‘God is my forest’ – Xhosa cultural values provide untapped opportunities for conservation

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In South Africa conservation is still largely framed in terms of Western scientific values, with a focus on material benefits to local communities, whilst little is known about the intangible values local people attach to nature and biodiversity. We explored the cultural, spiritual and emotional relationships with nature expressed by Xhosa people, within the Maputaland-Pondoland-Albany Hotspot, as well as the activities that mediate this relationship. A descriptive research approach was applied to document the emotions, meanings and values associated with landscape elements. This approach included group and individual interviews and ‘walk-in-the-woods’ interviews and participatory mapping exercises. Respondents portrayed a strong, although not always easily articulated, appreciation for nature, especially *ihlathi lesiXhosa* (‘Xhosa forest’, vegetation types within the Thicket Biome). Activities such as collecting fuelwood and other resources, hunting and time spent at initiation schools were described as key opportunities for spending time in nature. The benefits of being in nature were ascribed not only to the physical experience of the forest environment and its biota, but also to the presence of ancestral spirits. Being in nature thus contributes significantly to the physical, mental and spiritual well-being of local people, and is also integral to their sense of cultural identity. This study has made it clear that maintenance of biodiversity and natural vegetation is as much in the interest of the local community’s well-being as it is in the interest of conservation planners. We recommend that cultural values be incorporated into local conservation plans.

Introduction

Conservation is not merely a matter of appropriate conservation technologies and management processes. It is a process that is inextricably bound up with people’s values and world views on nature. Recognition of the cultural dimensions of biodiversity and its conservation is reflected in several international treaties and documents. For example, the Convention on Biological Diversity (1992) calls for the preservation of knowledge and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological resources. The United Nations Environmental Programme, the International Union for Conservation of Nature Energy Efficiency Subsidy Programme and UNESCO all recognise the importance of the cultural and spiritual values of biodiversity[1,2] and cultural landscapes.[3] The recognition of links between biodiversity and cultural diversity has been critical in determining local, national and global strategies for promoting biodiversity and for addressing the loss of biodiversity and cultural diversity.[4]

South Africa is the third most biologically diverse country in the world, with 80% of its plant species being endemic, and it has one of the highest known concentrations of threatened plants in the world.[5] The second richest floristic region in southern Africa (after the Cape Floristic Region) is the Maputaland-Pondoland-Albany Hotspot (MPA).[6] This global biodiversity hotspot spans an area of nearly 275 000 km², encompasses the Albany Centre of Floristic Endemism[7] and includes the largest part of the Albany Thicket Biome,[8] a structurally and phylogenetically distinct biome with a unique evolutionary history.[9] The biome has a high plant diversity with about 6500 species, as well as a notably rich vertebrate fauna.[10]

A large concentration of Albany Thicket falls within the former Ciskei and Transkei ‘homelands’ of the Eastern Cape Province. This region is predominantly inhabited by *isiXhosa* speaking people of Cape Nguni descent. The area still suffers the effects of apartheid policies and remains characterised by high levels of poverty, a lack of infrastructure, high population densities and inferior education opportunities. Unemployment levels are high and per capita agricultural production is very low; the Eastern Cape remains one of the poorest provinces in the country.[11] The importance of wild resources to people’s livelihoods in this region[12] and elsewhere in South Africa[13] is now well recognised. More recent research[12,14] has also revealed the significance of

specific plant species for cultural and religious practices amongst the *amaXhosa* living here. It has been shown that the use of wild plants for cultural and religious practices remains important even amongst highly modernised urban households.[15] In the former homelands, the Albany Thicket is threatened by the uncontrolled and unplanned spread of rural and urban settlements,[16] overstocking,[16,17] harvesting of wood for fuel and other purposes[18] and harvesting of medicinal plants.[19] In the rural and peri-urban areas of the former Ciskei, uncontrolled grazing and browsing by domestic livestock has transformed Thicket to an open karroid dwarf shrubland; this transformation was accompanied by the loss of many woody and succulent species, which re-establish with great difficulty in the hotter and more arid micro-climate that results from this transformation.[16,17]

