Human need in rural developing areas: perceptions of wildlife conservation experts

L.M. CAMPBELL
Department of Geography – SSC, University of Western Ontario, London, Ontario, Canada, N6A 5C2 (e-mail: lcampbe@julian.uwo.ca)

'Sustainable use' and 'community-based conservation' are two contemporary concepts in wildlife conservation policy. Their rise represents a shift away from traditional conservation techniques, and a merging of narratives about conservation and development. While policy statements by major conservation organisations emphasise the necessity of the shift, evidence to date suggests that, in practice, implementation of these concepts has been limited.

This paper considers the extent to which sustainable use and community-based conservation have been accepted (or not) by a specific group of conservation experts, and what this level of acceptance implies for conservation in practice. Based on in-depth interviews with experts in marine turtle biology and/or conservation policy, the paper considers the willingness and ability of such experts to incorporate human development needs and issues into conservation activities. The suitability of conservation organisations as promoters of rural development, and implications of their further involvement as such, are discussed.

Key words: wildlife conservation, human need, community development

Les principes de 'l'utilisation durable' et de 'la protection de l'environnement par la communauté' sont deux concepts courants dans la politique de la défense de la flore et de la faune. La montée de ces concepts représente un écart par rapport aux techniques traditionnelles de la défense de l'environnement, ainsi qu'un lieu de convergence où les récits sur la protection des ressources naturelles, et sur développement se fusionnent. Bien que les déclarations de principe faites par d'importants organismes de protection soulignent la nécessité de poursuivre cette nouvelle orientation, il y a de bonnes raisons de penser que la mise en pratique de ces concepts a été, jusqu'à présent, très limitée.

Cet article traitera de la mesure d'acceptation accordée à ces deux concepts, au sein d'un groupe spécifique de spécialistes en défense des ressources naturelles, ainsi que les répercussions de ce niveau d'acceptation pour la pratique de la protection. A partir d'entrevues en profondeur menées avec des experts en la biologie des tortues marines et/ou en la politique de leur protection, l'article examinera la volonté, ainsi que la capacité, de tels experts d'intégrer les exigences humaines aux activités de protection. Seront également considérées la question de l'aptitude de ces organismes de protection à promouvoir le développement rurale, et les conséquences possibles de leur implication continue dans celui-ci.

Mots clés: protection de l'environnement, exigences humaines, aménagement de la communauté

The Canadian Geographer / Le Géographe canadien 44, no 2 (2000) 167–181

Introduction

Over the last 20 years, wildlife conservation policies have shifted away from 'traditional' approaches that exclude local people from parks and protected areas and prohibit their use of resources, towards attempting to reconcile conservation with development needs. The shift is particularly relevant for developing countries, and the major wildlife conservation organisations (e.g. The World Conservation Union (IUCN) and the Worldwide Fund for Nature (WWF)) have been key in promoting the compatibility of conservation and development (IUCN 1980; IUCN, UNEP, WWF 1991; Freese 1994, 1996). The shift can be linked to several factors including: (1) the general rise of 'sustainable development', and, (2) increasing concerns about the appropriateness and effectiveness of protected areas in a developing country context (Campbell 1997). The latter concerns are biological and socio-economic, practical and philosophical, and contribute to what Pimbert and Pretty (1997, 1) refer to as a "deep conservation crisis." Practical concerns relate to the costs of protection and enforcement (e.g. Ham and Menganck 1993) and to the biological utility of protecting fragmented pockets of nature (e.g. Wolf 1987; Harris and Eisenberg 1989; Hobbs *et al.* 1990; Shaw 1991; Spellerberg 1992; Mangel *et al.* 1996). Philosophically, the concern is with the rights of local people to use resources versus the rights of international organisations to enforce Northern or urban views of nature on rural inhabitants (e.g. Marks 1984; Bell 1987; Collett 1987; Lindsay 1987; Turton 1987; Schöitz 1989; Homewood and Rogers 1991; Westing 1996; Pimbert and Petty 1997).

The overall shift in wildlife conservation policy is epitomised by two key concepts; 'sustainable use' and 'community-based conservation.' This paper focuses on the second, and specifically considers the extent to which the principles of community-based conservation have been accepted (or not) by individual conservation experts, and what this level of acceptance implies for conservation in practice. Based on in-depth interviews with experts in marine turtle biology and/or conservation policy, the paper considers the willingness and ability of such experts to incorporate human development needs and issues into conservation activities. While the focus is on community-based conservation, the concept is closely linked to sustainable utilisation. Thus, a brief overview of sustainable use and expert acceptance of it are included.

Conservation 'Narratives'

This paper applies Roe's (1991) concept of narratives to wildlife conservation policy and changes to it. Roe (ibid.) defines narratives as 'stories' with 'beginnings', 'middles', and 'ends.' Narratives are used to standardise problems. The logic of a narrative dictates a solution (Leach and Mearns 1996), and use of one provides a secure basis to debate problems in the face of uncertainty (Hoben 1996; Roe 1996). Labels are key to maintaining narratives and the process of assigning labels is an exercise in "valuation and judgement involving prejudices and stereotyping" (Wood 1985, 6). The interaction between the labeller and the labelled is "a relationship of power" (ibid., 4) but, as labels are central to communication, the judgements underlying them are often over-looked and the labels themselves unquestioned. Wood (1985, 7) argues that "the issue is not whether we label people, but which labels are created and whose labels prevail."

The narratives and labels associated with traditional conservation, sustainable use and community-based conservation, and the role of wildlife conservation 'experts' in maintaining them, are discussed below.

The traditional conservation narrative

The traditional wildlife conservation narrative is associated with a 'parks and protected areas' approach to conservation, and has identifiable labels and labellers. This 'crisis' narrative has been constructed primarily by international conservation organisations and national park agencies, and the wildlife biologists they employ. It describes wildlife populations in developing countries as threatened with extinction directly by local harvesting and indirectly by habitat degradation and fragmentation resulting from increased human populations. Local people do not value or appreciate wildlife and, with the crisis thus defined, the solution becomes providing wildlife with protection, a place where it is not be subject to human exploitation or competition and where certain non-extractive activities are privileged. The extent of the crisis is determined by wildlife biologists and protection is enforced by the state. Local people are removed and, if they do not respect the conditions of their removal and return to hunt or harvest, they are labelled 'poachers' and 'encroachers.' Thus, they reconfirm beliefs about the source of the crisis and, as they are breaking the law, the solution becomes more and better enforcement. Ample evidence of the tradi-

tional narrative exists in early IUCN documents, for example, in proceedings from conferences (IUCN 1964, 1974). While later IUCN conferences move away from the traditional narrative (IUCN 1993), it continues to emerge in times of specific crises, for example in the early 1990s when conservation organisations petitioned for a ban on trade in African elephant ivory (Bonner 1993).

Roe (1991) and Hoben (1996) argue that narratives are necessary to facilitate decision-making in the face of complexity and uncertainty. A problem, however, arises when a narrative is incorrect. Imbedded in institutions and professionals as 'truth', a narrative will be resilient in the face of challenge. For example, Leach and Mearns (1996) argue that the dominant conservation and development narrative in Africa persists in spite of evidence that it is incorrect and Hoben (1996, 1997) cites the Ethiopian famine of the 1980s (both the diagnosis of and responses to it) as a specific example. According to Roe (1991), however, mere evidence contradicting a dominant narrative is not sufficient to overturn it. The only way to do so is to create a plausible counter-narrative, one which is either completely new or an alteration/adaptation of the existing narrative. "Counter-narratives have to be as parsimonious, plausible and comprehensible as the original" (Adams and Hulme 1998, 4) and require their own beginnings, middles, and ends that must be equally appealing to interest groups. This paper considers sustainable use and community-based conservation as two key and inter-related elements of a conservation counter-narrative, and evaluates the extent to which experts see this new narrative as 'parsimonious, plausible and comprehensible.'

