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Stretching the Truth: Where is the Community in Co-management?

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Abstract

It is globally recognised that best practice protected area governance requires a co-management approach, resulting in a proliferation of literature regarding the meaning, attributes and consequences of co-management. In this paper we propose that the term 'co-management' has been continually and often uncritically 'stretched'. This conceptual stretching inhibits the critical analysis and development of co-management and may lead environmental managers to implement traditional hierarchical or marketised regimes under the guise of co-management – to the detriment of local development. In exploring the conceptual stretching of co-management, we develop and empirically test a nuanced framework of co-management models through which to better understand the variation of co-management in practice and enable a review of the design and implementation of co-management approaches within local communities.

Keywords

Introduction

In the environmental governance literature collaborative management has received enormous attention (see Plummer et al. 2013; Sandstrom, 2009; Sandstrom et al. 2014, Watson, 2015), with Margerum stating that collaborative management has "quickly become [the] leading paradigm for environmental management" (2008, p. 457). Now it is globally recognised that best practice protected area governance requires a collaborative (co-management) approach (CBD COP 5 V6 2000; Dudley 2008).

The rising importance of collaborative management has resulted in a proliferation of literature detailing the nuanced criteria and benefits of co-management (e.g. Blomquist, Dinar and Kemper, 2010; Dodson, 2014). But more literature is not always better. Following Sandstrom (2009), this paper proposes that the term 'co-management' has been continually and often uncritically 'stretched' (see Benson et al. 2013 and his reference to Sartori 1970). As such, co-management has outgrown its original frame of "a process in which diverse stakeholders [actors] … work together to resolve a conflict or develop and advance a shared vision" (Koontz and Johnson, 2004, p. 185). Conceptual stretching inhibits the critical analysis and development of concepts, as without clearly identified 'conceptual containers' to organise concepts, ideas, data and analysis, researchers run the risk of "saying less, and by saying less in a far less precise manner" (Sartori 1970, p. 1039 as referenced in Benson et al. 2013). For co-management, this 'stretching' may lead environmental managers to implement traditional hierarchical or marketised regimes under the guise of co-management.

Despite an increased clarity between alternate models of environmental governance such as hierarchical, markets and co-management (see Driessen et al. 2012), there has not been a clear articulation of the variance that can be found *within* a specific model of governance. In exploring the conceptual stretching of co-management, we seek to develop a greater understanding of the variation in co-management arrangements. Using existing literature, we develop a nuanced framework of co-management models which is then empirically testing using three National Parks in the Australian state of New South Wales (NSW) as case studies. The theoretically informed and empirically tested framework provides a better understanding of the variation of co-management in practice. The framework will enable the improved design and implementation of co-management approaches through due consideration of participating actors, institutions and delivery objectives. It is important to note that we are focusing on providing an understanding of different co-management governance arrangements and are not stating that co-management is any better or worse than other types of management (i.e. purely state or private). The success of any governance system is about how best it fits in achieving its outcomes within the prevailing context (see Hurlbert and Gupta 2015).

We present our argument as follows: firstly we introduce co-management and its link to governance models, using the literature we develop a nuanced framework to investigate governance arrangements across the co-management continuum. A brief overview of our methods is then provided with a description of the institutional setting for the three case studies. An analysis of co-management in practice highlights the influence of institutional context within each case study, providing a strong base to review the developed governance framework. We finish with practical insights on how different co-management models align with specific actor and delivery contexts.

