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**Reintroducing Homo Sapiens Sapiens into
Protected Areas and Nature**

by Diego Martino

A thesis submitted to
the Faculty of Graduate Studies and Research
in partial fulfillment of
the requirements for the degree of
Master of Arts
Department of Geography
and Environmental Studies

Carleton University
Ottawa, Ontario

2000

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the Faculty of Graduate Studies and Research
acceptance of the thesis

“Reintroducing Homo Sapiens Sapiens into Protected Areas and Nature”

submitted by Diego Martino, (BA)
in partial fulfillment of the requirements for
the degree of Master of Arts

Chair

Department of Geography and Environmental Studies

Thesis Supervisor

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Abstract

Since the creation of the first National Park in the USA in the 19th Century, and with the previous experience in the British Colonies, the whole world has been conducting conservation efforts in the form of protected areas. These protected areas are created based on a Western perception of Nature. The conservation movement ignored for many years the contribution other perceptions of Nature could bring in the quest for sustainability. This thesis starts by exploring the Western conception of Nature on which the world's conservation strategies are based and the consequences of these strategies. It then analyzes other conceptions of Nature and proposes a form of land management that, based on these perceptions and ending with the Humans + Nature dualism, proposes to stop separating lands in conservation and production units in order to reach the goal of an ecologically sustainable society.

Acknowledgments

This thesis was a long journey that started more than two years ago in my home country, Uruguay, and that does not end here. I would like to thank David Bennett and Hazel Anderson who during all the long application process were *very* patient and supportive. I certainly would not be here without their help. This support certainly did not ended in the application process. David has been not only a great supervisor, who chooses the difficult but unselfish and rewarding path of helping the student guide him/herself, but also a helping hand in issues unrelated to my thesis work. Hazel was always there to help with any administrative or not so administrative problem, and just knowing that she is there gives a lot of support to every Geography Graduate Student. I also want to thank Golda, Elsie and Judy for their support and constant good humor, being around the department has always been great, and this has been a factor in the decision to continue my studies at Carleton University. Villia Jeffremovas helped me getting started with the writing and has been of tremendous help in the organizing of my ideas. Thanks to Ian Prattis who directed a very interesting course in Anthropology. Thanks also to the rest of the Geography Department professors. I never though so much could be learn about so many things in just two years. The rest of the Graduate Students made this process not only easier but also a lot more fun, not only it has been an intensive learning experience but also an excellent opportunity to make excellent friends.

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Finally I would like to thank the love of my life, and future mother, for being such a lovely, understanding, joyful, and patient woman during all this process. I have no doubt that without Adriana this would have not been possible, this first work in a hopefully useful list of ones cannot be dedicated to anyone else.

Metakiase Oyasín

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INTRODUCTION

Only a people whose minds are twisted beyond an ability to perceive truth could act in ways which will threaten the future generations of humanity.

From The Haudenosaunee Declaration of the Iroquois

During my 29 years of existence, I have been living in, and witnessing a world in which, environmental degradation is commonplace. In this world poverty and human exploitation are part of everyday life. Indigenous Peoples and particularly women have suffered the most from both environmental degradation and social exploitation. I also learned that in the Americas this pattern was particularly intensified or initiated in the 16th century. During all my life, I have witnessed the same 'solutions' being proposed by the same people with different masks: Economic growth', isolation from 'Nature', 'development'. Although some achievements have been made, environmental degradation, poverty, social exploitation and destruction of native cultures has continued its path with no more than slight delays.

During the presentation of a recent report from the Interamerican Bank for Development (BID), which once more showed an increasing gap between rich and poor, president Iglesias expressed his worries about the increasing signs of obstruction to

A very recent report from the World Bank entitled "Growth is good for the Poor" "argues that only policy-induced growth is as good for the poor: democratic institutions or public spending on health and education have no systematic impact on poverty" (Eldis

government actions. He sees the acts of civil disobedience and pressure against the governments in Latin America as "...something to be worried about, since it affects the ambience of economic and social development" (El Observador Económico 5/8/2000, authors translation). Could not it be that these acts of civil disobedience and pressure are a result of the ambience of economic and social development set forward by institution like the BID for the past 50 years? Is it a coincidence that only 35% of Latin Americans are satisfied with the democracy they have? (Ibid.) A change of paradigm in conservation, development and economics is urgently needed.

Conservation, I believe, would have to be a central aspect in any new alternative that arises as a new path towards a more sustainable, equal, and diverse society. In this thesis I propose to rethink conservation goals and the role of protected areas which are the core of conservationism. In this alternative proposal I see social equity, diversity and indigenous rights as fundamental in order to achieve a better relationship with our environment. Because I believe diversity, spirituality and cosmovisions are fundamental for a different relationship with nature, I see Indigenous Peoples as carriers of knowledge and especially wisdom that we cannot ignore if we intend to harmonise human and nature's rhythms.

I do not suggest that Indigenous Peoples are the solution to all our environmental problems, it is not their responsibility. I do not believe every single native nation or tribe

lived in harmony with nature (whichever concepts you apply for harmony and nature²). However they certainly lived a closer every day life than most westerners do today, depended on their immediate surroundings and suffered the consequences of poor environmental management directly. I recognise the diversity of knowledge, life styles and cosmovisions that the term Indigenous Peoples implies. In addition I do not see Indigenous Peoples and their cultures as a static system. For these reasons I will refer to specific nations in specific moments of time whenever it is necessary to avoid generalizations and stereotypes of the 'Others' (Neumann 1997: 569). Nevertheless, Indigenous Peoples have some common aspects among themselves (Alcorn 1994: particularly 5-6) even if we are not analyzing them in opposition to westerners. Conservationism has played a key role in the stereotyping of Indigenous Peoples as well as in the prejudiced idealization or condemnation of their acts, and Protected Areas were and still are fundamental in this debate. (Neumann 1997, 1998; Brandon and Wells 1992; Lewis 1990; Gomez-Pompa and Kaus 1992; Colchester 1995)

What are Protected Areas really for? What should be their role in the future if any? Are protected areas still needed? Should we extend the conservation activities to the whole world? How can we assure that the culture-nature link is not persistently overlooked in the conservation activities of the future? These are some of the questions that conservationists should be asking themselves as they plan their activities for the new

² Andrew Campbell, quoted in Pimbert and Pretty, states that "It is inevitable that assessments of relative sustainability are socially constructed, which is why there are so many definitions". (1995: 13)

century. However, we should first see what protected areas really are and have been until today.

Protected Areas are, basically, pieces of land which are designated to be protected from something. Cultural perspectives of the institution in charge of the selection of the area or the institution in charge of the guidelines to select an area, obviously heavily affect the selection of an area that is worth being protected. In addition, the threat from which the area is being protected is also a culturally embedded concept. Being aware of these cultural perspectives towards the 'natural environment' is fundamental whenever the relationship between humans and their environment is being studied.

This thesis proposes, firstly, to identify/analyze the conceptions of "Nature" which have influenced the decisions about what a protected area should be and what the threats to a protected area are (chapter 1). Secondly, it will evaluate the performance of protected areas designated and managed following the 'western wilderness idea/paradigm' (chapter 2). Thirdly, different conceptions of Nature will be analyzed, emphasizing the consequences these conceptions have had in the relationship between humans and their environment (chapter 3). Finally, alternative ways of relating to the environment inside and outside protected areas will be discussed together with an analysis of the future. Some examples will be presented in which an alternative conception of Nature has been the basis for the creation of a different model of protected area or a different relationship with Nature (chapter 4).

The major limitation of this thesis lies in the lack of extensive case studies, the result of limited time and resources. However, this thesis is framed in a context which includes future research in which the "Baños del Este" biosphere reserve (located in Uruguay and part of the Man and the Biosphere program) and its surroundings will constitute the main case study in which extensive field research will be conducted. The research design will contrast current practices and institutions which relate to a dualistic conception of Protected Areas, with the organisational, political, social and intellectual consequences of adopting non-dualistic conceptualisations. The present thesis discusses very important concepts that needed to be examined and clarified before starting the field research. The process of examining these concepts was one of profound intellectual and emotional inner-discussions that lead the author to change many of the conceptions held before writing this thesis and reach new conclusions. Some of these new conceptions are summarised below.

Overall this thesis can be considered as a critique of the protected areas system which has been utilized this century. This critique, however, cannot be made in isolation from the events happening outside the areas that are being protected. It is for that reason that I introduced in the analysis the environment as a whole, and not just the areas being separated for conservation or the areas that are considered that qualify for conservation (which is precisely one of the aspects that will be considered in the first chapter). It can be argued that the situation outside protected areas (soil degradation, deforestation; loss of biodiversity; monocrops; industrial air contamination among other forms of environmental degradation) justify the creation of these areas in order to preserve some

of the 'natural' areas for future generations. What this thesis should clarify is first that these dichotomies exist because humans are seen as separated from Nature and it is this separation that creates the dichotomy of exploitation / degradation on one side and conservation / "Nature" on the other. Second, it will show that, under this dualism, protected areas do not seem to be able to prevent further environmental degradation either inside the areas being protected or in the ecosystem as a whole. In the theoretical cases presented (Soule and Sanjayan 1998) to achieve this goal (sustainability and non-loss of biodiversity) the area needed is too large to continue pushing forward the production - conservation dichotomy. Third, that by letting this dualism aside we can discover an alternative way of relating to the environment that does not have to be seen as degradation or conservation.

As I said above, and because this thesis intends to break the dualism that is behind the creation of protected areas, the ecosystem as a whole was introduced in the analysis and not just protected areas in a isolated way. For this reason, this thesis is not only dealing with protection of 'natural' environments but with issues of sustainability. We will analyze in chapters 3 and a little bit in chapter 4 some alternative ways of relating to Nature. These alternative ways presented here are based on the way many Indigenous Peoples and farmers have related to the environment and continue to do so today. It is important to say that after we break the dualism, after conservation and production are not treated as separated entities in the environment, sustainability is what comes into the analysis of how to live from the environment.

Finally, I recognize the thin line between criticizing the wilderness movement and becoming a humanist or a development advocate. I write this thesis, not with pleasure for criticizing the wilderness idea or the conservation movement. I write it with fear for how my criticism and the ideas could be used by groups such as the wise-use movement and others. But overall, I write it with the illusion of being able to collaborate, by the way of dialectic, in a, in my opinion, very needed change of concepts in the conservation arena.

Definitions

Indigenous Peoples: I will not try here to reach a universal and definite definition of the term Indigenous Peoples, but I will try to clarify my position in relation to this term. The word 'Peoples' is preferred to 'population' or 'people'. Indigenous People "legally means that they have individual rights. But the concept of indigenous peoples...legally recognizes their claims as sovereign nations with rights of self-determination..." (Chatterjee and Finger 1994: 58). I recognize the differences among different Indigenous Cultures, but I am also aware of the similarities. Because I recognize the differences, I believe we have to be as specific as possible whenever analyzing Indigenous knowledge, Indigenous cosmovisions, Indigenous management or whichever component of Indigenous culture. On the other hand because there are similarities, we can refer to indigenous management or cosmovisions in our analysis. Not recognizing their similarities is just as inaccurate as not recognizing their individuality. Some of these similarities are their closer relationship to Nature and strong dependence from local resources (Alcorn 1994), their own identification as custodians or caretakers of their land

and not as owners: their ancestors have been living in the area for generations and this strengthens the ties to the land and is the basis for knowledge of the land: "their social relations are often tribal, involving collective management of natural resources..." (Durning 1992: 8). This does not mean that if an Indigenous Nation does not have these characteristics they are not 'Indigenous' for as I said, their cultures are not a static system and they have been forced to adapt to the challenges western domination has posed.

This thesis follows the IUCN categories of *protected areas* described below. For the purpose of this thesis the objective of the protected areas, although it varies among categories, is the protection of biodiversity and "natural" ecosystems.

Definitions of the IUCN Protected Area Management Categories (Source: <http://www.iucn.org/themes/wcpa/iucncategories-definitions-english.pdf>)

CATEGORY Ia.

Strict Nature Reserve: protected area managed mainly for science
Area of land and/or sea possessing some outstanding or representative ecosystems, geological or physiological features and/or species, available primarily for scientific research and/or environmental monitoring.

CATEGORY Ib.

Wilderness Area: protected area managed mainly for wilderness protection
Large area of unmodified or slightly modified land, and/or sea, retaining its natural character and influence, without permanent or significant habitation, which is protected and managed so as to preserve its natural condition.

CATEGORY II.

National Park: protected area managed mainly for ecosystem protection and recreation
Natural area of land and or sea, designated to (a) protect the ecological integrity of one or more ecosystems for present and future generations, (b) exclude exploitation or occupation inimical to the purposes of designation of the area and (c) provide a foundation for spiritual, scientific,

educational, recreational and visitor opportunities, all of which must be environmentally and culturally compatible.

CATEGORY III.

Natural Monument: protected area managed mainly for conservation of specific natural features

Area containing one, or more, specific natural or natural/cultural feature which is of outstanding or unique value because of its inherent rarity, representative or aesthetic qualities or cultural significance.

CATEGORY IV.

Habitat Species Management Area: protected area managed mainly for conservation through management intervention

Area of land and/or sea subject to active intervention for management purposes so as to ensure the maintenance of habitats and/or to meet the requirements of specific species.

CATEGORY V.

Protected Landscape/Seascape: protected area managed mainly for landscape/seascape conservation and recreation

Area of land, with coast and sea as appropriate, where the interaction of people and nature over time has produced an area of distinct character with significant aesthetic, ecological and/or cultural value, and often with high biological diversity. Safeguarding the integrity of this traditional interaction is vital to the protection, maintenance and evolution of such an area.

CATEGORY VI.

Managed Resource Protected Area: protected area managed mainly for the sustainable use of natural ecosystems

Area containing predominantly unmodified natural systems, managed to ensure long term protection and maintenance of biological diversity, while providing at the same time a sustainable flow of natural products and services to meet community needs.

Resilience is defined as in Berkes and Folke, their definition of resilience

emphasizes conditions in which disturbances (or perturbations) can flip a system from one equilibrium state to another. In this case, the important measure of resilience is the magnitude or scale of *disturbance that can be absorbed* before the system changes in structure by the change of variables and processes that control system behaviour. This is a fundamentally different view of science, in which determining causal effects and making predictions are not simple matters at all. Rather, systems are seen to be complex, non-linear, multi-equilibrium and self-

organizing: they are a measure of robustness and buffering capacity of the system to changing conditions. (1998: 12, emphasis in the original)

Sustainability is defined as the ability of a group, nation or tribe to reach their needs without compromising the needs of future or present generations of other groups, nations or tribes and without going beyond the resilient ability of the ecosystem from which their resources come. For reasons that we will analyze in chapter 3, a special distinction is made between sustainability of Indigenous Peoples and conservation. *Conservation* and its goals are attached to a certain view of Nature, that will be analyzed in chapters 1 and 2, and consists on the preservation of certain characteristics of an ecosystem in a 'natural' state which is defined by the absence of human impact.

In many parts of the text there will be a distinction between relationship with the land and management of the land. Although in some cases I might refer to indigenous management of the land, there is an intentional distinction between the use of relationship and management. *Management* involves a western approach to Nature or to some resources. In this approach Nature is seen as static, as an object that can be observed, dissected, studied and understood and it is an inanimate object which can be dominated at humans' will. The same concept is applied to management of resources. The term relationship is used in the case of indigenous interaction with Nature and resources. It is a sacred and two way relationship in which Nature is not static not silent. Nature 'speaks', interacts, gives feedback to humans and is seen, together with its elements (i.e. water, animals, wind) in many cultures as possessing its own life and spirit.

CHAPTER 1

We are the environment. (Evaristo Nugkuag, COICA)

Which will ecology be, the last of the old sciences or the first of the new?

