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Agenda-setting and power in collaborative natural resource management

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SUMMARY

Collaborative management is a widely accepted means of resolving conflict amongst natural resource stakeholders. Power sharing is central to most conceptualizations of collaboration, but theoretical insights about power are only rarely used to interrogate collaborative processes. Agenda-setting theory was used to analyse cases of collaborative deer management in England, Scotland and Indiana (USA). Collaborative management agendas across scales and social contexts were found to be primarily set by contextual factors, particularly stakeholders drawing on specific cultures and policies, and pre-defining issues. These findings highlight significant gaps between the theory and practice of collaboration. If, in practice, substantial power has been wielded in advance, the capacity of subsequent collaborative processes to share power amongst stakeholders may be severely limited. To provide opportunities for differing cultural perspectives to be expressed and challenged, convenors of collaborative processes therefore need to be aware of and reflexive upon existing power relationships and structures.

Keywords: agenda-setting, collaboration, comanagement, conservation, deer, power, wildlife management

INTRODUCTION

Collaboration lies at the core of much contemporary natural resource and conservation management. It is widely cited as a process suited to addressing and resolving conflict amongst stakeholders and coping with change and complexity (Wondolleck & Yaffee 2000; Daniels & Walker 2001; Sabatier *et al.* 2005; Armitage *et al.* 2009). It is argued that inclusive collaboration provides opportunities for learning, building trust and adaptive capacity, and achieving more durable decisions. Central to claims about the effectiveness of collaborative processes are assumptions about power, especially the notion of power sharing (Berkes *et al.* 1991; Taiepa *et al.* 1997; Booher & Innes 2002; Borrini-Feyerabend *et al.* 2007). Power relations profoundly affect the process and outcomes of natural resource management (Jentoft 2007) and can vary considerably between scales and management contexts. However, these assumptions and conceptualizations are only rarely interrogated by applying theory relating to power within analyses of collaboration (although see Jentoft 2007; Sabatier & Shaw 2009). An understanding of the various components of power should enable the identification of how power imbalances may occur in collaborative processes. Moreover, it should enable understanding of if and how collaborative processes facilitate power sharing to a greater extent than other forms of management.

Robinson *et al.* (2011, p. 850) observed that the vast majority of knowledge about how collaboration works has been generated through empirical analysis of 'local level, action-oriented' efforts. This has led to primarily inductive theory-building relating to 'how collaboration works'. Individual empirical analyses do not often lend themselves to theoretical analyses as cross-comparison is generally required. Our paper aims to fill this knowledge gap by comparing three collaborative efforts and analysing them through the theoretical lens of context-shaping power and agenda-setting. Our endeavour is to bring together existing theory, particularly from political science and anthropology, with empirical data, so as to critically evaluate core assumptions underpinning this approach to management. In identifying the key issues we aim to inform those convening and participating in collaborative efforts in order to increase their effectiveness. After considering the theory relating to collaborative management, power and agenda-setting, we present our empirical data via case-studies of collaborative deer management in England, Scotland and Indiana (USA).

Wild deer and their management have long posed conservation managers profound questions, however rising deer populations across Europe and North America (Gill 1990; Ward 2005) means they now present an increasingly complex and dynamic management challenge. Wild deer are 'multivalent' (Fiorini *et al.* 2011), moving across landscapes, crossing boundaries and interacting with people in various ways. They can impact negatively on both biodiversity (Côté *et al.* 2004; Martin *et al.* 2010) and society. Nevertheless, deer remain important in environmental, cultural and economic terms. Collaborative deer management has been the subject of previous research, although the focus has been largely

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on community engagement (Decker *et al.* 2005; Raik *et al.* 2005*a*, *b*).

Collaboration refers, essentially, to joint-working between stakeholders, defined as a 'pooling of appreciations and/or tangible resources ... by two or more stakeholders to solve a set of problems that neither can solve individually' (Gray 1985, p. 912). A substantial literature seeks to identify the factors that underpin successful collaborative management (Wondolleck & Yaffee 2000; Keough & Blahna 2006; Belton & Jackson-Smith 2010) and claims that a range of benefits flow from it. These benefits are said to result in less conflict and more effective policy implementation, and most, if not all, accrue from two intrinsic characteristics of collaboration: interaction and inclusivity.

