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## Locating Communities in Natural Resource Management

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**ABSTRACT** *In recent decades, natural resource management (NRM) has embraced community participation and engagement. Despite considerable literature addressing community participation, the tasks of negotiating and integrating diverse community interests, values, goals and boundaries remains a challenge for practitioners. Our view is that NRM discourse is hamstrung by a multitude of overlapping terms and excessive focus on place-based communities. In this paper, we critically review existing strands of community theory and draw on stakeholder analysis and actor-network theory to identify a more effective approach to decisions about who should be involved and how they might participate. We then offer a typology as a conceptual tool for understanding, organizing, mapping and analyzing communities. Examples from NRM in Australia's Murray–Darling Basin are provided to illustrate the potentially multi-scalar nature of communities and their significance in addressing environmental change. As part of our discussion, we highlight the need for further research into the inter-relationships of power and environmental agency. These inter-relationships can assist in uncovering how differing actors hold variable capacity to exercise power, authority and influence while attempting to implement environmental change within a network of interactions.*

**KEY WORDS:** Communities of interest, public participation, governance, conservation, democracy, sustainability

### **Introduction: Involving Communities in NRM**

A decade ago, Duane (1997, p. 772) noted the 'need to reconcile communities of place with communities of interest (CoI) in ecosystems management' to ensure that the full range of human and ecological values were considered and that particular communities were not privileged over others. Over time a substantial body of literature has explored the implications of 'community' divisions in natural resource management (NRM), environmental planning and public participation (Agrawal & Gibson, 1999; Broderick, 2005; Lane & McDonald, 2005; Selman, 2004). Although there have been genuine efforts to engage communities in NRM, issues of representation, power distribution

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and the integration of multiple actors, interests, values and scales have meant that desired outcomes have rarely been accomplished (Lane & McDonald, 2005). In our view, sustainability efforts are being constrained by a lack of clarity on key community concepts and an excessive focus on engaging communities of place.

There are various reasons why communities participate in NRM. For instance, there may be a legal requirement or prerequisite in the government decision-making process such as with environmental impact assessment. Indeed, broad community participation is a stated aim of sustainability policies such as Agenda 21 which requires a range of groups and interests play a part in addressing sustainability questions (Dovers, 2005). Potential positive outcomes of participation are enhanced issue articulation; better communication and learning; increased trust and reduced conflict; and improved quality and legitimacy of participatory process and decisions (Creighton, 2005).

Participatory democracy also holds appeal for neo-liberals and communitarians as a form of state devolution, mutual obligation, egalitarianism, a means to address market failure and as an *alternative form of rationality* (Hay, 2002; O'Toole, 2005). However, there is a distinct difference between 'strong' or deliberative democracy where anyone can participate and the prevailing representative model where select individuals and interest groups are expected to articulate public interest and values (Dryzek, 2000; Eckersley, 2004).

While current participatory discourse revolves around engaging stakeholders, communities and interest groups, this juxtaposition can prove problematic in realizing the ideal of active public participation. Unequal power distribution, lack of expertise, inadequate engagement, funding shortages and local and broader interest conflicts are some of the factors limiting the potential for positive outcomes from participatory processes (Sidaway, 2005). It is possible for stakeholders (including individuals, organizations and governmental entities) who have an interest in, or are affected by, an NRM issue, to participate by being informed, consulted and involved, but it does not necessarily follow that they are engaged (Aslin & Brown, 2004). Stakeholders can attend meetings or write submissions whereas engagement implies direct involvement in a process and shaping an outcome (Head, 2005).

Involvement in a process and outcome is likely to require a mix of approaches to be adopted depending on the scale of the issue to be addressed, the stage in the policy or implementation process, the existing or potential level of conflict, the time available, the knowledge and skills of the participants and the financial resources available to support the process (Dovers, 2005; Frazer, 2005). Furthermore, it is possible that governments may have limited capacity to effect environmental change across multi-scalar geographies such as those of Australia's Murray-Darling Basin which spans local, regional and state jurisdictions (Connell, 2007).