Theodore Roszak 1972

Introduction

Figure 1 was taken from an IUCN publication (McNeely et. al. 1990: 34). The caption on the original publication reads as follows:

"The African elephant acts as a keystone species within its habitat. Its browsing on vegetation modifies the habitat and creates conditions favorable for other species."

If in the same picture, instead of an elephant we had placed a *Homo sapiens sapiens*, it is likely that the caption would have explained the terrible impact humans have on

vegetation and maybe even mention how humans contribute to invasions by exotic species. Why? Because under the 'wilderness idea', for a place to be wild it must, by definition, have no human influence'. Humans are not seen as belonging to "Nature" (Pimbert and Pretty 1995; Gomez-Pompa and Kaus 1992; Colchester 1995) even when their actions lead to enrichment (i.e. high biodiversity) of their surroundings, because the moment the 'enrichment' comes from human action, it stops being 'natural'. The same distinction is made when for example a plant is introduced into a certain ecosystem by a bird or by humans. The definition of native according to Noss is "[a] species that has not been introduced from somewhere else by humans". (1994: 395). If a bird introduces that plant, it is native and 'natural', if humans do so, it is considered a 'negative impact' to the ecosystem. So humans have no place in Nature, unless of course, the 'unnatural enrichment' happens inside of a managed protected area, in which case, it is Nature returning to its 'natural' 'original' state.

Why are humans seen as separated from Nature? Why is this separation so particularly highlighted in the preservation debates? (Callicott and Nelson eds. 1998, specially pp. 337-413) How does this affect human relation to Nature? How does this affect conservation strategies? What is the conceptual basis for this separation? In this first chapter, I will analyze the different debates around the concept of Nature, because it is on a particular conception of Nature that the whole concept of protected areas and conservation seems to be built. I will argue that Nature exists everywhere or has never existed as a separate entity (which is the same), because humans are not separated nor

Several legal definitions of wilderness are presented in chapter 2.

isolated from their physical environment. I will come to this conclusion by showing that what is socially constructed is a particular conception of Nature, and after this *conception* is shown not be 'true' under its own terms, we cannot claim to be separated or not part of it anymore. This insight is critical for the discussion on protected areas.

Breaking the dualism

Based on an analysis of texts from Rambo (1985) and Soulé (1995) , the intention in this section is to reveal the Human - Nature dichotomy and to show what in my opinion are inconsistencies in the arguments that intend to take forward this idea. Some authors argue that Nature is dead (McKibben 1989), and either they affirm or they imply that humans were the ones that killed it. And it is only humans that can do so because they (and their acts) are seen as the only element of the environment that does not belong to Nature. To reach this conclusion you need to believe that there is a place called 'Nature' which is defined by the absence of human intervention no matter what this intervention is. In this place, humans are seen as polluters whatever their acts may be. Rambo⁷ (1985), for example, argues exactly this.

...all human societies, primitive as well as civilized, cause environmental change, often the sort of degradation popularly referred to as "pollution".... It is furthered argued that *such change is the inevitable consequence of the functioning of human social systems* rather than a reflection of any particular cultural values regarding human interactions with nature. (I, emphasis added)

⁷ As it was pointed to me by Villia Jefremovas, Rambo maybe trying to demystify non-western peoples, but he overstates his case.

Thus, Rambo equates human environmental change with degradation or pollution, and he finds the cause of this pollution in the action of human social systems. No matter what a human being does "[t]he environment is changed away from its natural state..." (Ibid. 79). Even sneezing or children playing, are seen as a source of air and noise pollution respectively.

...sneezing and coughing blast astronomical numbers of germs into the surrounding atmosphere. As the Semang have *no cultural prescription* for covering of the mouth with the hand when coughing or sneezing, wide contamination of the surrounding air by sick individuals is permitted. Spitting and blowing of mucus on tracks, cleared areas around houses...were frequently observed and can be a source of airborne disease germs when the *infected soil* is disturbed and *contaminated dust* blown into the air." (Ibid. 51 emphasis added)

In his conclusion, Rambo emphasises that "[p]rimitive or civilized alike, we are all polluters because we are all members of social systems..." (Ibid. 80). There is no escape from our condition of polluters no matter in what society we live, no matter how we relate to the environment that surrounds us.

The evolution of human relations with the environment constitutes a single, unbroken continuum rather than any absolute dichotomy between primitive and civilized societies. If there is a dichotomy involved here, it is between the human species and all others, i.e., between the one species with culture and all those species without it." (Ibid. 78)

Why is it that when a monkey sneezes and 'blasts astronomical number of germs', it is considered a simple natural event? Or that when a young elephant cries calling the mother it is not a source of noise pollution? And even if it is the social condition that leads to degradation, how would Rambo explain the important 'impact' and modification

of the environment by ants, bees and other social beings that exist and act independently from humans?

Is not only by separating humans from a certain conception of Nature (that does not include humans) that we can reach such conclusions? Under that dualism, there is no possible relation between humans and Nature, for after the contact, Nature ceases to exist and it dies. And since human actions have reached every corner of the globe, therefore we must consider Nature as deceased. As Cronon argues, "If we allow ourselves to believe that nature, to be true, must also be wild, then our very presence in nature represents its fall" (1997: 40). If we continue to follow a conception of Nature based on the absence of humans, we have, in logic, three options. First, we commit suicide to avoid affecting the Natural order. Second, we continue living under the not very tempting prospect of seeing each one of our acts as a source of pollution and degradation of a place that would be, by definition, much better without us. Third, we create a space which we see as 'artificial' (as opposed to natural, natural meaning no human influence) to live and depend on and we set aside areas which are Natural and cannot be touched by humans. The last one, which is the one being analyzed in these first two chapters, has been the choice taken by western civilization.

There is something even more dangerous in Rambo's argument. The way in which different cultures' relation to the environment is equalized by the simple act of treating them all as polluters. Rambo wants to prove that our condition as human beings living in society will lead to pollution, hence the solution to our ecological problems

should not be looked for in other cultures' relation to the environment for they all fall under the category of polluters. His work ends up by explaining that it is only by understanding social systems and trying to modify them that we can hope to "...influence the future evolution on humans relations with the environment." (Ibid. 80) Aside from the grotesque generalization made about every culture after studying only one of thousands, it is hard to understand how, if every social system is seen as a source of pollution and degradation, a better understanding of these systems can help change its own fate. In other words, if human social systems are ipso facto polluters, how can we search for a solution to pollution in these systems? In this way he is closing the door to any contribution different cultures might bring to a better relationship with the environment.

In 'Reinventing Nature?' (Soulé et. al. 1995) Soulé and other authors react against what they see as a post-modern attack on Nature. Again, what they fail to see is that the 'attack' is not directed against 'Nature' but against a certain conception of Nature. In their argument they perpetuate the dualistic view of the world in which the separation of humans and Nature is the clue to the conservation of Nature, even (and this is the originality) if Nature has been partially 'disturbed' by humans. In his defence of mainstream conservation, Soulé argues that the groups that covertly attack Nature and wilderness, adhere to "at least one of the [following] three myths..." (Ibid. 146) which will be discussed below: "The Myth of Western Moral Inferiority..."; "The Myths of Constructionism..."; "The Myth of the Pristine Profane Dichotomy..." (Ibid. 146-145).

In his analysis of the Western Moral Inferiority Myth, Soulé points out that "...Western culture may not be more evil with respect to living nature than some other human traditions." (Ibid. 147) Then he refers to "...the belief that native peoples, particularly Native Americans, always behave in an exemplary way toward living nature...". He suggests that the low impact of these cultures might be due to their low population density and lack of technology. Finally, he affirms that this 'honourable' intention of looking in different cultures for a better relationship with living nature is harmful because it "...misdiagnoses the cause of human callousness, blaming it on culture." (Ibid. 148) The real problem he concludes is greed, and greed, "...is more fundamental than culture..." (Ibid. 148)

This intent to naturalize or 'normalize' greed in order to excuse Western culture, cannot deny that Western culture, *that might indeed not be more evil* than some other cultures, is in fact the dominant one in this particular moment of time in which we face the worst environmental crisis in history. So, while blaming Western culture for all the problems might not be a solution, declaring it free of guilt because greed is more fundamental than culture, is not a solution either. It is worth adding that not every culture is as rooted in individual greed as western culture is.

On the other hand, other cultures' relationships with Nature are generalized and even dismissed because of low population densities or lack of technologies. If greed is more fundamental than culture, then why is there a need to put all other cultures (or at least all Native Americans) in the same bag and 'blame' them for their 'lack of technology'?

or their low population densities? This argument not only usually takes into account the lowest population estimates but it also ignores the possibility that population might have been consciously controlled. (Smole 1989) Each culture has a distinctive relationship with the environment that, as Soulé agrees (Ibid. 153), comes from generations of relating to it, and each will relate to the environment in a different way in different regions and at different moments of time. So while generalization is not the way to look into other cultures for 'global solutions' to the environmental crisis, the particular relationship each culture has with a particular environment might give us important clues to apply in similar contexts in the future.

Things become even more interesting regarding the purposes of this thesis when we analyze what Soulé calls "The Myths of Deconstructionism" and "The Myth of the Pristine Profane Dichotomy". Soulé points out that, "[t]he deconstructionist alternative, nihilistic monism, is to deny that nature is real..." and then insists on the following: "historicists and some deconstructionists are...claiming that living nature and wilderness are illusory." (Ibid. 148-149). Later he concludes "...that the nihilism and relativism of radically constructionist critiques of science and the materiality of nature, while popular in some academic circles, is sophomoric". Further it is harmful because "...it undermines efforts to save wilderness and biodiversity." (Ibid. 154) Soulé represents the academic environmental community that as Quigley affirms, "...has, of late, been struggling with the challenges posed by poststructural thinking." (1995: 181). What Quigley points out referring to Evernden's 'The Social Creation of Nature' is totally applicable to Soulé's argument.

Typical of critics who have tried to wrestle with poststructuralist thought, Evernden feels he must reaffirm that the world is *there*, and that it has a particularly vital meaning. Poststructuralism denies none of this. It insists that the world is quite material and *there*, and has meaning for us. The difference is that materiality comes in a context, an interpretation, an interest, and the meaning is irretrievably charged with psychological, cultural and political significance; and there is no relief from this. Evernden is trying to dismiss the poststructuralist unfairly, by suggesting that it has no concern for the material it is appropriating, and that it is 'nihilistic'." (Ibid. 196)

Authors that deny certain qualities imputed to Nature, are not denying the reality of a physical environment, but the positioning of a certain cultural perception as *the reality*.

As Cronon argues:

Recognizing the culturally constructed character of our own knowledge is thus quite different from the claim that the world does not exist....Rather, it acknowledges the chastening fact that we can never know nature at first hand. Instead we encounter it only through the many lenses of our own beliefs, cultural institutions, and structures of knowledge, all of which can only hope to approximate natural reality in a mimetic or metaphorical fashion, never actually replicate it. (Cronon 1993: 14, emphasis added)

Finally we reach the so-called "Myth of the Pristine Profane Dichotomy. Soule starts by presenting the following syllogism which he says must be rejected: "True nature -wilderness- is pristine; there are no completely pristine or virgin places left; therefore true nature or wilderness is illusory; it exists no longer." (1995: 154-155) Then he argues that the virgin metaphor is inappropriate because 'living nature' unlike virginity, "knows nothing but degrees." (Ibid. 155) Although I agree that the physical environment has different grades of human involvement, and that the syllogisms' conclusion, by eroding the bases of conservationism, might be used to justify a further destruction of the environment, I do not see why this is the only possible result of the syllogism. The syllogism, which is referring to a certain conception of nature, is true if we consider a

conception of Nature that is defined by the absence of human interference. But the syllogism is false if, in the conception of Nature, humans are included. And here precisely lies the problem. Soulé seems to include human involvement only to reject the syllogism and when it comes to the management of the environment, again he returns to a conception of Nature based in the absence of human impact.

Let me explain why I reach this conclusion. Soulé seems to confuse the following concepts: human construction of the environment: human modification of the environment: Nature as a concept is a human construction. When social ecologists are trying to show how human impact has modified their surrounding environment, Soulé interprets that "[s]ome social ecologists use the "fallen virgin" metaphor, arguing *that nature has been physically produced, and that nature is, therefore, an invention of culture.*" (1995: 156 emphasis added) Poststructuralism is arguing that a certain concept of Nature is socially constructed, and social ecologists are arguing that humans have altered their 'natural' surroundings, so this conception of Nature is not real. Soulé, mistakenly, concludes that poststructuralism is constructing physical nature based on the physical construction (when in reality it is modification) 'discovered' by the social ecologists.

Soulé, argues in favour of the management of Wildlands (Ibid: 159-160), a position with which I agree. However, because of the separation of humans from the environment, I disagree with his statements on how (pristine or not human affected

environment in his case) to implement that management.⁴ By trying to recreate or conserve a concept that does not really exist, we deny ourselves the chance of creating an environment that is at the same time resilient, rich in biodiversity, landscape attributes, as a resource and locally or native oriented (not fixed). Another crucial aspect that is being left aside when continuing with the dualism, is the relation or overlapping of highly culturally and biologically diverse areas. (Durning 1992; Colchester 1995; Alcorn 1994; Wilcox and Duin 1995; Hyndman 1994; Lewis 1990)

To sum up, Soulé first confuses construction of the concept with construction of the environment, and so he confuses "modification" with building of the natural environment, and finally he argues that there is a need for the management of natural areas because they have been disturbed. He forgets, however, how biodiverse, resilient, and rich some areas that have been 'disturbed' are. He dismisses Sustainable Development because he considers it "...the odd delusion of having your cake and eating it too" so he condemns himself to be the manager of certain protected areas alone, leaving, as mainstream conservationism does, the rest of the world (more than 90%) to be exploited with complete freedom (or under the dubious control of Environmental Impact Assessment). This is precisely what this thesis is trying to avoid. Managing areas to return them to a less impacted state brings no benefit to humans or to the mythical untouched nature. I will refer to this point later during the analysis of restoration ecology.

Some other authors like Rolston III argue that "...when culture seeks to improve nature, the management intent spoils the wildness.... A scientifically managed wilderness is conceptually as impossible as wildlife in a Zoo." And then, he considers impossible to imagine a possible symbiotic relationship between humans and other species. Finally,

The Culture - Nature interactions

It is important to clarify at this point that I am not disregarding the importance of protected areas without human intervention in some particular ecosystems¹. Although dualism is relatively new in this world, the concept of protected areas, or of having a piece of land separated for "conservation" is not new at all. It has been part of many cultures' practices (Gomez-Pompa 1995, 1999; Kemp 1995; Berkes 1998; Gadgil et al 1993; Alcorn 1994; Breslin and Chapin 1984: 34; Gomez-Pompa and Kaus 1992) and we are just starting to discover the ways in which to take advantage of them. But am I contradicting myself? Whether or not we can break with dualism inside P.A, dualism will continue to rule outside them for a while. So, while we have a dualistic society pulling the strings, we might still be in need of "protecting" certain areas, not from humans per se but from a ruling society that is based in dualism. All this said, we should still direct our efforts towards "protected areas" based on an alternative conception (i.e. not dualistic) of humans' relation to Nature. Humans are animals with unique characteristics (Rolston III², 1991 in Callicott and Nelson eds. 1998; Soper, 1995: 160). By recognizing this uniqueness, I am not separating them from Nature, rather, I am reclaiming a space for humans in Nature, and by "reclaiming" their space in Nature, I am not acquitting them

¹"[t]he cultural processes by their very 'nature' interrupt the evolutionary process: there is no symbiosis there is antithesis." (1998: 371).

²Although creating the Protected Area IS a form of human intervention as we will see in the Sierra Nevada case.