Co-management

Protected areas are under increasing pressure to deliver multiple objectives, including the preservation of cultural heritage, recreation and tourism opportunities for local communities, and the protection of their environments (Locke and Deardon 2005). Over recent decades the management of conservation areas has moved from a purely government responsibility to a shared model with civil society and/or private actors within 'co-management' arrangements (see Dodson, 2014; Brisbois and de Loe, 2016; Borrini-Feyerabend et al. 2013; Weeks & Jupiter 2013). At its core, co-management is the sharing of decision-making responsibility between those who use natural resources and the state-based management authorities (Berkes 1994). The involvement of actors in decision-making process is thought to improve both the knowledge available and the legitimacy of the rule-making process (Jentoft 2000a; Sandstrom, Crona and Bodin 2014). Ideally this leads to rules tailored to local conditions (Basurto 2005; Ostrom et al. 1999), higher levels of compliance (Eggert and Ellegård 2003; Jentoft 2000b), lower monitoring and enforcement costs (Abdullah et al. 1998), enhancing conservation management outcomes.

Although co-management has a distinct theoretical background (for further insights see Carlsson and Berkes, 2005), Borrini-Feyerabend and colleagues (2013) have shown that co-management has been implemented across a range of contexts. This diversity of co-management examples and contexts has stretched the concept of co-management to enable it to be flexible. Flexibility is important, enabling co-management to comply with and design for varying institutions, including jurisdictional and legislative rules (Lane, 2001; Margrum 2008), and local practices and histories (see Margrum 2008, Sandstrom et al. 2014). Community aspirations (Ross et al.,

2005 and Robinson et al., 2015), and actor power relations including trust and reciprocity (Brisbois and de Loe, 2016; Stern and Coleman, 2015) also influence co-management design.

We provide clarity to this 'stretching' of co-management through the development of a framework that considers the role of actors and institutions, depicting three models of co-management. We then explore how 'stretched' co-management can be in the same context by testing the models using three case study protected areas where the legislative rules, local practices and histories are held constant.

Models of Co-management

To provide a greater understanding of environmental governance arrangements the last decade has seen a spawning of 'models' (see Sabatier et al., 2005 Hysing 2009; Driessen et al. 2012; Lange et al. 2013). These models follow the broad structures of markets, hierarchy and networks (under which co-management sits) prevalent in public policy literatures, providing clarity on different governance arrangements and how they vary with respect to core characteristics, such as actor positions, power, and approaches to representation and social interaction, and delivery. However, the implementation of co-management varies considerably which current models are unable to adequately capture. In the framework presented in this paper we enhance existing governance models (e.g. Driessen et al. 2012; Lange et al. 2013) by providing a more specified attribution of what each core characteristic means under different models of co-management. This focus will be achieved through an investigation of the bottom-up perspective to governance, thus focusing on delivery rather than policy.

The first core characteristic to be considered is actor positions. It is important to consider the types of actors involved in co-management approaches, including who initiates action and how

actors relate to each other (e.g. Driessen et al., 2001). We focus on an expanded actor set to the traditional state, market and civil society trio, ensuring a nuancing of the players, their position and roles. Our actor set focuses on common players in co-management, i.e. the government or state (S), private organisations and groups including non-government bodies, private trusts, companies and environmental groups (P), and the community to include all members owning and 'renting' land not just Indigenous or Aboriginal (C). In considering this broader set of actors we are able to identify important characteristics of co-management delivery, an often complex issue due to the many actor roles being directed by the governance structure, delivering aspects of control and power.

The power base is the formal and or informal basis of power within the governance structure (e.g. Brisboi and de Loë 2016). Understanding the power base helps to identify which actors have the power to make decisions, close down issues, deliver resources and drive on-ground action. While actors and their power are often detailed in management guidelines, the practical management of a protected area can be very different from legislated rules. In the delivery focused framework 'rules in use' are considered, as referred to by Ostrom (2005), rather than rules in law or regulation.

The model of representation relates to how actors interact and engage in the governance structure (e.g. Glasbergen and Groenenberg, 2001), including how they 'represent' particular aspects of the community at large. This is closely related to the mechanisms of social interaction which refers to how decisions are made in practice (see Fung 2006). What are the processes in place to make decisions? Are they consensus-based, representative, or conciliatory using deliberation?