Interactions between actors during collaborative processes provide substantial opportunity for learning (Daniels & Walker 2001; Raik *et al.* 2005*a*). Learning can potentially lead to the recognition of shared or overlapping objectives, but also underpin both comprehension of others' perspectives and tolerance towards them. The recognition of shared objectives, common understandings of the 'problem', and/or 'consensus', is a central feature of much collaborative management literature (for example see Chrislip & Larson 1994). Where actors recognize shared objectives and/or capacity complementarities, significant pooling of resources and coordination of activities can occur, increasing their effectiveness and efficiency (Wondolleck & Yaffee 2000, pp. 36–41). Learning via interaction is additionally linked to innovation (Wolf & Primmer 2006).

Collaboration needs also to be an inclusive process. 'Bringing in' a range of diverse but interdependent stakeholders can have the crucial effect of shifting power structures (Booher & Innes 2002). Inclusivity builds 'ownership' of processes, problems, increases knowledge exchange and encourages trust between stakeholders, all contributing to the overall legitimacy and efficacy of the process (Belton & Jackson-Smith 2010; Prell *et al* 2010). The inclusivity of a process can affect stakeholders' levels of satisfaction as much as the final decision itself (Lawrence & Daniels 1997). Collaboration is often, then, constructed as requiring and promoting work towards common goals and needs and a shared agenda. However, this ideal view of 'working together' is affected by relations of power that regulate social interactions.

Power is a prominent concept across the social sciences, although strongly 'contested' and conceptualized in various ways. Central to most conceptualizations is that power is relational, that is, it is a feature of the social relationships between and amongst actors and institutions. Power can therefore vary considerably between the different social contexts in which relationships are established (Jessop 1997).

Power is not limited to observable relationships between individual actors and institutions, but is manifest at a range of scales and in different social spaces. Lukes (1974) included situations in which individuals do not realize that their interests are being overridden or contravened, as their initial preferences and desires have been shaped by powerful others (Gramsci's 1975 hegemony: an individual's interiorization of dominant power ideology). Wolf (1999, p. 5) emphasized the 'structural' dimension of power, where it 'organizes and orchestrates the settings themselves, and ... specifies the direction and distribution of energy flows'.

Hay reconciled much of this analytical diversity, referring to direct 'conduct-shaping' and indirect 'context-shaping' power. He defined context-shaping power as 'the capacity of actors to redefine the parameters of what is socially, politically and economically possible for others' (Hay 1997, p. 50). The capacity to set agendas has long been recognized as one of the key dimensions of context-shaping power (Schattschneider 1960; Bachrach & Baratz 1962). Controlling the agenda of decision-making or negotiation processes allows particular actors to define the problems, options and choices available for discussion, along with the framework of values and practices within which they are discussed, prior to subsequent meetings around the negotiating table.

Issue or problem (re)definition lies at the core of much agenda-setting theory (Baumgartner & Jones 2009). Schattschneider (1960), for example, described how political actors expand the scope of conflict over public issues in order to mobilize previously uninvolved actors. Referring directly to Schattschneider, Bachrach and Baratz *et al.* (1962, p. 949) stated, 'Some issues are organized into politics while others are organized out'.

In this paper, we conceptualize agenda-setting as comprising a significant proportion of context-shaping power both inside and outside structured processes. It consists of explicit attempts to set boundaries around social and political values and practices, the definition and redefinition of problems, and the selection of topics for negotiation. Critical analysis of the interface of context-shaping power, agenda-setting and collaboration over natural resources (see Jentoft 2007) is vital given the claims made relating to the effectiveness of collaborative processes.

METHODS

Our research approach centred on the selection of case studies defined by a natural resource, followed by qualitative characterization of the decision-making process and interactions between stakeholders influencing or attempting to influence decisions regarding the resource. Each case was explicitly labelled and framed as 'collaborative' by its participants and, consequently, claims can be, and often are, made about its improved effectiveness. These claims were tested by our analysis. Each case considered some form of 'bridging organization' or partnership, the role of which has been identified as critical in collaborative management (Berkes 2009). Furthermore, in looking at contemporary wild deer management, the case studies provided an opportunity to investigate how collaboration evolves as different stakeholder groups become engaged as a resource changes its character and impacts.

