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Culture, values and conservation:

A review of perspectives, policies and practices for the integration of cultural and ethical values into conservation

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A review of policies and practices designed to integrate cultural values into conservation initiatives

SUMMARY

Modern conservation can be traced back to Europe and the United States of America at the end of the 19th century and reflects a conservation ethic which integrated aesthetic and moral values of nature and natural landscapes with the wise use of natural resources for the benefit of "mankind." Both these value sets gave rise to the first national parks, on which much of the 20th century's conservation endeavours have been based, and informed the ethics and practices of sustainable resource management.

As conservation initiatives began to be applied in developing nations, whose peoples had very different cultures and ethics, the subjective or relative values of aesthetic and spiritual attachments to landscape and nature began to give way to the supposed absolutes of scientific and economic rationalism. Conscious of the need to gain the support of local communities and to respond to the fact that conservation initiatives often levied significant costs on local communities with few balancing benefits, conservationists embraced began to represent the conservation endeavour in material terms and describe the natural world as comprised of commodities or resources to be sustainably managed. This trend was strengthened by the growing dominance in the west of market-based neoliberal solutions to social issues.

A proliferation of initiatives resulted, attempting to demonstrate and deliver tangible, material benefits from conservation to local communities. These included integrated conservation and development projects, community-based natural resource management and community conservation. Their poor delivery of conservation results, however, led to the basic assumptions on which they were founded - that communities degraded conservation areas or over-used natural resources because they were poor, and that enlightened self-interest would turn poachers into guardians - being questioned.

At the heart of concerns over the integrated conservation and development approach was that the conservation endeavour was not delivering. Global targets for biodiversity were not being met and protected areas, the crown jewels of the conservation establishment, were increasingly exposed due to lack of local and political support. Academic research began to re-examine the role of cultural, spiritual and ethical values in delivering conservation and recognized these as powerful drivers of human behaviour.

Efforts to re-integrate values-based approaches to conservation speak to fundamental questions. What are we trying to conserve? Why are we trying to conserve it? And who decides these things? They also help investigate important practical questions about why current models of conservation have not been more effective and how they can be improved.

The 'Yellowstone' model of protected areas was premised on the separation of human activities from nature and set aside large areas exclusively for conservation. However, the separation of biological and cultural diversity obscures the reality that they are closely linked and mutually

reinforcing. It is difficult to understand and conserve the natural world unless we recognise the human cultures that both shape it and perceive it, for different peoples possess their own sets of representations, knowledge and practices through which they interact with their environment. Nature is both a cultural construction and a biophysical reality.

The United National Millennium Declaration 2000 recognizes the current unsustainable patterns of production and consumption, and calls for a new ethic of conservation and environmental stewardship. Approaches that are based on cultural values need to become mainstream elements of the conservation endeavour, in both its conceptualization and its practical delivery. Integrating cultural values into the planning and management of protected areas, in particular, will provide practical lessons to address current and future challenges to conservation.

The cultural values approach is a response to the partial successes and failures of engaging communities on the basis of economic and scientific values. It offers diversity and adaptability – which are increasingly important in our rapidly changing world – and responds to questions of morality that go beyond the materialism of the 21st century.

Adopting a cultural values approach will not address all the challenges faced by conservation. But it offers promise for demonstrating mutually beneficial incentives for managing protected areas, surrounding landscapes and natural resources, and for creating a broader constituency for conservation that will protect biodiversity sustainably, more effectively and more equitably.

1. THE RATIONALE FOR INTEGRATING A CULTURAL[1] APPROACHES INTO CONSERVATION[2] PRACTICE

Conservationists have long understood that community support and action are key requirements for sustainable conservation and have responded to this understanding by integrating sustainable development with conservation. In these times of rapid change, escalating threats from loss of habitat to agriculture and resource extraction and the new threat of climate change, a focus on a cultural values approach to conservation, and especially to protected area management - an approach that allows representation of the different values, beliefs and moral philosophies of different cultures - affords a rallying point for targeted, sustained and more effective conservation action. Adoption of a cultural values approach provides an opportunity to forge new types of partnerships for conservation by making conservation more relevant and meaningful to more people.

1.1. An emerging cultural gap in biodiversity conservation

In 1988 the International Society of Ethnobiology emphasised the inextricable link between cultural and biological diversity.[3] Taking on this perspective requires a re-examination of what conservation 'means' and for who, as well as the development of new ways to achieve it. Cultural values approaches respond directly to the understanding that culture and nature are deeply and fundamentally linked.

The community-oriented approaches implemented over recent decades were designed to build supportive constituencies for conservation. These approaches were and continue to be dominated by a world view that privileges the application of science and economics. Over this period the values, both western and non-western, that underpin relationships between people, place and nature were steadily lost from conservation policy and practice. But adopting a cultural approach to conservation is not about simply adding a set of prescriptions. Rather, it is about viewing the world through a cultural lens (Rao and Walton 2004), through the eyes of those whose values informed relationships with land and resources for centuries and whom we wish to support our conservation endeavours.

Why is this important for conservation? Quite aside from issues of equity and the meaningful sharing of rights and responsibilities, it is important because, as Rao and Walton make clear, "An intervention that ignores social norms and imposes a view of the world that is external to the target group can be *particularly ineffective*" (2004, 9, emphasis added). This understanding helps explain some of the shortcomings of both development and conservation initiatives.

[1] 'Culture' resists definition. Culture relates to why human beings differ in their forms of life (Ingold 1994), confers identity, meaning, worth, aspirations and a sense of place in the universe (Goulet 1993), and comprises relationships between individuals, groups, ideas and perspectives (Rao and Walton 2004). Its use here and that of associated terms - cultural values, cultural approaches - is understood as complex, relative, and changing and to include the spiritual dimension and ethical considerations.

[2] 'Conservation' is used here and throughout the paper to mean the protection of biodiversity, species, ecosystems and landscapes, and the sustainable management of natural resources.

[3] International Society of Ethnobiology, Declaration of Belém, 1988 (http://ethnobiology.org/).

Integrating the values of local communities is of especial relevance in a rapidly changing world and where communities, including indigenous peoples, face profound, rapid and apparently continuous changes to their societies and circumstances, the erosion of the values and institutions that provide social cohesion, adaptability and resilience is a matter of considerable concern. The cultural lens must be re-polished and adjusted as communities respond to change; but grafting an entirely new lens is unlikely to result in increased capacity to recognize and respond to change.

Arguments for a cultural approach to conservation address two questions. Firstly, “What are the values in nature and the natural world we wish to conserve?” This question responds to concerns over the narrowness of perspectives in current conservation theory and practice, helps clarify non-material objectives of conservation, and contributes to the evolution of new conservation approaches. Secondly, “How can we achieve conservation?” This question speaks to the fact that the biological diversity that defines current conservation objectives continues to decline (Yamin 1995), demonstrating the urgent need for new approaches.

