiwi Plants and Animals: Aboriginal flora and fauna knowledge from Bathurst and Melville Islands, northern Australia*. Darwin: Parks and Wildlife Commission of the Northern Territory.

Renwick, A.R., Robinson, C.J., Garnett, S.T., Leiper, I., Possingham, H.P. and Carwardine, J. (2017). Mapping

Indigenous land management for threatened species conservation: An Australian case-study. *PloS one* 12, e0173876.

Roberts, M., Norman, W., Minhinnick, N., Wihongi, D. and Kirkwood, C. (1995). Kaitiakitanga: Maori perspectives on conservation. *Pacific Conservation Biology* 2, 7-20.

Rose, B. (1995). *Land management issues: attitudes and perceptions amongst Aboriginal people of central Australia*. Alice Springs: Central Land Council.

Salmon, E. (2000). Kincentric ecology: indigenous perceptions of the human–nature relationship. *Ecological Applications* 10, 1327-1332.

Schleicher, J., Peres, C.A., Amano, T., Llactayo, W. and Leader-Williams, N. (2017). Conservation performance of different conservation governance regimes in the Peruvian Amazon. *Scientific Reports* 7, 11318.

Schmidt, P.M. and Peterson, M.J. (2009). Biodiversity conservation and indigenous land management in the era of self-determination. *Conservation Biology* 23, 1458-1466.

Schreckenberg, K., Franks, P., Martin, A. and Lang, B. (2016). Unpacking equity for protected area conservation. *Parks* 22, 11-26.

Smyth, D. and Beeron, C., (2001). Development of cultural indicators for the management of the Wet Tropics World Heritage Area. In: G. Ward and A. Muckle (Eds.), *Australian Institute of Aboriginal and Torres Strait Islander Studies Indigenous Studies conference*, pp. 105-113. Canberra: Citeseer.

Sobrevila, C., (2008). T*he role of Indigenous Peoples in biodiversity conservation*. Washington: World Bank.

Springer, J. and Campese, J. (2011). *Conservation and human rights: Key issues and contexts.* Scoping paper for the Conservation Initiative on Human Rights.

Stacey, N.E., Izurieta, A. and Garnett, S.T. (2013). Collaborative measurement of performance of jointly managed protected areas in northern Australia. *Ecology and Society* 18, 1-19.

Suchet, S. (2002). 'Totally wild'? Colonising discourses, indigenous knowledges and managing wildlife. *Australian Geographer* 33, 141-157.

Venn, T. and Quiggin, J. (2006). Accommodating indigenous cultural heritage values in resource assessment: Cape York Peninsula and the Murray–Darling Basin, Australia. *Ecological Economics*.

Wilson, G. and Woodrow, M., (2009). Kuka kanyini: Australian indigenous adaptive management. In: C. Allan and G. Stankey (Eds.), *Adaptive Environmental Management: a Practitioner's Guide,* pp. 117-141. Dordrecht, The Netherlands and Collingwood, Australia: Springer Science and Business and CSIRO Publishing.

Yibarbuk, D., Whitehead, P., Russell-Smith, J., Jackson, D., Godjuwa, C., Fisher, A., Cooke, P., Choquenot, D. and Bowman, D. (2001). Fire ecology and Aboriginal land management in central Arnhem Land, northern Australia: a tradition of ecosystem management. Jou*rnal of Biogeography* 28, 325-343.

Yunupingu, D. and Muller, S. (2009). Cross-cultural challenges for Indigenous sea country management in Australia. *Australasian Journal of Environmental Management* 16, 158-167.

RESUMEN

Diversos instrumentos sobre políticas y regímenes de gobernanza internacionales, nacionales y locales reconocen el conocimiento de los pueblos indígenas y las comunidades locales como una plataforma clave para la gestión de la biodiversidad y los ecosistemas, pero la materialización de estos compromisos en la negociación de prioridades de conservación con comunidades locales adecuadamente empoderadas sigue siendo inconsistente. Con base en una revisión de los planes de gestión de las áreas de conservación en las bioregiones australianas identificadas con un alto potencial para la participación de las poblaciones indígenas en la gestión de especies amenazadas, examinamos cómo el potencial de las comunidades indígenas locales para perseguir sus objetivos de conservación y el grado de participación en la gestión de las especies importantes, el patrimonio cultural y los incendios, están influenciados por diferentes regímenes de gobernanza ambiental. Descubrimos que en la actualidad las comunidades indígenas tienen más posibilidades de participar en la gestión del patrimonio cultural que en la gestión de especies o incendios, a pesar de la evidencia de que las comunidades indígenas buscan participar en la gestión de todos los aspectos de sus bienes tradicionales. Las prioridades en la gestión de especies en los planes sobre regímenes de cogobernanza impulsados por los indígenas se centran en especies de importancia cultural en lugar de especies amenazadas. Concluimos que el potencial actual de las comunidades indígenas locales para participar en la gestión de la conservación en términos equitativos depende del establecimiento de regímenes de cogobernanza impulsados por los indígenas, y argumentamos que para elevar los niveles de participación de los pueblos indígenas en los regímenes de gobernanza de las agencias se requiere un mayor reconocimiento por parte de las agencias de las cosmovisiones indígenas en la planificación de enfoques de conservación.

RÉSUMÉ

Une large palette d'initiatives politiques et de régimes de gouvernance aux niveaux international, national et local, reconnaissent que les savoirs des peuples autochtones et locaux représentent une plate-forme essentielle pour la gestion de la biodiversité et des écosystèmes, mais la transformation de cette reconnaissance en négociations avec des communautés locales autour des priorités de conservation reste approximative et irrégulière. En se basant sur un examen des plans de gestion des zones de conservation dans les biorégions australiennes ayant un potentiel élevé pour l'engagement indigène dans la gestion des espèces menacées, nous avons analysé l'influence qu'exercent des différents régimes de gouvernance environnementale sur le potentiel des communautés autochtones locales à poursuivre leurs objectifs de conservation, et le degré de leur implication dans la gestion des espèces importantes, du patrimoine culturel et des incendies. Nous avons constaté que les communautés autochtones disposent d'une plus grande latitude dans la participation à la gestion du patrimoine culturel que dans la participation concrète à la gestion des espèces ou des incendies, malgré leur volonté manifeste de collaborer à la gestion de tous les aspects de leurs domaines traditionnels. Il s'avère qu'en cas de co-gouvernance avec les autochtones, les priorités de gestion des espèces sont centrées sur les espèces d'importance culturelle plutôt que sur les espèces menacées. Nous concluons que la possibilité pour les communautés autochtones locales de participer de manière équitable à la gestion de la conservation dépend de la mise en place de régimes de co-gouvernance dirigés par les autochtones. Nous faisons également valoir que pour améliorer le niveau de participation des peuples autochtones, les régimes de gouvernance institutionnelle doivent mieux reconnaître les visions du monde autochtones lors des initiatives de planification de la conservation.