Sustainable use and community-based conservation

While sustainable use, under a variety of names, has long been part of management strategies for renewable natural resources (Rosenberg *et al.* 1993), acceptance of its principles by wildlife conservation organisations is more recent. It became most evident in 1980, when the IUCN (1980, 1) defined conservation as "the management of human use of organisms or ecosystems to ensure such use is sustainable. Besides sustainable use, conservation includes protection, maintenance, rehabilitation, restoration, and enhancement of populations and ecosystems." Sustainable use programs often combine environmental and socio-economic goals (Westing 1996), but sustainability is difficult to determine in both areas. Biological sustainability is theoretically achieved when human extraction rates match the bounds dictated by the biology of the species, such that extraction is low enough to ensure its long-term survival (Shaw 1991; Ludwig 1993; Mangel *et al.* 1993; Rosenberg *et al.* 1993). Socio-economic sustainability is theoretically achieved when users are provided with adequate incentives (economic, social, legal, institutional, political and so on) to respect extraction rates dictated by the biology and life history of the species in question (Campbell 1998). Sustainability is a goal, but is by no means guaranteed when implementing use regimes and has proven difficult to implement in practice (Freese 1994, 1996).

The promotion of sustainable use by wildlife conservation organisations is in part based on the perceived need to imbue wildlife with economic value. By allowing people to use wildlife resources – giving wildlife a market value – sustainable use attempts to ensure that wildlife conservation can compete with other land or habitat uses (Robinson and Redford 1991; Swanson and Barbier 1992; Holdgate and Monro 1993). This rationale is arguably oversimplified, in both economic and biological terms. Firstly, it is problematic particularly for species with slow reproductive rates and corresponding high economic discount rates; the rational choice when dealing with such species is to maximise harvesting and invest profits in something with a faster rate of return (Clark 1973). Secondly, providing economic value to resources, without implementing clear ownership or control regimes, might encourage exploitation (Shaw 1991; Redclift and Sage 1994; Freese 1996). Thirdly, while it has often been assumed, particularly in developing countries, that economic benefits are key to gaining support for conservation, this has sometimes proven false. Economic benefits may exist, but if they are not perceived or valued as significant by users, local support for conservation will be lacking. Parry and Campbell (1992) and Heinen (1993) describe two such cases and conclude that devolution of control over resources to local people is equally, if not more, important to gaining their support for conservation activities. Similarly, Campbell (1998) describes an instance where local control over a use scheme is critical to community support for conservation activities.

Thus, the sustainable use counter-narrative as it is evolving in wildlife conservation organisations increasingly includes reference to the rights and roles of local people in using and managing wildlife as a resource. Participation in, and/or control of, use regimes by local people can enhance economic and

Table 1
Elements of the traditional and counter narratives of wildlife conservation

Traditional Conservation	New conservation
Exclusive	Inclusive
Parks & protected areas	Land use patterns
Restrictive/prohibitive	Sustainable use
Institutional (state) control	Community control
'Modern'	'Postmodern'
Top down	Bottom up

social security and can help convince people living on marginal livelihoods that it is in their interest to sustain their use of a wildlife resource into the future (Parry and Campbell 1992; Heinen 1993; Freese 1994, 1996; Mangel *et al.* 1996). Redclift and Sage (1994, 11) would exchange the label 'poachers' for 'stewards' by assigning "management responsibilities to local institutions, strengthening community-based resource management systems, and introducing a variety of property rights and land tenure arrangements." This recognition of the importance of involving local people in conservation schemes led to the concept of 'community-based conservation.' According to Little (1994, 350) community-based conservation implies "at least some of the following: local-level, voluntary, people-centered, participatory, decentralized, village based management" of resources. The differences in the traditional narrative and counter-narrative are clear and are summarised in Table 1.

Conservation experts

This paper is concerned with the extent to which the new counter-narrative, particularly its community conservation element, will be put into practice, and with the role of conservation experts in this process. Leach and Mearns (1996) would argue that such experts have a direct stake in maintaining the traditional conservation and development narrative, and in perpetuating views about "the destructive role of local inhabitants" (ibid., 19), in order to maintain control over natural resources and to support continued intervention. They link the 'received wisdom' of the traditional narrative to the broader historical, political, and institutional context of science and its relationship to policy, and to science's need to establish 'truth'. International wildlife conservation institutions have privileged scientists as decision-makers, and wildlife conservation experts traditionally have species-specific training, a factor reflected in the IUCN's many Species Specialist Groups and in the Species Survival Commission, its largest commission. While there may be a broadening of expertise in conservation organisations at a general level, species based conservation, particularly that associated with 'charismatic mega-fauna', remains dominated by biologists and zoologists. These conservation experts can be compared to Chambers' (1993, 1997) 'normal professionals' in development. Normal professionalism is described as "the thinking, values, methods, and behaviour dominant in a profession or discipline" (Chambers 1993, 1). Normal professionalism has defences against change linked to "specialisation, simplification, rejection, and assimilation" (ibid., 5), and thus contributes to the resilience of dominant narratives.

This paper considers biologists as the normal professionals of species based conservation, and as a filter through which sustainable use and community conservation must pass before being put into practice. In spite of support for sustainable use at an institutional level, there are few cases of wildlife use in practice that are proven to be sustainable (Freese 1994, 1996), and both the IUCN and World Wide Fund for Nature are working to develop guidelines or principles for evaluating sustainable use projects (ibid.; IUCN/SSC 1996a, 1996b). These processes have been controversial. Outright opponents of using wildlife are many, as are those who are hesitant about the sustainable use concept. Their concerns include: the ethics of using wildlife as a resource, co-opting the use concept to veil continued resource exploitation, the ability of a free market economy to adequately regulate wildlife use, lack of species specific considerations in the sustainable use discourse, and the very real difficulties associated with determining biologically feasible extraction rates (e.g. Ehrenfeld 1992; Robinson 1993; Adams 1994; Geist 1995). The latter concern is of particular relevance in this paper, as the difficulties associated with harvesting long-lived, late-maturing, migratory species, like marine turtles, are many (Ehrenfeld 1974, 1981; Congdon *et al.* 1993, 1994).

Thus, there is evidence that the counter-narrative has not been as 'persuasive, parsimonious, and plausible' as the traditional narrative. It would be misleading, however, to suggest that it is only professional resistance that prohibits the implementation of the counter-narrative. Efforts to implement community-based conservation (and related ideas like integrated conservation and development) have been made,

and have encountered difficulties (Stocking and Perkin 1992; Wells & Brandon 1992; Adams & Thomas 1993). Likewise, some development practitioners have long called for 'grassroots development', 'bottom-up' approaches, 'community participation,' and 'local empowerment' (e.g. Blaikie and Brookfield 1987; Chambers 1987, 1993, 1997; Atkinson 1991; Cox and Elmqvist 1991; Ekins 1992) but have had limited success operationalising the concepts, even though improving human living standards has been the primary objective. Little (1994) questions how conservation practitioners will put ideas about participation and empowerment into practice in light of the difficulties experienced by development practitioners. Part of the problem is that the concepts are open to interpretation, and sustainable use, like sustainable development, can be interpreted in different ways to serve the needs of the interpreter (Sunderlin 1995; Frazier 1997). There is a lack of clarity regarding the terms and conditions of things like 'participation' (Wells and Brandon 1992) and little recognition of the problematic nature of the participation concept itself (Macdonald 1995). While conservation and development narratives are increasingly similar, biologists interested in wildlife and social scientists and aid workers concerned with human development may continue to prioritise their respective halves of the sustainable use equation (Campbell 1997; Frazier 1997). Thus, there is a combination of issues to be explored, both the vagueness of ideas espoused in the conservation counter-narrative and the commitment of conservation experts to them.