The integration of cultural perspectives into mainstream conservation practice will require opportunities to be assessed on a case-by-case basis. Some values can easily be integrated into conservation initiatives, others cannot. This specificity of the cultural approach, which may appear to be a limitation, is actually a strength as it requires the approach to be tailored to the specifics of any given situation to which it is applied.

1.2. The origins of protection and protected areas

The idea of protecting and managing resources is not new. Over 2,000 years ago, royal decrees in India protected areas and species. Sacred groves, forests, springs, rivers, reefs and mountains were revered as places where the ancestors resided, spirits lived or rituals and ceremonies were performed (Byers *et al.* 2001). Areas were set aside for hunting, grazing, collecting resources and a host cultural pursuits and activities. The conservation movement of nineteenth century North America and Europe emphasized different values. In North America, protected areas were to safeguard sublime scenery, in Africa, big game and ‘the hunt’ dominated thinking, while in Europe, protection of landscapes – often domestic landscapes – was more common (Philips 2007).

Protected areas continue to be primary tools for the conservation of nature, whichever values are emphasized. In 1972[4] the United Nations agreed that the protection of all major ecosystems of the world was essential and that it should therefore be a requirement of national conservation programmes. Though it is apparent that protected areas alone will not conserve the world’s biodiversity (Mora and Sale 2011), protecting the world’s biomes is a core principle of conservation policy (Olson 1999).[5] By the end of the 20th century, 120,000 areas had been ‘set

[4] The Stockholm Declaration of the United National Conference on the Human Environment.
[5] E.g., *The World Charter for Nature*, 1982; the *Rio Declaration at the Earth Summit*, 1992; *Convention on Biological Diversity (CBD) Agreed Program of Work on Protected Areas*, 2004.

aside' for conservation purposes, covering 12 per cent of the world's surface - though just 1.72 per cent of the oceans (UNEP-WCMC 2008). Nonetheless, notable gaps in the representation of ecosystems and biomes remain, while many protected areas are little more than 'paper parks' (Brandon *et al*. 1998). Recognition that protected areas are primary tools for conservation is implicit in this exploration of a cultural values approach. It examines how conservation actions in and around protected areas can significantly improve in both effectiveness and sustainability by mitigating conflict with surrounding communities by strengthening support for the expression of cultural values.

1.3. The origins, loss and resurgence of values-based approaches to conservation

Moral, aesthetic and spiritual sentiments were central to the development of modern conservation at the end of the 19th century. In the United States, the spiritual and aesthetic values emphasized by John Muir, Henry Thoreau and others led to the creation of Yellowstone National Park in 1872 quickly followed by several others.[6] In parallel to these developments, a utilitarian perspective emphasized the practical and economic values of nature. Gifford Pinchot who founded the US Forest Service in 1905 coined the term, 'conservation ethic' and promoted an understanding of conservation as sustainable use.

These two strands of thinking intertwined as interest in conservation and protected areas spread around the globe. Strong justifications for protected areas were necessary in poor and developing nations. As the cultural values of western conservation which stimulated creation of the first parks were not easily transferable, utilitarian perspectives were emphasised. This led the institutions responsible for conservation to develop a strangely schizophrenic approach in which strictly protected parks and reserves prevented the use of most resources but were explained in economic and utilitarian terms. That most conservationists were motivated by moral and aesthetic interests added to the tension. Science, originally understood as a powerful tool for understanding ecological processes and designing management practices, came to define the reasons for conservation itself (Infield 2003); science mutated from a tool to achieve conservation to a reason for pursuing it.

Conservation practitioners universally recognize the need to build broad, robust and active constituencies for sustainable resource use, conservation and protected areas. From the 1980s, policy and practice changed profoundly as programmes to develop local support for conservation became mainstream parts of both the conservation and the international development agenda (Brown 2003, Adams and Hulme 2001)[7]. Hulme and Murphree (2001) describe three elements of 'new conservation': a community level focus; the use of ideas and language from the development sector; and market force incentives for conservation behaviours. The policies of governments, donors and NGOs came to be couched in economic

[6] The first national parks promoted the values of the western settlers; those of Native Americans were excluded.
[7] Key conservation conventions (e.g. the CBD, the Ramsar Convention, and the WCPA Durban Statement) require the inclusion, active participation and receipt of benefits by local communities and indigenous peoples.

and development terms, encouraged and supported by the ascendancy of neo-liberal economic theory throughout the 1980s and 1990s, particularly in the US and Europe.

The report, "Our Common Future" (World Commission on Environment and Development 1987) recognized that conservation levied costs on local communities. This strengthened the economic analysis behind sustainable development. The 1980s and 90s saw a proliferation of interventions that cast natural resources and protected areas as engines of development in order to engage local communities in their conservation. These activities included sharing revenues from protected areas, community-based natural resource management, and collaborative management schemes. They were based on the key assumption that hostility or lack of interest in conservation was the result of poverty. Thus, enlightened self-interest would lead communities to embrace conservation, and economic development would reduce pressure on protected areas and natural resources. Though investigation of these assumptions, especially in respect to integrated conservation and development projects (ICDPs), revealed their flaws (Wells *et al*. 1992; Wells 1995), they and efforts to calculate the monetary worth of wildlife and nature[8] strengthened representations of conservation as an economic endeavour. Recently, the language and thinking behind ecosystem services approaches, perhaps most notably for carbon sequestration and storage, have extended this trend and led to national and global initiatives to place monetary values on nature.[9] Interestingly, most frameworks include "cultural services" as one of four categories of ecosystem service.[10] Cultural ecosystem services are discussed in section 2.2.10

Economic approaches to conservation are not easy to design or deliver (Blaikie and Jeanrenaud 1996; Infield and Adams 1999), and success has been patchy (Noss 1997; Murombedzi 1999, Wells 1995). Despite significant investment in them, local interest and active support for conservation remains elusive and many conservation initiatives operate within an environment of conflict and suspicion. These shortcomings have led to both resurgent demand for traditional 'fines and fences' approaches (Brechin *et al*. 2002, Peterson *et al.* 2010), and to an articulation that a sole focus on scientific and economic rationales leads to alienation of those that value nature differently and have other motivations for its protection (Jepson and Canney 2003, van der Ploeg *et al*. 2010).