Case analysis drew on primary and secondary data. The process and themes for this characterization were initially developed for the analysis of the English case, and subsequently tested and refined in Scotland and the USA. The Scottish case was undertaken as an explicit extension of the initial project, whereas the USA provided an unexpected opportunity for analysis when one of the project team was asked to participate in a deer management task force that was initiated in their locality.

Primary data was gathered through semi-structured interviews and participant observation. Semi-structured qualitative interviews (Mason 2002, pp. 62–83) followed a written protocol (accessible via the UK Data Archive; see Rural Economy and Land Use Programme, no date) and allowed the collection of stakeholder-centred information on the history of stakeholder interactions, evolution of issues and collaboration, opinions on barriers and drivers of collaboration and on the decision-making processes. This was fundamental in England and Scotland, where collaborative processes were initiated years before research intervention. Interviewees were selected following detailed stakeholder analysis (see Reed *et al.* 2009, p. 1943–44 for further details), which emphasized the breadth of interests involved in and influenced by wild deer management. In England, interviews were conducted with national level ($n = 22$) and regional ($n = 8$) representatives of deer management stakeholder organizations. These included public sector agencies, such as the Forestry Commission and Natural England, non-governmental organizations, such as the Wildlife Trust and British Deer Society, and bodies representing private interests, such as the Confederation of Forest Industries and Small Farms Association. In Scotland, the focus was on a local deer management group (DMG) and interviewees ($n = 13$) included public officials (for example National Park Authority, conservation officers), private landowners and managers representing private, public and non-governmental ownerships. All interview data was captured through audio recording. Participation (Bogdewic 1999; Bernard 2011) at, for example, collaborative or public meetings allowed the researchers to record the development of the collaborative processes and the elements affecting them. This included direct observation of how interaction unfolded, the impacts of particular events, topics and themes discussed, how problems were expressed, and what influence institutional roles, policies and broader context (for example media) had on stakeholders. In the USA case in particular, this data coalesced as public record, including meeting minutes, reports, web and other media communications. Secondary data included legislation, policy documents and reports, as well as the considerable information available from government and hunting organizations in the UK and USA. Structured records of research activities were kept through audio recording, note taking and/or 'official' minute taking. Audio recordings were transcribed, reviewed by the relevant authors, and triangulated against notes and/or minutes.

Analysis of data from each case-study was initiated by the individual author responsible for the primary research for that case, followed by joint reflection. We followed the principles of a 'grounded' approach in order to reveal key structures and dimensions of collaborative management processes and to identify themes within and commonalities across the cases. 'Open' coding (Robson 2002, p. 194) was used to analyse transcribed audio recordings and documents. The foundation of the analysis undertaken in this comparative work is the recursive (repeatable) process of connecting theory to data. Our theoretical review was used to provide a framework within which our primary data was organized, structured and compared. Major data categories were identified through this process and iteratively refined to develop the synthesis that forms the basis of our discussion below.

RESULTS

Wild deer policy and collaboration at the regional and national scales in England

Wild deer policy at the national scale in England is the responsibility of the Department for Environment, Food and Rural Affairs (DEFRA), but is focused around a multilevel collaborative partnership organization called the Deer Initiative (DI). At the national level, policy is centred upon the 'sustainable management' of wild deer with particular reference to protecting native broadleaved woodland and addressing the problem of road traffic accidents involving deer (DEFRA 2004). This partnership features governmental and non-governmental organizations with clear interests in deer and their management: such as forestry, hunting, nature conservation and animal welfare. The organization has a small staff: a secretariat charged with coordinating interactions between partner organizations, and regional 'deer liaison officers' promoting local DMGs. At the national level, partnership activities involve roundtable discussions of policy, research findings and legislative changes, along with field visits aimed at grounding these discussions in 'real world' deer management. Despite its collaborative label, there is no formal decision-making power vested in the partnership. The forum therefore usually acts primarily as an arena in which to gauge participants' views. Discussion of proposed legislation to extend hunting seasons, for example, allowed hunting organizations to advocate the practical benefits it might bring, whilst enabling animal welfare organizations to express their concerns. These views were then taken into consideration by DEFRA, which was responsible for the final decision. The partnership's regional staff are focused on convening voluntary DMGs with the aims of raising awareness of deer, coordinating collaborative management efforts at a landscape scale, and advising on issues such as stalking and venison production (see Fiorini *et al.* 2011 for further detail of the workings of DMGs in England and Scotland). All partner organizations provide 'in-kind' resources, such as staff time, but nearly all funding originates from DEFRA.