It is now widely recognised that achieving conservation goals will require complementary activities inside and outside of formally protected areas,[20] including agro-ecosystems.[21] To date, such interventions have been largely focused on privately owned and state land, with communal areas in the former homelands receiving little attention.[22] In South Africa, spatial biodiversity plans are required to be mainstreamed into local government environmental decision-making processes under the National Environmental Management (Biodiversity) Act of 2004, although compliance with environmental legislation is often very limited in the former homeland areas.[16] Despite acknowledgement of the need for an integrated approach to the conservation of biological and cultural diversity for ensuring sustainable development,[2,22] policy responses to this integrated paradigm have been slow to emerge in the communal areas of South Africa. The vast majority of biodiversity assessments still focus solely on species, whilst equally important issues such as landscape diversity and provision of ecosystem services (including cultural services[23]) are given much less attention.[24] Whilst high population densities and weak institutional capacity are clearly challenges, the failure to engage communal land users in ways that accommodate their values, local knowledge and needs has been increasingly recognised as a fundamental problem.[4] One of the reasons for this failure is that the cultural values which the majority of the population may attach to nature are poorly understood.

This article reports on research that explored the relationships of rural and peri-urban *amaXhosa* with natural and agricultural landscapes in the Albany Thicket of the Eastern Cape, and how these relationships are manifested in different activities. Whereas the emphasis in previous studies on the relationship between rural people and their natural resources has focused largely on the values that particular species[13,25] or landscapes[26] have for meeting livelihood and other material needs, our focus is on the emotions that the landscapes evoke, the activities which lead to meaningful experiences in nature, and the ways in which their relationship with nature is portrayed. These are important to understand if we are to integrate people's cultural values and practices into conservation planning and implementation across different land use types. Given the well-documented reliance on natural resources, and the regular interaction with nature in the process of harvesting these resources, we expected to find familiarity with different landscape elements and their biota, as reported elsewhere.[26] We were also particularly curious as to whether a love for nature, an enjoyment of being in nature and an aesthetic appreciation of landscapes would be revealed, and in what terms. Given the dearth of literature on this in South Africa, it was difficult to predict what we would find.

Methods

Study area

Field research was conducted in several villages and townships in the Grahamstown, Alice and Peddie districts of the Eastern Cape Province, South Africa (Figure 1). Villages included Benton and Tharfield in the Peddie district and Llangollen and Victoria Post near Alice, all located in the former Ciskei. Although the area is classified as an area of subsistence agriculture, the main sources of income for many modernised rural households are government grants and support from family members living in urban areas, whilst relatively few villagers depend on agriculture for their livelihood.[11] Since 2000, villages in both districts have had access to electricity and water. Grahamstown is a small rural town with an estimated population of about 125 000, of which nearly 100 000 live in townships, where unemployment is estimated to be about 50%.[27] Access to commonage areas around the town allows urban dwellers to keep livestock and collect plant material, although often at a substantial distance from their homes.

Benton and Tharfield are situated on the gently undulating coastal plain with Albany Coastal Belt[8] vegetation dominated by short grasslands punctuated by scattered bush clumps and solitary *Acacia natalitia* trees. The villages are bordered by deeply dissected river valleys vegetated with Great Fish Thicket[8] vegetation recognised by iconic *Euphorbia* trees (*Euphorbia triangularis* and *E. tetragona*) and *Aloe ferox*. Great Fish Thicket comprises woody, often spinescent, trees and shrubs and has a well-developed succulent component including *Portulacaria afra* and *E. bothae*.

Llangollen and Victoria Post are situated on relatively flat ground vegetated with Bhisho Thornveld[8] characterised by open savanna, small trees of *Acacia natalitia* and scattered bush clumps dominated by *Scutia myrtina*, *Rhus longispina*, *Euclea undulata* and *Gymnosporia capitata*. Immediately to the east, west and south, within 2 km – 5 km, are deeply incised river valleys of the Tyume, Fish and Kat Rivers that are densely vegetated with Great Fish Thicket.

Grahamstown is for the most part situated within Bhisho Thornveld. Kowie Thicket[8] predominates at the upper reaches of the Blaaukrans River at the south-east residential area and also on the commonage north of Grahamstown along the Botha's River. Kowie Thicket is dominated by succulent