³Although I agree with Rolston's III argument on the uniqueness of the human animal, I completely disagree with his idea expressed in the rest of the article of the relationship between humans and nature.

from responsibilities towards the environment.⁸ Humans have to manage the environment in order to survive, but this *does not* mean that in the process they will, by definition, have to degrade it. On the contrary, if as Callicott and Nelson affirm "... Homo sapiens sapiens is a part of nature, all peoples can, in principle, either rediscover or reinvent a way of living sustainably and symbiotically with their non-human neighbours." (1998: 15)

That is the reason why I have expended so much effort 'defending' culture from different attacks by Rambo and Soulé and why I reject protected areas being an island to conserve a certain conception of Nature alone. Culture and Nature are indeed related (Descola 1992; Berkes and Folke 1998 present several examples of the way in which they link). Nature and Culture are not only not separated, but they are interlinked, culture is part of Nature, it is conditioned, shaped, directed by Nature, Nature at the same time is linked to culture, and I am not referring to the way in which culture constructs a *concept* of Nature, I am referring to the way in which culture relates to Nature physically. The way in which culture interacts physically with Nature is related to the way in which Nature relates to culture, they cannot be seen as separated. No one completely determines the other and no one is completely independent from the other. Both have their direction independent from each other⁹ but at the same time conditioned and shaped by each other. Capitalism, which is based on the exploitation of Nature (exploitation itself that is based

⁹ Soper argues that "unless human beings are differentiated from other organic and inorganic forms of being, they can be no more liable for the effects of their occupancy of the ecosystem than can any other species..." (1995: 160).

on a dualistic view of the world), might have created an illusion of separation and independence of Nature's "direction", an illusion that many other non-dualistic cultures do not have. It is being proved however, that such separation is in fact an illusion, and that cultures cannot just ignore the effect they have on Nature and the effect Nature will have on them. If the actual Western Civilization does not assume the strong links culture has with Nature, it will be forced to change by the actions Nature will take (reactions to actions initiated by western civilization i.e. gas emissions-climate change). Whether we see these actions just as consequences of human actions or as a sort of defence of 'mother earth', it does not change the fact that life as we know it is in danger.

Humanity cannot ignore the effect Nature has on culture and cannot ignore that the effects humanity has on Nature will be returned to them. It is an old Native American belief that life is a circle, what you do to Nature will come back to you. The Culture-Nature relation will be further examined in chapter 3 of this thesis.

Restoration and wilderness restrictions.

The importance restoration has for conservation is highlighted by Noss:

...no big conservation project is adequate in today's world without a major restoration component. There is simply too little land left in near-prime condition, human influences are everywhere..." (Noss 1991 in Callieott and Nelson eds. 1998: 521, emphasis added)

I am not saying that either nature or culture have a pre-determined direction, it is more a random direction (chaos). Deseola argues that "...there is no predictable correspondence between specific ecosystems and specific schemes of praxis. (1992: 111)

In this section restoration ecology, the use of fire, and exotic species will be analyzed as a way of revealing how traditional wilderness conservation narrows its own options by pursuing a certain idea of Nature based on the conceptions analyzed above. It is not the wise use movement that threatens the so called 'wilderness areas', it is the definition of wilderness itself that makes things easier for that kind of threats to be presented. By basing the conservationist movement in the wilderness concept, which is based in an unreal view of human impact on every corner of the world, conservationist are opening the door to the kind of threats like the ones presented by the wise use movement. So why base conservation on such a narrow concept? Recognizing that wilderness as constructed does not exist does not mean that there is nothing to protect, or that core areas should not be protected any more, or that there are certain spaces in which humanity should limit its direct interaction with Nature. Moreover, basing conservation in such a narrow and artificial concept restrains humans, not only from being a part of Nature, but also from interacting with Nature in a positive way. Restoration ecology illustrates how much the concept of wilderness can limit our options.

The goals and definition of restoration ecology vary, but according to Higgs, it "will always be rooted by ecological fidelity." (1997: 339). The Longman Dictionary tells us that fidelity is "truthfulness; closeness in sound, facts, colour, etc. to the original". So this intention of restoring a place to a historically previous form is what ecologists, mainly, are using restoration for. (Higgs 1997) And although some authors like Soule and Terborgh (1999) recognize the fourth dimension of Nature, time, they still want to revert the area to a previous moment.

Further, even pristine systems, undisturbed by humans, are dynamic.... Thus restoration should be aimed at *returning to the point on this trajectory of change that would have obtained in the absence of human disturbance*, rather than trying to replicate the precise system that once was present. (Ibid.: 66, emphasis added)

In this quote, the dynamic element is expressed clearly, but the concept of wilderness is clearly defined as well. There is recognition of the dynamic characteristics of the ecosystem as long as this dynamism does not include human actions other than the ones used to restore the ecosystem. What are some of the consequences and the limits imposed by following this concept when trying to restore an ecosystem? Before analyzing the use of fire, and the extirpation of exotic species, I will quote some other definitions of Restoration. This is important because the goals are a crucial part of any restoration project (Ehrenfeld, 2000)

- The Society for Ecological Restoration (1990):

Ecological restoration is the process of intentionally altering a site to establish a defined, indigenous, historic ecosystem. The goal of this process is to emulate the structure, function, diversity, and dynamics of the specified ecosystem. (Higgs, 1997: 340)

- U.S. National Research Council (1992)

"restoration is defined as the return of an ecosystem to a close approximation of its condition prior to disturbance...." (Higgs, 1997: 340)

The use of fire

In an article published in January 2000 in *Science*, Kloor exposed some of the practical problems arising from restoration in the Bighorn Basin and in Coconino National Forest (Kloor, 2000). In the case of Bighorn, the use of fire to control invasive

species was stopped after some research pointed out that the invasion might be due to the end of the Little Ice Age and not to the fire suppression. In the case of Coconino, 3 different options are described.

- a) Restore the area to "the way it looked before European peoples first settled the area around 1876" (Ibid.: 575).
- b) Reduce the fire hazard and let nature take over.
- c) Recognize that "...the forests and the people who lived there formed an inseparable whole that developed together over millennia." (Ibid.: 575)

Depending on which 'idea' or opinion we follow, the results will be remarkably different. On the other hand, it is clear that the idea of trying to restore it to a pre-human or pre-European (with the disrespect this implies for Native Americans) condition, is tied to a certain conception of what Nature ought to be. And this alone will not assure that species, biodiversity or the ecosystem are going to be secure, or more healthy or resilient, it only assures that we *are trying to imitate* Nature by following an *idea* (anthropocentric and ethnocentric) of what Nature has to be. Recognizing this will help us perform restoration in a much clearer and unrestrained manner.

Another interesting case is the one of the national parks situated in the Sierra Nevada. Fires were going to be used in the 1960s to "...restore a more open forest structure and stimulate reproduction of the giant sequoia, both of which were presumed to have suffered from a century of fire suppression..." (Graber 1995: 126). There was still a

problem to solve, should they mimic the aboriginal fires or should they only allow natural fires to occur?

[W]hat was the objective of the administrative burning?...."The course selected was to use prescribed management of fire as a corrective measure only -to reverse the fuel accumulation of the past century- and then to permit natural forces -lightning and climate- to determine fire regime and forest structure henceforward. Thus the hard decisions would be left to nature and *the National Park Service would be managing for wildness, not some "desired state"*. (Ibid. 127 emphasis added)

So, in order to conserve as 'wild' a place that they already knew had been managed using fire, the National Park Service decided the following. Manage the environment (using fire) only to return it to the state in which the previous managers (Native Americans) had left it probably by using fire as well (Denevan 1992). Then they will let Nature decide which course to take so the place could be called natural again because it is not being managed to some "desired state". What else needs to be done in order to see this as a conduction of the environment to a "desired state"? This illusion of the "re-creation of Nature" can reach incredible proportions:

"It is significant that in one part of the world where new land is being created - the Netherlands- an increasing proportion of the polders reclaimed from the sea is devoted to endeavoring to re-create nature, through forest and wildlife areas." (Lucas 1984 in McNeely and Miller, eds. 1984: 75)

As I pointed above, management is allowed and not considered harmful only when it occurs inside a protected area and the intention is to 'imitate nature'. In this case, the environment would be heavily intervened but to restore a certain idea of Nature. And

even in this case, in which clearly anthropocentric actions and ethnocentric ideas are prevailing, the tightness of the wilderness concept is not set aside.

Native vs. exotic

The 'discrimination' against exotic species, is another example of how far the mimicking of Nature and the wilderness idea are taken, and of how much these ideas can restrain our actions.

As I pointed before, a specie is native when it "...has not been introduced from somewhere else by humans" (Noss 1994: 395). So the only difference that exists between exotics and natives is the fact that the former was introduced by humans at any moment in time and the latter was introduced by some other means to the area or has gone through evolution in that area. I clearly understand that some exotic species can be invasive and even that the invasive characteristic can be manifested after a long period of time. On the other hand introduced invasive species only lead to biodiversity loss or extinction in 10% of the introduction cases and 90% of these cases of biodiversity loss or extinction occurred in islands (Barzetti 1993: 43). These facts obviously have to be considered. But there is a long way from considering these facts, to systematically work towards the extirpation of exotics for no other reason than being exotic. This is something that clearly shows the inflexibility of following a certain idea of Nature. According to Noss we have to "eradicate exotic species whenever feasible..." (1991 in Callicott and Nelson eds. 1998: 533). Simberloff et.al. state that:

The very presence of nonindigenous species, *whether or not they harm native species*, degrades the wilderness of an area in the perception of many. *Ideally* we would advocate the removal of all nonindigenous species in all areas as a necessary step in regional restoration. (Soulé and Terborgh, 1999: 76, emphasis added)

The inflexibility of defining a species as inadequate for the environment just because it was introduced by humans is prejudicial and does not seem to bring any kind of benefit to the conservation goals. In this way we will not be able to see species that, without disturbing the ecosystem, might in fact be favourable for the ecosystem or to some other species (including humans). The case of the Amazon is quite illustrative. Given the grade of endemism between small areas in the Amazon (Hecht, and Cockburn 1990: 28-32) and knowing that the Kayapó managed extended areas, (Ibid.: 35-37, McNeely, 1994: 11) it is easy to imagine 'exotic' species being introduced in certain areas. As Balee points out in his impressive study of the Ka'apor, alterations made in the Amazon for at least 5300 years, "...have contributed to the biological and ecological diversity of Amazonian forests today." (1994: 122) From Anderson's and Posey's study of the Gorotire Kayapo it can be added that "desirable species, or varieties of desirable species with special qualities, have been brought from ... neighboring tribes to Gorotire from areas thousands of kilometers distant" (1989: 172-173). As McNeely points out: "*Completely excluding human intervention may reduce both genetic and species diversity by changing the mix of successional stages*, although in other circumstances strictly limiting human impact may be necessary for conserving certain species." (1994: 6-7) Finally, watermelon among

Reichhardt, et al. present several cases in which biodiversity was not reduced but enhanced by native peoples (1994). Also see Toledo et al 1994; Haverkort and Millar 1994; Ryan 1992; Scoones et al 1992; Iltis 1988; Tiffen et al 1993; Berkes et al 1995; Colchester 1992: 17; Irvine 1989; Callicott 1991 in Callicott and Nelson eds, 1998: 337-

other plants, represents a case of an exotic specie introduced by Europeans which was adopted by Native Americans in their fields and combined with other crops, having a location similar to the squash in the crop. (Danilo Anton, personal communication, May 21, 2000) without disrupting the environment.

I want to make it clear that I am not criticizing restoration per se, which I think is a very powerful conservation mechanism that has to be used outside and inside protected areas. Instead, I am showing how following a certain conception of Nature limits our own abilities to manage the ecosystem. This is not to advocate a total independence from natural or landscape direction, there is a long way to go between, for example, Disney's Wilderness Lodge and the Indigenous managed Amazon Rainforest. Whether limits are needed or not is a different point. Limits should not come from a certain imposed definition of an illusionary concept but from a self decision to manage the ecosystem in a certain way because it is considered necessary to protect a certain habitat or certain species or biodiversity or simply to restore a lost balance.

What would a 'wilderness minded' restoration ecologist have done in Kissidougou where Fairhead and Leach conducted part of their research? (Fairhead and Leach 1995) 'Restore' the area to its 'natural' form of forest and get rid of the 'savanna people' that were degrading and fracturing the forest? But what would they do later, when they realize that

366 and for an opposite view of Callicott's see Rolston III 1991 in the same volume, particularly pages 370-374. However Reichhardt 1994 seems to affirm Callicott's position on the discussion. Of course when we analyze Indigenous managed lands and lands managed by modern agriculture for example, the distance in terms of biodiversity is even bigger.

the forest itself is created by humans in a savanna landscape? Get rid of the forests because they are managed and 'created' by humans? That might be exactly what they should do if they want to reproduce the 'new' 'original' landscape. At least they would count on logging companies that would be happy to help them in this 'restoration project'. How then would a wilderness minded conservationist justify not cutting that forest, or not managing the forest in a sustainable way? As Fairhead and Leach conclude,

It becomes very clearly a question of social or political choice about what vegetation forms are desirable at any given time in social history, and about ensuring that conflicting perspectives on this -such as between local, global and intergenerational interests- are adequately articulated and addressed. (Ibid.: 1033)

Has conservation gone through a change?

Although humans have been slowly integrated into protected areas and new categories have been created to include them¹, the core of the dualism, the idea that humans are by definition detrimental to their surroundings and that Nature is superior without them, is still in place. As a consequence, people living near or inside protected areas continue to suffer from conservationism as we shall see in the next chapter. There might have been a big shift in the theory or in the words (integration of local communities), but not in the action. (Neumann 1997:561-2, Lewis 1990: 22)

¹ Man and the Biosphere (MAB) and categories VII and VIII from IUCN are such examples (McNeely et al 1990: 59). Although MAB programs have been stronger in theory than in practice (Ghimire 1994: 199; Gomez-Pompa and Kaus 1999: 5983; Gomez-Pompa 1998).

The success or failure of protected areas varies from place to place and from author to author, but it is clear which concept of Nature has driven conservationists and conservation institutions in the creation and management of protected areas. Has the conception of Nature that, as argued, is socially constructed and based on a separation of humans from Nature been the foundation on which protected areas were built? If it has, would this bring traditional conservation to a dilemma on how to pursue its goals, or even worse, what are the goals to be pursued? It cannot be denied that conservation of biodiversity is of huge importance, but is the traditional conservation strategy, which is based on the above-described concept of Nature capable of protecting this biodiversity? Furthermore, in which ideas and conceptions of human's relation to nature has legislation and the practice of conservationism been based?

Conclusion

In this first chapter we presented the conception of Nature that is behind the concept of Protected Areas. We showed that this conception of Nature, which is also known as the wilderness idea, is based on a dualistic view of the world in which humans and Nature are separated and need to be separated if we want to conserve Nature. We also showed that this particular conception of Nature (defined by the absence of humans) cannot be real, simply because humans have already modified almost every place on earth, but pursuing it can restrain humans from practicing alternative non-destructive relationship with the environment.

In the next chapter I will describe the concept of Nature that drives conservationism in practice, and show the link between the dualistic conception of Nature described above and legislation and practice in conservation. I will show that legislation for protection of certain particular environments is based on a particular conception of Nature that separates Humans from Nature, and in many cases does this as a precondition to consider a place "natural". Graphics that show that the number of protected areas have been growing together with the number of endangered species are included in the appendix to show that although there are factors like population growth and industrialism, classical conservation has not been able to cope with these. The reason why is the dualism which is exacerbated by leaving aside 95 percent of the world's land and this is one thing that must be changed.

CHAPTER 2

...a national park must remain a primordial wilderness to be effective. No men, not even native ones, should live inside its borders.