The data generated by interviews with representatives of deer management stakeholder organizations in England

revealed a number of routes through which actors can set the collaborative management agenda. These included policy interpretation, the pre-definition of ideas and 'problems', and funding.

The transformation of national policies into local actions was revealed as a key process that enabled some actors, primarily those within state institutions, to set collaborative management agendas. One example is the implementation of DEFRA's *Working With the Grain of Nature: a Biodiversity Strategy for England* policy (DEFRA 2002), which called on land managers to 'harness natural processes' (see for example DEFRA 2002, pp. 42 and 46). Subsequent Forestry Commission policy reflected this by identifying 'natural regeneration' as the ideal process for ancient woodland restoration (Thompson *et al.* 2003, p. 36). This policy has had a profound effect upon the ways in which financial and legal tools have been applied, and the subsequent framing of collaborative deer management fora. As one local representative of the Forestry Commission (personal communication 2006) stated: 'We've got this "ancient woodland" type policy stuff that says that "natural processes if we can". ... [We] started to get applications from owners to [conduct felling] and we started to feel that we could say "no". ... if they had a lot less deer we could say "yes". ... We [then] started to look at whether we could pull together the controlling interests into a deer management group'.

The availability of funding is another factor that enables actors to set agendas. For example, although the DI is viewed by some as a 'very broad church' (representative of the British Association for Shooting and Conservation, personal communication 2007) focusing upon 'sustainability', its objectives are, in fact, distinctly defined by funding priorities dictated by DEFRA. A representative of the Deer Initiative (personal communication 2006) said: 'The elements that we focus on are the ones that we are being paid to do. So at the moment the priorities within ... collaborative deer management is pretty much the reduction of impacts. Those impacts are on biodiversity, deer-vehicle collisions and disease'.

Another way in which the agenda of this forum is set is via the dominant discourse in which it operates, particularly the way in which wild deer are 'seen' and perceived as a 'problem', to be managed only in certain ways. This has led to the construction of collaborative efforts around pre-defined 'problems' or issues, preventing the process from being iterative and generating opportunities for learning. Focusing on pre-defined problems has led to the participation of only a select few stakeholders, that is, those needed to deliver these objectives, with little room for others with different objectives. For example, when asked if there were any 'barriers' to their organization's participation in the collaboration, one anonymous interviewee (personal communication 2007) noted that: 'The tendency of foresters, researchers and the deer community to construct deer issues in negative terms leads to a lack of objectivity over considering their impact. This ... prejudices debate and decision-making in relation to management at a site or landscape-scale'.

Local-scale collaborative deer management in Scotland

In Scotland, DMGs deal primarily with red deer (*Cervus elaphus*). Most rural DMGs consist of a partnership between state agencies, landowners and resource managers, and have formed in response to state involvement since the 1980s. Research focused on the Cairngorms Speyside Deer Management Group (CSDMG), which includes a broad range of land management objectives. Members are developing a new collaborative deer management plan which aims to reflect the range of land-management priorities amongst the group, as well as recent policy and legislative changes. DMG meetings are structured around topics of common interest, with members taking the lead according to their skills, organizational position or interests. The DMG has no formal decision-making power, with final decisions about collaboration made by individuals. For example, when planning future deer population counts, resources such as helicopter hire may be contributed by agency staff, while landowners or managers determine transect routes and who will take part on their land. Some decisions, such as those about dates for population counts, are made consensually (see Fiorini *et al.* 2011 for further detail).