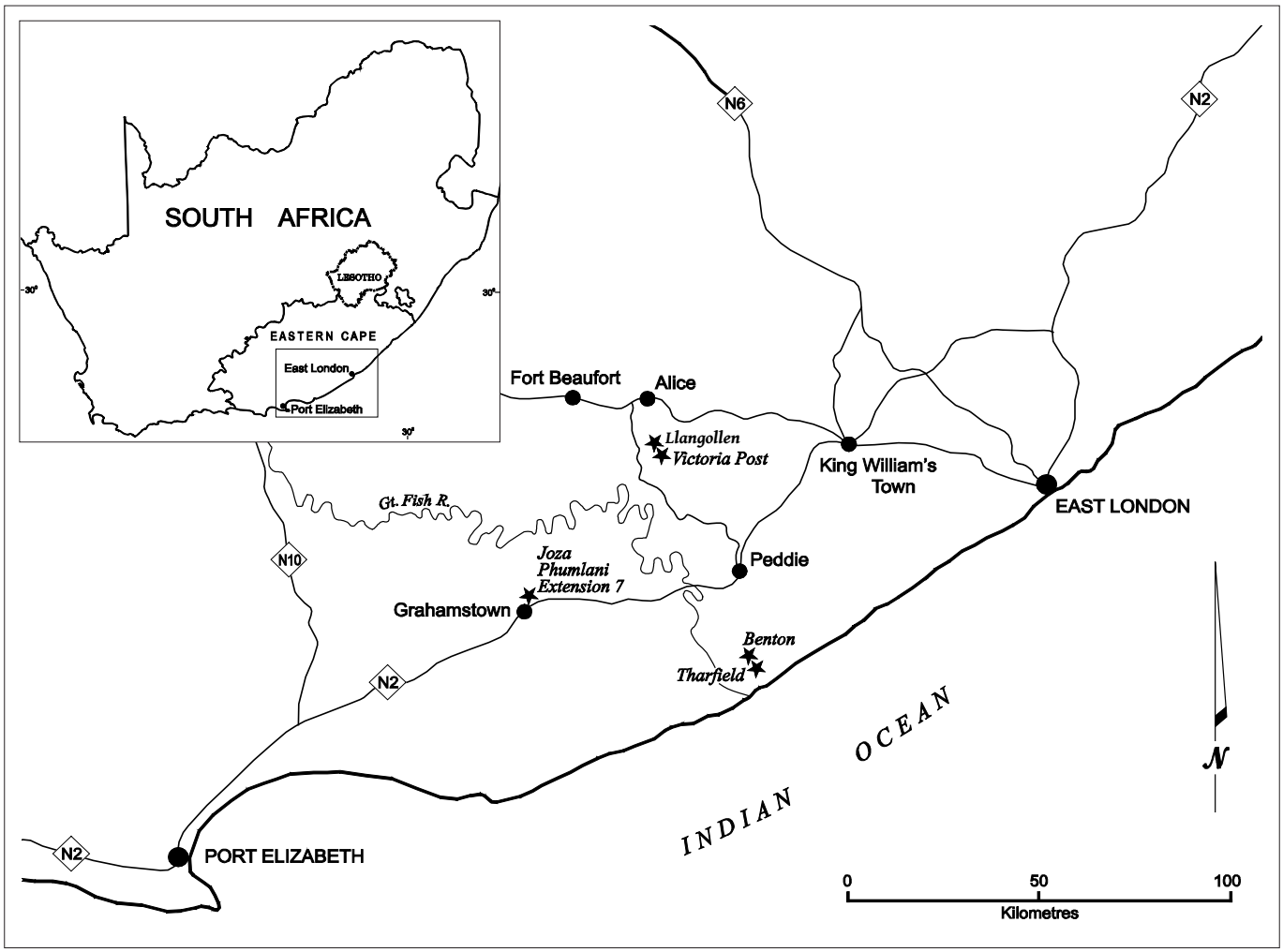

FIGURE 1: Map showing the location in the Eastern Cape of the study sites (indicated by an asterisk): Grahamstown, Benton, Tharfield, Llangollen and Victoria Post.

Euphorbia and *Aloe* species with a thick understorey of thorny shrubs, woody lianas and shrubby succulents.