Bernard Brzimek quoted from Adams and McShane, 1992

Next to shooting indigenous peoples, the surest way to kill us is to separate us from our part of the earth

World Council of Indigenous Peoples, 1985

We didn't fight two world wars to make the world safe for green vegetables.

Richard G Dasman, 1990

After WW2, Victor Lebon declared: Our enormously productive economy...demands that we make consumption our way of life, that we convert the buying and use of goods into rituals, that we seek our spiritual satisfaction, our ego satisfaction in consumption... We need things to be consumed, burned up, worned up, replaced and discarded at an ever increasing rate.

Introduction

This chapter will start by demonstrating that the wilderness idea was echoed in several countries' legislation around the world. Even in Latin American countries, where the wilderness debate was not so intense or did not take place¹² (Gudynas 1997, 1999) and where the wilderness idea was not pursued as much as in North America, Africa and parts of Asia, the dualism is perpetuated in legislation. Following this account, the harsh relations between local people and national park authorities will be briefly analyzed to

Although the 'frontier' mentality existed, specially in relation to the jungle which was seen (and still is) as exotic and dangerous, (Breslin and Chapin 1984: 32) the discussions were not about wild and tamed land but about unexploited land that should be reached and transformed into productive land

show how the wilderness concept put into practice influenced different cultures around the globe. Next, in light of the results of these conflicts, of the growing environmental crisis, and of the encroachment of protected areas, the goals and targets of conservation will be revised. Finally, over-consumption will be identified as one of the subjects to be addressed by conservationists.

Legislation: an analysis

As Goodin points out, "there is increasing recognition that decisions concerning public policies do reflect larger theoretical principles" (in Wallace, M. et. al. 1996: 3). Sandel states that "our practices and institutions are embodiments of theory", so, "[f]rom this perspective, policy is not solely an autonomous subject of study, but also a subfield of political theory." (Ibid.: 3-4) This paragraph highlights the importance of analyzing the legislation on protected areas.

An analysis of countries' legal definition of Nature Wilderness or of the requirements that a piece of land must reach to be considered part of the protected area system will help us see how the Wilderness idea was spread and adopted. In addition, and taking into consideration the existence of environmental impact assessment laws, it illustrates how far exploitation apparently can go outside protected areas.

Definitions

Since the U.S. model was the blueprint for many other countries, following the creation of parks following the Yellowstone N.P.(created in 1872) model, it is important

to start with the U.S legal definition. The Congressional Act that created Yellowstone N.P on March the 1st 1872 consisted on two sections. The first section described the limits. The second one stated what follows:

That said public park shall be under the exclusive control of the Secretary of the Interior, whose duty it shall be, as soon as practicable, to make and publish such rules and regulations as he may deem necessary or proper for the care and management of the same. Such regulations shall provide for the preservation, from injury or spoliation, of all timber, mineral deposits, natural curiosities, or wonders within said park, and *their retention in their natural conditions....* He [the Secretary] *shall also cause all persons trespassing upon the same after the passage of this act to be removed therefrom...* (Forty-Second Congress, Session II Ch. 21-24, 1872, March 1, 1872, CHAP. XXIV, emphasis added)

The Wilderness Act, almost a century later (1964), in its section 2.c defines wilderness as:

A wilderness, in contrast with those areas where man and his own works dominate the landscape, is hereby recognized as an area where the earth and its community of life are untrammelled by man, where man himself is a visitor that does not remain. An area of wilderness is further defined to mean in this Act an area of undeveloped Federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions and which (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable... (Callicott and Nelson eds, 1998: 121, emphasis added)

The distinction between 'man' and the "community of life" is clear, as well as the aspect that conceives the natural characteristic: The absence of human 'impact'. So we find that the human - nature dichotomy was echoed in the U.S. legislation. We also know that the U.S. national parks are in crisis (McNeely 1990; Di Silvestro 1993) and that profound changes are needed if parks, such as Yellowstone, are expected to accomplish the goals set for them. The pattern of Human - Nature relation outside protected areas in the U.S. is

certainly not one that conservationists can be celebrating. Industrial agriculture, clear-cutting, over-grazing, mining, over exploitation of resources are common in the 'unprotected lands' of the U.S. As a result, fragmentation and encroachment are the main problems to be addressed in the future. Pressure from outside the parks is being felt inside and the 'isolated lands' are not isolated enough to protect their interior contents.

Other countries that did not follow the U.S. definition of wilderness to such a 'purist' extent still fell on the same dichotomy and on the same patterns of exploitation outside the protected areas. Some examples of how the wilderness concept was echoed in several legislations follow.

Norway:

Land owned by the state may be designated a national park in order to conserve untouched areas or distinctive or beautiful natural areas.... In national parks the natural environment shall be protected. The landscape together with its flora and fauna and any natural and cultural sites shall be protected from construction, pollution and any other encroachment. (www.starkart.no skme, emphasis added)

Spain:

Parks are natural areas, with low transformation by human exploitation or occupation.... In the parks the exploitation of natural resources can be limited.... (author's translation from Spain's parks web page)

Chile's definition which substantially differs from other Latin American countries, defines preservation as:

Maintaining a wilderness area and its natural resources in its original conception, reducing human intervention to its minimum. (Article 2 Law No 18362, 1984, author's translation)

And Environmental Impact as:

Modification of the original conditions and features of a wilderness area by direct or indirect human action. (Ibid. author's translation)

Other Latin American countries have been more careful at the moment of defining, in their legislation, Nature by the absence of human impact. Although the human impact concept is part of the requirements, legislation generally specifies the absence of '*high*' human impact. The emphasis is more on the importance that these areas have socially, scientifically and culturally for the nation. "The wild flora and fauna are under State domain" says law number 74 (1981) from Ecuador.

The Uruguayan protected areas Bill, approved on December 1999, in its article 1, for example, defines the National System of Natural Protected Areas as

...natural areas of the national territory, continental, islands, or marine, representative of the country's ecosystems which, because of its particular environmental, historic, cultural and landscape values, deserve to be preserved as Nations inheritance, *even when* the areas have been partially transformed by men. (Deputy Chamber, Tuesday 14, September 1999: 52, emphasis added, authors translation)

In the Uruguayan case, including areas partially transformed by 'men' is mandatory since every piece of land has been managed not only by natives (a subject of discussion among different authors) but also by European descendants. And even in this case, in which the management of the ecosystem is clearly recognized, the emphasis of conservation is still placed on the Human Nature dichotomy. In article 3 the law defines National Parks (maybe just imitating the concept present in the IUCN definition) as areas in which the

ecosystems are not "significantly altered by human occupation or exploitation". (Ibid., authors translation)

Bolivia represents another case of how natural areas are seen as important for the nation, but what makes Bolivia more interesting is the apparent absence of the human-nature dichotomy. Article 60 of the Law number 1333 from 1992 reads as follows:

Protected areas constitute natural areas, with or without human intervention, which are declared as such by State law in order to protect flora, fauna, genetic resources, natural ecosystems, hydrographic basins and scientific, aesthetic, historical, economical and social values with the goal of preserving and conserving the cultural and natural inheritance of the country. (author's translation)

And this absence might be the result of the large native population of the country and of the particular ties natives have with their land. Article 64 declares:

Considering the objectives of conservation and the management plans, the declaration of Protected Areas is compatible with the existence of traditional communities and native populations. (Ibid. authors' translation)

Of course it is possible that the type of management inside of this area might then follow a completely different path in which native rights are not respected, which will be discussed later in this chapter.

Is the dichotomy still present in Latin American legislation? By pointing out what is not legally permitted inside these areas we will show that the dichotomy is still present, and address the further problem of excluding the majority of the land from "conservation" management. Does specifying that something is not allowed inside protected areas means that it is allowed outside? Legally not, but the need to specify that inside those areas that

is forbidden, gives you a clue of what is happening outside. Let us analyze some of the objectives of these areas and what is supposed to happen *inside* these areas.

Article 2 of the Uruguayan bill defines some of the objectives for the protected areas:

D) Prevent the deterioration of the hydrographic basins as a way of ensuring the quality and quantity of water.... II) Contribute to the socioeconomic development of local communities by encouraging their participation in activities related to natural protected areas.... I) Develop ways and methods to benefit and use the national biological diversity and the natural habitats in a sustainable way ensuring the potential benefit for future generations. (author's translation)

Article 8 then declares that the "Ministry of Territory, Housing and the Environment *could establish* the following limitations or bans on activities *inside the national protected areas or near its boundaries*." (Ibid., author's translation, emphasis added):

D) The dumping of waste, the draining of effluents or the liberation of contaminant emissions without the required treatment.... E) The collection, death or mistreatment of wild animals, including the...destruction or alteration of vegetation.... F) The emission or production of disturbing noises. (Ibid.)

Chilean law number 18.362 (1984) specifies that one of the objectives of wilderness areas is to "[m]aintain and improve the wild resources of flora and fauna and rationalize its use" and "[m]aintain the productive capacity of soils and restore those which are in danger of erosion or already eroded" (author's translation).

Guatemalan Law of Protected Areas of 1989 in its Decree number 4 (1989) establishes that the objectives are among others to "[s]ecure the functioning of *essential* ecological processes and of the vital natural systems" and "[u]se of the national species and ecosystems *in a sustainable way*". (author's translation, emphasis added)

Mexican General Law of Ecological Equilibrium and Protection of the Environment (1988) establishes among the objectives of protected natural areas, "to assure a *rational* utilization of the ecosystems" (author's translation, emphasis added)

Should not ecosystems be used in a "rational" way everywhere? Should not the "essential ecological processes and the *vital* natural systems" be secure everywhere? Should not the "productive capacity of soils" be maintained and the restoration of "those which are in danger of erosion or already eroded" be done everywhere? And finally, should not we "prevent the deterioration of the hydrographic basins", "use the national biological diversity and the natural habitats in a sustainable way ensuring the potential benefit for future generations" and prevent "the dumping of waste, the draining of effluents or the liberation of contaminant emissions without the required treatment" *everywhere*? Yes! I suppose is the answer. So why are all these provisions stated for protected areas in particular? Because the Human - Nature dichotomy had as a result the creation of the 'inside protected areas - outside protected areas' management moral dichotomy.

Local people and national parks

The Human - Nature dichotomy, together with a positivist approach in conservation (Pimbert and Pretty 1995), have been the foundation for harsh relations between park authorities and local populations. Many cultures cannot understand preservation measures that separate humans from Nature in order to restore the equilibrium between them. They do not understand the concept of wilderness because the

place called wilderness is the place they call home. (Kemf, 1993; Colchester 1995, 1996; Pimbert and Pretty 1995; Gomez-Pompa and Kaus 1992)

The further they are the better

According to Bachert, "...acceptance of parks increases with increasing distance to the area" (1991: 239). What is the reason for this? As we have seen above, conservationism intends to 'protect' Nature by separating pieces of land from the influence of humans. In order to reach the status of National Park, the designated protected area has to be 'dehumanized' and population living adjacent to National Parks cannot use the resources inside this area. But in the past and even today, 'wilderness areas' and high biodiversity areas have been and are inhabited, very often by Indigenous Peoples, at the time in which they are selected to be 'protected'. This is absolutely logical and predictable if we know that there is an overlapping between areas of high cultural diversity and areas of high biological diversity (Durning 1992; Lewis 1990; Colchester 1995; Alcorn 1994; Wileox and Duin 1995; Hyndman 1994). 86% of national parks in South America have some inhabitants (Fiallo and Jacobson 1995), 80% by Indigenous Peoples (Colchester 1993), 70% of protected areas world-wide are inhabited (Colchester 1993), 1.6 million people live inside national parks in India (Pimbert and Pretty 1995). And there are a large number of examples of Indigenous Peoples living inside areas designated as protected areas. Moreover, according to Lewis, "...the world's least disturbed ecosystems, which have generally retained the highest levels of species diversity and are thus highly desirable in conservation terms, are also home to the majority of the world's 200 million tribal inhabitants." (1990: 18) This overlapping has

brought numerous conflicts all over the world between park authorities or conservation agencies and local people.

From the beginning the idea of 'empty parks' proved to be a source of conflict. The first national park inaugurated not only expulsions but also a way of administration that was followed later in other countries. 300 people were killed in the conflicts between the park administration and the Shoshone in the year 1877 and the army was put in charge of administration a few years later. (Colchester 1995) This type of administration, with rifles and fences, has been common place in Africa since the colonial era. In North America, to the Shoshone followed the Crow, the Blackfeet, the Sioux, the Utes, the Navajo and the Miwok, all who suffered from the creation of Yellowstone and Yosemite National Parks. (Neumann 1998; Colchester 1995; Kempf 1993). In the rest of the world, the Ik, the Mongondou, the Vedda, the Batwa (Colchester 1995), the Masai (Adams and McShane 1996) among hundreds of others have been affected or seen their cultures and their livelihoods destroyed by the expansion of National Parks. (Lewis 1990; Clay 1985; Colchester 1995; Kempf 1993; Neumann 1997; Gihimire 1994; Pimbert and Pretty 1995) The list of tribes being affected is depressingly long, but the numbers in India are quite representative, 600,000 tribal people have been displaced by protected areas, representing 20% of India's tribal people. (Pimbert and Pretty 1995:1)

Expulsion and relocation

Until recently, the only exception to expulsion was the intention of keeping indigenous peoples as part of the landscape. (Colchester 1995; Neumann 1997) presenting them as semi-animals (Butzer 1992: 362) and also forcing them to a static condition. More recently Indigenous Peoples have been allowed to stay if they continue to live in a 'traditional way'. This could mean using no guns (Hitchcock and Holm quoted in Colchester 1995: 16) or having no trade (Sayer quoted in Neumann 1997: 566) or whatever the Park Authority considers suitable in its static view of 'traditional way'. And obviously Indigenous Peoples face expulsion or relocation if they do not live up to the externally imposed standards of traditional or even sustainable life. (Neumann 1997 : 570; Colchester 1995: 16) "However, it is the prerogative of First World conservationists (backed by the power of the state) to determine whether land uses are compatible with their interests or suitable for purposes of buffer zones." (Ibid.: 565) ¹ [or national parks when authorization is granted to remain inside].

Relocation followed expulsion as a policy which is supposed to compensate for the loss of land. "The study of forced relocation has been converted into a sort of science due to the frequent and growing application as an accessory to "development" programs" (Colchester 1995: 15, author's translation). Forced relocation from National Parks, just as the ones coming from development programs, have had disastrous consequences on relocated villages and tribes (Ghimire 1994; Poole 1989; Colchester 1993, 1995; Clay 1985; Neumann 1997). Losing the land leads, in most cases, to the destruction of culture

¹ Also see Pimbert and Pretty 1995, specially part III.

(Colchester 1995), the lack of job and income (Clay 1985), restriction or lack of access to common resources, and many other negative consequences that have to be faced when relocated to a new (usually insufficient) piece of land. This is of course when they actually get a piece of land, which is not always the case. (Colchester 1993)

Why are these relocation or expulsion processes taken so seriously and to such extremes even knowing the consequences they have for local populations? Is there such a strong commitment of Government authorities towards conservationism or is it just a way of following instructions of powerful international conservation organizations? If the commitment was so strong, we would expect to see the strict regulations being enforced on everyone inside the National Parks. This has rarely been the case. In Khao Yai National Park in Thailand, where local people had been evicted because of the creation of the Park, the strict regulations could not stop the creation of a 18-hole golf course or of tourist bungalows for example. (Ghimire 1994: 203-204) In Botswana, the San were removed from reserves. In these same reserves mining companies were authorized to explore, concessions were granted for timber cutting and safari companies were allowed to shoot game. (Clay 1985: 3) The Chimanes from Bolivia suffered the same fate against logging companies which are practicing 'sustainable development' which was preferred by the government to their own proposed alternative. (Lewis 1990: 21) Finally, Richards provides more examples from a long list of violations of local rights to then concede grants to big companies. (Richards 1996).

