

Geography 753
Environmental Management

Essay:

Can strict preservationism alone be an effective tool in achieving biodiversity maintenance and effective conservation?

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There is little doubt that the world is currently experiencing a 'biodiversity crisis'. According to Terborgh and Van Schaik, (2000: 3) "experts estimate that extinctions are occurring at hundreds of times the rate recorded through normal times in fossil history." As a result, there is a general global consensus that biodiversity needs to be conserved, and a general appreciation that something needs to be done sooner rather than later to halt its rapid worldwide decline. However, there is remarkably little agreement about the best way to achieve such goals, with proposals ranging from strict preservationism – based on the premise that nature will survive best when protected from all human activity – to broader methods encouraging sustainable use of natural resources. Throughout the last thirty to forty years, since the general population became concerned about biodiversity loss, the emphasis of biodiversity protection has shifted from one ideology to the other and back on many occasions. This essay will argue that although strict preservationism may have an important role to play in protecting the fragmented remains of biodiversity in rich developed countries, especially in isolated areas without an indigenous human population, it will be likely to fail in tropical developing countries where most of the world's rich biodiversity remains. Not only does strict preservationism in developing countries potentially remove land from indigenous people who have a legal right to that land, but there are also many intractable political issues relating to the feasibility and acceptability of strict preservationist policies to local populations. "The politicised nature of protected areas helps explain why conflict and resistance so often develop in response to parks and their management." (Wilshusen et. al., 2002: 23) These problems mean that although in many ways preservationists are right in claiming that desperate times call for desperate measures, there is no guarantee that the exclusion of people from areas of important biodiversity will lead halt the decline of the world's biodiversity in the long run. Therefore, involving local people in the conservation process is an absolute necessity in order for the best outcomes to be achieved.

Traditionally, protected areas have been considered the cornerstone of biodiversity conservation. (Brandon et. al., 1998) On the surface it appeared as though this policy had been quite successful, as by the mid 1990s there were "over 13,000 sites worldwide, protecting 8.9 per cent of the earth's surface" (Brandon et. al., 1998: 2) This

figure was a dramatic increase in a relatively short period and clearly identifies an important shift in international thinking – away from viewing nature as something to be overcome and tamed, to a valuable commodity that should be protected for its own intrinsic reasons, a belief which has spread throughout the world since the 1960s. (Salazar and Alper, 2002) Indeed, many of those writing on the issue of biodiversity protection (Brandon et. al., 1998; Chicchon, 2000; Terborgh and Van Schaik, 2002; Oates, 1999; and Terborgh and Peres, 2002) continually stress that protected areas should play a critical role. However, this method of conservation began to be criticised in the early 1970s by developing nations who felt they were having biodiversity protection ‘enforced’ upon them by richer countries. Environmental justice was also becoming an important issue internationally, with many indigenous peoples around the world beginning to gain recognition for their traditional rights to much of the land under protection. (Berke et. al., 2002) Therefore, a belief began to emerge that “conservation was an idea that only the rich could hold, and that the promotion of conservation policy by richer, developed nation was a device by which these nations could delay the development of poorer ones and maintain their hegemony.” (Oates, 1999: 49) Thus, a shift away from a parks-based system focused upon preserving nature for its own sake had begun, and international agencies started to move towards developing ideas of sustainability and the sustainable use of natural resources.

In the early 1970s the International Union for the Conservation of Nature and Natural Resources (IUCN) and the World Wildlife Fund (WWF) began to seriously embark upon creating a World Conservation Strategy. This strategy was created under the guidelines of the United Nations Environment Programme (UNEP), who provided much of the funding. (Oates, 1999) The Strategy’s second draft was released in July 1978, and placed great emphasis upon sustainable development and conservation for utilitarian purposes. Indeed, the strategy defined conservation as “the management of human use of the biosphere, and of the ecosystems and species that compose it, so that they may yield the greatest sustainable benefit to the present generations while maintaining their potential to meet the needs and aspirations of future generations.” (IUCN, WWF and UNEP, 1978 cited in Oates, 1999: 48) Many writers have been critical