In the above context, public participation can be considered part of the global trend away from government and towards governance. Government is the formal, centralized and vertical exercise of power and authority, such as through regulation or market-based instruments. Governance is where power and authority are horizontally decentralized and devolved to broader members of society. Thus, in governance the public can theoretically interact with the institutions and process of government to influence decisions and actions (Bulkeley, 2005; Stoker, 1998). Terms such as 'government-community partnerships', 'collaboration'

or 'co-management' typify contemporary NRM institutions which encompass rules, arrangements, laws, processes and traditions that structure environment–society interactions (Dovers, 2005). However, studies drawing on Actor-Network Theory (ANT) suggest environmental partnerships and collaborations have had only limited success in translating the rhetoric of sustainability into practice because of the power of entrenched interests and resultant place and interest-based conflict (Armstrong & Stratford, 2004; Davies, 2002; Selman & Wragg, 1999).

NRM governance comprises multiple actors, including human stakeholders, organizations, legislation, policy documents, agreements and components of the natural world (such as biophysical entities) interacting in different places (Davidson *et al.*, 2006). These heterogeneous actors hold differing forms of individual or collective agency, defined by their capacity to effect environmental change through the exercise of authority, power and influence. Indeed, the image of a cohesive community is frequently dispelled by observation (Agrawal & Gibson, 1999). Social and environmental outcomes are produced as actors seek to speak on behalf of themselves or others and mobilize resources in and across boundaries (Latour, 2005; Law, 1999; Murdoch, 2006). As such, actors represent a form of networked or hybrid governance, an amalgam of neo-liberal and third way politics advocating individual rights, market mechanisms, collective responsibilities, civic co-operation and public engagement at scales ranging from local to global to address environment and sustainability problems (Bulkeley, 2005; Lockie & Higgins, 2007).

In Australia, regional scale NRM has received significant attention as a form of decentralized governance (Moore, 2005; Moore & Rockloff, 2006). The notional transfer of 'state' powers to regional and local government and to non-government organizations is advanced as a 'means to harness the agency of the community and civil society' (Lane *et al.*, 2004, p. 104). Much of the appeal of the regional NRM approach lies in the opportunity provided to manage at the systems or landscape scale (Paton *et al.*, 2004). Notwithstanding the substantial successes of regional NRM in Australia, there have been important critiques highlighting the limited engagement of key stakeholders, the low level of autonomy conferred on regional organizations and the failure of national and state governments to provide adequate tools or resources to undertake the very complex tasks of priority setting, implementation and evaluation (Curtis & Lockwood, 2000; Head, 2005; Lane & McDonald, 2005). Conservation groups, women, local government, non-human species, indigenous and generational interests have limited representation and capacity to influence regional NRM governance (Moore, 2005; Paton, *et al.*, 2004).

This paper reviews strands of community theory and their application to participation in NRM with its foci on sustainable resource use and biodiversity conservation. The aim is to clarify terminology and ways these concepts might be applied. Particular attention is given to 'communities of interest' which remains a somewhat imprecise concept. Additional concepts such as affected communities, communities of identity and communities of practice are introduced, leading to consideration of who might be involved in NRM and how they might participate more effectively. After assessing the suitability of community theory to include, situate and represent a '*range of publics*' in NRM and biodiversity conservation, suggestions for future research are made.

## Locating Communities: Major Perspectives from the Literature

### *The Foundations of Community Theory and NRM*

Understanding the foundations of community theory is critical for a coherent approach to community participation in NRM. A general definition of community could be considered the 'ties that bind' individuals together as groups in collective activities as a common way of life. However, communities are diverse entities comprised of social, cultural and political differences across different spatial scales according to the interests of those involved (Jackson, 1989; Massey *et al.*, 1999). Community as a unified entity representing homogenous ties, cohesion, harmony, shared norms and common interests might be considered a symbolic object of desire and imagination (Brint, 2001; Valentine, 1999). More often than not, community represents heterogeneous values, beliefs, norms and interests signifying difference, contestation and conflict across space and time (Harvey, 1996).