Conservation agencies might have changed the discourse, they might be talking more about integrating indigenous and local people into management, but as Lewis states, "... indigenous parks or anthropological reserves are still very thin on the ground, and new national parks continue to proliferate." (1990: 22) Buffer zones were supposed to be the ideal area for this integration to start taking place, as the Man and the Biosphere program planned it. Instead they have contributed to an extension of national parks reach, and "[t]here are more reports of forced relocations, curtailment of resource access, abuses of power by conservation authorities, and increased government surveillance, than of successful integrations of local people into conservation management. (Neumann 1997: 564) The 'new' conservation approach is more used as a weapon to reduce hostility against parks than as a source of sustainable alternatives to local population (Ghimire 1994). Right now in the Lacandona Jungle in Chiapas (Mexico) Indigenous Peoples (Tzeltales and Tzotziles) and farmers are being threatened with expulsion from the Montes Azules Biosphere Reserve. Here, the ecologists - natives' conflict¹⁴ is as real as it used to be a decade ago. Government officials, backed by the menace of fire in the reserve, (in the beginning of the rain season and after several days of intense rain in the region) continue to support the expulsion of farmers from the Lacandona. ("La Jornada" May 23, 2000)

¹⁴ Nothing more illustrative than the words from the communities in their communique: "Indigenous Peoples are not enemies of biodiversity, our culture is not destructive as it has been manifested by some Mr Ecologists." ("La Jornada", May 23, 2000, authors translation)

Side effects

All this relocation of villages, disruption of ancient cultural ways of relation to the environment, and striving for an imported idea of Nature, has had in some cases a negative environmental impact (Ghimire 1994) to be added to the social ones already described. The national park is forced to be isolated and it suffers from the lack of protection that in many cases resident people used to provide to that land. (Colchester 1996, Adams and McShane 1996) The outcomes of the dichotomy of management revealed in the legislation analysis becomes more clear in the boundaries of protected areas

"The contrast between limited resources *outside* the park and abundant resources *inside* the park becomes marked as the pressure on the resources base intensifies" argue Brandon and Wells (1992: 558, emphasis in the original). Of course, this increase in pressure outside might be a direct result of the creation of the park. Not only as a result of the reduction of territory but also as a result of the breakdown of cultural practices (Colchester 1996) and even by the complete change of landscape and resource base that relocation sometimes entails. Similar degradation might occur *inside* the protected area as a result of the expulsion of humans that bring an end to activities that were favourable to wildlife. (Colchester 1996, Adams and McShane 1996).

The need for alternatives

According to Wells and Brandon, "... many protected areas are in crisis. Already underfunded, they have come under increasing pressure from the expanding scale of

human activities *outside* -and sometimes inside- *their boundaries*" (1992: ix, emphasis added). Protected areas are only 4% of the world's land surface (Johnston et. al. 1994: 405). Let's suppose that we cannot change the development paradigm. Let's assume that capitalism in its actual form and industrialism are here to stay unchanged for a while. How much territory do we need to 'protect the world's biological diversity'?

In the graphs included in appendix 1 we can see how in different countries from different continents, the amount of land dedicated to protected areas has been steadily growing. At the same time, in other graphs for the same period and the same countries, we do not appreciate a decline on the number of endangered species, instead in many cases these have been growing. Should we increase the amount of land under protection? In Central America for example,

"the number of national parks and reserves increased from 30 in 1970 to more than 300 in 1987 covering about one sixth of the total land area, but deforestation in the region has increased sharply to about 2% annually". (Richards 1996: 207)

According to Soulé and Sanjayan, conservation organizations have been pushing for 10-12% of land area being set aside for conservation, which would "double or triple the land area now designated as *national parks or similar strict reserves*" (1998: 2060, emphasis added). Just to clarify, the only activities that can take place in 'strict nature reserves are scientific and these areas should "...maintain natural processes in an undisturbed state..." (IUCN definition of Category I of protected areas). But this is not enough, biologists agreed that the "protection of only 10% of Earth's ecosystems could make at least half of all terrestrial species vulnerable to artificial (anthropogenic)

extinction..." (Soulé and Sanjayan 1998: 2060) "[H]ow much is enough?" they ask. In order to avoid the mass extinction that would happen under the 10% scenario, we must set aside about 50% of the land area. (Ibid.: 2060).

Is it a question of the amount of land being separated for conservation or is it a question of the type of development taking place outside these areas? Is it not dangerous to maintain this dichotomy of management inside and outside protected areas? As McNeely points out, "[t]he boundary post is too often a psychological boundary as well, suggesting that, because nature is cared for by the national park, development projects can proceed and convert the surrounding lands..." (1990: 20) And later he states: "[h]ow to conserve wild islands in a sea of hostile local interests and incompatible uses of surrounding lands is the fundamental issue facing national parks today." (Ibid.: 20) Should it continue being the issue?

Knowing the consequences that National Parks have had for local populations, considering that we need to set aside 50% of the earth to effectively achieve conservation, are we still willing to continue under the same conservation paradigm? Do we have to allow the current development paradigm (based on unlimited economic growth) to proceed? The former is necessary because of the existence of the latter. So the logic seems to indicate that conservationists should directly challenge the development and industrial paradigm. And it is in this regard where Indigenous Peoples' and some local population's relation with their environment has special relevance as a source of

ideas or guidance for future transformation. (Anton 1995a, Durning 1992, Colchester 1995, 1996)

However, why not do what Foreman suggests? Leave the Wilderness Areas aside, do not criticize them and try to impose sustainable development in the rest of land (Foreman 1998 in Callicott and Nelson eds. 1998: 396). It sounds logical if the intention is not to open protected areas for development but to extend protection to the rest of the land. But it is not logical. Not only because of the ambiguity of "sustainable development", which can and has served as a legitimization for further industrial development, but also because conservationists cannot sustain a dual policy of protecting "Wilderness" on one side and some kind of 'unnatural' area with no real conservation value on the other. They have to give a step aside from the wilderness idea in order to give up the Nature Human dualism. To break this dichotomy, Protected areas – Nature – no human "disruption" on one side, and 'the rest' – artificial – anthropogenic disruption on the other will not necessarily lead to a destruction of what is known as wildlife. On the contrary, it could lead to a better relationship with the environment in non-protected areas. The environment, inside protected areas but especially outside, is already being degraded under this dualistic view. Protected areas are not able to protect biodiversity. Even under our future goals (10-12%), mass extinction is being predicted (Soulé 1998).

What this change will bring, is an open door to search for a new reality, not an imposed one, maybe a constructed one, but a diverse one, one that will depend on localities (assuring in this way a plurality of approaches). It will also avoid the risks

involved in the biodiversity discourse identified by Escobar (1998), discourse that "has resulted in an increasingly vast institutional apparatus that systematically organizes the production of forms of knowledge and types of power... (Ibid.: 56). This open door will also help and give the chance to a nonwestern-style conservation strategy. This strategy might be needed to maintain and canalize local and traditional knowledge that "unlike modern constructions, with their strict separation between biophysical, human, and supernatural worlds...are often predicated on links of continuity between the three spheres and embedded in social relations that cannot be reduced to modern, capitalist terms." (Ibid.: 61) In McNeely's terms:

The crucial point is that governments, and people, must consider what kind of ecosystem they actually want. It is not enough simply to preserve the existing landscape, or seek to re-create one from the past. Ecosystems are dynamic. They must evolve. But what should an ecosystem be allowed, or managed, to evolve into? Answering this question moves from ecological issues to those of human values...." (1994: 7, emphasis added)

Finally, showing that a certain conception of 'Nature' does not exist will not disenchant Nature itself, will not take the beautiful and peaceful places away, will not make anyone feel like they are not in a 'sacred temple' any more, it will just show something that is real. That the concept of Nature that we are trying to conserve does not exist, so lets look for ways to relate to our environment. This is the only thing implied, if we face it, then we can open the door to a better relationship with our local environment.

Poverty, over-consumption and conservation

Many authors and institutions relate poverty and or population growth (which mainly comes from 'poor' countries) with environmental degradation, but is it poverty or

social inequity that we have to relate with environmental degradation, is it poverty or over-consumption that we have to relate with ecological destruction? In a world where resources are terribly mal-distributed, how can we blame poverty and population growth for ecological destruction if we do not put social equity in the top of our conservation agenda? I am not saying that population growth is or will not be a source of environmental degradation. Instead, what I am remarking is that you cannot mention population growth or poverty as a source of environmental degradation if at the same time you are not clearly presenting over - consumption and social inequity as part of the same problem.

As Baltz pointed out, the over-consumption of resources issue, is not being addressed by the conservation movement (1999). For the purpose of conservation, it makes no more sense to take the land away from southern peasants to avoid being cultivated than to place a ban on any excessive consumption for each rich citizen of the north or the elites in the south. It might be politically easier to take the land away (beginnings of conservation) or ban access to it (actual form of restriction), than to stop over-consumption. But if the goal is conservation, probably the latter is a more effective solution than the former. According to Brandon and Wells, "[u]ntil poverty is eradicated near biologically sensitive areas, conflicts are likely to remain between conservation and development needs", (1992: 567) but who knows of any biologically sensitive area that has survived near a 'village' of 'wealthy' citizens? Who knows of any biologically rich area in or near a typical North American suburb that is not affected by this development? And even if you could find an example of these rare cases, what effect is that wealth

creating in other parts of the world? We cannot ignore the effects peoples necessity might have in its natural surroundings, but neither can we ignore the reasons that resulted in that poverty nor the effects that wealth causes in natural surroundings near or far away from the location of wealth.

Over-consumption evolves as an extension of the dualistic view of the world and can only be maintained under this dual conception. Humans in industrial society maintain the illusion of the physical separation from Nature and in addition they generally do not see or do not want to see at first hand the effects their activities have on Nature. "You know what you do, you know why you do it but what you do not know is what what you do, does." (Dreyfus and Rabinow 1983) These words from Foucault illustrate the separation from the consequences of our actions so characteristic of industrial capitalism, and this is one of the most important things to be addressed by the conservation movement in the next century. We cannot afford to continue overlooking and not addressing the effect over-consumption has on biodiversity, whether it is politically costly or not.

Over-consumption, not only does not seem to be addressed by conservation NGOs, but 'over-consumers' seem to be encouraged and offered the opportunity to "save the planet" while they consume. Recently I received an e-mail from the WWF which is telling me how to "take action to save endangered species", "help saving the planet" and "get free miles"! Basically what they are doing is encouraging you to give money and get miles, consume 'nature related' articles, celebrate in that way 'earth day' and continue

your life travelling with your new free miles while someone else takes care. Where are we trying to go with this marketing of nature? Is this part of the packaging of nature pointed out by Neumann (1998: 27)? Or are we experiencing a different kind of new marketing, the marketing of clear consciousness. And since I am referring to actual news, I cannot stop from relating this to the report from CNN news about the new cars (especially referring to high-consumption SUVs) that alternate electric with gas consumption. They present these cars as the way to "go on the road and don't feel guilty about it". Is this what all this is about? "Buying a clear conscience" as they say? Is the WWF also in the 'selling clear conscience business'? These are NOT the bases to protect the environment from over-consumption. Over-consumption must be seriously addressed by NGOs that declare they have the intention of protecting biodiversity. By doing this kind of campaign, instead of encouraging a change of attitude, they are continuing to divorce people in the first world from the consequences of over-consumption. I am not only referring here to the depletion of natural resources, the loss of soil, the overgrazing, the alteration of rivers, all which are, generally, more rapidly connected with over-consumption but not with the conservation movement itself. I am also referring to the impact global warming has and will have on species and habitats, to the impact the hole in the ozone layer has and will have on species and biodiversity, and to the many other ways in which over-consumption has and will influence, not only the already "degraded" or "human influenced" areas, but also the very same core areas of protected areas that are being conserved by the conservationist movement. Overpopulation and poverty have been clearly identified by conservation organizations and intellectuals as a direct and

powerful threat for biodiversity and conservation. Why is it that over-consumption has not also been clearly identified by many of these same organizations and intellectuals?

When are we going to change the focus and target of conservation? After the encroaching of protected areas has gone too far? We cannot forget that although we might reach the 'political' goal of 10-12% of the land as protected area, this will not be enough (Soulé 1998 science) because we must also reconsider the situation outside protected areas. Protected areas will become more and more isolated if we do not reconsider relationship outside protected areas. I am using the term isolated not only to refer to the island character but also to the ecosystem's profound differences with its surroundings. The patches of not intensively impacted pieces of land will disappear, and although corridors might be having some success, we cannot put all our efforts just on them. And this does not only affect the connectivity between protected areas, it also affects, and intensively, the activity inside the protected area (Di Silvestro 1993) even if we consider that bigger areas suffer less from the edge effects. As Zube states, "no park is an island" (1992: Ch 20). Both over-consumption and protection of every piece of land have to be addressed by the conservationist movement.

Indigenous Peoples' knowledge *and experience* are being used inside protected areas. However, the best contribution can be done where it is mostly needed: outside protected areas, which is the place where modern sustainability is failing. The failure in relating to Nature is marked outside those areas. This is why in the next chapter I present alternative views of Nature or cosmovisions and alternative relations with Nature.

Westerners (and their followers) must change the way of relating with Nature inside the protected areas, but specially and crucially outside. There is where westerners are having most of the problems in their relationship with Nature and where alternative views could help the most. People that have a better understanding of non-scientific and every day contact with the land can help westerners refine their own relation, not only physical but also in some other dimensions that we do not usually stop to think about and that as we shall see are important.

Conclusion

This chapter started by presenting several different pieces of legislation that defined protected areas and or wilderness. The intention was to prove that the Human - Nature dichotomy was reflected in legislation, and that legislation also reflected the different kind of approaches to resources depending on whether they are considered 'productive' or 'conservation' resources. The dichotomy is not just an idea with no influence in policies but it is an idea that it is being followed by policy makers. Following that, we explored the consequences that this idea taken into practice had on humans that lived near the areas selected to be protected and we saw how people living in high biodiversity areas were the ones who suffered the most, even though it is also being demonstrated that there is a high correlation between high culturally and biologically diverse areas. Then we showed that there is not such a straight correlation between new protected areas being created and security for biodiversity, and that under the current conservation methods 50% of the land should be separated for conservation if we want to avoid an important extinction in the future. The solution, we started to conclude, should

not come from increasing the amount of land being protected but from breaking the dichotomy between lands for production and lands for conservation. Finally, overconsumption was presented as one of the threats for ecological sustainability that is not being appropriately addressed by several important international NGOs and also as another consequence of seeing humans as separated from Nature.

CHAPTER 3

Por lo regular se ha notado, que hay mas sabiduria en los idiomas quanto mas salvages son las naciones: prueba nada equivoca de la divinidad y pureza de su origen, y de que la mano atrevida del hombre no ha entrado a corromperlos (It can be generally noted that the more savage the nation, the more wisdom there is in its language: this is a fundamental proof of the divine and purity of its origin, and that the insolent hand of men has not come to corrupt them.)