The last characteristic, delivery, pertains to how the co-management approach works in practice - who is involved, how are resources provided (people, tools, knowledge, and time), and how does this relate to the institutions and actors of co-management (e.g. Potts et al. 2016). This last feature identifies the key actors and the dedicated resources available for co-management implementation.
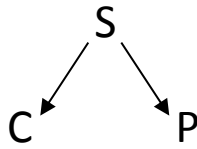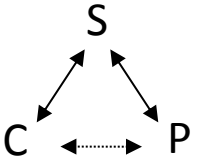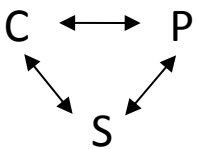
Based on these five characteristics we have constructed a co-management framework (Table 1). This framework articulates the 'rules of the game' as appropriated by Ostrom (1999, p. 38) for co-management, and as such outlines i) actors positions, ii) actor power, , iii)model of actor representation, iv) model of social/ actor interaction, and v) actors responsible for delivery. The framework depicts three models of co-management, identifying the 'stretch' continuum of co-management, from total government control to one of shared responsibility. We have termed these models; controlled management, coordinated management and collaborative management.

Model 1 – Controlled. This model highlights the deliberate isolation of actors from each other, with the state controlling decision-making through predominantly discrete dialogue with individual actors. The State uses its discretionary power as the legal manager of the protected areas to control decision-making, including controlling who is involved, when and to what extent.

While such an approach may seem unnecessarily hierarchical in a mature democracy such as USA or Australia, this model has significant benefits that need to be recognised. First, the controlled model is a legitimate model within the regulatory frameworks that underpin protected area management, albeit not the preferred approach when broader development goals are considered. Second, the constrained nature of the controlled model should encourage a fast

decision-making process and thus enable proactive protected area management through the timely completion of management plans and operational documents, given appropriate resources.

Table 1. A 'stretched' co-management framework

	Model 1 Controlled Management	**Model 2 Coordinated management**	**Model 3 Collaborative management**
	S → C, S → P	S ↔ C, S ↔ P, C ⇢ P	C ↔ P, C ↔ S, P ↔ S
Actor positions	Actor autonomy determined by state	Autonomy of actors within predetermined boundaries	Self-governing entities determine the involvement of all actors
Power base	Authority of state,	Competitiveness; contracts & legal resources	Self-sufficient (autonomy) leadership and social networks
Model of representation	Pluralist (national election & lobbying)	Corporatist (formalized stakeholder arrangements)	Partnership (participatory stakeholder governing arrangements)
Mechanisms of social interaction	Top down; command and control	Actors decide; autonomously about interactions	Bottom up: social learning's, deliberations and negotiations
Delivery	State	State, contracted + volunteers	Shared between actors

State (S), private organisations and groups (P) and community (C)

Model 2 – Coordinated. In this model dialogue between the state, the community and private organisations is enabled, although controlled by the state. This approach is more participatory than the controlled model, actively encouraging inclusion in decision-making from other actors while retaining final decision-making power at all times. Actors have the opportunity to negotiate decision-making outcomes within often formalised terms of reference, reflecting a networked approach to governance. This approach provides opportunities for localised interests

to be brought to the decision-making table and debated. Such an inclusive approach reduces tensions, by enabling opportunities to form relationships and share knowledge of management objectives and constraints, and an element of community ownership of governance decisions (Schirmer et al 2016, Mascarenhas and Scarce 2004).

This model requires the willingness of actors to be at the decision-making table with the knowledge that they do not have the final say in decisions. Such an arrangement requires a level of trust in the state, as such coordinated arrangements may take some time to deliver as community members and participating actors need time to develop relationships, adjust to new management paradigms, and move beyond initial angst and uncertainty (see Koontz 2014; Schirmer et al. 2016, Dare and Schirmer 2017).