Conceptual foundations of communities can be traced through the work of Hillery (1955), Tonnies (1955), Weber & Durkheim (Aron, 1967) where distinctions are drawn between community as a geographical location, or community as a series of associations between actors with particular interests and identities associated with collective interactions. The classical distinction is between communal relations, a common way of life, central ties and frequent interactions as a form of natural will (*Gemeinschaft*) and interest-based associations or dissimilar interactions based on rational will (*Gesellschaft*) (Tonnies, 1955). Kenny (1996) argues that while community may be regarded as core value within an ecologically sound society, the *Gemeinschaft* model of aggregated aspirations, interests, common goods and general will fails to account for difference and individual rights, resulting in questionable democratic and sustainability policy outcomes.

Rather than considering community as an organic whole, Brint (2001) suggests that a disaggregated exploration unpacking the narrower structural and cultural variables might be more productive. Latour (2005) favours tracing activities, group formation and network associations as an effective means for exploring interactions. Others suggest that it is better to focus on 'multiple actors with multiple interests, the processes by which actors interrelate and the institutional arrangements that structure interactions' (Agrawal & Gibson, 1999, p. 636). This approach suggests that while communities may provide a means to mobilize public participation, represent public interests and translate the government policy from national to local scales, the 'state' may impose a dominant strategic line within circumscribed parameters which limits community participation (Murdoch & Abram, 1998). This critique questions the legitimacy of participatory environmental governance, suggesting instead that it is a new form of governmentality which enrolls a public component to produce better outcomes for some actors but not others (Bulkeley, 2005).

The literature generally separates communities of place and CoI, but a suite of frequently ambiguous and overlapping terms abound in the community participation literature and in NRM discourse. We now turn to a review of the key community concepts and propose a typology that attempts to clarify the meaning of key concepts and provide a coherent framework for others to apply in community mapping and analysis.

## Communities of Place

Place can be considered the ordering of bounded space to include the local neighbourhood, a region, a landscape, a state or nation. While place is felt to be the locus for community and community-based conservation (Carr, 2002), place constructions comprises multiple meanings, functions, values, distinctive institutions and forms of organization (Relph, 1976). Communities of place are typically considered as geographic locations or physical spaces within particular social, political and naturally defined boundaries (Cheng *et al.*, 2003). Therefore, members represent a geographic area such as a town, shire or region rather than a specific set of interests (Moore, 2005).

Considering just whose sense of place we are talking about raises questions of insular views, imposed cultures and '*particular claims to place*' (Cameron, 2003). It is well documented that Australia's postcolonial legacy has challenged both indigenous and non-indigenous claims to place, belonging and attachment. For instance, the development of a uranium mine in the Northern Territory's Kakadu National Park required the traditional indigenous owners to make choices between their strong natural and cultural ties to the land and the pressure to create jobs to address contemporary local economic and social problems (Williams, 2006). Native title claims such as those in the Barmah-Millewa Forests in South Eastern Australia exemplify contested place and interest claims which incorporate cultural and environmental concerns and multiple-use interests such as logging, grazing, irrigation and recreation (Ellemor, 2003).

It is argued that place-based collaborations focusing on local problems are likely to be more meaningful to the community and provide greater motivation to address local issues (Brunckhorst & Reeve, 2006; Lane & McDonald, 2005). However, Eckersley (2003) considers it necessary to look critically as well as sympathetically at the potential of place-based community initiatives as their small scale does not reflect the geographical reach of environmental problems or the scale of action required. Furthermore, the local level is insufficient to explain external forces such as social, economic and institutional structures which shape resource use patterns and environmental problems in particular places. Local places can suffer from elitism, parochialism and polarization which restrain environmental improvement (Armstrong & Stratford, 2004).