Established cultures and policies have a profound impact on the agenda of this collaborative management forum. Traditionally, deer management has revolved around game sport, leisure and ownership for personal pleasure. This established agenda is being challenged by two interlinked factors. First, with the rise of the sustainability and biodiversity agenda, state interests have shifted towards greater protection of natural heritage. Second, landowner objectives have become more varied, notably through increased ownership by conservation organizations and private owners with conservation interests (Warren & McKee 2011). Whereas sporting estates favour relatively high deer densities and consistent numbers to ensure a 'safe' replacement level and maintain the economic contribution from sporting clients, other owners seek to reduce and maintain lower densities to limit browsing impacts. In CSDMG and more broadly, these changes have brought about a desire amongst state agencies and conservation-oriented managers to shift the agenda to managing deer impacts, rather than numbers. This has resulted, in some instances, in cull targets now being set with the aim of balancing numbers and impacts of deer. The state natural heritage agency's objectives reflect their legal responsibility to achieve 'favourable ecological condition' on designated sites, in accordance with higher level policy and legislation, particularly the European Union Habitats Directive (Directive 92/43/EEC, see European Commission 2013). However, rather than using statutory powers to impose habitat management, local management is mainly achieved via voluntary agreements

with landowners in order to maintain trust and good working relations.

This legislative obligation on the state to protect biodiversity can focus the agenda on a subset of sustainability issues. Although national strategy recognizes environmental, social and economic aspects of sustainable deer management, there is no comparable legislative duty to consider the economic and social dimensions. Agency staff recognize that these aspects remain less well explored (also see Bullock 1999); a representative of Scottish Natural Heritage (personal communication 2011) stated: 'we're very good addressing the habitat bit, we're not very good at addressing the economic and the social piece of what sustainable deer management is supposed to be about. And these other two things need to come to the fore'.

Different sets of knowledge also compete to affect the DMG's context and agenda. Although systematic records are often kept of population harvest and animal condition, formal 'scientific' habitat monitoring required to assess deer impacts is not often seen as a necessary means of achieving the objectives of sporting estates. Gamekeepers primarily make decisions based on observational or traditional ecological knowledge, and thus more 'scientific' monitoring is not necessarily part of the DMG's agenda. As a DMG member (personal communication 2011) said: 'The estates that have policies that are more allied to . . . traditional sporting, . . . their monitoring will just be in the head of the keeper or the man who spends his time on the ground and will not be documented'.

In addition, negative impacts of deer on habitat often trigger state intervention, so legislative drivers are often viewed as a means of coercing collaboration, influencing the balance of power. This contributes to mistrust over how scientific data are used to drive changes in management (see also Davies & White 2012). A DMG member (personal communication 2011) said: 'And this is the problem with a lot of the science, that I'm afraid to say political or emotional bias can come into it. And we've seen too much of that to actually trust anybody who comes along and says "No, no, I'm just working off the data". You can read the data in a number of ways'.

Consequently, some managers express support for conserving and enhancing biodiversity, but take a cautious approach to engaging with the overarching habitat agenda owing to a lack of common understanding. Instead, some DMG members, especially on sporting estates, seek to maintain a balance by upholding their interest in deer numbers, since this affects incomes and jobs. Open discussion of this agenda is, however, limited by reluctance to disclose commercially sensitive economic data. As a result, the distribution of costs and benefits also affects the context of local deer management in Scotland, as is acknowledged by both state and private actors. As a DMG member (personal communication 2011 said: 'there's a huge lack of . . . communication and justification for . . . the expense and the maintenance of this [ecological] condition and what public benefit is it delivering'.

Overall, as the concerns and objectives of stakeholders change, the management approach has shifted. For example, voluntary processes within DMGs are becoming more formalized, with each group encouraged to establish a deer management plan that outlines agreed monitoring strategies, encourages open exchange of information, and sets out, not only the objectives of individuals, but the range of objectives and aspirations that exist and their likely impacts on neighbours.

Collaborative management of urban deer in Indiana (USA)