Data collection

To understand and document the emotions, meanings and values associated with landscape elements, we employed a descriptive research approach. The method of data collection with groups and individuals of men, women and children was by means of informal (unstructured) interviews with participants in their homes (17 in the villages and 5 in Grahamstown), 'walk-in-the-woods' interviews (10) in surrounding landscapes and mapping exercises (4). Initial interviews made use of photographs but these proved to be unsuccessful and were soon abandoned. One of the authors (M.C.) accompanied groups of four to six women on fuelwood gathering excursions (*ukutheza*) in the surrounding vegetation on three occasions at Benton and Tharfield. Another author (T.D.) visited two initiation schools in Grahamstown and one in Benton to provide insight into preferred sites of seclusion lodges, accompanied a traditional hunt with dogs at Tharfield, and attended two religious rituals (at Llangollen and Tharfield) to present gifts to the ancestors residing in the forest. Respondents' ages ranged from 12 to 67, with most (65%) being women between 35 and 50 years old. Mapping exercises with small groups of men and women using flip-chart sheets of paper and coloured pens were undertaken in Tharfield and Llangollen. Data collection was carried out between 2008 and 2010. Interviews were conducted in isiXhosa with the assistance of translators.

Results

Effectiveness of different research methods

Eliciting the emotions and values local people attached to natural landscapes proved difficult. It was necessary to use culturally appropriate approaches to understand and document these values in context. An awareness of taboos such as *isihlonipho* vocabulary (certain words that may not be used by certain people at certain times) and gender-based restrictions on daily activities is imperative. For example, all aspects of male initiation are taboo to women whilst fuelwood collecting is restricted to women. As has been eloquently shown by Krog[28], translation from the vernacular is critical in understanding and contextualising expressions and emotions. An example of this importance from our study was the literal translation of the phrase *umoya omdaka* as 'dirty wind'. Further investigation revealed that the word *umoya* in this particular context referred to 'spirit' and *omdaka* means 'dark', thus *umoya omdaka* referred to evil spirits rather

than polluted air. The use of colour photographs within interviews was unsuccessful in conveying what we thought were meaningful images of valued and familiar vegetation types and landscape features. We failed to communicate that we were presenting people with 'general' images of nature (such as a forest or grassland), and instead interviewees thought that we were referring to specific places which they would then try to identify.

Based on our own perceptions of nature, our questioning was initially designed to elicit values such as the aesthetic beauty of nature or the wonders of nature, for example, spectacular scenery or a beautiful sunset. It soon became apparent that this line of questioning was inappropriate as local people did not attach these same values to their natural landscapes. These difficulties were compounded by the fact that most participants had not explicitly reflected on their relationship with natural landscapes before and found it difficult to express themselves. This difficulty was particularly true for people who had spent most of their lives in rural areas and thus lacked the experience of living in a place, such as a city, where they were unable to access familiar natural places.

The most effective method to gain information was 'walk-in-the-woods' interviews, that is, accompanying people on activities that brought them into regular contact with nature. Talking about their relationship with nature was something none of the respondents had ever done before and many participants expressed their pleasure and gratitude for having been given the opportunity to do so.

Interpretation of landscapes

Mapping exercises in villages indicated a clear distinction between domestic and natural landscapes and a number of identifiable zones were distinguished. Several types of natural landscapes were recognised, based on a combination of attributes such as vegetation structure, dominant plant species, accessibility, distance from village, safety, grazing and browsing value, availability of natural resources, and cultural and religious significance. Areas of thicket vegetation ranging from fairly open to very dense and tall, including *Euphorbia* groves, were referred to as *ihlathi lesiXhosa* (Xhosa forest) (Figure 2). Culturally important sites were reported to occur primarily within *ihlathi lesiXhosa*, as well as in natural landscape features including the ocean, estuaries, river pools, caves and mountain peaks. The importance of these sites was attributed to their association with the ancestors (*izinyanya* – ancestral spirits, hereafter referred to as 'ancestors') who act as benevolent guides, mentors and protectors; the ancestors are venerated and are very much considered to be part of people's daily lives.

Notwithstanding the negative environmental impact of continuous harvesting from the forest, particularly of medicinal plants to supply urban markets and of fuelwood for commercial sale, it was believed by many of the respondents that the ancestors take care of the forest and that the forest will always recover from destruction if the ancestors intervene.

Source: Tony Dold

FIGURE 2: Typical *ihlathi lesiXhosa* (Albany Thicket) overlooking the Great Fish River.

Unlike the Western dichotomy between 'pristine nature' versus 'transformed nature', even heavily transformed *ihlathi lesiXhosa* was still appreciated for its recreational and spiritual value. Nevertheless, most respondents, both rural and urban, did recognise environmental degradation and considered it to be disrespectful to the ancestors, as illustrated by the following quote: 'When these people chop the forest the ancestors become angry. You would also be unhappy if they came and broke your house down!' (34-year-old man, Grahamstown).