'Eco-civic' resource governance regions have been proposed to address local place-based limitations by emphasizing boundaries of interest to local residents, but recognizing that local and regional boundaries do not necessarily incorporate all resource governance issues (Brunckhorst & Reeve, 2006). This landscape scale approach is considered a means to ensure that enclaves of special or vested interest are not privileged and environmental initiatives can better reflect the scale of ecological processes and land use practices (Selman, 2002). Nonetheless, a mismatch between local and non-local interests frequently occurs. This is exemplified in NRM programs such as Landcare and Biodiversity Action Planning which charge communities of place with responsibility for management and on-ground action while the community of interest deliberates on planning and governance issues (Curtis, 2003; Lowe *et al.*, 2006)

Place-based perspectives have further limitations. For instance, a 'catchment community' can be defined as rural and regional communities, landholders, land managers, indigenous people, Landcare groups, urban people, industries, businesses, special interest groups and individuals who live and work in the



catchment or have a special interest in the catchment (Murray–Darling Basin Ministerial Council, 2001, p. 26). However, this relatively inclusive list does not account for multi-layered and overlapping community memberships, interactions, rights, responsibilities and alliances that might monopolize resources or exclude particular groups (Smith, 2004).

Pointing to the politics of community in the Murray–Darling Basin, Bouilly & Dovers (2002, p. 106) posit ‘there is no such thing as a catchment or basin community, but rather a highly complex, interacting set of communities’. Multiple community memberships which contend with agricultural production, wetland conservation and regional catchment management can place representatives in difficult and often conflicting positions when acting for particular places, interests and practices (Kemmis, 1990). This is typified in the *Living Murray Initiative* which strives to balance the interest of local, rural and regional communities with the national priority of protecting the ecological integrity of the Murray River (Murray–Darling Basin Commission, 2006).

From the perspective of environmental conservation, attachments to place extend well beyond local borders. Although individuals and groups interested might reside ‘outside’ geographically defined communities, they show openness to place-based collaborations (Hibbard & Madsen, 2003). Therefore, a challenge exists to engender such partnerships in rural areas where collaborative conservation can be seen as a threat to local property rights and a means by which outsiders impose restrictive controls (O’Neill, 2005).

#### *Inside and Outside Communities*

The inside-outside binary can limit public participation by associating belonging and legitimacy with residential presence, mutual identification and interaction within groups, whereas outsiders could be considered as ‘not belonging’ through manifestations of difference, politics, power and alienation. Such differences reveal multiple meanings and experiences which are dependent on where actors ‘center’ themselves and their interests. The implications of this division for NRM are that ‘... inside social and ecologically determined boundaries, individuals and groups may participate in decision making and have their interests, values and concerns addressed, such as residents of a water catchment. Those outside the boundaries have fewer and indirect ways of participating...’ (Bloomquist & Schlager, 2005, p. 105). Thus community can become a boundary making exercise, a claim of geographic proximity which separates and divides people and places.

As Carr (2002) found, the insider–outsider dualism overlooks how members of broader groups and communities might relate, interact and are interdependent with one another and the physical environment. Although Brown (2003) considers it important to stimulate a shared sense of place where identity and meaning are both inside and outside locality and not dependant on residential presence, this appears to be difficult to achieve. The way actors’ capacities to participate and effect change are constituted, mobilized and exerted should be considered as a relational network of interactions, rather than either/or divisions (Whatmore, 2002).

As globalization, ecological modernization and sustainable development have taken hold, notions of community based on locality and nationality are being challenged by new forms of social and spatial differentiations that transcend

jurisdictional place-based boundaries (Barnett & Low, 2004). Local claims to place are increasingly challenged by suggesting the need to open up spaces that consider and reflect the interactional scales of social, cultural, political and biophysical meanings and processes. Indeed, Selman (2001) argues that participation and social interaction might have nothing to do with local sense of community and that groups form through ties of common interest and in opposition to dominant value sets.

### **Communities of Interest**

Communities of place are an important setting for collective action but a growing body of literature suggests that CoI are equally important in environmental conservation (Dovers, 2005; Harrington *et al.*, 2006; Selman, 2004). As Fulcher (1989) observed, the concept of a community of interest is poorly defined with multiple meanings that diminishes its usefulness as a term.