Rationale

The need for this type of research is threefold. Firstly, due to increasing scepticism about the ability and willingness of state and international institutions to address the needs of local people (Macdonald 1995; Wapner 1995), non-government organisations (NGOs), both developmental and environmental, have proliferated and many of the experts interviewed in this research worked for or advised environmental NGOs. NGOs are believed to be particularly good at encouraging local participation and empowering the communities in which they work (Esman and Uphoff 1984; Poulton 1988; Carroll 1992; Ekins 1992; Fisher 1993; Princen and Finger 1996), but there is arguably romanticism attached to them and further research on their actual practices is needed. Research on the role of environmental NGOs in rural development is particularly crucial as, by adopting a counter-narrative espousing the use of resources and community participation, conservation organisations now find themselves in line for funding traditionally earmarked for development (e.g. Meyer 1993; Price 1994).

Secondly, community-based conservation has in part arisen in response to criticisms levelled at both conservation and development organisations for the ways they marginalise local people in decision-making. Wildlife conservation has been particularly exclusive, often involving the prioritisation of Western aesthetic values over those of local people living and interacting with wildlife (Marks 1984; Bell 1987; Mackenzie 1988; McCormick 1989; Bonner 1993). Thus, there is a justice issue at stake that community-based conservation has the potential to address.

Thirdly, reconciling conservation and development represents a major challenge to both conservation and development organisations in the 'sustainable development' era. Much of the mainstream discussion of sustainable development has been oversimplified, has ignored the sometimes contradictory objectives of conservation and development, and has resembled a case of 'wishing it will make it so' (Robinson 1993; Frazier 1997). The same could be said of sustainable use and community-based conservation. Nevertheless, these concepts have potential (yet unmet) to offer an alternative to exclusionary protection and to outright exploitation, and their meanings to various stakeholders need to be further explored.

Methods

Focus species

A focus species, marine turtles, was selected in order to allow for identification of a group of experts for interviewing and easier comparison of individual views. It also allowed the researcher to acquire relevant biological knowledge, a key factor influencing conservation policy. While certain expressed views are clearly tied to the species in question, the response of this sub-set of marine turtle experts to the challenges raised in the counter-narrative may be an indicator of the wider challenges faced by the conservation community in general.

Marine turtles were chosen for several reasons. Firstly, the Marine Turtle Specialist Group (MTSG) of the IUCN is one of the oldest and original Species Survival Commission (SSC) Specialist Groups (formed

Table 2
Basic Data on Interviewees, 1995.

Affiliation	#	Area	#	MTSG Status	#	Nationality	#
Academic	17	Natural sciences	37	Member	28	USA	31
Government	10			Non member	14	Costa Rican	8
NGO	11	Conservation policy/Other	5			Canadian	3
Other	4						
Total	42		42		42		42

SOURCE: field research

in 1966) and has been in existence during the transition in conservation narratives. There is a traceable history of the MTSG's reaction to these changes and its stance on sustainable use (Campbell 1997). Secondly, marine turtles are migratory. While highly protected in Northern countries, they are used (often illegally) in Southern countries, for both food (eggs and meat) and cash (shells and skin), and this provides a straightforward North-South context within which the debate about sustainable use and community-based conservation can be explored. Thirdly, the consumptive use of marine turtles is considered problematic due to gaps in the understanding of marine turtle biology and behaviour. Thus, the trade-offs between the biological requirements of the species and development needs of local communities are not obvious and are open to interpretation by individual experts (Campbell 1997).

In-depth interviews

Interviews were conducted over the period January to November 1995. In total, 42 marine turtle experts were interviewed, most of whom (n=28) were members of the MTSG. The MTSG has over 200 members, and the majority consists of North American academics, conservation workers, or public servants working in natural resource agencies, who have training in the natural sciences. The MTSG produces a member newsletter, employs a full-time programme officer in Washington, and meets annually. It recently produced both an Action Plan (Bolten and Bjorndal 1993) and A Global Strategy for the Conservation of Marine Turtles (MTSG 1995) and its influence extends well beyond its immediate members. Interviewees who were not members of the MTSG were intentionally included to gauge this influence.

The largest practical constraint on the selection of interviewees was their location. All interviews were conducted in the interviewee's home environment, which allowed for long in-depth interviews during which individuals could comment freely on controversial issues, but which necessitated extensive travel on behalf of the researcher. Thus, all interviewees were based in Ontario, Canada (n=3), various locations in the Eastern and Southeastern United States (n=31), and in Costa Rica (where additional fieldwork associated with this research was undertaken) (n=8). Beyond the practical constraint of location, individual selection was based on experience with policy development and implementation and on professional affiliation, to obtain a wide range of viewpoints. Interviewed experts were associated with academic, government, private, and non-government organisations. All experts who were asked to participate agreed, and attributes of interviewed experts are summarised in Table 2.

Interviews were semi-structured, with experts asked to comment and elaborate on a variety of general topics. Topics relevant to this paper included: i) the evolution of sustainable use as a conservation policy, ii) general beliefs about conservation and the value of sustainable use in comparison with other conservation techniques, iii) the value of sustainable use in the particular case of marine turtles, iv) the role of local people, and of their rights and needs, in use schemes, and v) practical experience with sustainable use and/or community-based conservation. Interview lengths ranged from 50 minutes to over two hours. All interviews were taped and transcribed, except for four (due to one refusal, two mechanical difficulties, and one inappropriate environment). Detailed notes for the first three untranscribed interviews were made. Three of the interview transcripts were lost in a robbery in Costa Rica. Thus, analysis in this paper is based primarily on the 38 interviews for which transcripts and notes exist (hard copies of transcribed interviews are held by the author).

Transcribed interviews were manually analysed around seven specific subjects, three of which are relevant to this paper: 1) general views on sustainable use; 2) sustainable use as applied to marine turtles; and, 3) the role and rights/needs of local people in conservation. This subject based analysis allowed for comparison between interviewees. Transcripts were also mapped to allow for analysis of individual arguments, their structure and contradictions. There has been some quantification of interview results in order to provide an indication of the similarity of views among experts. However, the nature of in-depth interviewing is

such that specific topics were often not addressed, or addressed quickly, and that eight experts believed one thing, does not imply that the other 30 did not. To preserve anonymity of experts, interviews are referred to by their number and differentiated according to whether or not they were undertaken in Costa Rica (series A) or in North America (series B).

Results

Analysis of interviews revealed four key results of interest to this paper:

1 At a general level and with few exceptions, interviewed experts accepted sustainable use as a valid conservation tool;
2 Most experts rejected the idea of local rights to use resources;
3 Most experts accepted that either economic or cultural need can justify subsistence use of resources, but then discounted such need by challenging its basis or re-defining key terms;
4 Experts accepted and encouraged local participation in conservation undertakings, but their definitions of participation varied greatly.

Following detailed presentation of these results, their implications for conservation in practice are discussed.

Expert acceptance of sustainable use

All interviewed experts accepted sustainable use at a general level (i.e. no one discounted it completely). Close examination of the caveats and disclaimers associated with acceptance, which were often linked to the biological difficulties associated with using marine turtles, rendered acceptance somewhat limited. Nevertheless, this general acceptance and reasons cited for it are of interest in this paper. The three commonly cited reasons in support of sustainable use, all of which reflect key elements of the sustainable use and community-based conservation counter-narrative, were: (1) the inappropriateness of exclusion and prohibition in developing countries; (2) the reality of resource use, i.e. that resources have always been used and that sustainable use is a means of making use more acceptable; and (3) the necessity of bestowing value on wildlife resources. While the author has explored all three themes in detail (Campbell 1997), only the first theme is discussed here, as it links the sustainable use and community-based conservation concepts. Sustainable use was rationalised under this first theme in three ways.