Model 3 – Collaborative. This model represents the most inclusive form of co-management whereby formalised partnerships are established amongst the actors to govern protected area management. Such arrangements deliberately take control away from the state, dispersing it throughout the partnerships, albeit with caveats regarding public accountability, compliance with legislative requirements etc. Collaborative approaches, when functioning effectively, encourage mutual learning and deliberately seek the inclusion of a broad range of interests to generate 'better' decisions (Dare et al 2011; Koontz 2014). However, collaborative processes are often resource intensive and can take considerably longer (Beder 2006, Borrini-Feyerabend and Tarnowski 2005), hence they are not suitable for all contexts.

These three models of co-management are developed to depict the predominant 'stretching' of co-management approaches. To test the utility of these models in adequately describing co-

management models we pilot the models in three protected areas in New South Wales (Australia).

Methods

In 2013 an investigation of protected area governance was undertaken in response to community concerns of adverse social and economic impacts resulting from the poor management of local protected areas. A case study approach was implemented using three western NSW National Parks. NSW National Parks provides a legitimate case due to a long history of co-management within NSW protected area management. Each of the three parks studied in this research was implementing a different approach to co-management, providing critical insights into the development, implementation and outcomes of alternative co-management models.

Data was collected using document analysis and interviews. Document analysis was conducted to develop a comprehensive understanding of the institutional framework in which NSW protected areas are governed. This analysis identified the current and past governance arrangements for each case study area, including key actors and their interactions. Documents analysed included government reviews and inquiries, relevant policies, management plans and other publicly available documents pertaining to NSW protected area management.

Semi-structured interviews were conducted with 22 key-actors representing a range of actor views. Interviewees included seven local government representatives (local government annotated as S), four NPWS representatives (State actors which are annotated as S in the results), three Indigenous representatives, three land or other resource managers (private organisations or groups which are represented by P in the results) and five community members (which are represented by C in the results). Interviews lasted between 45 and 120 minutes with interview

questions designed to elicit information on interviewee's perceptions and/or experiences with protected area management (including actors involved, processes of interaction, and actor roles), benefits and impacts of protected area management in their local community, and land use history to help understand social and economic changes across the region and the perceived impacts of protected areas in the region.

Interviews were analysed using an adaptive theory approach (Layder 1998), where content themes were developed iteratively based on both the literature and empirical evidence. Document and interview data was triangulated throughout the analysis to understand the development of governance structures for each protected area, and the perceived acceptability of each of these approaches within the local communities in relation to the five core elements of the model: actor positions, power bases, mechanisms for representation and social interactions and delivery.

National Parks in Western New South Wales

In 2013 a New South Wales governmental review was undertaken on the institutional and actor roles in the management of crown lands (including protected areas) (see New South Wales Legislative Council 2013). This review was in response to a public outcry about the acquisition process and ensuing management, public access and allowable activities able to take place on new protected areas, especially those lands found in remote areas (e.g. Western NSW). These concerns, coupled with the NSW2021 goals[i] regarding greater community involvement and "increasing opportunities for people to look after their own neighbourhoods and environments", highlight the need for a better understanding on the governance arrangements for protected area management.

In 2012, researchers involved in 'Building Sustainable Communities' as part of the Murray Darling Basin Futures Collaborative Research Network[ii] were asked by local actors to investigate the concerns, strengths and opportunities for protected areas in western NSW, particularly regarding the south west NSW communities of Balranald and Hay. While there are several National Parks in the region, three are dominant: the long established world heritage area park (Mungo National Park); a newly established culturally significant park (Yanga National Park); and a recently acquired local sheep station park (Booligal Station National Park) (see Table 2).