Communities of interest might comprise formal and informal groups with common or shared interests, issues, aspirations, values or concerns which are spatially diffuse. The term could be considered a '*catch-all*' encompassing interest groups, social movements, non-government organizations, collectives and other social formations. Recurring features identified through the literature synthesized in Table 1 include:

- (1) a separation between local and non-local geographies;
- (2) representation defined by territorial boundaries or group membership;
- (3) functional centers of activity and/or biophysical significance; and
- (4) interest groups with collective values which transcend boundaries.

### **Representing Communities: Applying Theory—Unpacking Praxis**

As it is unlikely every interested community, group and individual will participate or be engaged in environmental issues, the matter of representation is critical yet problematic. Dilemmas arise over who represents individual, community or public interests, who is accountable and what constitutes an acceptable decision (Munton, 2003). The bounded geography and unbounded interest dualism reflects multiple, contested and overlapping elements. Communities of place might be relatively easy to identify within predetermined political and administrative boundaries but CoI are far more diffuse and difficult to define.

To provide some clarity, we have developed a typology (Table 2) underpinned by five related community concepts. We now draw on additional theory and empirical research to unpack the concept of CoI and to introduce the concepts of the affected community, communities of identity and communities of practice. This discussion demonstrates the potential shortcomings of the place-based perspective.

### **Community of Locality (Inside Space)**

While community is frequently conceptualized as a place-based geography or locality, a territorially based residential, political or administrative unit is too narrow to reflect socio-cultural differences, heterogeneous interests and practices, accountability issues or resource impacts within and across space (Read, 2006).



**Table 1.** Selected definitions 'Communities of Interest' (CoI)

Author(s)	Definition	Defining feature(s)				
		<i>Local geographies</i>	<i>Non-local geographies</i>	<i>Functional centres</i>	<i>Interest groups</i>	<i>Values</i>
Fulcher, 1989	People in a residential locality with a perceptual sense of belonging to the area; functional centres of activity e.g. schools; and representation of local members in participatory democracy.	•		•		
Lieb, 1998; Forest, 2004	Shared common interests (groups) that transcend space to radiate beyond geographic boundaries; or geographic formal/functional regions which cut across group divisions.			•	•	
Brunckhorst & Reeve, 2006	Areas of interest and importance to local community residents; landscapes with which people identify and have an interest.	•		•		
Bloomquist & Schlager, 2005	Distinguished by unique value choices (ecological, recreational or aesthetic)—either local or non-local.	•	•			•
Sidaway, 2005	Different groups within a community, each of which has its own set of values and views concerning policy and practice which can extend beyond the local geography.	•	•			•
Brunner & Steelman, 2005	Interest groups outside the local community, representing only part of the community.		•		•	
Selman, 2004	Groups who have direct control over land/water, considered to be 'interest groups'.			•	•	
Duane, 1997	Commonalities in relationship to a particular ecosystem or resource as beneficiaries of that place or contributors to its condition.			•		
Aslin & Brown, 2004	Members may not live near each other, but have something in common about which they respond as a group.		•		•	
Nelson & Pettit, 2004	Interests as a division of labor in governance where the whole of society might have an interest, but not all individuals want to be involved.				•	
Ross <i>et al.</i> , 2002	Interest groups as a form of collective decision making and representation.				•	
Harrington <i>et al.</i> , 2006; Rockloff & Lockie, 2006	Groups with common interests, aspirations, concerns and values.				•	•

Moreover, social organization, representation and practice can be fragmented as much within boundaries as outside them.