Perceptions of thicket vegetation

Thicket vegetation, known locally as *ihlathi lesiXhosa*, was considered to be a sacred place where the ancestors communicate with their living descendants by means of messengers (*izithunywa*) in the form of birds, mammals, insects or even the wind. For both rural and urban respondents, the Xhosa forest was believed to be home to a wide variety of birds and other animals, including dangerous animals such as snakes and 'tigers' (leopards) that are greatly feared. Certain animals were, however, believed to be representatives of the ancestors. For example, swallows (*iinkonjane*) and wagtails (*iicelo*), when frequently seen around the home, nesting or entering the house, were reported to bring good luck and blessings from the ancestors.

Several religious rituals, facilitated by diviners (*amagqirha*), take place in the *ihlathi lesiXhosa*. The diviner is reportedly shown the site in a dream beforehand and it is here that gifts of traditional beer, cooked maize and tobacco are presented to the ancestors. Plant and animal materials necessary for traditional medicine, customs and rituals to appease the ancestors are believed to be available only in *ihlathi lesiXhosa*. These plants and animals are considered sacred and they are imbued with the spiritual power of the ancestors.

For many adult respondents, both rural and urban, the term *ihlathi lesiXhosa* represented not simply a vegetation type but also a powerful metaphor for shelter or protection, such as the traditional *isiXhosa* idiom *uThixo ulihlathi lam* (literally: God is my forest; figuratively: God is my refuge or

protection). Similarly, it is with great pride and respect that a mother is referred to as *ihlathi lokuzimela* ('forest of hiding'), which is indicative of her role as protector and provider for her family.

Respondents distinguished between 'cool air' in the forest and 'hot air' in the town or village. In this instance 'hot' and 'cool' were metaphors for negative and positive, respectively, and air can be translated as 'spirit'.[29] *Ihlathi lesiXhosa* was considered to be positively charged, whilst the village environment was perceived to be negatively charged. The forest was therefore understood to be a place that bestows spiritual health and well-being (*impilo*), and it was therefore believed that without access to the *ihlathi lesiXhosa* one would become spiritually and culturally impoverished. Some village people referred to their urban kin as impious because they had limited contact with the forest ancestors.

The following quotes recorded in this study convey a profound appreciation of *ihlathi lesiXhosa*:

> 'When I breathe the forest air and I take in the smell of the flowers and medicines I feel good. My troubles seem insignificant.' (56-year-old man, Llangollen)
>
> 'I go to the forest to collect wood and get away from my troubles; I like the fresh air. It makes me feel happy. When I've returned from the forest I feel I have received a blessing.' (44-year-old woman, Tharfield)
>
> 'Sometimes I walk with my dog or hunt in the forest, or I just sit in a quiet place to forget my worries.' (59-year-old man, Tharfield)
>
> 'I like going to the forest with my friends and mom to collect firewood. We gossip and my mom teaches me the names of trees and I teach my friends. I feel happy when I'm in the forest.' (15-year-old girl, Tharfield).

Activities that shape values and relationships with *ihlathi lesiXhosa*

Despite the hard work involved in daily fuelwood collecting (*ukutheza*), the village women interviewed (n = 15) unanimously said that they enjoyed the chore and looked forward to the opportunity to leave their homes, chat with friends and spend time in the forest in the presence of their ancestors. Despite increased electrification in all the study sites, wood was still preferred for cooking certain foods, such as pot-herbs (*imifino*), because of the particular flavour it adds. Food prepared for religious rituals must always be cooked with fuelwood. Collecting fuelwood was considered to be the task of a hardworking housewife, who takes great pride in the size and neatness of her woodpile (*igoqo*). These woodpiles are not stacked for fuel purposes but have a high cultural value for the women of the household, as their female ancestors are considered to reside there.[18] Some of the urban women who no longer had access to these resources said that fuelwood gathering was the one activity that they missed the most. One middle-aged woman stated, 'When I was working in King William's Town I missed collecting firewood in the forest; I did not feel like I was *umama* [a mother; hard working adult woman]'. Some women in towns still collected fuelwood on municipal commonages, but young women and girls noted that crime was the main reason for not going to the forest. A sad but widely acknowledged aspect of fuelwood gathering is that some women find solace from abusive partners in the forest and *ukutheza* is a socially acceptable way of escaping. The idiom *uThixo ulihlathi lam* (God is my forest) is particularly poignant under these circumstances.