The first rationale, identified directly by 11 experts, concerned the reality of enforcing exclusion and prohibition in developing countries, i.e. that the financial costs of land acquisition and of enforcement combine to make exclusion too expensive (and thus impractical). These experts noted that exclusion is still tried and often fails, making protection efforts little more than "*palabras polites* [polite words]: words that really sound wonderful and you say them with a flourish, but don't really have much impact" (Expert Interview B23).

A second rationale, provided by eight experts, was that human rights and needs (both economic and cultural) in developing countries made exclusionary protection inappropriate. As B26 described it, exclusionary protection is a cultural luxury for developed countries, while in developing countries "the poverty of people exceeds the bounds of protection." These experts were concerned with the morality of enforced exclusion, rather than the practicality.

A third rationale, identified by nine experts, was that exclusionary protection, as epitomized by National Parks, is essentially a Northern tool reflecting Northern values and that it is unacceptable to impose these on developing countries. Only one of these nine experts was Southern, i.e. from Costa Rica.

In all three of the above rationales, the roles of local people in resisting exclusionary conservation were acknowledged, as typified by B23: "If you can't in the long run get the local people on your side, you're probably lost. Because they out-number you, they're hunger driven ... So they can run rings around you. It becomes a cops and robbers game." Based on the limitations of exclusionary protection and its history in developing countries, B16 described sustainable use and the inclusion of local people in use programmes as "the new touchstones for how to do conservation. And I think that for this time and period they are probably correct."

Expert acceptance of local 'rights' to use resources

The idea that local people have 'rights' to use resources was problematic for most experts and many refused to address the issue when asked. An illustrative example of how rights were viewed: "Again, this is a concept that clearly we have to deal with. Hiding our heads in the sand isn't going to make this go away" (Expert Interview B24). Eighteen experts did comment on local rights. Five of these experts believed local people have rights to use resources and were concerned with making the resulting use as sus-

tainable as possible. For example, B16 described the experience of first considering conservation in a developing country context:

> ...you found that a lot of your preconceptions were wrong. That the fine, sensible, intelligent people that you met in strange places turned out to be all sorts of colours and shapes and sizes and backgrounds and had an absolute legitimate need and right to use the resources (Expert Interview B16).

Five experts rejected the notion of local rights. They were concerned, firstly, with the non-universality of the concept and how "People from completely different cultures have completely different concepts of rights. ... It just boils down to 'what is the appropriate use of things.' ... I don't tend to talk in terms of rights very much because, intellectually, they sort of slip out of your grasp" (Expert Interview B23). B27 was concerned with how rights can interfere with end objectives, and argued for caution regarding "how much ground you give up in the area of rights or you just invalidate all of the arguments that you may need to make." For both B23 and B27, arguments could be made and appropriate use determined based on some other criterion, which was not subject to interpretation. This criterion was science and, while both of these experts acknowledged that use may occur without scientific justification in the face of need and the reality of implementing exclusion, they believed that rights should not be allowed to confuse the issue. In general, almost all interviewed experts emphasised the importance of science in setting conservation policy.

B27 also believed that local rights were nullified in the case of globally valued resources, which he equated with "almost any biological resource", and for which "everybody on the planet has a stake. Perhaps some countries have a greater stake than others, but almost everyone has a stake ... and should have some say." Marine turtles are migratory and the MTSG Strategy (MTSG 1996) emphasises that they are at least regionally, if not globally, 'shared' and should be managed as such. Six experts avoided pronouncing on the question of rights in general, and two supplemented their general resistance to the notion of rights by referring to this non-local nature of marine turtles. For these experts, the idea of local rights "becomes quite strained very quickly when you start talking about global species, entire ocean basin populations" (Expert Interview B24). B20 stated that "Nobody can claim exclusive rights to a sea turtle population" and B6 felt that "the approach should be [to look] at local needs but maybe not local rights."

While the migratory nature of turtles was used to discount local rights, it was also used to support the rights of outsiders to intervene in management. For example, B8 referred to a Mexican proposal to harvest adult olive ridleys and the United States' response to it. He struggled with "what should we [Americans] allow because we're sharing the resources with them [Mexicans]. They're coming to our nesting beaches or they're migrating through our water to their nesting beaches. So it's how do you get over the question of sovereignty and shared resources between those countries that make those decisions?" B24 had no such difficulties with the sovereignty issue, and was the most outspoken in according equal if not greater rights to outsiders, however transitory:

> As distances shorten and travel increases, is it really fair to say that the green turtles... belong to the villagers...? Don't they belong just as much to the people who travel down there? They spend great sums of money to travel down there to see them (Expert Interview B24).

Local need for resources

As discussed above, human need and poverty in developing countries – key elements in the evolution of the conservation counter-narrative – were perceived as compelling reasons to justify the use of wildlife resources by local people. While interviewed experts were hesitant to assign rights to local people, they were willing to discuss local human needs, both to acknowledge them and to discount them. Two types of need were identified: economic need and cultural need.

Economic need: Thirteen experts recognised economic need as a legitimate justification for local use of resources, in a subsistence manner only. Commercial use, and particularly large-scale commercial use, was seen as inappropriate for marine turtles by all but three interviewed experts. Having recognised subsistence need, experts discounted it via two strategies. The first strategy, employed by four experts, was to question the terms of poverty. Two illustrative quotes are provided. The first is from A6, a Costa Rican interviewee:

> They're not starving to death. It's not as if they only had turtle eggs to eat. They have agriculture, livestock, tourism. They sell services to tourists. They have fishing as well that they can do. So it's not necessary (Expert Interview A6).

The village A6 was referring to is rural and isolated, and all of the alternative activities listed are of minimal importance. The second quote is from a North American interviewee with experience in Latin America. Referring to a specific research site, she claimed "people there are not dependent on turtles. I mean, they don't need them but they like them. They'll eat them if they can get them" (Expert Interview B17). She later explained that "that's why they kill turtles, to get the money to pay the 60 dollars a year they need to ... send [the children] to school." These statements either contradict each other, or B17 did not consider education to be an element of subsistence need.

While the experts cited above questioned claims of poverty, none of them discussed what, to them, constituted poverty or lack thereof (although in all of the examples the users are certainly poor in comparison to experts making the judgements). Only one interviewee was willing to reject subsistence needs of local people outright, and he did so in the face of dire poverty:

> ...you don't want to come in and tell this fishing village that 'you can't take sea turtles anymore.' Because you know that this fishing village is poor ... there's no source of income there and they take sea turtles, to live, to survive. ... Okay, so I understand that. But they say 'if this little fishing village is going to survive, it's going to have to take sea turtles.' And I, a biologist, I have to come in and tell you that maybe by continuing to take sea turtles this little fishing village may survive, but you're going to destroy the resource. And the little fishing village is going to disappear eventually anyway. So the solution is don't take the sea turtles regardless of the consequences to humans (Expert Interview B15).

The second strategy employed to discount economic need was to re-define subsistence. Eleven experts did so, most by excluding commerce and/or technology from their definitions. B12, for example, had trouble with subsistence uses because "... they're not really ever that. The products always somehow get into commerce ... When you're going out there with a Johnson or an Evinrude ... you're a little bit beyond subsistence."

Five of the eleven experts who questioned claims of subsistence believed that commerce could play a role in rural subsistence livelihoods. However, they found this a complicating factor, and B18 questioned, "where do you draw the line? 'I need to sell this one so that I can buy fuel to build a fire.' But then you get to the point where 'how much of my economic gain can I take from this natural resource?'"