Table 2. Study areas

	Protected Area Case Studies		
	Booligal Station National Park (as part of the Lachlan Valley State Conservation Area)	**Yanga National Park (as part of Murrumbidgee Valley National Park)**	**Mungo National Park (is 65% of the Willandra lakes World Heritage Area)**
Size	6,500 hectares	66,734 hectares	110,967 hectares
Date of gazetting	2010	2007	1979
Previous use	Multiple sheep/ wheat farming properties	Sheep/ wheat farm in the district	Western Lands pastoral leases, sheep farming
Actors	State + committee	State + committee + volunteers	Joint Management (Aboriginal people + State)
Conservation objectives	Preservation of current flora	Restoration of 12 different wetland types; protection of identified threatened and vulnerable flora and fauna.	Conservation of significant cultural, archaeological, and biodiversity values; provision of recreational opportunities
Governance Structure	Government with advisory group	Advisory board to government	Joint-management with Indigenous and government
Management plans currently in place	Fire Management Strategy & Pest Management Strategy	Fire Management Strategy& Pest Management Strategy	Plan of Management & all necessary (e.g. Fire)
Level of Bureaucracy	Low	Medium	High
Delivery	State	State + volunteers	Local community, State,

The establishment, governance and management of each of these three parks vary, with different models of co-management in practice. This diversity of governance arrangements operating within the same regulatory and environmental conditions provides an excellent opportunity to investigate how co-management is 'stretched' in delivery.

Booligal Station National Park

The Booligal Station National Park is one of several new National Parks located within the Hay region. A renowned station with significant cultural values for community members from across the region, the purchase of the property and lengthy delays in opening the new park to the public created tensions within the community[iii]. Strong community ties to local properties strengthen the community's interest in the ongoing management of Booligal Station and other protected areas within the region. While recognising that input from the local Nari Nari indigenous people was sought during land acquisition processes, many community members perceive that the ongoing governance and management of Booligal Station (and other new parks within the region) was 'closed' to the public, with insufficient opportunity for a diversity of local actors to become involved, and that even NPWS staff hands are tied due to limited resources:

> Local Government and community have no say in National Parks. Some Aboriginal groups have a say, especially on new input on acquisitions also cultural tours etc. [P1]

> There's no consultation with local people other than rangers and managers. But I don't think they get any say, they just get told "you don't have any money". [C1]

The governance arrangements for Booligal were contested amongst the study participants, highlighting the lack of actor roles and poor mechanisms of representation and interaction.

Members of the community believed there was an advisory group (or 'community liaison group') that provided overall advice and insight to NPWS on Booligal management. However, participants from the NPWS stated that the only community engagement was with a small group of landowners that collaborated in the management of a wetland adjacent to Booligal, of which NPWS is a member. This restricted governance approach contributes to the level of community concern regarding the legitimacy of NPWS management objectives. Community actors disenfranchised with the delivery of protected area management and associated marked shift in actor power bases, do not see public value in current park management:

> They bought it for the public but they're not open to the public and it's not managed. It's full of boxthorns and if that doesn't get them, then it will all burn. [C1]

> Everybody likes to see land available for public use, there is no reason for it not to be stocked [for grazing] and it has to be accessible for the public. Not reason not to have them available, what is the point? [C2]

Local park managers are well aware of the community concerns but feel that their hands are tied due to the lack of resources to adequately deliver governance and management activities:

> National Parks is so busy we haven't had time to do all the plans and get things going, we are understaffed and with new acquisitions all the time, it's hard to keep up. Once we have the management plans established we can be more involved in the community – whenever that will be! [S1]

This is a sentiment that is understood by community members who attribute poor protected area management to the prevailing bureaucracy which restricts the actor power base to government

actors external to the local community and to the single delivery approach to park management despite significant social and environmental differences:

> I trust some personnel but not the State government system. It's mostly a debacle but it is not the fault of the people on the ground, it is the senior managers. [C2]

> The local ranger and manager are good people, but their hands are tied, decision are handed down to them and they get nearly no funding to do the management … Our national parks here aren't the same as the ones on the coast, but they put them under the same control. [C1]

Yanga National Park

Originally Australia's largest sheep farm, Yanga National Park was opened in 2009 following its purchase in 2005. Yanga Station was an iconic economic and cultural asset for nearby Balranald, providing substantial agricultural employment and having Aboriginal and European cultural significance. As such the purchase by NPWS was followed by significant community concern.[iv]