Deer and their management have been a matter of interest in Indiana for a considerable length of time, as evidenced by estimates of deer density in Morgan County (to the North of our case-study Monroe County) at one deer per 16 acres in 1820 (Leopold 1933, p. 55). By the end of the 19th century, deer had gradually been removed from the state. Following reintroduction between 1934 and 1942, the current population of white tail deer (*Odocoileus virginianus*) in Indiana is considered to be stable or slightly increasing. The current collaborative deer management agenda in Monroe County and the City of Bloomington has arisen from community concerns over deer encroachment into urban areas and a natural preserve. Citizens' initial concerns concentrated on deer impacts in private gardens, vegetable gardens, tick-borne diseases (especially Lyme disease), road safety and grazing impacts. This resulted in a petition signed by more than 1000 residents, asking for the City and County to act on the issue (Citizens for Responsible Deer Management, no date). At the same time, a letter to these same institutions by the Bloomington Parks and Recreation's Environmental Resources Advisory Council (ERAC) expressed concern over the impact that deer overabundance was having on the Griffy Lake Nature Preserve. The result was the citizen-led Deer Task Force (DTF; City of Bloomington, no date), with the mandate to 'explore ways to address deer-human conflicts and to solicit community feedback on different possible approaches', facilitate knowledge exchange with the public and 'draft advisory recommendations for review by the City, County and the IDNR' (Indiana Department of Natural Resources 2010).

Knowledge exchange is a critical agenda setting mechanism in this case-study. The primary state agency involved, the IDNR, has contributed to the DTF's agenda via its consultative role. It is the main source of information on management techniques/options and decides whether they are acceptable from a legal point of view. Various aspects of policy and regulation constrain deer management in urban areas, such as rules regarding fence heights and discharge of firearms. A city council researcher supported the operation of the DTF and conducted research on behalf of its members. Furthermore, during its last year, the DTF hosted presentations from experts on the impacts of deer. A survey had also been used to collect information that informed

final recommendations considered by the Mayor, City Council representatives, County Commissioners and IDNR as the basis for a management strategy.

Lack of appropriate and accurate information is problematic and impacts upon the agenda by limiting available management options. This has, at least in part, resulted from the difficulties in counting deer, due to a lack of economic resources and the required scale of citizens' involvement in such an operation (for example, for counting and trespassing). IDNR estimates deer population trends based on harvest, hunting pressure and the incidence of road traffic accidents, and does not provide data on deer in the urban area (where hunting is not allowed).

IDNR stresses the importance of human acceptability of deer (termed the 'social carrying capacity') in communities as a factor determining the need for management intervention. One original purpose of the survey, mentioned above, was to assess this social carrying capacity. People's knowledge of deer and deer management options can influence preferences and acceptability of management actions and thus knowledge exchange is critical. Evidence from this case suggests that citizens see contraception, sterilization or capture and relocation among the most acceptable and least contentious interventions. However, these preferences seldom take into account the economic, biological or legal complexities involved and can lead to lack of acceptance of other management options. During the two years of its operation, all DTF business was conducted publicly and information was shared via the internet and local media to facilitate full community participation. The strength of this transparent and inclusive approach became clear when the community came together, during two City Council meetings in autumn 2012, to discuss the acceptability of the recommendations as a valid advisory document. In that, despite opposition from some groups opposed to the killing of animals, the Council unanimously voted in favour. Nevertheless, this endorsement does not bind the Council to the recommendations. Hence, a new process needs now to be put in place to approve and implement actions.

DISCUSSION

We have described three cases of collaborative management occurring at different scales (national or local) and within distinct political and social contexts (North America and Europe; rural and urban). Looking across the qualitative data presented in relation to each of our cases, it is apparent that collaborative management is a complex process. What is clear, however, is that collaborative agendas are primarily set by contextual factors. Through our grounded analytic approach (see above), we identified three primary contextual factors that set (and are used explicitly to set) agendas within the collaborative processes we examined. These were: drawing on particular cultures, drawing on pre-defined policies, and the construction of the issues and problems to be 'managed'.

Culture

In these cases, stakeholders drew on understandings of shared values and acceptable practices ('culture') in attempts to set the agenda by including or excluding stakeholders and/or management options from the process. Two contrasting cultures prevailed: a 'traditional' management approach and an emergent 'public' perspective characterized by scepticism of the acceptability of established management methods (constructed by some stakeholders, inaccurately, as 'urban'). Stakeholders from the traditional deer hunting ('stalking') and forestry management sector were prominent in our British cases and were effective in setting the collaborative agenda through reference to their shared culture. In our first case, the national level collaboration forum (DI) was constructed from stakeholders in the traditional deer and forestry sector, who were expected to be able to help resolve pre-identified deer impact problems. Stakeholders beyond this group were not encouraged to participate, or deterred from engaging by the traditionally defined problem and solutions. In our second case, collaboration was built over a dominant traditional deer management culture in the form of Highland sporting estates. In both instances, traditional actors remained powerful and drew boundaries around the appropriateness of, for example, management methods. There is a commonly unspoken perception that concerns attached to deer numbers and demography contribute resistance to state-led agendas focusing on deer impacts.