While CoI are often regarded as non-local geographic representatives, there are problems with deploying the concept this way. As Selman (2004) found, there are few examples of communities managing landscapes at large and specific communities such as farmers or environmental groups are likely to

**Table 2.** Community of Interest Typology

Community Concept	Geographic Concept	Description
Community of Locality	Inside space	Regarded as communities of place within political, social or physically defined boundaries. Examples—towns, local government municipalities or regions.
Affected Community	Outside space	A space or place outside the community of locality. A non-local reference point, place, space or resource affected by external impacts. Examples—downstream towns, landholders, resource users or ecological communities on a waterway who have no control over non-local factors such as upstream resource use or impact.
Transcendent CoI (1) Special interest groups (2) General interest groups	Boundless space (1) (Formal space) (2) (Informal space)	Collectives/groups that have some identified 'stake' in a particular issue, place, space or practice bound by shared interests, values and concerns. (1) Politically active formal groups which aim to connect to the 'state'. Examples—Australian Conservation Foundation; National Farmers Federation. (2) Groups which are semi-formal or informal, do not have the primary aim to connect to the 'state' and are activity based. Examples—Rivercare or Landcare groups.
Communities of Practice	Inside and Outside space	Groups organized around an activity or common practice such as biodiversity conservation and/or agriculture who are often locally or regionally based, but sometimes spatially diffuse. Examples—conservation communities; irrigation communities.
Communities of Identity	Inside and Boundless space	Groups who can reside in and transcend space, either bound or separated by common identities as relationships of 'otherness'. Structured around aspects which include culture, class, age, gender, networks, politics and practice. Examples—Indigenous people; youth; greens; farmers.

focus on different *landscapes of interest*. For instance, a group of landowners who placed voluntary conservation agreements on their properties and did not permanently reside in a geographic place were regarded as a community of interest (Harrington *et al.*, 2006). These landowners form part of the community of place, but their claims to place are diminished by a '*division of difference*' in values, interaction and practices which are counter to local ones. In a functional sense, they contribute ecological integrity and social diversity by introducing new ideas and practices.

### **Affected Communities (Outside Space)**

As explained, community engagement might be enhanced by selecting functional landscapes that reflect social and ecological areas of interest to residents and provide a means to 'scale up' to address critical issues (Brunckhorst & Reeve, 2006). However, these authors continue to emphasize geographically bounded local and regional spaces which do not always account for different land uses, tenures, boundaries, rights, cultures, interactions and networks such as cross-border ones. Experience in community-based land reform affirms the need to distinguish between the purely geographic and broader functional communities. The latter can comprise seasonal residents who live and work elsewhere, recreational interests and conservation trusts and their constituents who have legitimate claims and interests in a geographic place (Bryden & Geisler, 2007).

In biodiversity conservation, social, cultural and environmental interests are likely to span broad geographic communities, particularly where ecological assets of national or international significance exist. For instance, the Murray River rises in the Australian highlands and discharges to the sea 3760 km downstream. While traversing three states, The Murray River passes through some of Australia's most significant wetlands that have international protection under the RAMSAR agreement. Over such vast distances, upstream water users are unlikely to know or consider the downstream impacts of their actions on these wetlands (Connell, 2007). Thus 'affected communities' including ecological and unborn generations need to be considered and can be included by the formation of a 'community of fate' held together by the potential to be harmed (Eckersley, 2000, p. 119).

### **Transcendent CoI (Boundless Space)**

Transcendent communities (Kelly, 1995) are defined as groups situated in multiple spaces with ties that bind across physical geographies. This contrasts with the purely geographic view of CoI as a formal and functional bounded area or region (Lieb, 1998). Here, community is comprised of distinctive social, cultural and political groupings which transcend geographic boundaries.

Defining features of CoI are sets of shared common values, interests and concerns rather than specific geographies. They may be formal or informal groups that join together to negotiate collective action. While mobilizing communities and groups is a focus for innovative conservation initiatives (Berkes, 2004), a distinction can be drawn between geographical communities and transcendent groups, as the former are 'fluctuating social forms with multiple interests whereas groups tend to be formal or semi-formal and organized around a particular interest' (Relph, 1976, pp. 57–58). For instance, a proposed waste containment facility in an area of high biodiversity value in the Australian State of Victoria has seen an alliance form to engage and represent collective interests including local and non-local environmental and primary producer groups, associations, local governments and political parties to oppose the development (Shtargot, 2004).