Despite the rocky start, the governance of Yanga Station is well-established with a community advisory group in place to provide local insights in decision-making. The advisory group consists of representatives from across the range of community interests (e.g. local government, business, Aboriginal group, field naturalists, National Parks Association and local land holders). Highlighting the continued importance of Yanga for the local community, there is also a volunteer group, 'Friends of Yanga', who provide tours and support for Park activities. This strong connection of the community to Yanga drove both the initial contention when it was purchased by NPWS, and its renewal:

Yanga was a prominent property, an entity in itself, when sold locals felt betrayed, it always employed generations of people, it was almost as if the owners didn't really own it the community owned it. [S1]

[The sale of Yanga] hurts that much – you don't want nothing to do with them. [C3]

It's about creative thinking and problem solving, I've only been here 3 years and I've seen huge changes out in the park and it is all due to the local staff. [C4]

However, despite the waning of community concerns over time, some community actors remain cautious about the intentions of NPWS who are recognised as working hard to engage local's in decision-making and employment opportunities as much as possible:

It's not what you do it's who you are in the local area. It's really important to employ local people and get local support. [S1]

Parks have been running some very good campaigns, working with local businesses and community groups … they order catering from town or a community organisation runs a barbeque, they support local businesses. [C4]

The community advisory committee enables local actors a role in developing the park's management plan. The NPWS uses an open discussed forum approach to initially engage the committee members, after which the plan is drawn up and formal consultation occurs prior to the Advisory Council making a recommendation to the Minister. Despite this formal process, some members of the community remain concerned about the delivery of park management, which may be attributed to poor communication and or differences in values:

We don't send them a 50 page document in the mail and expect them to read it anymore, we just host a slightly, not overly, facilitated meeting and ask for verbal comment. Then we talk them through the issues and tell them what our actions are, get some discussion going and write down their comments, it is all minuted. [S2]

They really do need to communicate more for the community, the community are the best ambassadors for the park. They need to have local community engaged … It is happening to a certain extent, lack of resources and time, so many things that need to be done. [S4]

It's partly a clash of philosophies – how other people think we should be managed versus how Parks think we should be managed. [S2]

Park managers are keen to embrace the involvement of the local community and other interested parties, so long as activities are endorsed by external regional and state-based advisory committees. In addition to the Yanga community advisory committee, there is a Regional Advisory Committee which includes approximately 14 members representing various interests across the region. The Regional Advisory Committee plays an important role in the relationship between the NPWS and the community, liaising with the community about NPWS issues and providing feedback:[v]

We have a regional plan that links all the key plans with the budget … If it is not in an endorsed plan that is signed off on at regional and state level then it won't get funded." [S3]

Mungo National Park

Mungo National Park is within the well-established Willandra Lakes World Heritage Area. Mungo National Park governance is embedded in a co-management arrangement that facilitates mutual learning and recognition termed joint-management. Co-management arrangements have evolved from one with purely Aboriginal people involvement to now include local land holders from adjacent properties, Aboriginal elders and the local Council. This reciprocal arrangement provides sufficient accountability and legitimacy for participating actors and the government, with the Mungo National Park management objectives and operations predominantly determined by the joint-management committee (within relevant policy, legislation and regulatory requirements). The co-management approach and delivery is well embedded, providing reciprocal benefits for NPWS and the local community:

> The National Park is really great – they have done a lot for the Aboriginal people, work for younger people and older blokes, encouragement to look further ahead, caring for country. National Parks allows us to do all that; before they came on the scene we didn't have the money to do all this. [C5]

The success of the Mungo co-management approach is attributed to the time allowed to develop the relationships between participating actors and allow for effective interactions and dialogue:

> Co-management takes time, don't rush everything through at once – take time to talk, and think and look at it again, there are different types of people involved who need to work through different issues. [C5]