Damaso Antonio Larrañaga (1816)

Introduction

Generally speaking, indigenous societies managed the entire environment which they relied on as a resource and conservation unit, although sacred groves or ponds are some exceptions (Gadgil et al 1993; Alcorn 1994; Breslin and Chapin 1984: 34; Gomez-Pompa and Kaus 1992, Kemf 1993), but even in these cases extractive or other activities (depending which tribe or nation we are talking about) were and are allowed. In contrast, modern western society makes a distinction between lands for production and lands for conservation. Lands for production are treated with no respect and the rule is to obtain a maximum yield from them or in some cases where regulations apply, what is known as the Maximum Sustainable Yield. On the other hand, lands for conservation are enforced very strictly due to the constraints that productive land poses on the system as a whole. According to Toledo et al. "...under indigenous rationale the Western rooted contradiction between conservation (of biodiversity) and production (for use and for exchange) tends to be reconciled through a strategy of complementary and multiple use of the natural space." (1994: 11)

The current patterns of production and conservation in the modern world have placed the environment and the people who depend directly on local resources under threat (chapter 2). As we saw in chapter 1 these ways of production and conservation are rooted in a particular world vision which does not integrate Humans and Nature. This chapter will present an alternative to this vision that could serve as a structure for alternative kinds of management that will be analyzed in chapter 4, alternative meaning opposite to the modern production – conservation dichotomy mentioned above. I will refer to cultures that manage the environment as a unit and that do not conceive nor understand this separation. (Apffel-Marglin 1997b; Colchester 1996) Not only a different way of relating to the environment will be presented but also, and very importantly, a different way of acquiring knowledge and experience, a different way of relating to the world and *a different way of connecting knowledge, production, conservation and every day life under a holistic cosmovision*. (Boege 1996)

A few warnings

There must be a recognition of the different relationships Indigenous Peoples have with their environment in comparison to western management (including both production and conservation). Moreover we cannot generalize and say all Indigenous Peoples lived in harmony, just as it cannot be said that all Indigenous Peoples were not capable of living sustainably simply because we find one example of one tribe or nation that disappeared or collapsed due to unsustainable management. This is not a search for a reborn myth of noble savages (Gomez-Pompa and Kaus 1992) (see below). We *can* learn

from Indigenous Peoples and from their experiences (Wilcox and Duin 1995: 50; Klee 1996; Berkes et al 1995), but we *must place their experience in context*. It is very important to be aware of the spiritual background, of the cosmovisions that were and are part of the society we are trying to learn from. It is not about copying or "translating" to scientific terms, it is about recognizing that knowledge in other societies is not isolated from local needs and from Nature as it is in modern western ones. In these cases, knowledge and management are inserted in, and part of, a complex social and spiritual system that co-exists with the surrounding environment. This does not mean that practical examples cannot be used as a model for environmental management elsewhere, but it does mean that we have to be very careful and aware of the background of those practices if we do not want to fail in our extrapolation of management models.

Diversity

In the quest to preserve biodiversity it is crucial to protect cultural diversity (Wilcox and Duin 1995) as well as diversity in the acquisition and transmission of knowledge, diversity in institutions and diversity in how to take decisions. The more diverse the ecosystem is, the more resilient it becomes, and this seems to be a rule that can be trusted in many other aspects of life, even in computer systems. The more diverse the software (e.g. e-mail software) the harder it is for viruses to produce extensive damage around the globe. The more diverse the cultures, the better the understanding of local environments. This does not imply relativism, it only means that a certain form of knowledge (western) that has its roots in rationalism and pragmatism is not continued to be imposed as the only way. (Toledo 1996) It also means that different cultures that have

accumulated experience and knowledge about the environment and its management for millennia (Berkes et.al. 1995) will have a chance to bring them forward and prove their own virtues and problems, even though they were acquired using parameters that have nothing to do with the abstract occidental scientific ones. (Boege 1996: 1-2)

Indigenous Knowledge systems pose an attribute in intent of use and expansion that western scientific knowledge did not have. Some authors like Agrawal, argue that "instead of trying to conflate all non-western knowledge into a category termed 'indigenous', and all western knowledge into another category, it may be more sensible to accept differences within these categories and perhaps find similarities across them" (1995: 427).¹⁵ While it is important not to place all indigenous knowledge into a single category and define it in opposition to western knowledge, it must still be recognized that there are, on average, some important differences between indigenous and western knowledge. Although "the gap between scientific knowledge and TEK is decreasing" (Berkes et al 1995: 296), and I believe scientific knowledge is getting closer to IK in its conceptions, I still do not believe Indigenous Knowledge is to become a new paradigm to substitute the old western paradigm (Agrawal 1995: 417). The reason is simple. There is not a single Indigenous Knowledge.

Indigenous Knowledge is embedded in social and spiritual systems (Gadgil et al 1993; Berkes et al 1995) and although some of the results of this knowledge can be

¹⁵ The debate between Muir and Pinchot and the ideas of Leopold show how in western thought there have been different trends on the subject.

collected and stored for future use, it is its main difference with western knowledge that cannot be preserved without these social and spiritual systems (Berkes et al 1995): its non dualism, its non separation from the object of study. (Apffel-Marglin 1996) As Berkes states, a "fundamental lesson of traditional ecological knowledge is that worldviews do matter". (Berkes 1999: 182)

The Myth of the Noble Savage and its three mythical bases

The original myth of the noble savage can be traced to authors like Rousseau or Moore (Redford 1990; Alvard 1993). The detractors of the Modern Myth of the noble savage come from two similar positions. On the one hand some authors believe the noble savage concept is a consequence of not realising that the only reason why natives lived in harmony with Nature was their low technology or their low populations. On the other hand, other authors believe that natives once lived in harmony with Nature but after acquiring technology or increasing their population (both due to contact with western 'advances') this harmony was destroyed. So this leads the authors to believe that when conservation (or non-destruction of the environment) did happen among indigenous cultures, this was not conscious and was just a result of their lack of possibilities to destroy the environment. These three myths -low population, low technology and non-consciousness- will be analysed before the Noble Savage one.

It is important to clarify the use of the term 'myth'. I refer here to the term myth as a response to the way this term is used when there is reference to 'the myth of the noble savage'. Although, as we shall see, not every Indigenous Nation lived in harmony

with their surroundings, some Indigenous Nations did. Presenting the relation of Indigenous Peoples with the environment in harmonious way as a myth is an inaccurate and common generalization. By referring here to the three 'myths', I am placing the bases of the categorization of noble savage (low technology low population non-consciousness) at the same level of the so-called myth of the noble savage. The noble savage or the Indigenous Nation living in harmony with their surroundings is only a myth when it is implied for every nation or tribe that ever existed. In the same way, these three myths are so only when implied for every case.

The three myths

Many of the detractors of the myth of the noble savage, after showing that Indigenous Peoples actually managed and modified their environment and that the Garden of Eden myth is not close to what happens in their environment, go further and justify the low impact of Indigenous Peoples on the environment by arguing that this was due to a lack of technology or to low population. (Callicott 1989: 203-207; Butzer 1992: 348-351; Alvard 1993: 355-356; Redford 1990: 29; Johnson 1989: 214-221; Gomez-Pompa and Kaus 1992: 274 and 1998: 5983; Posey 1990: 17; Gutierrez 1993: 1) In some cases, lack of consciousness on the part of Indigenous Peoples is also added in this quest to destroy the myth of the noble savage. (Alvard 1993; Callicott 1989 205-217; Gadgil and Berkes 1991: 134; Gomez-Pompa and Kaus 1992; Johnson 1989 221; Breslin and Chapin 1984: 34; Denevan 1992: 371) As a consequence alternative forms of management are discredited.

'Lack' of technology

It is common place to attribute the 'low impact' of native populations on their surroundings to their low capability to modify them due to their lack of technology to do so. On the other hand, the extinction of many big mammals in the Pleistocene has been attributed to the ancestors of Native Americans and the conversion of forest areas to grasslands has been attributed to more recent Native American cultures. (Gomez-Pompa and Kaus 1999: 5982-5983) How then, people whose ancestors managed to drive several mammals to extinction, transform forests to grasslands and maintain forests in a desired state by using fire, can be seen at the same time as people who do not influence their environment because they do not have the means to do so? (Callicott 1989 204-207) I should also add, regarding Pleistocene extinction, that it is one thing to examine the consequences of the new comers (Anton 1995b: 23) and a very different one to live for generations in that land creating not only knowledge about it, by trial and error, but also spiritual and ethical ties with it, ties that as we have seen can be crucial in the relationship between humans and their surroundings.

Maybe the distinction should be between appropriate and non-appropriate technologies instead of being between primitive and modern ones. This distinction is very clear, especially in the tropics, where modern technologies have not been able to 'adapt' to such an environment and in contrast to more 'primitive' ones they have been an important source of degradation. (Toledo 1996) In the Americas before 1492 many cultures had

been using irrigation and agricultural techniques and had a knowledge of astronomy for example that was far from what is labelled as primitive

Finally this quote from Callicott will highlight the fact that we cannot study the influence of technology on Indigenous Peoples in isolation from the impacts of industrialism, market and capitalism.

[T]he adoption by Indians of Western technologies was accompanied by massive and aggressive disruption of their traditional belief systems by Europeans and Euro-Americans. If the white man had landed in North America, off-loaded cargoes of axes, knives, iron kettles, and so on, and then turned around and left, it remains a moot question whether or not these allegedly more efficient means of environmental exploitation would have been embraced and abused by the recipients-or even used at all. (Callicott 1989: 205).

A similar case can be argued in relation to population, as Gadgil and Berkes state.

Population pressure is real, of course, but in many cases, it comes after local systems collapsed and local resource users lost control, and not before. Ecologists have usually dealt with human population growth as an independent variable. They have not, to any extent, examined the possibility that the Third World population explosion may in part have been a consequence of the loss of local control of resources. A decoupling of co-evolutionary relationships between the social system and the natural system could plausibly result in the suspension of traditional limitations on resource exploitation, as well as the loss of feedback relations that kept population size within the limitation of the resource base. (1991: 139, emphasis added)

Having said this, let us go back on time and see if the 'low impact' of some Indigenous Peoples was in fact just a matter of low population as it has been frequently argued.

Low population

Alvard (1993), Redford (1990) and Johnson¹⁶ (1989) are among the authors who base low impact on low population. Two aspects should be distinguished in our analysis. Population can be in fact a source of pressure on the environment because a given amount of land cannot sustain an infinite amount of people. So the population dependent on a certain amount of land is in fact an important thing to consider in our analysis. Regarding Indigenous Peoples impact there are, as I said, two things to analyze: First, is the low impact a direct consequence of Indigenous low population, as argued by many authors, or was the population, in some of the cases argued, bigger than supposed and the resources much more effectively managed than supposed? And second how important is it to recognize that in many cases the population could have been kept in 'low' levels consciously in order not to deplete the limited resources? Together with this second point (consciousness) comes a reminder. We are not looking for conservationists or conservation measures, we are looking at sustainability. I will clarify this point by quoting Alvard. "[O]bserving a native group in equilibrium with its environment is not sufficient evidence to label them as conservationists. Sustainable harvests can be easily maintained by small groups of consumers living in an abundant environment." (1993: 356) Here the terms conservation and sustainable are being used to the same case and this creates a confusion as we analyzed above. I made this clarification because it is common to argue that indigenous peoples are not consciously conservationists, but as I have argued above they are not necessarily aiming at conservation (as described in chapter 1) but at sustainability. It is very different to affirm that Indigenous Peoples are not consciously conservationists than to affirm that Indigenous Peoples are not consciously

It should be clarified that Johnson refers to a specific tribe (Machiguenga) and does not

sustainable. The consciousness aspect will be analyzed in brief, however we should keep in mind this distinction for in this thesis we shall be arguing that many Indigenous Peoples were and are consciously *sustainable*. Now we shall get into how direct is the link between low indigenous population and 'low impact'.

The population figures for the Americas before 1492 have been the subject of debate. Wright situates the population on 100 million (1993: 4). Stannard quotes different sources and situates the figures between 75 and 150 million (1992: 11) and Denevan suggests it could have been between 43 and 65 million (1992: 370). What is clear is that the numbers suggested have been growing through the years based on new evidence and that very few academics believe today that the Americas had a very low population in the 15 Century. There seems to be a general agreement on the distribution of the population which was concentrated in the highlands of Central America and north west of South America. For this reason I will concentrate on those areas. I should say however that the rest of the Americas were far from un-populated and even the Amazonia, which was considered to be a very low density area, was in fact supporting many different tribes with higher density than initially supposed (Posey 1990: 17).

The Maya civilization lived in a tropical environment for generations and had densities of 150 to 500 people per Km² in places where today there are densities of 4.5 to 28.1 people. (Gomez-Pompa and Kaus 1992: 274 and 1999: 5983) This analysis confirms that indigenous management of the land in the tropics has been much more successful

intend to generalize the case study to every Indigenous Nation

that any modern management attempt. (Toledo 1996; also Gutierrez 1993) So on the one hand we know that the Americas were populated with higher densities than it was first supposed, and we also know that in some areas densities were high and even much higher than they are today. On the other hand we know that European Conquerors, and also many scientists until recently, saw the Americas as pristine. How do we reconcile these two facts? Some authors would argue that after the contact the spread of contagious diseases (which was not always undelivered) decimated the population before the Europeans even arrived to the area and for that reason the environment had enough time to recover and be perceived as untouched. But even in that case, such a fast recovery of the environment would suggest a not highly impacted environment and surely one that was not impacted beyond its resilient capacity. Of course it can continue to be argued that the 'low impact' was due to a population still not too high and, as we saw, this will always be a fact in the search for sustainability. So the importance starts being not only the amount of population but the reason why the population was on the numbers it was. We know that "traditional Oceanic societies (Micronesia, Polynesia, and Melanesia) ...placed limits on their...populations in order to remain sustainability (sic)" (Klee 1996: 17). We also know that the "Barafiri have utilized effective mechanisms (prolonged lactation, infanticide, and abortion) for maintaining their numbers low in relation to their total resource base." (Smole 1989: 118-119). Like these there are many examples of population control performed by Indigenous Peoples. Ultimately in the quest for sustainability the size of the population does matter. It can be said that with modern technologies more people could live on a certain resource base in a sustainable way (and this has been proved not to be yet possible in the american tropics) but the low population

myth should not be used to discredit Indigenous Peoples ability to live sustainably. To finish I would like to remark the idea implied in the above quote from Gadgil and Berkes that although population pressure is real among several indigenous communities, in many cases the pressure comes after a collapse of local institutions. (1991: 139)

Myth of non-consciousness

We have briefly touched the myth of non-consciousness in a couple of places in this chapter. We mentioned the conscious population control and we made the very important distinction between being consciously sustainable and being consciously conservationists. As said before, and as for what was discussed on chapter 1 and part of chapter 3, we will be analyzing the sustainable aspect and not the conservation one unless otherwise previously clarified.

Since the simple act of living from the environment for generations is not considered as sufficient proof of sustainability for many authors, what should we be looking for when trying to prove sustainability? According to Alvard "[s]ustainable harvests can be easily maintained by small groups of consumers living in an abundant environment." (1993: 356) Later he also dismisses altruistic restraint from the use of certain resources and he says that "[c]onservation, then, can be operationally defined in contrast to short-term rate maximizing. Hunting decisions that are costly in terms of short-term harvest rate maximization, yet increase the sustainability of the harvest, are deemed conservation." (Ibid: 358) How then would Alvard define a 'nomad' society that maximizes its short-term harvest in a certain area knowing that once the resource gets

harder to find they can go to a different area and let this one rest for a certain period before hunting again with the population replenished? Each one of the areas might be considered in the management decisions, but the hunting in each area might be done maximizing the short term rate. After showing the existence of restrictions in the use of a technology and control in the numbers of the population we should get into restrictions on the use of the resources with a given technology and a given population. So the question would be, did indigenous peoples consciously restrain their use of the environment to live in a sustainable way?