of this shift, and today's strict preservationists either critique the reasons behind this shift towards a greater focus on people in the conservation process, or identify studies showing how these policies have been unsuccessful in some areas. (Oates, 1999; Terborgh and Van Schaik, 2002; Terborgh and Peres, 2002) Firstly, Oates (1999) is very critical of the motives behind such a shift towards basing conservation around a sustained yield ideology. He believes that such a shift was based on political compromises – many developing countries considered conservation as a type of neo-colonialism with rules enforced upon them by richer nations, which contradicted the IUCN's ideology of helping developing nations. Unsurprisingly, the IUCN was very keen to avoid such allegations, and argued that “it was a misconception to think that conservation is concerned only with wildlife and wilderness and is thus a pursuit of an elite minority unburdened by the pressing problems suffered by a majority of the world's people. Rather, a lack of conservation is a main cause of such problems as inflation and unemployment, hunger and disease.” (Oates, 1999: 49) Secondly, the focus on sustainable use as the guiding principle for conservation has been criticised because it only appeared when much of the money available from international funding agencies was being directed to improving the livelihoods of those in developing countries rather than on pure conservation strategies. Therefore, the notion of protecting nature for its own sake was being abandoned by the very agencies that were supposed to support such a cause just so they could gain access to an increasingly large pool of money helping poorer countries develop. (Oates, 1999) Since such strategies were implemented in the 1970s, policies have become even more human oriented with the widespread uptake of the concept of ‘sustainable development’ after the 1987 Brundtland Report (WCED, 1987) which stated that the concepts of environment, society and economy were so inter-related to make it impossible to improve one without the others.

Since their inception, policies basing conservation around sustainable development, and devolving responsibility for the maintenance of biodiversity down to local communities have been criticised by some, who claim that they are ‘wishful thinking’ and ‘utopian’. In some respect, the criticism is soundly based as there is a tendency from some policymakers to view indigenous people as ‘ecologically noble

savages', a flawed concept traced back to European Romantics and Utopians such as Thomas More and Jean-Jacques Rousseau. (Oates, 1999) Indeed, although some areas of important biodiversity have been inhabited by people for many thousands of years with fairly limited negative impacts upon the environment, this is by no means universally true of all indigenous peoples, and has only usually occurred in areas with very low population densities and relatively limited contact with 'mainstream' society. This situation is becoming increasingly rare, as "today, there are virtually no groups of people not involved to some extent with a global market economy, and the numbers of people in tropical countries continue to increase rapidly. Even if noble savages did once exist, their time is past and there is little point in conservationists trying to recreate them." (Oates, 1999: 56) Redford and Sanderson (2000) provide good evidence from the Amazon that a population density of more than one person per square kilometre inevitably depletes large game populations in the area, even though the local hunters contributing to this decline have only limited modern technology helping them. Furthermore, Peres (2000) concluded from an exhaustive study of 24 Amazonian sites, including extractive reserves and Indian lands that "Subsistence hunting in Amazonia... can result in profound changes in the structure of tropical forest vertebrates communities through (a) shifts in the relative abundance of difference size classes, (b) significant reductions in the overall community biomass, and (c) changes in guild structure." As a result, it does appear quite clear that although local indigenous people may have close ties with the land and have some 'vested interest' in conserving the biodiversity of the area, to simply assume that their traditional activities will not adversely affect the biodiversity of the rainforest is extremely naïve. Therefore, in order to achieve effective conservation in areas with a local population it is necessary that some restrictions are placed upon resource extraction. Who decides what the restrictions are and how they are to be enforced remain an area of huge contention with very high stakes: if restrictions can be effectively enforced upon indigenous people and outside influences then the rapid decline in biodiversity may be halted; but if such restrictions are not seen as legitimate, or cannot be adequately policed they may indeed prove to be counter-productive and the decline of biodiversity could potentially accelerate.