For decades, attention to non-material values all but vanished from discussions of conservation policy and practice, even though cultural values had been drivers of the modern conservation ethic (Nash 1982; Lord 1994; Adams 1996) and individual interest in conservation remained strongly associated with aesthetic, ethical and spiritual values. While the role of cultural values

[8] Surrogate market pricing, survey-based approaches, and contingent valuations (Dixon and Sherman 1990; Eltringham 1994) were used to commoditize nature without creating actual revenue flows.
[9] The recent UK National Environmental Assessment http://uknea.unep-wcmc.org/ and the ongoing global process to draw attention to the economic benefits of biodiversity - The Economics of Ecosystems and Biodiversity (TEEB) process http://www.teebweb.org/ are good examples of these.
[10] The four categories of ecosystem service usually described are 1. Supporting services, 2. Provisioning services, 3. Regulating services and 4. Cultural services.

in building support for conservation was noted in the 1980s (McNeely and Miller 1984; Brownrigg 1985) and the concept of protecting diversity rather than "… some ideal, pristine nature" was recognized (Soule and Kohm 1989, 2), both were largely ignored in practice (Infield 2001). However, there is now growing recognition of the interrelationships between culture and conservation (Maffi 1999, Posey 1999, Peterson *et al.* 2010) and initiatives to reintegrate cultural values into conservation. Researchers and conservation practitioners alike are recognizing that conflicts with local groups increase when local cultural values are ignored (Verschuuren 2007), contributing to failures to conserve biodiversity, and undermining local peoples' abilities to help protect their environment (Alcorn 1993).

Despite this evolution, initiatives to integrate cultural dimensions into mainstream conservation programmes remain rare. Practical initiatives do exist, however, especially in the developed world where stronger institutions and more open governance structures can encourage active participation encouraging innovation and creating new models that present opportunities for developing cultural approaches in developing countries too.

1.4. Protectionist conservation policy and practice

Protected areas (PAs) are set aside to maintain values that cannot survive in intensely managed landscapes. Conservation policies are strongly influenced by PAs, which remain the cornerstone of national and international conservation strategies. PAs embrace a wide range of management approaches, from total exclusion, through parks that welcome visitors, to areas that allow traditional lifestyle activities, including resource extraction (Dudley 2008). However, many if not most PAs continue to protect nature by separating it from human intervention.

This invariably creates conflicts between local people and conservationists (Alcorn 1993). Though each circumstance is unique, severing people from their land is destined to cause disagreements as the 'wilderness' set aside by conservationists is inevitably part of someone's homeland or cultural landscape. PAs have thus tended to create a surrounding community of people who have been disenfranchised and ignored, who do not understand or agree with the purpose, relevance or meaning of PAs, and who derive few or no sanctioned benefits from them. The conservation authorities, meanwhile, have little appreciation of local perspectives, and pay insufficient attention to links between the PA and the lives of neighbouring communities. A profound and lasting mutual distrust often results (Adams and McShane 1992). Rather than embracing the links between vigorous local cultures and nature, conservation policies effectively build barriers against them.

1.5. Cultural perspectives in protected areas and natural resources management

Responses to the natural world stem as much from culturally based constructions of nature as they do from economics (Croll and Parkin 1992). Though the cultural values of biological diversity have received considerable attention in the literature, until recently there was little practical exploration of the influence of culture on interactions between communities and conservation initiatives (Infield 2001).

Cultural values and social constructions of nature and landscape are at the centre of relationships between nature and communities (Schama 1996, Posey 1999). Infield (2002a) argues that protected areas are best understood as cultural rather than economic entities, and that their management should emphasize values rather than resources. However, different people (and peoples), have different values and even value the same object differently. For example, the scientific and economic values emphasized by modern conservation that have largely replaced aesthetic and ethical values (Japson and Canney 2003) do not generally appeal to local or indigenous communities (or even the general public).

Many local communities and indigenous peoples, however, have values systems that link them to the natural world. If incorporated into conservation initiatives, these have the power to imbue protected areas or resource management regimes with relevance for local people. Furthermore, the enforcement of the rules and taboos of cultural institutions are generally more acceptable to indigenous communities, and less expensive to implement than externally imposed, poorly understood laws and regulations and may thus offer local but effective protection, including to threatened species (Colding and Folkes 2001).

For example, in the coastal forests of Kenya, the *Mijikenda* conserved their sacred forests over many generations using cultural institutions and taboos. People breaking the rules faced the discipline of elders who handed out socially accepted sanctions. Social and economic changes have weakened the authority of the elders but, with the support of external agencies such as the Kenya Wildlife Services and WWF, they continue to play important roles in efforts to conserve these threatened forests. FFI, in partnership with the Uganda Wildlife Authority, are working with *Bakonjo* and *Baamba* communities to enlist taboos against the killing of chimpanzees, which are considered 'kin to people' by some clans. In Southeast China, relationships between natural resources and the *Dai* and *Hami* peoples have been forged within religious, moral, political, economic and ecological boundaries that are enforced by long-standing rules and norms. The philosophy and religious life of these peoples instil respect for forests, plants and animals and the landscape has been maintained through traditional land uses and cultural practices (Xu *et al* 2005).

1.6. Relevance in a changing world

The relationships between people and nature are socially and culturally conditioned, creating a diversity of reasons for conserving biodiversity across different cultures and societies (Yamin 1995). This diversity of interests and perspectives is a key to adaptability and the capacity to respond to change. By supporting this diversity, cultural approaches help retain and enhance adaptability and are especially relevant in a changing world.

It is clear that no single approach to conservation will meet all the needs of our changing world or the rapidly evolving threats to biodiversity. Adding to the range of tools available, however, increases adaptability of the conservation endeavour to the range of challenges it faces, now and in the future. Cultural approaches, by their nature, must respond to local situations, and

thus offer adaptability. Values-based approaches can be applied where traditional 'fines and fences' and community conservation approaches have failed or delivered only partially. Responsiveness is essential, not just to the design of conservation initiatives but to the resilience of communities and cultures themselves.

Culture, values and ethics are not static but respond to and evolve with changing circumstances. Indeed, they are key mechanisms for responding to change in ways that are socially relevant, appropriate and creative. Communities, especially indigenous communities, are most exposed to the negative effects of external influence and globalization when their cultural values and institutions have been lost or weakened[11].

2. A REVIEW OF APPROACHES AND PRACTICES

Despite the focus on material values in conservation, and the gathering impetus of ecosystems services approaches, interest in the non-material values of conservation is growing. A review of values-based approaches being employed reveals both their underlying rationales and practical ways to build support for conservation initiatives.

2.1. Opportunities for values-based approaches to conservation

2.1.1. Broadening values in nature conservation

Several significant initiatives are integrating spiritual and religious values into conservation endeavours. Other values may be more difficult to describe, relevant to smaller groups, and difficult for outsiders to appreciate; as such, there are currently fewer practical initiatives to integrate them into conservation activities, even though they represent a vast and diverse set of values that link people to nature.

The cosmologies and behaviours of most indigenous peoples implicitly see humans as an integral part of the natural world (Croll and Parkin 1992). Though differing world views may make separation and definition of these values challenging, grouping them can support practical approaches to integrating values into conservation. Figure 1 provides an attempt to present values held in the natural world.

Values related to nature present practical opportunities for integrating culture and conservation. Use values and lifestyle values may be synonymous with spiritual values in a given culture, but they also engage people in activities and behaviours that locate them in landscapes and physically connect them to a natural resource. Use values have long been employed in community conservation initiatives, but described in economic terms (Infield 2001). Investigating underlying drivers of the use of resources and places presents a wide range of tools for attracting the interest of local people in the conservation of these resources and places.