Berkes et al tell us that

We understand little of how indigenous knowledge of nature and human social behaviour has been translated into resource use practices that tend to promote sustainable use of biological resources and conservation of biodiversity. *What we do know is that many ecosystem people do exhibit resource use restraints that promote conservation.* (1995: 284, emphasis added)

Gadgil and Berkes (1991) present ten different forms of restraint used by human groups. Moreover we know that many cultural practices have lead to restraint in the use of resources (Gomez-Pompa and Kaus 1992) and Klee presents a particular case in which limits are placed in the economy of traditional Oceanic societies. (1996)

Finally I would like to get into the consciousness issue regarding specifically *conservation* and not *sustainability*, as we have been doing up to now. At the beginning of this chapter we referred to some cases in which pieces of land are set aside by Indigenous Peoples. (Gadgil et al 1993: Alcorn 1994: Breslin and Chapin 1984: 34;

Gomez-Pompa and Kaus 1992, Kemf 1993). These were in many cases presented as conservation in the purely western conception of the term when indeed the area might have not been isolated for conservation but might be one more part of the sustainability of that society. These places were not completely isolated and were used or created either to obtain seeds, conserve certain varieties, or to extract medicinal plants and other resources that otherwise could not be obtained. These cases might have been presented as conservation by some scholars, either because they are searching for a particular idea of conservation or because in their search for arguments in favour of indigenous conservation alternatives they see these examples as ideal cases that resemble western conservation or that can be presented as such to a scientific and bureaucratic community that is not going to concede that conservation can follow more different styles. Still, why is there such a need to see *conservation* as conscious? Could it be because the environment is still seen dualistically and if there are lands for production there must be lands for conservation and this conservation has to be consciously carried by the society under study? And even if we are talking about conservation and not about sustainability, why does conservation have to be seen as a conscious attitude? How many people living in a modern state know why every law exists and how it came to be? Why do they follow those laws? Is it unconsciously? Or is it because of the existence of institutions which they trust to apply and create appropriate laws? In the same way, conservation might not be unconscious. There is a belief in religious practices and institutions that might be created after feedback from the environment and these practices and institutions show what to do and how to do it in order to survive and conserve the resource that sustains yourself and your community.

The ecologically noble savage

The concept of the ecologically noble savage poses many dangers which are important to analyze before we get into the alternative conceptions of Nature. First, it places indigenous peoples, for the only reason of being indigenous, as the savers of humanity in an era of ecological devastation caused by industrial society. Second, whenever an Indigenous Nation is showed to live in harmony with its surroundings, this is normally attributed by many authors to one of the three myths. On the other hand, whenever a new archeological discovery shows that a civilization collapsed due to 'bad' management of the environment, the case is generalized to every Indigenous Nation or tribe. Finally, it forces Indigenous Peoples to live under a certain constructed model of what they ought to be, and as soon as they are out of that model they cease to be noble savages and they might even loose their 'indigenusness'. This last one is the most patent and dangerous one when it comes to conservation, because under that conception, Indigenous Peoples are forced to remain static in order to conserve a certain imposed vision of primitive noble savages. (Neumann 1998: 1999)

Just as western conceptions of what a noble savage should be are imposed on indigenous peoples, western conceptions of what conservation must be are also imposed, and both conceptions are related to each other in their construction. Many authors believe that after it is shown that indigenous peoples modified their surroundings intensively then the ecological harmony myth falls apart. As Redford argues:

The idealized figure of centuries past had been reborn, as the ecologically noble savage. The recently accumulated evidence, however, refutes this

concept of ecological nobility. Precontact Indians were not "ecosystem men": they were not just another species of animal, largely incapable of altering the environment, who therefore lived within the "ecological limitations of their home area." Paleobiologists, archeologists, and botanists are coming to believe that most tropical forests have been severely altered by human activities before European contact. Evidence of vast fires in the northern Amazonian forests and of the apparently anthropogenic origins of large areas of forest in eastern Amazonia suggests that before 1500, humans had tremendously affected the virgin forest, with ensuing impacts on plant and animal species. These people behaved as humans do now: they did whatever they had to to feed themselves and their families. (Redford 1990: 27)

The problem lies on picturing Indigenous Peoples as noble savages under the assumption that for being a noble savage they must follow our own conception of harmony with Nature. Under this conception, for Indigenous Peoples to be in harmony with Nature, they have to be in harmony under our own terms. Here is where the dualism and the conservation practices come into play again. Indigenous Peoples can only be in harmony if they do not alter Nature. As soon as someone can prove that Indigenous Peoples did manage the environment intensively, then they fall from the Garden of Eden in which they were placed. That Indigenous Peoples were managing the environment intensively does not mean they were destroying Nature, because Nature was not seen as separated and absent of Human actions: so they could not destroy it and live from it at the same time. It is western dualism that makes management look like destruction. Nature has to show no trace of Human management, and for that reason places Indigenous Peoples as noble savages when we cannot see the traces of management on their environment.

I will present yet another example of this dualism being imposed on Indigenous Peoples.

There is no doubt that indigenous people have an intimate knowledge of their environment, perhaps rivaling Western scientific specialists in some areas. A number of researchers have recently questioned, however, the view of native peoples as benign stewards of nature. As noted by Hames, *it remains to be proven whether native knowledge is utilized to maintain a balance with nature, or simply to procure resources in the most efficient manner possible.* (Alvard 1993: 356, emphasis added)

Again, the western industrial mode of production and conservation is presupposed as the only one possible. Why do resource exploitation and conservation have to be in opposition? Why cannot indigenous knowledge be used to procure resources efficiently and to preserve the environment at the same time? Alvard argues that the apparent overlapping of an indigenous group with a healthy environment can be explained by their low population. (Alvard 1993)

To avoid mystifying Indigenous Peoples and therefore posing challenges to their knowledge and way of life which they did not ask for, we must first of all recognize that although there exist many similarities among different indigenous knowledge and management systems, there is no single indigenous knowledge or management. Secondly we must recognize that encroachment on indigenous lands and acculturation might be too fast for certain indigenous groups to adapt and create new alternatives or institutions in order to cope with those changes. This is not to embrace either of the two myths (low-population or low technology), but to recognize that indigenous systems and their environment are under pressure. We neither see them as static nor underestimate them, for evolution and adaptation has allowed them to survive 500 years (in America) of an atrocious constant attack (Galeano 1994; Wright 1993; Stannard 1992; Perera 1995) on their culture and way of life.

Once we go beyond the myth of the noble savage and we understand that "not all pre-scientific societies have necessarily lived harmoniously with the natural world, and not all indigenous peoples, outside industrial society do so today" (Gadgil et al 1993: 151 also see Gomez-Pompa and Kaus 1992: 278) we can more consciously open the door to understand and try to make good use of other forms of knowledge. These are completely different from the western scientific knowledge, with its own advantages and disadvantages. However, due to the general characteristics of indigenous knowledge, this kind of knowledge can be particularly relevant to conservation. (Gadgil et al 1993: 155) I agree with Haverkort and Millar's argument:

[t]here are good reasons to challenge the primacy of western science and technology. Yet, we believe that neither romanticizing indigenous cosmovisions and knowledge systems nor condemning western science as being responsible for the problems of environment and development is a good position. We think that one should look for the best combination of elements of the indigenous systems and of outside systems. In the end this would not lead to worldwide westernization, but to global diversification of development approaches. (1994: 63)

Cosmovisions and spirituality

As I said at the beginning of this chapter, Indigenous Peoples' management of the land has a particularly different characteristic from western management. Production and conservation are not seen as separate spheres. This different way of management and relation to Nature will be analyzed in the next section of this chapter but now the conceptual differences will be analyzed. These differences are in my belief the reason why so many indigenous management cases go in a certain direction different from western direction. In the first chapter, I argued that a dualistic view of the world has

influenced management of resources in many Western systems and showed the consequences it has had in that management. Then at the beginning of this chapter I analyzed how indigenous management and knowledge is embedded in its social and spiritual institutions. In the following section I will consider how different world visions can affect the management of Nature.

Cartesian rationality which tried to free humans from the confusion between soul and matter, had as a consequence a disenchantment of the world. (Apffel-Marglin 1996). "The cosmos became what it is for citizens of the modern world, a despiritualized mechanism to be grasped by concepts and representations constructed by reason" (Apffel-Marglin 1996: 3). In pagan Europe, nature was transformed from a magic entity full of spiritual meaning and sacred objects to a silent machine which humans could master, explore, dissect and fully understand if they proposed to do so. This change was not conducted by intellectuals alone. The Inquisition had its hands involved in the perpetuation of this demystification of nature.

By contrast, Indigenous knowledge and management systems are not separated from the cultures' cosmovision and spirituality. (Apffel-Marglin 1996; Boege 1996; Haverkort and Millar 1994) which at the same time are not separated from their environment. (Gadgil and Berkes 1991; Haverkort and Millar 1994; Apffel-Marglin 1997b) This 'embeddness' of spirituality and cosmovision in nature does not permit a separation of land for production and land for conservation because all land is sacred and all land has to be treated in a sacred way. This means that no matter the role the land

plays in humans' life, their own role continues to exist and respect is needed in the interaction with it. Mayans asked for forgiveness from the earth before planting and thanked after getting their crops. There is an understanding of human dependence on nature but there is also a respectful way of assuming that dependence. Alvard states that having a profound knowledge of the environment is not the same as using the knowledge to achieve equilibrium (1993: 356). We know from past extinguished civilizations that relying on local resources is also no guarantee for non-depletion of these resources. These facts highlight the importance of rooting sustainability in worldvisions and spirituality in connection to a good understanding of the natural processes and a recognition of our dependence on our belonging to Nature.

After showing that indigenous peoples, their knowledge and their institutions were not separated or isolated from Nature (Apffel Marglin 1996; Boege 1996; Gadgil et al 1993; Carruthers 1997: 265; Haverkort and Millar 1994); that they could not understand the concept of wilderness (Colchester 1996: 33); that they had a sacred relation with the environment (Gadgil et al 1993; Haverkort and Millar 1994; Apffel Marglin 1997) in which all life forms had spirits which were in many cases interlinked (Apffel Marglin 1997; Gadgil and Berkes 1991; Breslin and Chapin 1984; Richards 1996: 209; Descola 1992: 116; Haverkort and Millar 1994) and needed to be respected (Descola 1992; Boege 1996); we would now follow a logical sequence and analyze which were the consequences on the relationship or management of Nature or natural resources of these world visions or conceptions of Nature that so much differ from the modern western conception which directs conservation and production.

Relationship with Nature

Indigenous Peoples cosmovisions influenced the way they related with Nature. moreover this management and this relationship with Nature was one that left lots of footprints but few scars. Again, I am aware that generalizing creates its problems. Not only would it be more precise if we did not talk about "Indigenous Peoples", but also it would be more precise to refer to particular cases in which management did not lead to unsustainable practices. I will refer here to some particular nations' management and relationship with the environment, but I will also refer later to Indigenous Peoples in a general way. As stated in the introduction, not recognizing their similarities is just as inaccurate as not recognizing their individuality.

We know that many Indigenous Peoples had and have a profound knowledge of their natural surroundings (Berkes 1999; Berkes and Folke 1998; Anton 1995a; 1995b; Haverkort and Millar 1994: 54; DeWalt 1994), but we also know that "the mere possession of knowledge does not guarantee that a given human group will live in harmony with its environment." (Berkes 1999: 59) On the other hand, we also know that Indigenous Peoples had an almost complete dependence on their *local* environment for their survival. Could these two facts together and alone be the reason why so many native nations lived in harmony with Nature? Taking away the three myths is it possible that just knowledge and dependence could lead to sustainability? We now know that this so called "global village" civilization depends on Nature to get its resources. We also know that science has achieved magnificent progress, but, are we living in harmony with

Nature? Or in other words, should this path of awareness, development, science and technological achievements continue, would there be human life on earth as we know it in 7 generations? No one has the answer, but I am sure that the majority of scientists would tend to say "no". So what is missing? Why did many Indigenous Peoples manage to live in harmony for generations with their surroundings while other indigenous nations, western civilization and its followers are not? Many would bring to light at least one of the three myths, but I believe cosmovision, the way we see ourselves, Nature and our place in Nature, is what makes the difference.

Andean farmers instead of dissecting Nature to understand it and obtain the maximum from it, think that "...nurturing is not the sole prerogative of humans, but also nature and of all that inhabits the world." (Apffel-Marglin 1997a: 222-223) To understand Nature they had to be ready to follow her signs, so their relation is not towards a passive Nature that we can influence at our convenience, but a two way relationship in which we have to respect and nurture to be nurtured. The Cree of eastern James Bay believed not only that animals offered themselves to humans (belief shared by other North American Natives) but also that humans had to respect animals. "[T]he main reason for showing respect to animals is that humans and animals are related, they share the same Creator. Just as one respects other persons, one respects animals. Cree culture is rich with rituals related to respect." (Berkes 1999 Chapter 5: 83-84). According to Warren and Pinkston, "[i]n the Yoruba worldview, the land is a divine phenomenon with celestial status" and "[r]eligion played a role in assuring the maintenance of biodiversity in precolonial Ara." (1998: 166) According to Sponsel, "the Desana [in the Amazon]

have an elaborate system of myth, ritual, and symbol which regulates the dynamics of their human and animal populations as they interact in the dynamic predator-prey relationship" (1992: 240).

These cases illustrate how knowledge, management and harmony with Nature are also rooted in cosmovision and spirituality. In the words of Haverkort and Millar: "[t]he evidence of anthropological research, but also of agroforestry research and agricultural research suggests that the cosmovision of agricultural people have quite some impact on the biological diversity that is being created." (1994: 55) For these reasons I insisted so much in being aware of the dangers of "transporting" indigenous knowledge from one geographical place to the other without considering the background and embeddedness of that knowledge system. It should be noted, however, that Berkes argues that "worldviews... may be themselves affected by changes... such as collapse of management systems" (1999: 14) and Descola argues that "...peoples who use a similar environment in an almost identical manner nevertheless objectify nature and society through very different schemes" (Descola 1992 in Kuper: 113). This does not reduce at all the importance of the role that cosmovisions and spirituality have in management, relationship and knowledge. Moreover it highlights the importance of being aware of how rooted cultures are in Nature although they can relate with it in different ways but yet in harmony.

How did and does a management or relationship based on a non dualistic view of the world affect the environment?

In the last section, we analyzed the consequences for the management of Nature or natural resources of certain world visions or conceptions of Nature. We will go a step forward and analyze the consequences of these alternative management or relationship practices on the environment. It is important to do both things because we cannot consider the effects of cosmovisions on management without considering the effects of management on the environment and vice versa.

It is crucial to clarify a certain point before analyzing the specific subject of the effects of management on the land. A clear distinction must be made between management of the land in a sustainable way and conservation following a particular conception of Nature. In many cases, when studying the effects of past civilizations on their surroundings, authors search for traces of management of the environment in order to prove that the myth of the noble savage is not true. It is clear that every culture had an effect on their surroundings, they needed to do so in order to survive. It is also clear by now that many Indigenous Peoples did not distinguish between lands for conservation and lands for production. Why then search for evidence of indigenous management to say that the myth is not true? To say that a particular indigenous nation lived in a sustainable way is not to say that their management left the land in pristine condition, because that is not possible.

I will illustrate this point by presenting the following quote from Butzer, who after demonstrating that forests and prairies in North America and rainforests in the Amazon were not pristine at the time of the European invasion, he states the following.

The empirical evidence therefore contradicts the romantic notion that Native Americans had some auspicious recipe to use the land without leaving a manifest and sometimes unsightly imprint upon it. (Butzer 1992: 348)

This is not what is being argued about Native Americans' management. This might be what a traditional conservationist might be looking for as an example of appropriate ecologically 'positive' management, but it is very different to manage the land appropriately from an Indigenous point of view than from a conservationist point of view. The former, as opposed to the latter, depends directly on the local environment for survival. One manages the whole land as a unit, careless of whether or not their management is noticed by outsiders; the other one manages part of the landscape with the objective (among others) of hiding human involvement in it. I have to remark that this is not to say that Butzer was 'wrong'. The Americas were definitely far from pristine in 1492, but it is very important to clarify what we are trying to establish about Native Americans. Are we trying to determine if they lived in a sustainable way or are we trying to determine whether or not they preserved certain areas in the same way we now try to preserve National Parks? This point having been clarified, we can now start analyzing the effects some of the past civilizations had on their surroundings.¹⁷

Earlier in this thesis it was mentioned that there is an overlapping of highly culturally and biologically diverse areas (Durning 1992; Colchester 1995; Alcorn 1994; Wileox and Duin 1995; Hyndman 1994; Lewis 1990), and that in many ecosystems

managed by Indigenous Peoples biodiversity was enhanced by them. (Toledo et al 1994; Haverkort and Millar 1994; Ryan 1992; Sponsel 1992; Scoones et al 1992; Ilitis 1988; Reichhardt. et al 1994; Tiffen et al 1993; Berkes et al 1995; Colchester 1992: 17; Irvine 1989) According to Hyndman.