Complicating the issue of biodiversity conservation is the fact that indigenous people are not the greatest threat to the environment in most parts of the world. Powerful, large-scale economic, political and climatic forces have a far greater impact upon the health of biodiversity in the world's tropical forests than indigenous people (Schwartzman et. al., 2000a) "Brazil has more agricultural land per capita than the United States, but the deforestation rate is among the fastest in the world. Infrastructure development, government incentives, and inequitable land tenure have far more to do with the problem of deforestation than does population." (Schwartzman et. al., 2000a: 1355) Schwartzman et. al. (2000b) also believe that the biggest threats to Amazonia and other large tropical forest formations is global warming, which combined with deforestation and the building of highways that open up the centre of the forest, leaves the world's most important area of biodiversity exposed to the possibility of huge wildfires during the dry months caused by El Nino weather patterns. By unfairly (in many cases) blaming indigenous people as the main contributor to the loss of biodiversity, an enemy is being made out of what could be conservationists' greatest ally, and there have been numerous studies showing that traditional farming techniques are historically sustainable. (Perry and Dixon, 1986; Shiva, 1991; Vivian, 1991; Bromley, 1992; Alcorn , 1993; and Raju, 1993) As Colchester (2000: 1365) importantly points out "it is now recognised that as many as 85 per cent of the world's protected areas are inhabited by indigenous peoples and most remaining areas of tropical forests with high biodiversity are also owned or claimed by them. It makes more sense for conservationists to work with these peoples than to cast them into the role of environmental villains and expel them from their homelands. To choose the latter course is a sure route to social conflict and political instability." Therefore, it is a difficult task for conservation policymakers to decide to what extent they should allow indigenous people to utilise natural resources. Emerging in the literature is an ideology that a participatory process between governments and local communities is the best method of making such decisions, and achieving conservation outcomes that can be both socially inclusive and environmentally sustainable. (Kapoor, 2001)

Traditional environmental management was based on a centralised and exclusionary process and a narrow view of what constitutes the ‘environment’ – usually based upon highly scientific and objective observations. Under this concept, people have often been seen as obstructing ‘rational’ and ‘scientific’ management. Strict preservationism definitely bases its conservation methods on such an ideology, separating ‘humans’ and ‘nature’ into two separate categories and claiming that they can never coexist without the inevitable depletion of biodiversity. Indeed, Terborgh and van Schaik (2000: 6) proudly state that “no apology should be required for adhering to the accepted definition of a national park as a haven for nature where people, except for visitors, staff and concessionaires, are excluded.” However, such a separation between humans and nature is very much misguided, as humans are clearly an integral part of nature. Intensive and extensive human-nature interactions have irreversibly propelled all ecosystems along new trajectories of change for many thousands of years, so advocating a conservation focus on removing humans from nature would, in theory at least, create an environment quite ‘unnatural’. The crucial roles that people play in the world’s ecosystems mean that conservation biology needs to focus on human behaviour, and actively managing the environment to create such desired conditions. Nevertheless, preservationists often view the forest as something that has attained natural equilibrium over many thousands of years, and that only by keeping people out of the forest such equilibrium be maintained. However this viewpoint is very questionable, as much of the Amazon was probably more densely populated before 1500 than at any time until this century, or even to this day in some areas and shows signs of indigenous management, resource depletion and even ecological crisis in parts of the forest, yet is still valued as an area of incredible ecological importance. Thus, “the pristine forest prized by Terborgh, Chiccon and Redford & Sanderson is in fact a recent artefact of the demographic collapse of indigenous populations after 1500 brought about by introduced diseases.” (Schwartzman et. al., 2000b) This example is reflected throughout most of the world, with most ecologists concluding that there are few, if any, remaining ecosystems on the planet that have not been influenced – either directly or indirectly – by human activity.

A shift in the focus of environmental management towards a more participatory process recognises the omnipresent relationship between humans and nature, which has evolved from a general dissatisfaction at the success rate of more 'traditional' environmental protection schemes. Popular resistance to top-down environmental management has occurred around the world, including the Indian/Chipko forestry movement, the Kenyan greenbelt movement and many others. (Kapoor, 2001) The inability of states to police people and prevent them from accessing environmental resources (Wilshusen et. al., 2002), as well as the many studies (Neumann 1992; Ghimire, 1994; Beinart and Coates, 1995; and Schroeder, 1999) that show "how the zealous protection of prized flora and fauna has jeopardised the livelihoods of local people in historical and contemporary conservation" (Bryant, 2000: 674), have led to both notable failures of these conservation schemes from an ecological perspective, along with the increasing view of conservation initiatives as 'territorial control strategies' among indigenous peoples. It is important to realise that both these failures are deeply interconnected, as it must be recognised that effective conservation is a highly politicised process, something which scientifically based, politically objective, preservationist conservation strategies clearly fail to comprehend.