In contrast, traditional deer culture was less prominent in the USA case and membership of the collaborative forum was more open. The result of this was that an alternative culture was expressed, but this also created boundaries around the issues, management options and methods that were deemed acceptable. Specifically a 'public' culture constructed wild deer as a problem, perhaps primarily as they threatened private and public spaces. However, they also questioned the appropriateness of traditional control methods. Traditional cultures and stakeholders may also be less apparent here since the collaborative management forum was not perceived as a threat to their activities, unlike in England and Scotland.

Issue definition

A key dimension of 'culture' is shared knowledge, particular 'ways of seeing' (in this case, the resource and the environment it sits in), and the construction and definition of resource issues was another agenda-setting mechanism across the cases. Despite the fundamental 'multivalence' of wild deer that entails both positive and negative interactions between them and people, in each case wild deer and their impacts were constructed as a 'problem', providing the primary agenda around which collaborative management effort was required. Damage to natural environments, human health and safety, and disease risk were three of the most significant impacts. Collaborative management efforts were not constructed around positive interactions with wild deer, such as their

economic value as a game species, their value as cultural icons, or positive contributions to biological diversity.

Issue, or 'problem', definition was itself affected by two prominent factors across the cases. First, the debate over deer numbers (population) or impacts as a focus, and second, by the status and interpretation of 'science'. Although perhaps most prominent in the second case, the shift in focus from a discussion about the numbers of deer to their impacts (regardless of numbers) is a common aspect of all three cases. This reflects the increasing capacity of conservation-focused stakeholders to set the agenda, which is reinforced by biodiversity-related legislation. Impacts could provide neutral ground for negotiating the agenda in collaborative deer management. However, in practice, the definition of sustainable impacts is often determined by specific environmental objectives, and conservationist priorities can clash with 'traditional' deer managers' evaluation of an area's environmental carrying capacity for deer. The increasing importance of 'science' within the management process also reflects this shift in power away from traditional stakeholders, who are more likely to rely on traditional ecological knowledge based on unstructured observations and a legacy of lay knowledge.

Culture and issue definition clearly need to be seen as an integral dimension of agenda-setting, and thus context-shaping power. Conceptualizing issue definition as just one stage of collaborative processes during which common purpose is generated (Raik *et al* 2005*b*) is inadequate. As noted above, the literature on agenda-setting has long identified actor diversity and the associated redefinition of issues as democratically productive, particularly through bringing stakeholders into political processes (Schattschneider 1960; Baumgartner & Jones 2009). Bringing stakeholders into collaborative processes can have similar positive effects (Prell *et al* 2010; Berkes 2009). Our findings support this, but illustrate that established stakeholders can effectively resist increased diversity even within collaborative processes.

Public policy

Public policy, especially the growth of sustainability and nature conservation policies, had a similarly critical impact on the agendas of collaborative processes across our three cases. In each case, nature conservation has been a crucial objective driving the formation of the collaborative forum. Such policy is firmly within the remit of state agencies and therefore this particular dimension of agenda setting power rests with them. Given the character of resources of these agencies, policies have become embedded with and reinforced via legislation and the allocation of funding to collaborative efforts. There is a clear tension in relation to the distribution of costs and benefits across public and private stakeholders across the case studies.

Our evidence strongly suggests that the agendas of natural resource management efforts are set primarily by contextual factors. Once a collaborative forum is established, getting new management options 'on the table' is difficult. The fact that some stakeholders may need to redefine an issue (or whole agenda) requires them to expend resources (generating and organizing information, and persuading others), which others do not. Public policy is a key dimension of agenda-setting power, and is a particular configuration available only to state agencies. Other organizations, such as business and large membership organizations, may have predefined 'policies', but these only rarely have the capacity to embed or manifest themselves within the allocation of resources on a similar scale to state bodies or legislation. Consequently, non-state stakeholders cannot significantly affect this critical agenda setting mechanism even in collaborative fora. Collaboration may, however, enable a better understanding of legislation by stakeholders and/or a more nuanced or sensitive approach to its implementation by local officials, as policy limits the management approaches applied to specific situations, as in the USA case study.