> We are always working together. Differences can be worked out if you sit down and talk about it. People will be reasonable. [C5]

The evolution of co-management arrangements in Mungo National Park highlights the need for flexible and context specific delivery arrangements:

> Across all the reserves we manage we have varying degrees of co-management in place ... all sorts of partnerships going on … It depends on the park and what the needs are. [S3]

Results show that co-management has been stretched across the three national parks, each representing a different model of delivery. Booligal Park is state controlled with limited input from other actors. All power for decisions and delivery is vested in the state with community perceiving that the co-management approach is not delivering the broader benefits to the community that a more actor inclusive approach could deliver. Yanga National Park has a coordinated approach, with community engaged in some decision making and delivery, while the state retains overall responsibility and accountability. This model has developed over time with current perceptions positive about the outcomes, although concern remains regarding the overly strong hand of the state in local community matters. Finally, at Mungo National Park where both Aboriginal and state actors share responsibility and accountability for decisions and delivery, the collaborative model is recognised as slowing decision-making, but delivers strong positive community outcomes.

Designing and delivering co-management

The continuum of co-management models distinguishes three models focused on actors and delivery, but all three still meet the original co-management frame of as articulated by Koontz and Johnson, (2004, p. 185); "a process in which diverse stakeholders [actors] … work together

to resolve a conflict or develop and advance a shared vision". The case studies provide us with insights into the breadth of application of co-management within protected areas, highlighting that even within the same legislative structures co-management is 'stretched' to take on various forms and functions – essentially different co-management models. Given this stretching there is a need to carefully consider each of the co-management models when designing any co-management approach, selecting the model that best suits your actors and delivery options. To help understand how best to design and implement a co-management approach within a given social and political context, the core characteristics of co-management, actor positions, power bases, mechanisms for representation and social interaction and delivery will be explored further.

The governance, and consequently the management, of protected areas is not the sole realm of state based managers such as the NPWS. Modern democratic expectations, government policy and strategic goals, and resource constraints (including time, money and expertise) highlight the need for multiple actors to be included within NRM governance (see Sabatier et al. 2005; Thomas 2003). However, having a diversity of actors involved is insufficient for effective co-management. Consideration of the actor's roles in the co-management approach and their capacity to undertake such roles effectively are important. Actors will require appropriate resources (technical and communication skills, time, authority, power), have access to relevant networks (local, professional, political), have trust in the decision-making process and their fellow actor participants. Attracting such actors is often difficult in remote regions where protected areas are often located with trade-offs required that may inhibit the quality of co-management outcomes, or alternative models of co-management may need to be implemented.

The skills, requirements and expectations of actors in a controlled approach are different to those of coordinated or collaborative co-management approaches. In locations where managers have

poorly developed networks and relationships within the community a controlled approach may be best. However, as actors become more skilled in working within the prevailing institutions and proficient in communications and conservation management, they will likely expect to transition to a more coordinated and ultimately collaborative co-management models.

It is important to acknowledge the role of time in this transition. The three models presented represent the case protected areas at a point in time. They can also however provide an insight into the temporal implications of co-management with an evolution from controlled management through coordinated management, and eventually collaborative management possible if the right social and political conditions and resources are available. The potential for such evolution is well recognised in the literature, with areas with pre-existing and ongoing collaborative processes in place having greater co-management success (see Ansell and Gash 2007 and Brummel et al. 2012). While, these previous structures and collaborations lend trust and legitimacy to new co-management initiatives the reverse is also true, with Gray (1989) highlighting that previous conflict ridden experiences may hinder successful co-management arrangements.