While it is unwise to place unwavering trust in indigenous peoples to protect the biodiversity on their land, traditional practices and community structures are a more worthwhile place to begin the search for effective biodiversity maintenance than by excluding these people. Some indigenous peoples have proved to be highly effective conservationists, with the most commonly cited example being the Kayapo people in the Amazon. In the Brazilian Amazon, indigenous people including the Kayapo have established their rights to around 20 per cent of the forest – some one million square kilometres, an area five times what is protected by any kind of formal reserve – and through the creation of extractive reserves, have created the largest expanse of tropical forest under some sort of protection anywhere in the world. (Schwartzman et. al., 2000a) Indeed, "in the Brazilian states of Para and Mato Grasso, the Kayapo Indian nation has achieved, both in law and practice, control over more than 13 million hectares of primary forest and savannah." (Zimmerman et. al., 2001: 11) There is good evidence that the

Kayapo have been far more effective at preventing deforestation on their land than has been the case in many of the nearby federally operated reserves. Fewer than 200,000 people live in this area, showing that the supposed rapid population growth that inevitably occurs in Terborgh and Peres' (2002) model just is not happening. Satellite images show that "agricultural frontier expansion stops at the boundaries of legally recognised areas because the indigenous groups control access. Forest cover that would otherwise be lost is maintained as is the preponderance of plant and animal species." (Schwartzman et. al., 2000a: 1353) Indigenous reserves such as that controlled by the Kayapo are often more effectively managed than federal parks in developing countries, federal parks are often under-funded and not policed to any extent required to keep loggers, miners and farmers from clearing the land for their uses.

Proponents of the preservationist ideology frequently complain about the lack of policing in 'protected' areas – yet instead of empowering local communities to protect their parks, they are seen as the 'enemy' even when their level of resource use is minimal compared to the threats listed above. With the widespread failure of many traditional parks, preservationists feel that 'desperate times call for desperate measures' and even advocate the use of armed forces for biodiversity conservation as "the role of the military is to protect that nation's interests", which biodiversity could be seen as a part of. (Van Schaik and Kramer, 1997: 224) However, this option appears to be highly questionable given the history of military power abuse, it is possible that the military may use conservation as an excuse to further their own political aspirations and to assert their power in 'marginal' regions populated by ethnic minorities. (Wilshusen et. al., 2002) Furthermore, in most developing countries the proposition that the military serves the best interests of nation is highly misinformed, as the interests of elites are normally the only ones represented. One outcome from the use of military intervention is quite predictable though, and that is the negative impact it is likely to have on any environmental goodwill that local indigenous people currently hold. As a result, unless considerable time and resources are allocated to the protection of the park, the park's lack of legitimacy in the eyes of local communities is likely to lead to its failure as an agent of biodiversity maintenance.

The 'legitimacy' of any conservation venture, from the perspective of local communities, has been identified as a crucial ingredient to the success or failure of that venture. The best way to achieve 'legitimate conservation' is to involve local communities in the planning and execution of any strategy designed to improve the state of the environment around where they live – which recognises the blurred distinction between humans and nature as well as the potentially significant conservation inputs that can be gained through the use of traditional ecological knowledge (Sherry and Myers, 2002). Participatory management also recognises the political nature of conservation, and can create local solutions to the ever-present questions of 'who has access to how much of what resources?' The wide variety of information and knowledge held by stakeholders including governments, NGOs and local communities can help coordinate information across ecosystems and across sectors, ensuring a holistic environmental approach which can adequately respond to both ecological and political challenges that will inevitably arise. Local ownership of conservation ventures also increases the commitment and accountability of indigenous peoples towards such programmes, as Kapoor (2001: 272) elaborates: "when stakeholders are excluded from programming decisions, they will tend to feel removed from the responsibilities for the results. Their inclusion, on the other hand, helps them 'buy into' the programme, and makes them feel empowered and accountable. Such ownership, in turn, spurs team-building, joint problem-solving and local management capacity." However, conservationists must be careful when planning participatory schemes, ensuring that all stakeholders' claims and interests are carefully considered. Partial or half-hearted attempts at creating participatory management is likely to be highly counter-productive, further alienating some communities, and when it is considered that for such schemes to be successful "the transition to participation requires nothing less than a change of organisational culture, involving a movement towards broader, more flexible and longer-term goals, procedures, results and time horizons" (Kapoor, 2001: 273) there is little wonder that it is very difficult to establish effective participatory conservation schemes.