Cultural Need: Nine experts recognised cultural need for consumptive use of marine turtles. For some, cultural need prohibited exclusionary protection from a practical perspective, while others accepted culturally based use due to the meaning it holds for users. However, as with economic need, cultural need was discounted by some of these same experts, and similar strategies were employed. The first strategy was to question whether or not a need was "truly a cultural thing? And in some cases it certainly is. In other cases I don't think so... I think some of it is probably cultural and some of it that's being passed for cultural reasons is not" (Expert Interview B19). The second strategy involved challenging the meaning of 'culture' and related terms like 'indigenous' and 'traditional.' For some experts, these definitions were again linked to technology:

> ...but traditional societies using motor boats and rifles and cellular phones ... I hear this traditional stuff and then I hear it transferred to groups like the Mosquito Indians. They're no more traditional... (Expert Interview B15).

For others, traditional use had to be static over time, and you had "to look at the context of history and [make] sure that the utilisation of today is somewhat similar in terms of the specific function that it was in the past. And many times that has changed" (Expert Interview B9). Finally, B15 believed that traditional use, by definition, could not impact negatively on the environment:

> If you're talking about the Indian groups of Brazil, then certainly, they should have the right to live their traditional life. They've not been shown to have a negative effect and if that's the way that you're going to maintain that forest, then fine, let them raise Brazil nuts (Expert Interview B15).

The above restrictions on cultural use reflect an oversimplified view of rural communities and economies, and impose restrictions on resource use that are not required in more 'developed' societies. Only one interviewee criticised the emphasis on defining concepts like 'indigenous' and 'traditional'. B28 claimed it was "hypocritical of us to say that some kind of uses are legitimate... Or that some people have legitimate access to resources that other people don't ." She also pointed to problems associated with such views: "we did make a lot of assumptions about things that were wrong, or had really simplistic views,

or clung to this romantic notion ... that if we only give them the opportunity to go back to a simple bygone era, then they'll do it happily."

Local participation

Less contentious than ideas of local rights or needs, was that of local participation in conservation activities. However, while the concept of community-based conservation includes caveats relating to community ownership of and control over resources and their management, views of experts on participation fell well short of this type of empowerment.

Eight experts identified the need to 'work with the local people' when pursuing conservation activities. This included employing local people in conservation efforts and could be combined with other participation activities. B4's view of working with local people, for example, consisted of educating them about the need to conserve resources. For three of these experts, working with local people involved keeping them informed and listening to their views. All of these experts assumed that the objectives of conservation efforts were set, and participation was used as a means of 'getting people on side.'

Four experts gave local people more significance in management and decision-making, usually according them status as co-participants with resource managers and scientists. Again, this was done to get people 'on side' with conservation activities:

> We have to give those who are directly managing that resource, or managing it mostly, more say in how it's happening. Otherwise I think most things can backfire. These schemes to manage or prohibit things can backfire (Expert Interview B8).

For B8, total prohibition on use was still an option. However, B8 felt that local people would support it if given 'more say' in how it was executed. Furthermore, on closer examination, the use of the word 'local' by these experts was subject to interpretation. For example, while B16 promoted "home grown stuff, even if it's a little bit sloppy and a little bit not the way you would have done it yourself," he was referring to national scientists in developing countries rather than to local people. Similarly, B29's view of local control did not equal control by local people, but by experts who have experience in the local area, "people with a long experience in that particular system. They [decisions] can't be made in Gland in Switzerland, or in Brussels ... They have to be made by people who know what's going on... And you do get a feeling of what's happening, after you've been with the system for five or ten years, or 20 years."

Four experts stated explicitly that, while local involvement was required, it could not be used to guide decision-making. For example, B6 stated that "while I'm all for community involvement, you know hearing what the community perspective is, I don't think that utilisation should be based on what the locals think. It needs to be based on good science." Similarly, B24 suggested that "clearly there has to be the involvement of the community. ... But to turn over the future of these populations to the local population, I think is very problematic." Turning over control is problematic particularly when local people do not have the 'right' objectives. For B27, for example, allowing local control over resources was "completely compatible with conservation if you have conscientious and well informed people. Failing either of those two things, it may be a trap." B24 provided a specific example:

> What they want to do is kill every... turtle they see... When the local population just says '...we want to develop this area for one type of tourism that doesn't include eco-tourism, that doesn't include turtles,' what does one do? Do you say 'well, all right. You're the local population and these are your turtles. Croak them?' (Expert Interview B24)

Only B1 was willing to let local people make such decisions and argued that, ultimately, they were the ones who paid the price.

B17 had the most extreme views on local participation. While other experts tried to provide some role for local people, however limited, B17 criticised the process of 'participation' as an unnecessary and inconvenient deterrent to conservation:

> I know there have been some projects that have totally floundered because the social concerns were so central ... Like the [specific example]. It's a real mess. Because it had an in-built thing where all these local people were part of the group that's supposed to decide what areas will be used for this and that ... And all they've done is fight and bicker... and they haven't really set up any areas. They haven't done any good (Expert Interview B17).

Discussion

To summarise the results above, interviewed marine turtle experts accepted initially the general concept of sustainable use, especially in the case of developing countries. While there was resistance to the notion

that people have 'rights' to use resources, there was wider acceptance of local needs (economic and cultural) and of local participation. However, local need was discounted by redefining definitions associated with, and terms of, need, and participation was limited for the most part to consulting or educating local people about pre-determined conservation goals. These results suggest that the transition from policies advocating community-based conservation to actual practice will be difficult. If experts serve as a filter between policy and practice, they are a resistant one.

There are particular implications associated with the ways in which experts discounted human need. As need was one of the key factors leading to expert acceptance of a sustainable use counter-narrative, discounting it allowed experts to return to a traditional narrative of exclusion and prohibition. Most experts, particularly in the specific case of marine turtles, saw exclusion of people from nesting beaches and other marine turtle habitat as an option for conservation. Only five experts rejected exclusion completely and the remaining experts, to varying degrees, deemed it as appropriate under certain circumstances. Those circumstances were, firstly, when a turtle population was greatly reduced and, secondly, when attempts to promote conservation by other means had failed.

In the first category of 'dire' circumstances, "you get to a point if the populations are so low, it just doesn't matter. No matter what the reason is, you just can't. You can't do it" (Expert Interview B19). B17 cited a specific nesting beach where "the only way to save it now would be to physically stop people from taking those turtles. The incentive is so great ... that there's nothing that will stop them, besides guards." Indeed, a wider 'crisis' narrative was evident among some marine turtle experts (e.g. B3 referred to turtle populations: "they're all declining." B18 suggested: "I just don't know why there are any turtles left").

The second circumstance arises when:

> ...people don't listen to reason ... If you can't convince... the group of people that it's in their own best interest to curb their activities, maybe it's time to go to a higher level of government... It's going to be hard to argue with someone... that they should stop doing that and sacrifice their own good for the good of country and in the interest of conserving turtles all over the world (Expert Interview B20).

Not only is there a contradiction in this statement (people should both recognise something is for their own good and sacrifice their own good for the good of others) but some outside force promotes 'reason' to be adopted or rejected by local people.

Experts who supported exclusion under certain circumstances appeared to believe that such techniques could work, in spite of their awareness of the practical limitations on enforcing exclusion and of specific examples where exclusion efforts at marine turtle nesting beaches had proven problematic. Only B15 recognised directly that "exclusionary techniques are only as good as the enforcement behind them" and he questioned whether funding enforcement was the best way to spend conservation budgets. B17 indirectly recognised the costs when she described a conservation project as having "always suffered from not having much money for guards and boats and motors and guns" and she lamented that the political commitment necessary to enforce exclusion was often lacking. In contrast, five marine turtle experts, including B17, cited enforcement problems as a key barrier to pursuing sustainable use regimes. That B17 lamented the lack of effort made to enforce exclusion, but did not suggest the same effort could be used to regulate sustainable use schemes, reflects her bias towards the former technique.