A further distinction can be made between social movements as an umbrella for organizations. Peak bodies, advocacy and lobby groups are organized associations formed around common interests and goals that aim to directly influence or connect to the 'state' (Dryzek *et al.*, 2003) but form only part of the larger interest group community. Environmental conservation movements, organizations and groups have a critical role to play in deliberative democracy. They can represent

less powerful interests and present an alternative to productivist interests and the dominant modes of neo-liberal rationality which have been slow to absorb new ecological values, ideas and practices (Eckersley, 2004; Mercer & Marden, 2006).

#### *Special Interest Groups (Formal Space)*

The role of formally organized interest groups is vital in providing both balance and integrative potential in the common or public interest. Common interests are considered as those widely shared by the members of a community and often associated with sustainable development and productive human-use paradigms. Public interest or public good can be considered equivalent concepts where governments are expected to ensure public good outcomes for common resources such as water that span geographically diffuse boundaries (Ostrom, 1990). However, these concepts, like communities, are variable and contested. Failures to advance the common interest are more conspicuous than successes. Local and larger community interests rarely align and this lack of alignment often results in conflict (Brunner & Steelman, 2005).

Various environmental organizations and groups seek to transcend borders and political ideologies. They range from relatively conservative trans-national organizations such as the World Wildlife Fund for Nature to community-based activists such as Friends of the Earth (Doherty & Doyle, 2006). A similar array of national, regional and local associations such as the Australian Conservation Foundation, National Parks Associations, Field Naturalists and local environmental organizations might be considered to act in the public interest by representing a broad constituency including non-human nature and future generations. While criticism may be leveled at these groups and organizations for lacking understanding of local community needs and aspirations, they are increasingly involved in conservation planning, management and on-ground action across a range of geographic localities (Burdon, 2005).

#### *General Interest Groups (Informal Space)*

While formal groups might aim to connect to the 'state' and influence policy, there are a broad range of organizations and groups that are less politically active. These groups are often voluntary and activity-based around on-ground action, recreational pursuits, learning, networking and exchange. Examples in biodiversity conservation include friends of groups, monitoring and survey groups, bushwalking clubs and landholder and conservation networks. Sometimes local in origin, they might participate in diffuse settings depending on the activity of the group. While considered part of the environmental community of interest, they might also be considered a community of practice (see below).

### **Communities of Practice (Inside And Outside Space)**

A community of practice is generically defined by Wenger (1998a) as a group of people interacting with one another and the world while engaged in and pursuing an enterprise that results in collective learning and practices which are created and shared by the participants. The enterprise might be work-based, education-based or hobby-based. Community is central to Wenger's social theory of learning. He also argues that a community of practice is different from a community

of interest or a community of place, as neither implies a shared practice, inferring that communities of practice are based on rational interest rather than emotional bonds (Wenger, 1998b).

The NRM community of practice is activity- or practitioner-based, with knowledge exchange emphasized, but of variable importance depending on the interest of the group and the desired learning outcome. In Australia, the concept has been widely applied to rural and regional development in agricultural enterprises, river basin management and local government (Keen *et al.*, 2006; Kilpatrick & Vanclay, 2005). Groups are often based in a locality but can also be multi-scalar, encompassing place-based and non-place-based participants. Examples might include groups of farmers engaged in a particular practice such as irrigation or NRM extension officers.

### **Communities of Identity (Inside And Boundless Space)**

Members of communities of identity are tied to each other through socio-cultural characteristics that may transcend place (Duane, 1997). Identity can be formed through particular experiences and associations with place, interest or practice as a form of self and communal identification. Identity is also constructed in relation to 'others' through social practice, culture, networks, politics, gender, age, class and institutions. Identity groups might comprise indigenous, youth, women, conservation, agricultural or urban collectives. These groups can reside inside a community of locality and outside it, but they are bound together by both real and constructed identities. The problem, as Eversole (2005, p. 47) observes, is that '... outsiders' understanding of local identity and needs may contrast markedly with those of local people ...'.