Men also reported enjoying their time in the Xhosa forest where they may spend hours with their cattle and goats or walking with their dogs. Unlike women, who access the forest primarily in the context of work (such as fuelwood collection) or occasionally for rituals, many men spend time in the forest for purely recreational or spiritual purposes in addition to more utilitarian practices such as cattle herding or harvesting of medicinal plants. It is common for village men who are migrant workers to spend time alone in the forest a day or two before returning to their workplace. Besides the opportunity for personal reflection, this ritual forest walk, often to a remote place, is described as a spiritual sojourn and reports of encounters with clan totem animals (*izilo zasekhaya*) and messenger animals (*izithunywa*) were common. Despite the attraction of urban life, village people of different ages still had strong cultural associations with nature and remained hopeful that their children would maintain these ties:

> 'Our children must go to the forest; they must know about everything in the forest; everything about being Xhosa is from the forest - it is the *izithethe* [the manner of doing things] of Xhosa people.' (80-year-old man, Grahamstown)
>
> 'I am showing my 3-year-old son traditional medicines from the forest. It is important that he knows these things [because] it is part of being Xhosa!' (30-year-old man, Benton)

Trapping birds and hunting small game with dogs were common activities in the village study sites and were considered to be traditional sports for boys and young men. Traditional hunting was considered to be very different from poaching or commercial hunting and was described as a highly competitive sport that was said to sharpen the mind and body of both hunter and dog. Hunting dogs are skilled and disciplined. Traditional hunting with dogs has long been considered by conservation authorities as reprehensible and has been an illegal activity for many years in South Africa. Nevertheless, the men interviewed in this study (between 15 and 45 years old) showed remarkable insight and understanding of the habitats and habits of the animals they hunted. Hunters set bird traps using specific bait to catch different bird species and are able to identify bird calls and even call various birds by whistling or making a sucking sound on the back of the hand. When hunting with dogs, hunters are able to identify animal spoor and droppings and control the hunt, for example, by calling back the dogs when the flushed antelope is a female.

The passage of a Xhosa boy from boyhood to manhood is characterised by the rite of circumcision (*ulwaluko*) followed by a period of ritual seclusion in a temporary lodge. The lodge is located out of view from the public and preferably in close proximity to Xhosa forest and a river or stream. The lodge,

called *ibhoma*, is constructed out of branches and covered with layers of grass to house the initiates (*abakhwetha*) during the period of seclusion. The central upright pole is preferably cut from an *umnquma* tree (*Olea europaea* L. subsp. *africana*) as it is symbolically linked to the ancestors who by this gesture are called upon to take care of the initiates. Lodge sites were considered sacrosanct and were often reported to be used by several generations of initiates. Village men often revisited their lodge sites to reminisce and spend time alone in nature. Urban men showed concern for the future of lodge sites on the Grahamstown commonage because of the spread of informal housing, illegal dumping and fuelwood collecting.

Discussion

The results of this study clearly show that natural landscapes and the associated biodiversity are closely linked to the strong nature-based religious beliefs, including a strong sense of interconnectedness with nature, of many *amaXhosa*. Ancestor reverence is central to the belief system of the *amaXhosa*, whose identity and well-being is grounded in their strong relationship with the ancestors who act as guides, mentors and protectors.[30] Many of the narratives collected from local people who interact with *ihlathi lesiXhosa* portray an enjoyment of being in nature that highlights qualities such as silence, beauty and tranquillity, the opportunity to observe wild animals and a chance to escape the worries of home. This enjoyment was reported equally by male and female respondents, regardless of whether access was mainly out of necessity (such as fuelwood collection) or for enjoyment (such as hunting or taking a solitary walk to a special place). The importance of this enjoyment was clearly conveyed when respondents described the sense of well-being they derived from being in the forest, which was ascribed not only to the physical experience of the forest environment and its biota, but also to the presence of the ancestors, who may communicate with their living descendants through specific animals. The portrayal of the forest as a shelter and protection can at least be partly attributed to the benign presence of people's ancestors. Being in nature thus contributes significantly to the physical, mental and spiritual well-being of local people. It follows that not only the persistence of the natural vegetation, but also people's continued access to it to carry out the activities that enable this interaction, are essential to maintaining this well-being.