[11] Undermining cultural institutions was a favoured means of creating compliant subjects by imperial powers in the 18th and 19th centuries.

Place values may also be linked to spiritual values, as well as the history of occupation and use that establishes a connection between people and place.

Not all values in and of nature are sympathetic to its conservation and some directly conflict with conservation objectives. Identifying values that are appropriate for integration and those which are not can be challenging. Conflicts between values may be nearly insurmountable. Conflict over whaling, for instance, is an example of conflict between competing values that has proved hard to resolve.

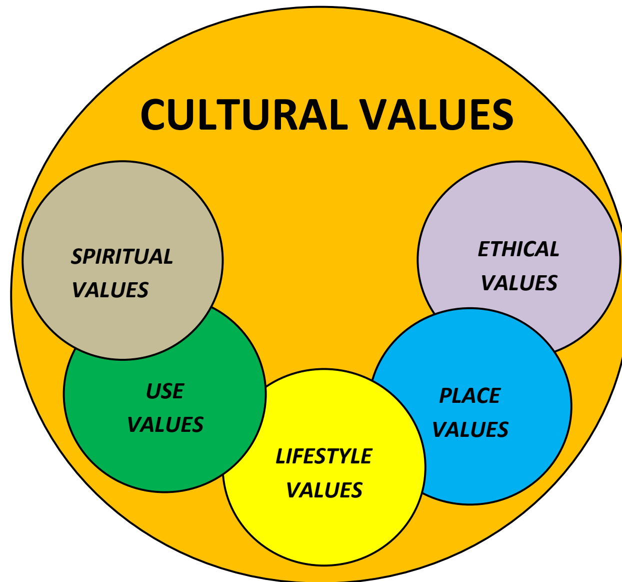

Figure 1. Simplified representation of sets of values in nature

In addition, culture is not static and the contemporary values and ethics of people may have little to do with traditional ones or support conservation goals. The practice of wildlife consumption amongst Vietnamese elites, for example, where relationships are cemented by offering rare and expensive wildlife dishes, present a complex and difficult set of problems for conservation (Drury 2011).

2.1.2. Working with cultural values

The five value groups presented in Figure 1 connect people to nature in different ways and provide a range of opportunities to build support for conservation.

- *Spiritual values:* Sacred natural sites include sacred groves and springs, sites of worship, rituals and offerings, burial sites, and locations associated with spirits or deities. Numerous sites exist around the world[12] and many are managed to support both

[12] Some estimates suggest that Sacred Natural Sites cover 15% of the surface of the earth (Palmer, M. (2008)).

conservation objectives and spiritual functions (Wild and McLeod 2008). The Rwenzori Mountains in East Africa provide an example of a spiritual landscape; their glaciers, high peaks and moorlands are the home of the gods of the *Bakonjo* people. The entire island of Bali is sacred to the Balinese, a landscape in which the forces of good and evil must be balanced by worship and making offerings at specific sites.

- *Use values:* Use values have been employed in community conservation projects as economic incentives rather than cultural benefits for communities. Though use cannot be divorced from economics, the underlying cultural drivers of resource use are generally ignored. Specific resources may be essential for the maintenance of cultural practices or necessary for specific prayers, initiation rituals or purification of people or places. Others are needed to make material cultural artefacts or are linked to valued lifestyle activities, such as hunting or fishing.

- *Lifestyle values:* Collection of resources may be necessary to prepare traditional dishes. Many West African peoples, for example, collect a broad range of forest plants to prepare characteristic dishes. Regional specialties are central to the food culture in France and influence the use and perceptions of the landscape. Grazing 'beautiful cows' links the *Bahima* pastoralists of Uganda to their ancestors, locates them within the pastoral landscape, and defines their values, tastes and ethnic identity. Walking or 'rambling' links the English to 'countryside' and informs their sense of place and values in nature. Summer camps give millions of young Americans an experience of 'wilderness' and the back-country skills associated with the settler experience.

- *Place values:* Place values are established at and by locations of cultural or historical importance such as battle sites, graves, memorials and ruins that establish the identity of a people. Natural features may have been created by acts of gods or ancestors; actions may be required or proscribed to maintain the harmony or healthiness of landscapes, and maintain a people's place and links to it. These may include establishing markers, holding gatherings, harvesting plants or animals, burning, and grazing livestock. Activities may entail economic transactions, such as the sale of smoked bamboo shoots by the *Bagisu* people harvested from Mount Elgon National Park in Uganda, but these do not define them (Infield 2001).

- *Ethical values:* Ethics or moral philosophies allow communities, groups and individuals to address questions of morality in relation to behaviours towards the natural world, and separate actions that are right from those that are wrong, those that are good from those that are bad. These judgments are intrinsically linked to the higher values of a people, perhaps especially their religious and spiritual values, which, together, provide a set of overarching moral principles that can help resolve complex moral problems. Though less direct than the other values discussed above, ethics are important in governing normative behaviour and though they will not always result in decisions in favour of

nature conservation over community needs, they provide a moral compass to balance material demands on the natural world and others species.

2.2. Approaches integrating cultural values into conservation

Recent research suggests that the involvement of local communities and institutions is the strongest predictor of successful conservation projects Community participation, conservation education and benefit sharing, when conducted by outside groups, had less relationship to success (Waylen *et al.* 2010). Examination of protected areas indicates that indigenous areas and multiple use reserves are less prone to fire than conventional protected areas (Nelson and Chomitz 2011). In addition, partnerships with local and indigenous groups offer opportunities for strengthening conservation both within and outside protected areas (Alcorn 1993). Interest in the values and belief systems of local people with respect to conservation has led to a number of global partnerships including: the Forest Peoples' Charter published in 1992 to give indigenous people rights to the forests in which they live (Alcorn, 1993); the Global Biodiversity Strategy, which supports recognition of ancestral domains and spiritual values (World Resources Institute *et al.* 1992), the Forest Peoples Programme which champions the rights of forest peoples to their forest-based cultures and lands, and the Indigenous and Community Conserved Areas Forum which promotes recognition of the role of these areas in conservation. Examples of programmes and approaches that are investigating the integration of cultural, spiritual and ethical dimensions into conservation practices are described below to indicate their diversity.

2.2.1. Indigenous and Community Conserved Areas

Indigenous and community conserved areas (ICCAs) conserve biodiversity and cultural values by indigenous and local communities, often through traditional institutions.[13] Communities develop regulations and institutions to manage ICCAs for a range of purposes including use of natural resources, recreation, the enjoyment of aesthetic values, and perhaps most commonly, for spiritual and religious activities. In 2003 the World Parks Congress recognized their importance to biodiversity conservation and recommended that ICCAs be afforded national and international recognition. However, as traditions weaken and globalization and access to education expand, the involvement of external agencies and changing world views may be result in more materialist interpretations to define the functions of ICCAs being put forward, conflating traditional understandings of the functions of these areas with contemporary conservation objectives. Though this trend emphasises synergies in interests between communities and conservationists, it may do so at the expense of truly local perspectives, weakening the depth of connection between a people and an ICCA.