Expert resistance to the counter-narrative suggests that it has not been as 'parsimonious, plausible and comprehensible' as the traditional narrative of exclusion and prohibition. Resistance can be linked to the 'normal professionalism' of conservation experts, i.e. their bias towards science, and their limited understanding of rural development. An issue that was expected to, but did not, influence resistance was geography, i.e. the nationality and working environment of interviewees. Normal professionalism and geography are discussed below.

Influence of normal professionalism

Almost all experts continued to prioritise science over socio-economic elements of conservation. This was in part based on the real limitations imposed by marine turtle biology and life histories, and on gaps in understanding of these. Experts perceived a great deal of uncertainty regarding marine turtle management, and how they dealt with uncertainty influenced their acceptance/rejection of the counter-narrative. B3 was a good example. She stated: "And no one really understands the population regulation, how these populations regulate themselves. ... And until you understand that... I wouldn't advocate any kind of use." This is an important trade off; B3 stated quite definitively that she considered sustainable use a valid

wildlife conservation tool, specifically where use is localised or indigenous. Yet in the quote above, she cannot 'advocate any kind of use' in the face of scientific uncertainty. Prioritisation of science was also reflected in expert opinions on issues not addressed in this paper, e.g. information requirements for implementing effective conservation policy (Campbell 1997).

Most experts (particularly those from the US and Canada) reflected inadequate understanding of the reality of rural livelihoods (e.g. regarding the role of cash and technology in subsistence livelihoods, and the 'timeless' nature of traditional society). This was also evident when experts, having returned to a narrative of exclusion, suggested exclusion could best be achieved by combining it with provision of alternative economic activities. The activities were rarely specified, but when they were, they sometimes involved greater inputs of cash and labour (e.g. cattle farming) than the activity being replaced. The most popular alternative economic activity was ecotourism, which most experts defined as a form of non-consumptive use. This virtually unanimous preference existed in spite of wide spread concern over the impacts of ecotourism on marine turtles, and more limited concern regarding impacts on the environment in general and on host communities, and awareness of the difficulties in ensuring local people benefit from ecotourism (Campbell 1997). Promoting ecotourism, however, offered experts a means of 'getting off the hook' regarding sustainable use and community-based conservation. As ecotourism often relies on parks and protected areas, promoting it allowed experts to speak the language of the sustainable use and community-based conservation counter-narrative while continuing to rely on techniques mandated by the 'received wisdom' of the traditional narrative.

The continued privileging of scientific issues and lack of understanding of socio-economic ones by experts in marine turtle biology and conservation is not surprising given their training. It is nonetheless problematic due to the role and impacts of conservation organisations in rural development. It suggests that these organisations will have to either expand their expertise (which, according to three experts, appears to be the route WWF is taking) or work more closely with organisations concerned primarily with development. Indeed, many of the interviewed experts prefaced their comments with qualifications that they were not social scientists and that, in practice, they would have to seek advice from the other sources. However, a small minority of experts resisted the whole concept of integrating socio-economic and biological aspects of conservation. They argued that they should not have to account for humans, as someone has to defend wildlife. B17, for example, questioned the shifting focus of WWF:

> I hear a lot of people not liking that shift. ... I mean, they talk about WWF like they've really lost their minds. ... I don't know why they went that way. ... I don't see the evidence that it's helping wildlife. I mean it depends on what their goals are. If they've changed their goals and they're really helping people and not wildlife, that's fine (Expert Interview B17).

Influence of geography

Marine turtles were chosen as a focus species partly because of their migratory natures, and the related North-South context in which to consider acceptance of sustainable use and community-based conservation. Interviewed experts themselves believed that there is a clear distinction between how Northern and Southern experts approach these issues, and felt that the greater integration of Southern experts into the MTSG, for example, had expanded the organisation's approach to use (Campbell 1997). However, this research found few differences in views of Northern and Southern experts. Southern respondents shared the views of their Northern colleagues on the suitability of marine turtles for consumptive use and their preferences for non-consumptive use, and advocated very traditional conservation techniques (i.e. the establishment of parks and protected areas). Southern experts did argue more strongly for socio-economic claims and local participation and even control, but they eventually discounted these in the same ways their Northern counterparts did, and showed a similar lack of appreciation of rural subsistence livelihoods (e.g. A6 was one of those who redefined poverty to discount human need).

The small number of Southern experts interviewed limits the comparison of Southern and Northern experts and further research might reveal more differences in views. Nevertheless, this research suggests that the influence of normal professionalism is not restricted by geography.

Conclusions

Conclusions can be made regarding future prospects for marine turtle conservation, the problems and

ambiguities associated with the counter-narrative, and the wider status and implementation of the conservation counter-narrative.

Regarding marine turtles, while there is evidence that the language of the sustainable use and community-based conservation counter-narrative has been adopted, marine turtle experts continue to promote the mechanisms dictated by the traditional narrative of exclusion and prohibition. This is made easier by promoting non-consumptive use of marine turtles via ecotourism. Local people will continue to play minor roles in marine turtle conservation, primarily that of being consulted or educated. These are the least effective means of participation, according to Arnstein (1969), Pretty (1995) and Davies and Gathorne-Hardy (1997). Science and scientists remain key elements of the 'normal professionalism' of marine turtle conservation.

If the interviewed marine turtle experts are any indication of the wider community of wildlife conservation experts, then the prospects for the implementation of the conservation counter-narrative are pessimistic. The basis of resistance, however, illustrates some of the problems associated with the counter-narrative itself. Firstly, it reconfirms that the terms associated with community-based conservation are ill defined and over-simplified. Experts interpreted terms differently and reflected inadequate understanding of how they would actually be implemented. Secondly, it reveals the complex nature of decisions about conservation and development. While conservation organisations have been advocating the reconciliation of conservation and development, this often appears to be a case of 'wishing it will make it so.' As pointed out by Robinson (1993) and Frazier (1997), the reality of reconciliation is more problematic, and B24's question regarding what to do if the local community wants to 'croak all the turtles' is a legitimate one. Trade-offs between conservation and development often have to be made, and the role of ideals and values in this trade-off is key. The assumption in much of the literature, however, is that these ideals and values are shared. While participation and empowerment are advocated, there is less consideration of their potential consequences, i.e. what will happen if the community makes decisions that are in opposition to outside interests.

The wildlife conservation narrative can be considered a narrative-in-transition, as the evidence presented above suggests it is not 'parsimonious, plausible and comprehensible' for many conservation professionals. Roe (1991) argues that narratives are stronger than myths because they encourage listeners to take action (i.e. implement the prescriptions dictated by the narrative's 'received wisdom'). In the case of marine turtle conservation, however, there is discordance between the spoken narrative and recommended solutions. Marine turtle experts repeat the logic of the counter-narrative (i.e. that it is no longer possible to argue for outright exclusion and prohibition for both moral and practical reasons, and that local people must be central to conservation activities), but resist the 'received wisdom' of its related solutions. The compromise appears to be promoting non-consumptive utilisation of marine turtles via ecotourism, one that follows the logic of the counter-narrative, but relies on the solutions dictated by the traditional narrative.

The transitional status of the counter-narrative reflects the reasons behind its evolution. It did not evolve because there were no longer stakeholders interested in solutions dictated by the traditional narrative, but because the repercussions of those solutions had become unacceptable to other interest groups (e.g. those interested in human development). The overall and wide spread merging of conservation and development through the dominant discourse of sustainable development has made it less acceptable for conservation organisations to promote exclusionary protection. In order to remain relevant in the sustainable development era, conservation organisations have had to integrate human development objectives into their own narrative. Likewise, development agencies have had to adopt environment objectives.