Each protected area sits within a local community with its own cultural heritage and development story. People's perception of policy is driven by their personal belief systems, which in-turn affects their framing of policy problems, preferred solutions (see Vasileiadou 2012 in Hurlbert and Gupta 2015, p. 101) and preferred institutions of decision-making and delivery. In this study the controlled and coordinated co-management cases highlighted that not all communities see the current co-management approach as being effective in delivering value both to the environment and to the community. Local communities perceive protected areas differently from the policy problem and goals set by the NSW Government, and consequently

disregard the predominantly top-down and perceivably illegitimate institutions in place for protected area management. Their local stories and belief systems affect their approach to protected area management, which is often a new land use forced upon them with alleged negative consequences for their community's future development, livelihoods and sustainability.

As illustrated by the coordinated co-management model implemented at Yanga National Park, local stories need an opportunity to be reframed, to become recollections that enable optimistic, or at least constructive, outcomes for the communities and for the environment. Effective governance arrangements in co-management can provide this opportunity, enhancing the power base of community actors, encouraging social learning (Hurlbert and Gupta 2015: Koontz 2014), and broadening the model of representation. By creating mechanisms for social interaction that provide space for local voices and time for healing, a coordinated co-management model enables for more networked governance approaches that encourages actor skill development while retaining decision-making power. In those circumstances where actors are highly skilled and there is a strong correlation across actor framings of preferred management objectives and delivery options, a collaborative model of co-management enables a range of instruments that encourage greater dialogue and negotiation amongst actors compared with traditional top-down approaches of coordinated and controlled models.

Delivery of protected area management is wholly the responsibility of the NPWS, with minor activities such as garden maintenance with local community groups under the watchful eye of the NPWS. This delivery authority is not without tension, with protected area management's key focus on delivering conservation outcomes often inconsistent with prevailing social and economic objectives. Each model of co-management provides difference spaces for mediation across these contradictory outcomes. In controlled environments little space for mediation is

available, with successful delivery reliant on the knowledge and skills of the protected area managers. Coordinated approaches enable community members more interaction amongst actors, providing space for negotiating delivery approaches that help to mitigate social and economic impacts of protected area management on local communities (e.g. local employment and procurement policies). In collaborative co-management models, the responsibility for protected area governance and delivery more devolved, with the join-management group typically undertaking both process and hence there is less potential for contradictory management objectives.

Conclusion

Co-management has been identified as the preferred management approach for the protection and conservation of nature around the world, despite the ambiguity around the meaning and application of co-management in practice. This research has filled a 'gap' in the current understanding of co-management, by providing a framework to explore its conceptual 'stretching'. In exploring this stretching a literature based framework was proposed identifying three distinct models of co-management along a continuum; controlled, coordinated and collaborative. These models vary with regards to stakeholder positions, power, representations, interactions and roles in delivery. This framework was successfully tested on three protected areas within the same legislative structure in New South Wales, Australia.

The framework is beneficial for exploring the range of co-management arrangements existing, and potentially suitable for, specific management contexts and outcomes. The framework explores how 'stretched' the term co-management has become providing insight for

environmental managers on alternative governance frameworks and their potential strengths and weaknesses in application. In achieving this specificity we have provided some clearly identified 'conceptual containers' to organise concepts, ideas, data and analysis for future researchers so they do not run the risk of stretching.

The co-management framework informs not only the future management of protected areas, but broader natural resource management where co-management arrangements are in place. A better understanding of how co-management is, or can be, implemented enables improved governance and management approaches that better reflect and incorporate the social and political context and community interests, encouraging positive benefits for local regions.

It is worth noting that this paper is limited by its cases. This framework is tested on terrestrial protected areas occurring within the same organisational structures (e.g. same regulation) within a sparsely populated landscape. Therefore further testing of the nuanced features and framework are appropriate in different spatial, temporal and socio-ecological settings. Additionally more work needs to be done to explore the various models of co-management in practice to help explain why some models work in some instances and not in others. This paper does not explore the range of implications of alternate co-management models associated with broader policy development, network governance, or even participatory management. Rather the paper provides a stylised framework of a 'stretched' co-management approach used in protected areas in practice and opens up the space for more focused debate on the implications of such stretching in the governance, and management, of public lands for conservation purposes.

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