2.2.2. Sacred Natural Sites

Sacred Natural Sites (SNS) are perhaps the world's oldest protected areas. Many are important for biodiversity as well as the culture of their guardians. The geophysical and biological

[13] The ICCA Forum website (http://www.iccaforum.org/) provides information and analysis of ICCAs and their role in nature conservation

characteristics of SNSs can be described - they may be a small stone, a standing tree, or an entire mountain range - but their sacredness can only be defined by the peoples who hold them sacred. Activities attached to SNSs or carried out (or proscribed) within them are similarly diverse and dependent on local values. Not all SNSs support significant biological diversity or actively conserve what they do support. Large numbers of visitors may limit support for conservation objectives or even result in negative impacts (Wild and McLeod 2008).

The Friends on Gamo Gofa Sacred Sites Association in Ethiopia demonstrates how SNSs can support cultural and biodiversity conservation. After forest lands were converted to agriculture, local people vowed to protect their sacred places. Ritual festivals fostered respect for the area's cultural history, decreasing pressure on the sacred forests. The custodians of the sacred sites were accorded legal authority, helping them better protect both their culture and biodiversity (Maffi and Woodley 2010).

In Columbia, the Fundacion Pro-Sierra Nevada de Santa Marta (FPSN) is working to increase connectivity among forest fragments in four river basins of the Sierra Nevada de Santa Marta massif. The project builds on the values of native ethnic groups whose traditions centre on a belief that the mountain's wellbeing controls their day-to-day welfare and long-term destiny. This feeling of sacredness translates into a sense of stewardship for natural resources.[14]

2.2.3. Protected areas management that integrates cultural values

Protected areas policies may allow and support their designed and management with reference to cultural values. The national parks of the United Kingdom for example, conserve anthropogenic landscapes valued as cultural landscapes, often linked to art and literature (for example 'Hardy Country' references the semi-fictional land of Wessex created by the19th century poet and novelist, Thomas Hardy, while the Lake District is associated with Wordsworth and the romantic poets). The active and implicit inclusion of "invisible heritage", people's feelings of belonging through language, sayings, place names, history, legends, and folk customs which all derive from heritage, clearly demonstrates the centrality of cultural values to conservation practice (Snowdonia National Park Authority, 2005, quoted in Hourahnane *et al* 2008, 184).

In Australia, the New South Wales National Parks and Wildlife Service commissioned studies to understand how the varying cultures of different parks users influenced their expectations and experiences in order to develop management responses (Thomas, 2002). The cultural values of 18 aboriginal groups in Queensland are being mapped to ensure their survival and to help coordinate efforts to protect and manage cultural heritage and values in the Wet Tropics World Heritage Site (Maffi and Woodley 2010). Such approaches remain the exception rather than the rule, however, especially in developing countries.

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[14] MacArthur Foundation grant description: PROGRAM ON GLOBAL SECURITY AND SUSTAINABILITY, Conservation and Sustainable Development, Fundacion Pro-Sierra Nevada de Santa Marta, Santa Marta, Columbia.

In Uganda, a programme implemented by Fauna & Flora International and the Uganda Wildlife Authority supports practical steps to integrate cultural values into protected areas by working with managers, communities and other stakeholders. In Lake Mburo National Park the project focuses on values and behaviours associated with the institution of *enyemibwa* (the breeding of beautiful cows) to resolve long standing conflicts with *Bahima* pastoralists.[15] In Rwenzori Mountains National Park, the project is working with the sacred nature of the mountain landscape for the *Bakonjo* people who live around it (FFI-UWA, 2012). In the forested parks of the Albertine rift, the project is working with Batwa and Basua people, former hunter gatherers of these forests, to integrate their values and practices into the management.

The Nature Conservancy is supporting Nicaragua's Bosawas Biosphere Reserve, which stretches over a number of traditional peoples' territories, to develop a management plan that incorporates local values and traditions (Maffi and Woodley 2010).

Since 1999 Fundación para la Sobrevivencia del Pueblo Cofán has worked with The Field Museum to expand protected status to and effective management of Cofán territory, and foster a new generation of Cofán leadership committed to and capable of providing sustained stewardship of their land and culture. The project trains and employs Cofán as park rangers, protecting the reserve from illegal extractive activities, addressing threats to both biodiversity and the lands of the Cofán.[16]

2.2.4. Flagships and keystones

The concept of flagship species is a key one for conservation but Jones and Entwistle (2002) note the importance of broadening the idea to reflect local as well as global values. This gives greater local relevance to the concept, helps engage the values of local people in efforts to conserve particular species and, perhaps most importantly, shares the process by which priorities for conservation are set. FFI has used cultural flagships to support conservation of endangered habitats and species in Indonesia, by emphasizing the cultural significance of Asian elephants, in Nigeria, by building on traditional values invested in Cross River gorillas, in Tanzania, by focusing on a flying fox, and in Cambodia, by integrating the reverence indigenous peoples have for the Siamese crocodile into wetland conservation efforts.

Keystone species have significant effects on their environment and other species. Their loss may result in rapid loss of complexity and resilience. Similarly, values or institutions may be fundamental to the identity and culture of a people and their loss result in rapid loss of social norms, language, and traditional knowledge and practices. Such institutions may be thought of as cultural keystones. For example, the removal of the King of the *Bakonjo* tribe following the declaration of a republic in Uganda in 1966 led to loss of the authority structure which governed

[15] See Infield (2000) for information on the relationship between Bahima, livestock and Lake Mburo National Park
[16] MacArthur Foundation grant description: PROGRAM ON GLOBAL SECURITY AND SUSTAINABILITY Conservation and Sustainable Development, Fundacion para la Sobrevivencia del Pueblo Cofán, Quito, Ecuador.

the mountain ridges communities which led in turn to the loss of traditional resource use practices and the network of ritual sites and institutions.

2.2.5. Traditional knowledge and practices

Practices develop knowledge that can support the management of ecosystems (Berkes *et al.* 2000). Traditional knowledge and practice is increasingly incorporated into the design and management of protected areas and community based resource use regimes. The specific knowledge and experience acquired by local and indigenous communities over centuries can provide significant insights to improve management. Traditional forms of ecosystem management include multiple species management, resource rotation, succession management and patchy resource management that are rarely attempted under conventional modern resource management (Berkes *et al.* 2000). Recognising and legitimising traditional knowledge can re-vitalize cultural values and institutions, and help strengthen relationships between people and nature where the forces of modernization and globalization have weakened them. Colding and Folke (2001) advocate the use of informal institutions, rather than government institutions, as a less expensive option for managing PAs.