Whether or not sustainable use and community-based conservation will emerge as a real alternative to traditional wildlife conservation, one that recognises human development needs as legitimate and that empowers local people to meet these, remains to be seen. If Roe (1991) is correct, however, this will only occur when those interested in such aims have power over the evolution of narratives and the implementation of solutions. This requires either, expanding the mandates, commitments, and understandings of those who currently control the narrative (i.e. conservation's normal professionals), or including those local people and resource users impacted by the narrative in its formation. This research suggests that in rural developing areas where a species of international interest exist, such as marine turtles, this is currently not the case.

Acknowledgements

This research was funded by the Canadian Social Sciences and Humanities Research Council. The Worts Travelling Fund, Cambridge University, and the Philip Lake Fund, Department of Geography, Cambridge University, provided additional support for field work. I am grateful to the 42 marine turtle experts who agreed to be interviewed and shared their views anonymously as part of this research project, and to other members of the MTSG for their encouragement and support. While I have not always agreed with their views, I hope I have done them no disservice. Additional thanks are extended to my supervisor, Dr. W.M. Adams, and to R. Barreto and J. Campbell for their various comments, advice, and support throughout this work.

References

ADAMS, A.L. 1994 *Sustainable Use of Wildlife and the International Development Donor Organisations* (Washington D.C.: Humane Society of the United States)

ADAMS, W.M. and HULME, D. 1998 Conservation and communities: changing narratives, policies and practices in African conservation, *Community Conservation in Africa: Principles and Comparative Practice*, Discussion Paper No. 4 (Manchester: Institute for Development Policy and Management, University of Manchester)

ADAMS, W.M. and THOMAS, D.H.L. 1993 'Mainstream sustainable development: the challenge of putting theory into practice' *Journal of International Development* 5, 591-604

ARNSTEIN, S. 1969 'A ladder of community participation' *American Institute of Planners Journal* 35, 216-224

ATKINSON, A. 1991 *Principles of Political Ecology* (London: Belhaven)

BELL, R.H.V. 1987 'Conservation with a human face: conflict and reconciliation in African land use planning' in *Conservation in Africa: People, Policies and Practice*, eds D. Anderson and R. Grove (Cambridge: Cambridge University Press) 79-96

BLAIKIE, P.M. and BROOKFIELD, H. 1987 *Land Degradation and Society* (London: Methuen)

BOLTEN, A.B. and BJORNDAL, K.A.E. *1993 Marine Turtles: An Action Plan for their Conservation. Part 1: 1993-1998.* (http://nervm.nerdc.ufl.edu/~accstr/Actionpl.html, available 1993)

BONNER, R. 1993 *At the Hand of Man: Peril and Hope for Africa's Wildlife* (London: Simon & Schuster)

CAMPBELL, L.M. 1997 'International conservation and local development: the sustainable use of marine turtles in Costa Rica' (unpublished Ph.D. dissertation, Department of Geography, University of Cambridge, Cambridge UK)

__. 1998 'Use them or lose them? The consumptive use of marine turtle eggs at Ostional, Costa Rica' *Environmental Conservation* 24, 305-319

CARROLL, T.F. 1992 *Intermediary NGOs: The Supporting Link in Grassroots Development* (Hartford CT: Kumarian Press)

CHAMBERS, R. 1987 *Sustainable Rural Livelihoods: A Strategy For People, Environment and Development*, Institute of Development Studies Discussion Paper (Sussex: Institute of Development Studies, University of Sussex)

__. 1993 *Challenging the Professionals: Frontiers for Rural Development* (London: Intermediate Technology Publications)

__. 1997 *Whose Reality Counts? Putting the Last First* (London: Intermediate Technology Publications)

CLARK, C.W. 1973 'The economics of overexploitation' *Science* 181, 630-634

COLLETT, D. 1987 'Pastoralists and wildlife: image and reality in Kenyan Maasailand' in *Conservation in Africa: People, Policies and Practice*, eds D. Anderson and R. Grove (Cambridge: Cambridge University Press) 129-148

CONGDON, J.D., DUNHAM, A.E. and VAN LOBEN SELS, R.C. 1993 'Delayed sexual maturity and demographics of Blanding's Turtles (*Emydoidea blandingii*): implications for conservation and management of long-lived organisms' *Conservation Biology* 7, 826-833

__. 1994 'Demographics of common snapping turtles (*Chelydra serpentina*): implications for conservation and management of long-lived organisms' *American Zoology* 34, 397-408

COX, P.A. and ELMQVIST, Y.T. 1991 'Indigenous control of tropical rainforest reserves: an alternative strategy for conservation' *Ambio* 20, 317-321

DAVIES, A. and GATHORNE-HARDY, F. 1997 *Making Connections: Community Involvement in Environmental Initiatives* (Cambridge: Committee of Interdisciplinary Environmental Studies, University of Cambridge)

EHRENFELD, D. 1974 'Conserving the edible sea turtle: can mariculture help?' *American Scientist* 62, 23-31

__. 1981 'Options and limitations in the conservation of sea turtles' in *Biology and Conservation of Sea Turtles. The World Conference on Sea Turtle Conservation, Washington, DC., Nov. 26-30, 1979* (Washington: Smithsonian Institute) 457-464

__. 1992 'Editorial: the business of conservation' *Conservation Biology* 6, 1-3

EKINS, P. 1992 *A New World Order: Grassroots Movements for Global Change* (London: Routledge)

ESMAN, M.J. and UPHOFF, N.T. 1984 *Local Organisations: Intermediaries in Rural Development* (Ithica NY and London: Cornell University Press)

FISHER, J. 1993 *The Road from Rio: Sustainable Development and the Nongovernment Movement in the Third World* (Westport Connecticut: Praeger)

FRAZIER, J.G. 1997 'Sustainable development: modern elixir or sack dress?' *Environmental Conservation* 24, 182-193

FREESE, C. (compiler) 1994 *The Commercial, Consumptive Use of Wild Species: Implications for Biodiversity Conservation* (Gland, Switzerland: WWF-International)

__. (compiler) 1996 *The Commercial, Consumptive Use of Wild Species: Managing It for the Benefit of Biodiversity* (Washington, US/Gland, Switzerland: WWF-US/WWF International)

GEIST, V. 1995 'Introduction' in *Wildlife Conservation Policy*, eds V. Geist and L. McTaggart-Cowan (Calgary, Alberta: Detselig Enterprises Ltd.) 7-25

HAM, S.H. and MENGANCK, R.A. 1993 'Applying environmental interpretation in protected areas of developing countries: problems in exporting a US model' *Environmental Conservation* 20, 232-241

HARRIS, L.D. and EISENBERG, J.F. 1989 'Enhanced linkages: necessary steps for success in conservation of faunal diversity' in *Conservation for the 21st Century*, eds D. Western and M. C. Pearl (New York: Oxford University Press) 166-181

HEINEN, J.T. 1993 'Park-people relations in Kosi Tappu Wildlife Reserve, Nepal: a socio-economic analysis' *Environmental Conservation* 20, 25-33

HOBBS, R.J., SAUNDERS, D.A. and HUSSEY, B.M.T. 1990 'Nature conservation: the role of corridors' *Ambio* 19, 94-95

HOBEN, A. 1996 'The cultural construction of environmental policy: paradigms and politics in Ethiopia' in *The Lie of the Land: Challenging Received Wisdom about the African Environment*, eds M. Leach and R. Mearns (Oxford: The International African Institute) 186-208

__. 1997 'The cultural construction of environmental policy: paradigms and politics in Ethiopia' *The Ecologist* 27, 55-62

HOLDGATE, M. and MUNRO, D.A. 1993 'Limits to caring: a response' *Conservation Biology* 7, 938-940