The complexity of establishing effective conservation policies based upon a participatory process involving local communities should not be seen as an indictment of the whole theory. If it is recognised that communities have many different elements operating independently within them, then they can be a powerful tool in creating effective time-and-place-specific environmental management schemes. (Agrawal and Gibson, 1999) International literature related to the actions of communities is finally starting to understand the inherent complexities associated with the concept, and people are beginning to realise that visions of communities as “small, integrated and using locally-evolved norms and rules” are a gross over-simplification of what can be very complex social groups. (Agrawal and Gibson, 1999: 633) Such complexity has been identified by preservationists in the past as good reason for abandoning community based natural resource management programmes, while Oates (1999) quite correctly identifies that simply empowering people will not necessarily lead to better conservation practices, as local people may well decide to use their resources in an unsustainable way, based in their present wants rather than their possible future needs.

With so many competing interests, so many complicated political relationships and the continual decline of the world’s biodiversity it is no wonder that many conservationists and ecologists have concluded that strict preservationism, although flawed and difficult to implement, is the only remaining option available to avoid an ecological catastrophe at some point in the next one hundred years. Such policies appear to have been quite effective at protecting the last remnants of native forests in countries such as the United States, Australia and New Zealand – so perhaps there is no other option in developing nations to preserve existing biodiversity. Indeed, the destruction of tropical forests is an enormous problem, for example between 1990 and 1995 approximately 110,000 km² of tropical forests was cleared each year according to the Food and Agriculture Organisation of the UN (cited in Schwartzman et. al., 2000a) Furthermore, the impact of this deforestation on biodiversity has been underestimated according to recent research which is only just beginning to understand the complexity of the many ecological systems that populate the rainforest, earth’s richest area of biodiversity. Nevertheless, it appears as though the problems associated with

implementing an effective conservation strategy based upon community participation are less insurmountable than those associated with strict protectionism – indeed many of the arguments used by preservationists to debunk ‘people-oriented’ schemes are no better answered by their own policies.

This is not to say that a people-free park cannot be an effective conservation tool in a particular circumstance if it implemented effectively. However, the high probability that there will be an existing population residing in the protected area immediately complicates the issue, and means that it is necessary to find a culturally and morally acceptable way to relocate these people. “Resettlement has been a controversial component of park establishment in many parts of the world. Socially, resettlement is almost always going to be controversial depending on how the process is carried out: whether people were consulted or compensated, whose lands were expropriated, who was compensated, at what value, and within what time frame.” (Brandon et. al., 1998: 19) In some instances people have been willing to be relocated from parks, when compensation and participation in the relocation process was deemed adequate. However, “in many other cases, resettlement has been involuntary and has led to conflict, especially when people had strong ties to particular areas.” (Brandon et. al., 1998: 19) One aspect of the resettlement process that makes it a difficult policy to apply in developing nations is the financial cost. For indigenous peoples to voluntarily relocate from an area which they may have had a strong cultural bond with for thousands of years the alternative would have to be very attractive. This may prove to be either financially prohibitive or culturally impossible. Furthermore, the ‘paper parks’ phenomenon throughout much of the developing world gives out the distinct impression that government bureaucracies do a poor job in protecting their current parks system, let alone having the ability to manage areas which are currently being ‘protected’ far more effectively through the extractive reserve system – which allows indigenous people access to the resources on their land. Terborgh and van Schaik (2002) do not deny that formal tropical parks are quite ineffective conservation tools at the moment, and are often rife with illegal activities such as poaching, logging and mining, yet they appear to blame such problems on the presence of indigenous peoples in these parks, when most often external threats which are

carrying out such activities. It seems illogical that preservationists such as Terborgh and van Schaik continue to place so much faith in the traditional park concept when they can see it failing right before their eyes.