Rice varieties in Nepal are being conserved in the face of pressures on local people to adopt more productive varieties. Rice landraces have symbolic value and are important in rituals, celebrations and food traditions. Communities chose to continue growing traditional varieties, conserving biodiversity and agricultural stability in the event that crops face declines due to disease or changes in climate (Maffi and Woodley 2010). The *Parque de la Papa* (Potato Park) in Peru demonstrates a practical application of traditional knowledge. Local communities established this protected area with the intention of conserving their cultural landscape, their livelihoods and ways of life, and their customary laws and institutions as well as the 1200 varieties of domesticated potatoes they cultivate (Colchester 2005).

2.2.6. Academic investigations of culture and conservation

Research into links between culture and conservation examine both why we undertake conservation and how we can achieve it. Examination on the values, beliefs and perceptions of those who carry out conservation and those who are affected by it contribute towards conservation theory and practice (Peterson et al., 2010). The number of disciplines examining relationships between culture and conservation include anthropology, development studies, economics, philosophy, psychology and sociology.

Ethno-ecology, which studies people's understandings of the environments in which they live, and how they relate and respond to them, is particularly relevant to questions of resilience to sudden or unexpected environmental changes. Closely related fields include ethno-biology, ethno-zoology and ethno-ornithology; all study the interactions of people and nature through time and across cultures. Tidemann and Gosler (2010), for example, examine how indigenous knowledge and practice related to birds can be used to support research and conservation.

In 1997, UNESCO New Delhi began an extensive research initiative in Northeast India on the linkages between two knowledge systems: the traditional ecological knowledge system of indigenous groups living in close proximity to nature with knowledge gained through an experiential process of development over generations, and the formal knowledge system derived through a deductive process of analysis and scientific experimentation. The goal is to determine the links between the tangible and intangible forces that operate within traditional societies and contribute to conservation, ecological balance, and sustainable development.[17]

2.2.7. Biocultural diversity conservation

Linguistic diversity is an indicator of cultural diversity, and areas of linguistic and biological diversity are correlated (Loh and Harmon 2005). Thus, threats to languages and biodiversity are closely linked (Posey 1999). According to UNEP and UNESCO (2003, 7), "Respect for biological diversity implies respect for human diversity," yet the dominant conservation approaches do not demonstrate this, and negative impacts of conservation on local and indigenous communities are well documented.

"Biocultural diversity comprises the diversity of life in all of its manifestations – biological, cultural and linguistic – which are interrelated (and likely co-evolved) within a complex socio-ecological adaptive system" (Maffi and Woodley 2010, 5). This mutuality defines 'biocultural diversity' and informs steps to conserve it. Western cosmology that separates the human and the natural worlds underpins contemporary approaches to conservation, often at the cost of indigenous and local peoples and their cultures, weakening the links between peoples and nature. Biocultural conservation seeks to strengthen these links to strengthen the prospects of conserving both. Maffi and Woodley (2010) describe 45 biocultural diversity conservation initiatives that, in response conservation needs, have separately evolved mechanisms that integrate efforts to conserve biodiversity, culture and language.

2.2.8. Religions and conservation

Religions are emerging as strong sources of support for conservation (Bhagwat and Palmer 2009). In 1986 representatives of five world religions met in Assisi, Italy, and pledged to promote conservation awareness within their communities. In 1995, leaders of nine faiths committed to interfaith cooperation on conservation. Several institutions or programmes have developed since then to support conservation initiatives. For example:

- *The Alliance of Religions and Conservation (ARC)* implements projects on behalf of eleven faiths. In 2009, ARC launched the multi-faith "Plans for Protecting the Living Planet."
- *World Bank Faiths and Environment* works with people and institutions whose spiritual beliefs lead them to environmental actions as part of the expression of their faith.

[17] MacArthur Foundation grant description: PROGRAM ON GLOBAL SECURITY AND SUSTAINABILITY Conservation and Sustainable Development, UN Educational, Scientific and Cultural Organization, New Delhi

- *The Forum on Religion and Ecology (FRE),* a multi-religion project, explores religious world views, texts, ethics, and practices to broaden responses to current environmental concerns.
- *The Interfaith Center on Corporate Responsibility* is an association of faith-based institutional investors whose members press companies to be socially and environmentally responsible.
- *The National Religious Partnership for the Environment is* an association of independent U.S. faith groups that emphasize scholarship, leadership and public policy education.

Many practical initiatives work with major religions to support conservation on the ground. For example, Imams in Aceh Province, Indonesia, have worked with FFI to develop and deliver conservation messages.

2.2.9. Rights-based approaches to conservation

Conservation maintains and enhances the long-term benefits of nature for all, including future generations, as human wellbeing is strongly dependent upon ecosystems and the biodiversity within them. Initiatives and actions to conserve nature and natural resources support the rights of people to secure sustenance, shelter, livelihoods and healthy, productive environments. Yet, conservation can also generate negative impacts if human rights and wellbeing are not sufficiently understood or addressed. Provisions in international conservation agreements, including the Convention on Biodiversity, include specific requirements for the protection of the rights of local and indigenous communities.

Conservation organizations of all types (national, international, government and non-government) recognize that their actions affect the relationship of peoples to their lands and vital resources and are increasingly accountable for the social effects of their programmes. They generally consider rights related to material needs, such as land rights or resource access. However, Article 27 of The Universal Declaration of Human Rights (United Nations 1948) states that everyone has the right to participate in the cultural life of their community. Therefore, rights-based approaches also support a cultural values approach to conservation. Amatya Sen, awarded the Nobel Prize for work on welfare economics, writes “The freedom and opportunities for cultural activities are among the basic freedoms the enhancement of which can be seen to be constitutive of development” (Sen 2004). The same can be said of conservation.

The Field Museum’s Environment, Culture, and Conservation Program (ECCo) is working to assist native community-based organizations in the Cordillera Azul buffer zone in Peru to develop natural and cultural asset maps, design and implement ‘life plans’, develop culturally appropriate communications strategies, and strengthen the relevance of monitoring tools to

indigenous use. Quality-of-life plans reflect central community values, emphasize self-sufficiency and are grounded in local ecological knowledge.[18]

An aspect of rights-based approaches to conservation relates to the ethical treatment of animals and the according of rights to species other than the human species. Though perhaps most associated with efforts to halt the cruel treatment of captive or domestic animals, it extends to the treatment of wild animals and their exploitation by, for example, the global fur trade or the Asian food and traditional medicine industries. There is now a growing movement to accord the planet itself legal rights, promoted under the "Trees Have Rights Too" campaign.[19]

2.2.10. Cultural ecosystem services

Placing values on ecosystem services has become increasingly important in policy development and decision making related to nature and the natural environment (Cardinale et al., 2012; Fisher, Bateman, & Turner, 2011; Mace, Norris, & Fitter, 2012), and cultural values are included in these assessments

The ecosystem services approach developed as a way of communicating the importance of nature to decision makers in terms they could respond to. The belief that planning decisions respond to economic or financial interests, whether made by governments or the private sector, or by communities and individuals, strengthened interest in describing the natural world in terms of its economic and financial contributions to human wellbeing.