HOMEWOOD, K.M. and ROGERS, W.A. 1991 *Maasailand Ecology: Pastoralist Development and Wildlife Conservation in Ngorongoro, Tanzania* (Cambridge: Cambridge University Press)

INTERNATIONAL UNION FOR THE CONSERVATION OF NATURE (IUCN) 1964 *First World*

Conference on National Parks: Proceedings, Seattle, 1962, ed A.B. Adams (Washington: National Park Service and US Department of Interior)

—. 1974 *Second World Conference on National Parks: Proceedings*, Yellowstone and Grand Teton National Parks, 1972, ed Sir H. Elliot (Lausanne, Switzerland: IUCN)

—. 1980 *The World Conservation Strategy* (Gland, Switzerland: IUCN)

—. 1993 *Parks for Life: Report of the IVth World Congress on National Parks and Protected Areas* (Gland, Switzerland: IUCN)

—., UNITED NATIONS ENVIRONMENT PROGRAMME (UNEP) and WORLD WILDLIFE FUND (WWF) 1991 *Caring for the Earth: A Strategy for Sustainable Living* (Gland Switzerland: IUCN)

IUCN/SPECIES SURVIVAL COMMISSION (SSC) 1996a 'Sustainable use initiative' in *Sustainable Use Initiative Resource Manual* (Washington, D.C.: IUCN) 1.3-1.5

—. 1996b 'Appendix: draft guidelines for the ecological sustainability of non-consumptive and consumptive uses of wild species' in *Sustainable Use Initiative Resource Manual* (Washington D.C.: IUCN) 11

LEACH, M. and MEARNS, R. 1996 'Introduction' in *The Lie of the Land: Challenging Received Wisdom on the African Environment*, eds M. Leach and R. Mearns (Oxford: The International African Institute) 1-33

LINDSAY, W.K. 1987 'Integrating parks and pastoralists: some lessons from Amboseli' in *Conservation in Africa: People, Policies and Practice*, eds D. Anderson and R. Grove (Cambridge: University of Cambridge Press) 149-165

LITTLE, P. 1994 'The link between local participation and improved conservation: a review of issues and experiences' in *Natural Connections: Perspectives in Community-Based Conservation*, eds D. Western and M. A. Wright (Washington, D.C.: Island Press) 347-372

LUDWIG, D. 1993 'Environmental sustainability: magic, science and religion in natural resource management' *Ecological Applications* 3, 555-558

MACDONALD, L. 1995 'NGOs and the problematic discourse of participation: cases from Costa Rica' in *Debating Development Discourse: Institutional and Popular Perspectives*, eds D.B. Moore and G.J. Schmitz (New York: St. Martin's Press Inc.) 201-229

MACKENZIE, J.M. 1988 *The Empire of Nature: Hunting, Conservation and British Imperialism* (Manchester: University of Manchester Press)

MANGEL, M., HOFMAN, R.J., NORSE, E.A. and TWISS, J.R. 1993 'Sustainability and ecological research' *Ecological Applications* 3, 573-575

MANGEL, M. *et al.* 1996 'Principles for the conservation of wild living resources' *Ecological Applications* 6, 338-362

MARKS, S. 1984 *The Imperial Lion: Human Dimensions of Wildlife Management in Central Africa* (Epping, U.K.: Bowker)

MCCORMICK, J. 1989 *The Global Environmental Movement: Reclaiming Paradise* (London: Belhaven)

MEYER, C.A. 1993 'Environmental NGOs in Ecuador' *Journal of Developing Areas* 27, 191-210

MARINE TURTLE SPECIALIST GROUP (MTSG) 1995 *A Global Strategy for the Conservation of Marine Turtles* (Gland Switzerland: IUCN)

PARRY, D. and CAMPBELL, B. 1992 'Attitudes of rural communities to animal wildlife and its utilization in Chobe Enclave and Mababe Depression, Botswana' *Environmental Conservation* 19, 245-251

PIMBERT, M.P. and PRETTY, J.N. 1997 'Diversity and sustainability in community based conservation' (paper prepared for UNESCO-IIPA Regional Workshop on Community-based Conservation, February 9-12 1997, India).

POULTON, R. 1988 'On theories and strategies' in *Putting People First: Voluntary Organisations and Third World Organisations*, eds R. Poulton and M. Harris (London: Macmillian)

PRETTY, J. 1995 'The many interpretations of participation' *In Focus* 16, 4-5

PRICE, M. 1994 'Ecopolitics and environmental nongovernmental organizations in Latin America' *The Geographical Review* 84, 42-58

PRICEN, T. and FINGER, M. 1996 'Environmental NGOs: carving out a new niche' *Ecodecision* 22, 26-29

REDCLIFT, M. and SAGE, C. 1994 'Introduction' in *Strategies for Sustainable Development: Local Agendas for the Southern Hemisphere*, eds M. Redclift and C. Sage (Chichester, UK: John Wiley & Sons) 1-15

ROBINSON, J.G. 1993 'The limits to caring: sustainable living and the loss of biodiversity' *Conservation Biology* 7, 20-28

ROBINSON, J.G. and REDFORD, K.H. 1991 'The use and conservation of wildlife' in *Neotropical Wildlife Use and Conservation*, eds J.G. Robinson and K.H. Redford (Chicago: University of Chicago Press) 3-5

ROE, E.M. 1991 'Development narratives, or making the best of blueprint development' *World Development* 19, 287-300

—. 1996 'Sustainable development and cultural theory' *International Journal of Sustainable Development and World Ecology* 3, 1-14

ROSENBERG, A.A., FOGARTY, M.J., SISSENWINE, M.P., BEDDINTON, J.R. and SHEPHERD, J.G. 1993 'Achieving sustainable use of renewable resources' *Science* 262, 828-829

SCHÖITZ, A. 1989 'Conserving biological diversity: who is responsible' *Ambio* 18, 454-457

SHAW, J.H. 1991 'The outlook for sustainable harvest of wildlife in Latin America' in *Neotropical Wildlife Use and Conservation*, eds J.G. Robinson and K.H. Redford (Chicago: University of Chicago Press) 24-34

SPELLERBERG, I.F. 1992 *Evaluation and Assessment for Conservation: Ecological Guidelines for Determining Priorities for Nature Conservation* (London: Chapman & Hall)

STOCKING, M. and PERKIN, S. 1992 'Conservation-with-development: an application of the concept in the Usambara Mountains, Tanzania' *Transactions of the Institute of British Geographers* 17, 337-349

SUNDERLIN, W.D. 1995 'Managerialism and the conceptual limits of sustainable development' *Society and Natural Resources* 8, 481-492

SWANSON, T.M. and BARBIER, E.B. 1992 *Economics for the Wilds: Wildlife, Wildlands, Diversity and Development* (London: Earthscan)

TURTON, D. 1987 'The Mursi and national park development in the Lower Omo Valley' in *Conservation in Africa: People, Policies and Practice*, eds D. Anderson and R. Grove (Cambridge: University of Cambridge Press) 169-185

WAPNER, P. 1995 'Politics beyond the state: environmental activism and world civic politics' *World Politics* 47, 311-340

WELLS, M. and BRANDON, K. 1992 *People and Parks: Linking Protected Area Management with Local Communities* (Washington: IBRD)

WESTING, A.H. 1996 'Core values for sustainable development' *Environmental Conservation* 23, 218-225

WOLF, E.C. 1987 *On the Brink of Extinction: Conserving the Diversity of Life.* Worldwatch Paper 78 (Washington: Worldwatch Institute).

WOOD, G. 1985 *Labeling in Development Policy: Essays in Honour of Bernard Schaffer* (London: Sage)

Received 11/98; Revised 05/99; Accepted 05/99