The findings from our study are borne out by a survey comparing the activities and perceptions of rural and urban households around *ihlathi lesiXhosa* (LM Mogano, unpublished data). The household survey showed that in both areas at least half the people still accessed the 'forest' (a term widely used in the study area to denote any form of natural vegetation) on a regular basis, although the frequency of visits was higher in the rural areas. In town, commonly cited reasons for no longer going to the forest were the great distance to the forest, concerns about personal safety and reduced requirement for forest products because of the availability of alternatives, including electricity. In the villages, safety was also a common concern, but less so than in town. Urban and rural people shared many of the same positive feelings about nature (e.g. 73% of urban and 97% of rural respondents agreed that 'nature inspires and revitalises me' and 71% of urban and 79% of rural respondents agreed that they 'feel something would be missing if [they] could not visit the forest'). In contrast to their rural counterparts, however, most urban people did not cite achieving physical well-being, relieving stress and seeking solitude as reasons for actually visiting the forest.

These findings point to the fact that people's relationship with nature is being eroded by factors which prevent people from spending time in nature. Amongst these factors are increasing urbanisation, competing activities such as schooling, fear of crime and regulations restricting access to natural resources.[31] A study of school-going children in two villages[31] found that ecological knowledge and cultural environmental narratives were only passed down to a limited extent between generations. In many cases, parents' fears about safety strongly impacted upon children's access to nature, with girls being particularly affected. In the village where access to natural resources was limited by strict state regulations, children also showed lower levels of ecological knowledge. Many respondents in our study voiced concerns that the youth and urban population are becoming increasingly alienated from nature, and many expressed a wish that the younger generation should spend time in nature so that they could stay in touch with their cultural roots. This will only be possible if people's continued access to natural resources, including for extractive use, is safeguarded.

Conservation policies in South Africa have, to date, almost exclusively reflected Western scientific values and beliefs, with an emphasis on protecting nature from human impacts, but the majority of South Africans do not generally value or understand biodiversity in this way.[32] In southern Africa, conservation has a history of evictions of rural people to create protected areas,[33] which has left a negative perception of conservation as being largely a White middle-class pre-occupation opposed to development that modern conservation approaches have largely failed to dispel.[33,34] We suggest that local people's values need to be incorporated into conservation plans and activities from the outset, in order to ensure that biodiversity conservation contributes to their well-being, including the maintenance and strengthening of their cultural identity.

In failing to understand and meaningfully engage with the values and world views of the majority of South Africa's population regarding nature, we are missing an important opportunity for implementing conservation more effectively.[22] The benefits of working with local people and taking advantage of opportunities presented by sacred sites,[35] indigenous bio-cultural values[36,37] and local rulemaking around resource use[38] have been increasingly documented and provide many encouraging examples worldwide. This integrated approach has particular relevance in areas such as the MPA, and other areas of high biodiversity throughout

Africa and the rest of the developing world, which fall predominantly within human-dominated landscapes where most biodiversity is concentrated in various types of community lands. The likelihood of conserving significant areas of biodiversity in these areas in the form of wilderness or strictly protected areas is slim. Instead, conservation models that accommodate a mix of more and less pristine elements, and which acknowledge and work with the cultural values people attach to nature, will be more likely to achieve conservation goals.

People's emotional ties to nature and their cultural values may offer a stronger incentive for conservation than economic arguments based on the livelihood values of nature, which are generally insufficient to motivate collective action.[39,40] One of the ways these incentives could be achieved within the South African context is to promote the conservation of cultural species in specific landscape niches, such as maintaining initiation sites and sacred sites within communal areas.[14] The management of these sites should be incorporated into spatial biodiversity plans and mainstreamed into local government environmental decision-making processes to ensure that enclaves of biodiversity persist within communal lands. This process would work towards ensuring that conservation agendas are framed around local stakeholders' interests and commitments[32] and help towards local communities retaining their own cultural distinctiveness and connections to the land.

We are well aware that conservation and resource management in developing countries, including South Africa, is faced with great challenges in light of the dire poverty and continued marginalisation experienced by people living in these areas. We believe, however, that a better understanding of people's values and world views can only improve efforts at resource management and nature conservation. This study has made it clear that the maintenance of biodiversity and natural vegetation is as much in the interest of the local community's well-being as it is in the interest of global conservation planners.

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Competing interests

We declare that we have no financial or personal relationships which may have inappropriately influenced us in writing this article.

Authors' contributions

M.L.C. was the project leader; M.L.C. and T.D. were responsible for research design and fieldwork. S.V. had input into the research design. All authors worked on the development of the manuscript.

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