Though ecosystem services are increasingly important in decisions, they are complex and thinking about them and how to assess them remains in flux (Mace, Norris & Fitter, 2012). Figure 2 presents a typology of ecosystem services.

The wisdom of the ecosystems services approach has been questioned and concerns raised about the commodification of nature.[20] That it encourages consideration of the value of ecosystems in decision making processes is, however, valuable. The intention may have been to describe nature in economic terms, but the need to describe non-material contributions is recognised and most frameworks include cultural services along with supporting services, provisioning services and regulating services. Descriptions of these categories and their contributions towards human wellbeing can be found in several publications.[21]

Cultural ecosystems services are "… contributions to the non-material benefits (e.g. capabilities and experiences) that arise from human-ecosystem relationships" (Chan, Satterfield and

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[18] MacArthur Foundation grant description: PROGRAM ON GLOBAL SECURITY AND SUSTAINABILITY, Conservation and Sustainable Development; Field Museum of Chicago, Assisting native community-based organizations in the Cordillera Azul buffer zone.

[19] http://www.treeshaverightstoo.com/

[20] George Mombiot writing in the Guardian Newspaper in 2012 gives a good summary of these concerns http://www.guardian.co.uk/commentisfree/2012/aug/06/price-rivers-rain-greatest-privatisation

[21] See the Millennium Ecosystem Services material http://www.millenniumassessment.org/en/index.html or the UK National Ecosystem Assessment materials http://uknea.unep-wcmc.org/Resources/tabid/82/Default.aspx

Goldstein, 2012, pp2). Several lists of non-material benefits have been developed. The Millennium Ecosystem Assessment synthesis report, for example, refers to recreational, aesthetic and spiritual benefits (Millennium Ecosystem Assessment, 2005) while Costanza *et al* (1997) lists aesthetic, artistic, educational, spiritual and scientific values.

Though defining and assessing cultural services is proving difficult, failure to assess them undermines the robustness of the ecosystem approach (Chan, Satterfield and Goldstein, 2012).

Figure 2. A typology of non-material material values of nature, ecosystems and biodiversity

	Anthropocentric values	**Non Anthropocentric values**
Instrumental values	**Anthropocentric instrumental value** Equivalent to total economic value - use and non-use values. Examples of non-use values: i. Existence value: conservation for the pleasure and satisfaction in the continued existence of entities ii. Vicarious use value: self-interested altruism (the ‘‘warm glow’’ effect) iii. Intra-generational altruism: conservation to ensure availability for others iv. Inter-generational altruism: conservation to ensure availability for future generations (bequest value) v. Sense of stewardship: conservation on behalf of nature - belief that non-human life has rights and/or interests	**Non-anthropocentric instrumental value** Entities have ‘sakes’ or ‘goods’ of their own, independent of human interests. The good of collective entities, e.g. ecosystems, in a way that is not irreducible to that of its members. These values may not demand moral consideration
	Anthropocentric intrinsic value	**Non-anthropocentric intrinsic values**
Intrinsic values	Culturally dependent attribution of value to entities for ‘their own sake - for the good of their own existence’; entities may need and use nature for their own intrinsic ends Value linked to acceptance of stewardship responsibilities - anthropocentric because a human ‘valuer’ ascribes intrinsic value to non-human nature Holding these values may validate/give identity to a group	Viewed in an objective value sense – the inherent worth in nature The value an entity possesses independent of human valuation. These values may constrain anthropocentric instrumental values

Source: Adapted from Turner *et al.*, (2003)

Some of nature’s contributions to wellbeing are easily captured in economic terms. Most cultural services are not, raising difficult questions concerning their assessment.

The contributions of religious and spiritual beliefs connected to nature to human wellbeing, for example, are important to many people but cannot be assessed in monetary terms. Individual and group identity is often linked to connections to place and the natural world. Identity keeps people grounded in time and place and establishes continuity between past and future. This can be essential to retaining social cohesion, adaptability and resilience in the fact or rapid social and economic change. Putting monetary values on identity is probably both inappropriate and

practically difficult. But finding ways to factor values such as these into decisions that trade off nature and culture against economic development is important. Trade-offs are the day-to-day reality of environmental management. If the primary language of ecosystem services is economic, can cultural values be expressed in terms that do not put them at a disadvantage in the decision making process?

There are a number of techniques for assessing non-monetary values (Table 1). Several techniques employ forms of contingent valuation to provide monetary assessments for cultural values. Others, however, employ methods that will provide qualitative non-monetary assessments, while a few generate non-monetary metrics. Organisations such as the Valuing Nature Network and the Ecosystems Knowledge Network are working to improve the available techniques.[22]

There is simple answer to how to assess non-material values. The requirement for social and natural scientists to find common epistemologies and methodologies to all effective assessment of cultural ecosystem services remains a challenge.

Table 1. Summary of techniques for assessing cultural services

Key techniques	**Required inputs - costs and technical expertise**	**Type of information**	**Contribution to analysis**
Analytic-Deliberative			
Deliberative multi-criteria analysis technique for evaluating costs and benefits against a range of non-monetary and monetary criteria	High cost; technical and social	Monetary and non-monetary combined into quantitative scale of values.	Gives monetary and non-monetary valuation of costs and benefits
Deliberative monetary valuation technique for deriving monetary values in group setting	Medium to high costs; Technical, social and economic	Monetary, expressed in terms of preferences of 'self' and 'other'	Monetises costs and benefits
Deliberative approaches			
In-depth discussion groups Group based assessment; open and exploratory structure; participants shape terms of discussion, develop themes relevant to their priorities	Medium to high costs; Social	Qualitative and non-monetary	Identifies winners/ losers; describes costs/benefits
Citizen Juries Group based assessment; based on exposing citizens to evidence of expert witnesses and stakeholder perspectives	Medium to high costs; Social	Qualitative and non-monetary	Identifies winners/ losers; describes costs/benefits

[22] See http://www.valuing-nature.net/ and http://ekn.defra.gov.uk/

Survey techniques			
Structured questionnaires. Information from individuals gathered using standardised approach to content and phrasing of questions	Low to high costs; Social, technical and economic	Quantitative monetary or non-monetary	Identifies winners/ losers; describes costs/benefits; quantifies impacts; monetises costs and benefits
Semi-structured interviews. Open-ended questions to individuals; phrasing of questions varies between interviews.	Low to high costs; Social	Qualitative and non-monetary	Identifies winners/ losers; describes costs/benefits;
Focus groups Semi structured interview in a group format	Low to medium costs; Social	Qualitative and non-monetary	Identifies winners/ losers; describes costs/benefits;
Participatory approaches A range of participatory tools used in a group format	Low to medium costs; Social, technical	Qualitative, quantitative and non-monetary	Identifies winners/ losers; describes costs/benefits;

Adapted from Fish and Haines-Young (2011).