With the complexity associated with both community-based natural resource management, and the feasibility issues surrounding strict preservationism, what can be done to save the world's tropical rainforests from their almost inevitable destruction? Not surprisingly, many of the answers lie in examples where a participatory approach based around local politics has been effectively implemented. Concerns relating to sustainable development and environmental protection are beginning to emerge among rural workers' organisations, while politicians associated with sustainable development policies have made major political gains in the Amazon in recent years. (Schwartzman et. al., 2000a) It appears as though the general population living in and around the Amazon area appreciate the dire situation that surrounds them, and are willing to place conservation high on their political agenda. "The people of two states in the Amazon have elected governors (Jorge Viana in Acre and Joao Alberto Capiberibe in Amapa) who hold that forest destruction has produced limited benefits for a small elite at great and widely distributed environmental and social cost. Both actively support forest protection, extractive reserves, and indigenous areas and are advancing models of sustainable development within their states." (Schwartzman et. al., 2000a: 1355) Furthermore, "field experience in the Guiana Highlands show that, where outsiders have helped indigenous peoples secure their rights to their lands and resources, important gains can also be made for conservation." (Colchester, 2000: 1366) These communities, located around the Orincoco headwaters in Venezuela have occupied the land for many hundreds of years, while maintaining ecosystem diversity complete with an almost full complement of top predators. The Orincoco communities have also managed to protect the area from outside intrusion by miners and loggers since the 1960s, and gained government support in the 1980s to create the Upper Orincoco-Casiquaire Biosphere Reserve – the largest continuous area of tropical forest protected anywhere in the world. (Colchester, 2000) "Experience from other areas suggests that guaranteeing long-term sustainable resource use in the area will not be easy, but is a more reasonable and desirable proposition than

seeking to establish the entire area as a people-free park, which would be ethnocidal, if not genocidal in its consequences.” (Colchester, 2000: 1366) By being well aware of the potential problems and complexities associated with creating such an effective nature reserve, the potential for viewing community-based natural resource management as a panacea should be avoided and the long-term success and viability of such reserves should be maintained.

Creating effective biodiversity maintenance is a prohibitively difficult and complicated task, both in the developed world but more particularly in developing nations where financial resources that can be allocated to conservation schemes are scarce to non-existent. In developed countries national park systems have been reasonably successful, but obviously because of greater availability of resources to effectively manage these areas. But with most of the world’s remaining biodiversity residing in developing countries, how to create effective conservation in such areas has been the focus of this essay. During the past thirty to forty years, conservation literature and policy has swung similar to a pendulum, back and forth, between community-based resource management and strict preservationism. Both theories are complicated and difficult to implement in countries with poor populations who are often just struggling to survive themselves, let alone worrying about protecting biodiversity. However, it appears as though the most important determinant of whether a conservation initiative will be successful or not, is whether it can gain a sense of legitimacy with the local population. With such limited resources and such a large area to protect, unpopular protection schemes have proven to be completely ineffective – clearly demonstrated by the ‘paper parks’ phenomenon. Moreover, for a protected area to gain a sense of legitimacy a complicated participatory process needs to occur – one that takes into account local politics and can represent as many stakeholders as possible which can be extremely difficult – and there needs to be a commitment to the success of the park at a local level. Strict preservationists and the promoters of ‘people-free parks’ ignore the complicated politics of the tropical forest, instead basing their judgements on scientific rationale which simply cannot be applied in many of the areas most in need of protection. “Even a cursory study of the political ecology of tropical forests should persuade conservationists that they need allies where it

really matters – on the ground – and few are better grounded than indigenous peoples.” (Colchester, 2000: 1366) Therefore, it is clear that strict preservationism alone cannot lead to biodiversity maintenance and effective conservation, especially in developing countries, and that ‘bottom-up’ management schemes based around local communities are potentially far more effective than a ‘top-down’ bureaucratic ideology.

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