Our analysis examines various scales of collaborative management and finds contextual factors setting agendas at each level. Given the lack of cross-scale comparative research identified above, the fact that these influences transcend differences in the scale at which collaboration occurs is noteworthy. Furthermore, these context-shaping powers reach between scales: for example, from national policy to local rules, or from local cultures and values to national or regional decision-making. Critically, resource management agendas are to a great extent decided prior to the formation of collaborative fora themselves and the selection of their participants. This has a profound impact on power relations within collaborative management. Thus, in the USA, the process was initiated by citizen groups based on a common interest and is facilitated by local administration and the state, whereas in the UK, deer management institutions are state-led initiatives seeking to bring together individuals who have varied priorities and struggle to define a shared agenda. When particular cultures, policies and issue definitions are used by established stakeholders to construct the agenda for and participation in collaborative efforts, weaker or new stakeholders can be left powerless. However, where a broad set of stakeholders is allowed access the agenda can be affected, particularly through bringing alternative cultural perspectives to the table and/or redefining issues and norms.

CONCLUSIONS AND MANAGEMENT IMPLICATIONS

In this paper we have combined theory relating to power and collaboration with empirical data from case studies of collaborative deer management to unpick the power structures that affect management decisions and actions. We have shown that the agendas of natural resource management can be set primarily by contextual factors which constrain management by determining how issues are defined, who is involved, and the range and type of management methods available to stakeholders 'around the table'. In particular,

public policy, culture and shared ways of seeing the resource (all dimensions of 'context-shaping' power) have especially powerful impacts, and can operate at and reach between different scales of management. Collaborative management processes can provide opportunities for differing cultural perspectives to be expressed, balanced and challenged; and form a venue for management issues to be discussed and redefined. However, in order to achieve this, convenors need to be aware of and reflexive upon these power relationships and structures.

Our results provide a number of insights relevant to natural resources and conservation management. Whilst power sharing is widely cited as an important aspect of collaboration, the extent of this can clearly be seen as limited when power is understood more fully. Collaborative agendas are often set contextually rather than within the fora, in the same way as non-collaborative agendas can be. This does not render fora non-collaborative. Rather, it identifies the importance of recognizing that power-sharing around a table is not necessarily the extent of power sharing required in order for collaboration to be fully effective and reap the many benefits claimed. Statutory obligations, for example, may set boundaries which prevent compromise; other forms of participation may be more appropriate in this case. Recognition of the impact of context is therefore a useful addition to collaborative management, within which the rhetoric of collaboration and power sharing within the process can belie inequalities outside of it. It can help managers to understand and explain how, when and why conflicts between stakeholders occur.

Subsequently, those charged with building collaboration are in a position to consider and put in place strategies which enable reflection on and, importantly, critique and challenge of the management context, as well as ensuring the equality of stakeholder voices expressed about issues actually on the table. Collaborative processes are often constructed at single scales, for example a local deer management group or national policy forum. Given the cross- and between scale natures of agenda-setting powers, more attention needs to be given to multi-level collaborative efforts. Such arrangements demand at the very least effective and streamlined communication processes, particularly to underpin reflection amongst stakeholders (Davies & White 2012). To reap the maximum rewards for collaboration, however, the establishment of cross-scale institutional processes with the aim of redressing power imbalances is required. Generating social learning has been identified as a critical task for bridging organizations within collaborative processes (Berkes 2009), and our findings add extra dimensions to this need. In particular, convenors need to allocate some of the likely limited time and resources available to provide opportunities for stakeholders to express cultures (that is, shared values, practices and knowledge) and redefine issues. This is especially difficult to achieve between the various scales of management identified, and may well challenge the dominant culture and/or issue which led to the establishment of the collaborative forum. This is a difficult task, and may easily be perceived as irrelevant and not addressing core issues by some stakeholders. It may also be resisted by stakeholders who feel reflection and redefinition of problems may challenge their interests or run counter to their duties. In placing a demand on those building collaboration to challenge the context in which it is taking place, this paper advocates a different, perhaps deeper, more deliberative form of collaboration as a process via which to share power more fully between those involved.

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