2.3. *Integrating ethical dimensions into conservation*

2.3.1. Historical relationships between ethics and western conservation

The philosophical underpinnings of modern conservation arose from two ethical perspectives: to preserve the aesthetic and ethical values of landscapes (Jepson and Whittaker 2002); and to prevent excessive and 'unsporting' hunting and resource use in general (Mackenzie 1987; Adams 2004). Theodore Roosevelt, an early supporter of conservation, wrote, "I recognize the right and duty of this generation to develop and use the natural resources of our land; but I do not recognize the right to waste them, or to rob, by wasteful use, the generations that come after us" (National Parks 2009). The conservation ethic encapsulated responsible use and recognition that the conquest of nature carries with it the responsibility to avoid needless, cruel and barbaric killing (Jepson and Whittaker 2002). These ethical considerations were shared by many hunters and led to the establishment of the Boone and Crockett Club in America and the Society for the Preservation of the Wild Fauna of the Empire in England[23], important departure points for modern conservation (Adams 2004).

2.3.2. Ethical dimensions of current conservation approaches

Current conservation strategies are based on exclusionary conservation policies, particularly in the management of protected areas. Success has been mixed (Brandon *et al.* 1998) and

[23] Fauna & Flora International descends directly from this organisation, formed in 1903, of which Theodore Roosevelt was a founding member.

controversy is common (Alcorn 1993). The erosion of ethical dimensions of conservation policy with the rise of scientific and economic rationalism and the commoditization of nature enforces a simplified relationship between people and nature. The consumer culture of the 21st century threatens much that people value in nature, including individual and community identity and spirituality (Jepson and Canney 2003).

A re-examination of conservation ethics is in order. The ethical underpinnings of western conservation are based on two ideas. A bio-centric ethic respects the intrinsic value of all life and promotes a moral obligation to conserve it that extends to granting 'rights' to species. This ethic is balanced by an anthropocentric ethic which recognizes the values of biodiversity and nature for human wellbeing. Because the wholesale destruction of nature and the loss of biodiversity will have profound effects on the planet as a whole, mankind has a responsibility to both the planet and itself to halt the damage (Yamin 1995). While loss of biodiversity is a natural process, the unprecedented scale of species extinctions due to human actions requires an ethical response as to knowingly accept extinctions can be considered an act of violence – similar to genocide – towards nature and other species (van Klinken and van Hoff 2004).

The question of how the benefits and burdens of conservation policy and practice should be appointed must also be raised. Though practical aspects have been discussed in this paper, particularly with respect to improving conservation performance through the integration of cultural values, arguments must also be phrased in ethical terms (Yamin 1995). The relationships between people and nature have shaped, and been shaped, by society (Jepson and Whittaker 2002). Kellert (1996, 218) states that "respect and reverence for the value of life" results from self-interest. However, for a society to be 'civilized' all life must be respected and people must co-exist with all of nature, regardless of its utility (van Klinken and van Hoff 2004). Thus ethical arguments that recognize the non-material value of nature and require their consideration add to utilitarian arguments for conservation (Byers *et al.* 2001).

2.3.3. Extending ethical dimension within conservation practice

People-centred conservation requires a pluralistic approach to values (Brown 2003). 'Care' is individual and discretionary, but implies a relationship and requires action (Clayton and Myers 2010). Care for nature will renew in society the wonder and inspiration man has traditionally derived from the natural world and, by establishing a deeper relationship with nature, develop a renewed sense of personal and social worth (Kellert 1996). This will build support for and thus success of conservation endeavours (Jepson and Canney 2003).

Traditional indigenous belief systems and the major faiths of the world influence how people interact with and view nature (Palmer and Finlay 2003) and provide potentially powerful institutions for achieving ethical change. The Judeo-Christian concept of mankind's dominion over nature, for example, has been interpreted as establishing the duty and right to exploit the world and its resources. However, contemporary teachings give mankind, as a 'higher being', a moral duty towards the natural world and to protect the gifts given by God.

There is a growing convergence amongst nations that respect for all species and their habitats should be incorporated into national and global constitutions (van Klinken and van Hoff 2004). To achieve this and the goals of modern conservation, cultural, spiritual and ethical values in nature need to be integrated into conservation actions, especially those of local and indigenous peoples (Bibles 1999).

Conclusion

Culture and economics are at the heart of human behaviour. Though closely linked in many respects, they are not the same. Demand for the basic essentials for life is perhaps the most powerful driver of behaviour but even in the pursuit of the basic requirements for life, cultural norms governing appropriate behaviour are important. Once the fundamental needs for food, water and shelter have been met, the role of culture becomes a powerful determinant of what people think and therefore what they do. What is valued and therefore sought after, whether goods or services, and whether material or non-material in nature, is determined by the culture of a person and a people. Beyond base survival it is values, ethics and morals that determine human behaviour.

The failure of policy and practice to respond to this is at the core of many of the difficulties faced in conserving nature and biodiversity today.

Academic critiques discuss the relationship between conservation and values. Policy at the highest levels of international institutions refers demand attention to them and there is growing recognition of the need to reconcile material and economic valuations of nature with approaches that recognise and describe its value to humankind in non-material terms. But practices that respond to cultural values remain in their infancy. Though no one-size-fits-all prescriptions will be effective in our increasingly complex and interconnected world, integrating the connections that exist between people and nature into the design of conservation initiative will help build support for conservation and support will be critical to success.

As the growing exhaustion of and competition for resources and land and the mounting expectations of material comforts from a still growing global population sharpen economic drivers, economic justifications for protecting nature and conserving biodiversity will become harder and harder to demonstrate. If no other arguments for conserving it exist, we can expect the natural world to be lost at an ever increasing rate. Arguments based on the abiding connections between people and nature may be all that can stem the flow.

Time, however, is not on our side. These ancient connections are eroding and ironically, conservation practice has often speeded their loss. The link between culture and nature has been described as inextricable, unbreakable. Unfortunately, we see the links breaking everywhere. Human culture is more adaptable than nature it would seem, or at least more able to manage high rates of change. Our increasingly materialistic, technological, urban lives seem

to be rapidly weakening the links our forefathers had to nature and the natural world. It is hard to be sure what the implications of this will be for humanity.

Loss of the massive contributions made to our economies and livelihoods by the natural world are recognised and urgent efforts are being made to quantify them. But for all the dependencies that can be described, a technological fix is waiting in the wings. Arguments based on the inherent or intrinsic values of nature and the rights of all species to exist are powerful but unlikely to stand against human self-interest.

What will life be like without the connections to the natural world that helped define us as people? Life will continue, certainly, but what kind of life? Perhaps children growing up in urbanised, homogenised production landscapes will neither notice nor care. What existence on a plant impoverished of its natural richness and diversity will be like is hard to predict. Only experience will teach us, and by then, if we don't like it, there will be no remedy.

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