### **The NRM Community of Interest Typology: Application and Future Research**

The typology presented can be applied as a conceptual tool by researchers and practitioners to map and analyse CoI in NRM. It should be applied at the initial stage of participatory projects to help define, include and balance the range of localities, interests and practices. Practitioners can use the typology as a form of stakeholder analysis that considers who is or should be involved, how they are engaged and at what scales. This assessment can be fleshed out further to examine stakeholder interests, explore power relationships and identify issues that are likely to require careful negotiation (Sidaway, 2005).

While collectively typology elements might constitute the '*NRM community of interest*', we stress that these elements are not mutually exclusive. Actors can be situated in and across multiple places and interests at different times. Communities should not be viewed as discrete entities but as actors that operate across multiple scales, from local to national with vertical and horizontal connections. These are the spaces where authority and power is held, shared and moved. By linking ANT and Stakeholder Analysis, consideration can be given to a full range of actors, the ways NRM policy is translated to action and the how different actors integrate by association (Murdoch, 1998; Pouloudi *et al.*, 2004; Rockloff & Lockie, 2006).

The five concepts reflect different worldviews related to where actors 'centre' themselves, their interests and the outcomes they desire. For example,

a 'Rivercare group' might comprise members who are local and non-local residents, extractive and non-extractive users, young indigenous people, local government councilors or regional environmental network members. The group might undertake activities such as working bees, making submissions, water monitoring or public education. While multiple memberships are possible, the driving force behind participation and interaction is common interest. Hence, consideration should be given to the ties that hold and crumble between actors and their network of interactions as they struggle to effect change at local, regional and national scales.

Field testing the typology in should expose any contradictions and ambiguities and enable reflection and further iterations. The typology could be used as an aid to the up-front thinking required to develop a stakeholder engagement strategy for a large NRM program.

### Conclusions

Communities will continue to be embraced as a popular and widely used concept in the academic, NRM and public policy discourse. We have set out rather modestly from existing theory to provide some clarity on community terminology and concepts in NRM. Our approach has been to offer an applied understanding of communities as an organizing framework rather than as normative theory (Stoker, 1998). The framework, when applied, can assist in determining what or who are we talking about, when we refer to communities in NRM, and why they are an important concept. Through this process we have opened up communities to uncover complexity and heterogeneity.

As observed at the beginning of this paper, community diversity needs to be reflected in the institutions of representative governance if the full range of interests and values are to be integrated. We have put forward five inter-related community elements to achieve this aim by considering the make-up of the NRM community of interest. Communities of locality defined by geographic boundaries will continue to be an important focus for on-ground NRM action. However, the place-based perspective is unlikely to capture and account for wide-ranging communities such as affected ones. Affected communities have limited capacity to take action, especially across vast geographic scales and jurisdictions. Therefore, it is important that a range of formal and informal groups represent diffuse place and interest-based constituencies. These transcendent CoI can cut across boundaries and provide a means to represent those who are less able to speak for themselves. Communities of practice focused on learning and knowledge exchange offer potential to introduce new ideas and practices but may be constrained by a focus on rational interest. Communities of identity are formed by common socio-cultural characteristics, such as culture, class, age and gender, and can help to flesh-out a broader view of community.

Applying the framework will enable practitioners to consider and engage a range of key stakeholders for participation in NRM projects. However, stakeholder analysis needs to go beyond mere representation if participatory governance is to reflect a collective and interactive process where responsibility and power is shared. We have recommended drawing on insights from ANT to explore how power and collective and individual agency are dispersed throughout a network. This approach enables the consideration of multiple centres of power as a means to help break down well-established dualisms such as place-interest



and social-ecological by attending to the five community elements outlined in this paper as a governance framework.

While individually actors may have limited capacity to bring about environmental change at the scale required, collective arrangements between governments and communities are considered an imperative precondition for change in multi-scalar NRM participatory governance (Bouilly & Dovers, 2002). On-going research into the relationships and ties between communities and their network of interactions, such as how actors might be situated within multiple communities at any given time and how this affects policy translation, is recommended. If sustainability and NRM policy is to produce better collaborative outcomes understanding the institutions of representative governance and how they structure environment–society interactions will be a crucial step in assessing and progressing approaches to community participation and engagement.

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