Existing biological and cultural diversity occurs predominantly in humanized, cultural landscapes and seascapes inhabited by indigenous nations. This situation has created a 'Rule of Indigenous Environments'. Which states: 'Where there are indigenous peoples with a homeland there are still biologically-rich environments' (1994: 299)

There is no doubt that Indigenous Peoples strongly depended on their local environment for their survival (and in a different way they still do today). So when there is evidence of tribes or nations living in the same area for generations, we are automatically evidencing that they lived in a sustainable way (we will analyze population and technology later). Although Indigenous Peoples share many common characteristics, every Indigenous Nation is different from the other, so when a case is found in which a certain culture disappeared or collapsed, this does not mean that every Indigenous Nation is not sustainable. Moreover when the classic Maya culture collapsed due to a prolonged dry period in the Yucatecan area there was not a biological collapse with it, just a population collapse. (Gomez-Pompa and Kaus 1999). Even under pressure, the environment was not degraded to a point in which future generations could see their future threatened and indeed a period of population growth came later which lasted until the arrival of the Spaniards (Ibid).

⁷ Also see the discussion between Alcorn (1993) and Redford and Maclean (1993a, 1993b)

I am arguing that the mere existence of Indigenous Nations in the same region for generations is enough proof of their sustainable relationship with the environment. Moreover, we have plenty of proof from the Mapuches in the south to the Inuit in the north that Indigenous Nations survived for generations in the very diverse environments of America without provoking a biological collapse or even major disturbance in it. It can be argued that at the beginning this survival was carried bringing several species to extinction as it happened during the Pleistocene, but we have already seen that Indigenous management is highly dependent on feedback¹⁸ from the environment. So this first period of people adapting to new ecosystems probably created some disequilibrium which might have been later adjusted as new institutions, taboos, management techniques, rituals and knowledge were implemented. I should add that this adaptation of management (Gadgil and Berkes 1991: 134-136) might have not been independent from an adaptation in the respect for the natural environment. As Callicott argues, there is no reason why "major cultural changes" have to "be confined to material culture" (1989: 206), indeed, maybe

"those Native American [who survived are] descendants of the remnant population of Siberian immigrants who evolved an ideology which helped them avoid the pattern of overexploitation that brought an end to the ultimately ruinous *modus vivendi* of their ancestors. (Callicott 1989: 207, italics in the original)

The same thing can be said about western civilization, whether or not we consider the current path as sustainable. We are indeed much closer to a sustainable living than we

¹⁸ Berkes and Folke distinguish between positive and negative feedbacks, the former being the one that reinforces the subsequent behaviour and the latter being the one that modifies it. (1998: 6)

were in the 1950s and 60s, or at least we are ideologically. Once again, the interdependence of "management" and cosmovisions is apparent.

Conclusion

The intention of this chapter was to present alternative ways of relating to Nature that are commonly presented as having a relatively low impact on the environment. In order to do so we analyzed the concept of noble savage and we had to deal with what we called the three myths that underscore the importance of Indigenous Peoples management or relationship with Nature. The importance of diversity and indigenous knowledge was highlighted and the interrelationship between management, knowledge, cosmovisions, Nature and spirituality was brought forward. From this chapter we can conclude that *there are possible alternatives to the western production-conservation dichotomy* and that we can try to understand which are the bases of these alternatives. However, the time to learn and understand the bases of these possible alternatives -which are not the only ones- might be short, for we know that "traditional knowledge systems are rapidly fading away." (Cox 2000: 44) Of the 6000 languages (Cox 2000; Durning 1992) -the best indicator of distinct cultures (Durning 1992)- spoken at the beginning of the 20th century, half are not spoken any more and of the remaining, "80% are spoken only by small groups of elders" (Cox 2000: 44).

CHAPTER 4

...we suggest a subtle permutation of the definitions of sustainable development and conservation to encompass those actions which provide environmental and biological safeguards for future generations without compromising the needs of present ones.

Gomez-Pompa and Kaus, 1999

Introduction

The first two chapters analyzed the conception of Nature that forms the general basis for the creation and management of protected areas. Chapter 3 presented alternative views of Nature and alternative cosmovisions in which the separation between Nature and Humans, and productive and conservation lands does not exist. These alternative ways of relating to Nature showed that Humans and Nature can and did coexist in harmony in the past and opened the door for a search for alternatives for the future. This chapter presents alternative goals for protected areas arguing that the environment has to be managed as a whole, and also shows that management inside and outside of protected areas has to be part of the same goal of achieving sustainability. The alternative goals and management practices for protected areas proposed here do not root sustainability in a distinct separation of lands for the purpose of conservation and lands for production. Both are part of a system that has itself to be sustainable and cannot be considered isolated. Although different kinds of management might be considered for different parts of the land, this is not a dualistic view, for each piece of land is managed in consideration of the other and each role is not independent of the other.

This chapter introduces the proposed goals of protected areas and the reason for the search of new goals together with the aim for these new goals. Suggestions on how to achieve the new goals will be made and the buffer zone concept, together with the Man and the Biosphere programme, will be introduced. Management alternatives that could be introduced in these area will be discussed. Finally, management alternatives that include Indigenous Peoples' management will be considered.

What should be the role of conservation and protected areas?

Protected areas should be one more component of the strategy to be sustainable, not just an exhibition of 'Nature', nor a reservoir of biodiversity for an uncertain future, nor a place to conserve as a contrast to the situation outside the areas. It is important to highlight this idea in the process of change, because the world vision (as non-dual) affects the objectives of production, the adoption of economic objectives and the technology used in the process. (Hoffmann 1992: 111)

The purpose of conservation has gone through several phases since the creation of the first national parks. At first the objective was to conserve beautiful landscapes or places with remarkable geological characteristics, then the conservation of particular species was the goal. Later this conservation goal was met by conserving particular ecosystems in order to achieve the conservation of biodiversity. (Colchester 1995: 9)

Although conservation goals have gone through these different periods, the method to achieve these goals has changed remarkably little through time and space. However, as we saw in chapter 3, 'conservation' was achieved in different ways by different peoples.

This diversity together with the relative degree of success of different methods should give us some suggestions on how to achieve conservation under the proposed goal of sustainability.

The goals of protected areas in the new search for sustainability would be the following:

- 1) To integrate productive and conservation practices
- 2) To promote or encourage the integration of Humans into Nature not just as visitors that do not remain.
- 3) To show how production can be sustainable - not only in terms of yields but also in its role in processes of sustainability - can respect other forms of life and benefit from respecting them, and can work with, rather than against, the ecosystem characteristics.
- 4) To encourage, protect and initiate the adoption or conservation of alternative management strategies such as, but not only, Indigenous management systems.
- 5) To be a refuge (and an expanding one) for ecosystems, species and biodiversity in general without endangering the above mentioned characteristics and without letting those compromise this crucial goal.

Two different aspects of these new goals and the new role of protected areas will be discussed: first, we will consider the *reason* for searching for new goals and then the *aim* for these new goals. The *reason* is the unavailing role of the present protected areas system, which have no important influence in what the future will be, if changes do not

happen outside of them. As stated in chapter two, the goal of conservationists is to reach 10% of land surface as protected areas. This goal will exclude 90% of the land, and we already discussed in chapter two what kind of legal protection that 90% of the land will have. Moreover, we know from Soule and Sanjayan (1998) that in order to avoid massive extinctions we need to set aside 50% of the land as protected areas. We come up to two basic options if we want to preserve biodiversity and all forms of life as we know them. Either we set aside more and more land as protected area, or we change the patterns of production and consumption outside protected areas. Protecting 10% of the land while leaving overconsumption, population growth, social injustice, and industrialism in place, does not make sense, at least not if sustainability is the goal. Because we know the consequences of protected areas on local people (chapter two) and we know that there are other options to the preservation production dichotomy (chapters 1 and 3), the latter option, change patterns of production and consumption, is preferred to the former, increase number of protected areas. Trying to change patterns of production and consumption outside protected areas may seem a difficult goal to achieve through the conservation movement. It is better, however, to try this goal than to continue under the fallacy that there is a possible future in saving small patches of 'Nature' in a sea of exploitation. Because no matter how well we protect that 10% of the land, how well we buffer it from outside influences, if the whole system is not sustainable due to the management in the 90% what are we conserving those areas for? The goals proposed here for protected areas recognize that the dualism has to be confronted in order to reach sustainability, and they attempt to reconcile the relation between Humans and Nature in every piece of land and not just in a few patches that are deemed worth saving. This

conception is what leaves the rest of the land unprotected or not deserving protection.

Conservation must go beyond the limits of protected areas and work towards change in the source of degradation instead of placing buffers that do not challenge the situation outside protected areas but rather adapt to it. Over-consumption, as stated in chapter 2, must be confronted. In a world in which, on the one hand, industrialized countries, "with 26 percent of the population, account for 78 percent of the world production of goods and services, [and] 81 percent of energy consumption..." (Escobar 1995: 212) and, on the other hand, the south struggles to achieve a northern life style, we have a recipe for constant social injustice or for future environmental destruction. In addition,

They [conservation planners] are...forgetting that First World business are drawing on Third World natural resources to meet First World demands, and, therefore, not meeting those demands by extracting the natural resources in their own nations' national park and reserve systems." (Alcorn 1991: 319)

Consumption, population growth, development, globalization, social injustice, and economic growth are topics that cannot be fully discussed here but have to be addressed, and their interrelation considered, by the conservation movement. These topics are as important for conservationism as is the study of soil, climate, migration, habitat fragmentation or corridors.

The *aim*, on the other hand, is to achieve sustainability, not just sustainability of protected areas but sustainability of an area that goes beyond the limits of the protected areas. The proposed goals try to achieve more than just biodiversity preservation or protection of natural resources, or any other of the preservation arguments used

throughout history¹⁹. This is one of the most important lessons learned from other societies, the goal is to be sustainable, or to think about the effects our acts will have on the seventh generation like many Native American societies did and do before taking anything from Nature. This can be achieved by managing the environment with knowledge and respect, without drawing boundaries between Nature and Humans.

Sustainability

When aiming for sustainability, it is necessary to highlight the importance of the whole system and not just of parts of it. In agroecosystems for example, sustainability is defined as "...the ability of an agroecosystem to maintain production through time, in the face of long-term ecological constraints and socioeconomic pressures." (Altieri 1995: 58) Land dedicated to agricultural production can be "sustainable", that is, produce a certain yield for many generations. This is very important, specially if we consider the practices of modern agriculture which tend to be destructive and may lead to erosion, compaction of soil, contamination of water sources and other problems that are reflected inside and outside the area of production. However, this view of sustainability tells us very little about the sustainability of the system as a whole. If a whole system is dedicated to intensive agronomic production, can we consider this system sustainable? It might produce sustainable yields over time, but is the system sustainable by itself or is it being sustained by outside factors like a 'less productive' area that provides water, genetic diversity and other 'inputs' that are not produced by the agroecosystem? It is important

¹⁹ Nelson, M (1998), presents 30 different preservation arguments that have been used by different actors in the history of the conservation movement.

to clarify that I am using agroecosystems to highlight the example because agroecosystems are considered less harmful than modern agronomic production². So although we can conclude that a certain agronomic system is sustainable in terms of its production, we have to expand our scope if we want to find out whether the country or society or region in which this agronomic system is located is ecologically sustainable or not.

Protected areas, as productive areas, cannot continue to be analyzed as isolated units. If the goal is sustainability, then the interactions between units have to be considered and enhanced. One clear example of this point is presented in figure 2.

Figure 2

Part A of figure 2 is a simplification of more complex figures (see Wild and Mutebi 1997:49) that show the protected area is surrounded by different types of areas that go from intense protection to intense production. In this case there is a 'Core Area' in which

² Hecht defines agroecology as follows: "...agroecology often incorporates ideas about a more environmentally and socially sensitive approach to agriculture, one that focuses not only on production, but also on the *ecological sustainability of the production system*." (Hecht 1995: 4, emphasis added)

protection is strict, a 'Sustainable Development' area, a buffer zone to protect these areas and the rest of the country or region in which environmental regulation is fitted to allow industrial modes of production. How can we consider the so-called 'Sustainable Development' area as a sustainable area by itself? The sustainability of this area is of little importance. What should be important is that the whole area being considered inside the buffer zone is sustainable. The goal should be to extend this sustainability to the rest of the country or region. In part B of the figure the activities are not placed in a way in which buffer zones or shields are fundamental to protect an area from the other but in a way in which they can interact with each other when possible. Each area could be dedicated at different moments in time to different activities. For example, industrial areas could overlap with agroecology²¹ areas that at the same time could overlap with areas dedicated to the preservation of certain species that could not survive if overlapping with the industrial areas but can do so if there is certain overlapping with agroecology areas. At the same time agroecology areas would be benefited, as we shall see, by the proximity of such preservation areas. Permaculture and restoration ecology could be practised in areas no longer dedicated to industrial agriculture and could overlap with agricultural and conservation areas. Location or grade of protection of the areas is not the main concern. What matters and is highlighted by part B of the figure is the sustainability of the whole system. As in the case of the Kayapo of the Amazon or the Huastec of Mexico, there is an ecological integration of the forest as a 'natural' system and the provisions of the forest as a managed system. While in traditional western management, areas are separated for preservation and other areas are used for production, and this

situation is stable through time, in this case different roles of the land vary through space *and time*. An old agricultural piece of land that is not providing maize and manioc any more, will start providing sweet potatoes or papaya for some time and in the future will provide medicinal plants, or it will be a good hunting reserve because of the deliberate planting of certain foods preferred by deer or tapir. At the same time, a different part of the forest will be providing maize and manioc and the cycle will be repeated. (Posey 1990; Posey et al 1984; Balee and Gely 1989; Anderson and Posey 1989; Balee 1994) In this way, the whole forest is managed but with different intensity *at different moments in time and space*, and *no land's role or sustainability can be analyzed without considering the role and sustainability of the others*.

The new goals present new challenges for the conservation movement, but these challenges have to be faced if the conservation movement hopes to have a real and significant influence in the shape of future land management.

How can this new role be achieved?

Any conservation plan based on the new goals of protected areas needs to be inserted in a regional or national context and has to be backed up by policy at the national level (Barzetti 1993: 63). It should be planned and developed together with the population affected (Wells and Brandon 1993: 157), driven by diversity in a bottom-up approach instead of imposing the same methods on different circumstances (Durning 1989; Colchester 1996). It should consider the origin of the imported products consumed

or used in the area²² and finally, the application of the precautionary principle could be a wise way of protecting traditional conservation targets during the transition, and it could also help to guarantee its gradual accomplishment. The Man and the Biosphere programme is compatible with both the goals and the suggestions stated above. The buffer zone management concept on the other hand, represents an instrument that can be used in the transition to achieve the new goals of protected areas.

Buffer Zones as a transition to a new role

In many cases, when trying to integrate protected areas and their immediate surroundings, conservationists or developers suggest buffer zones. What are these buffer zones designed for? And most importantly, why is there a need for buffer zones? Modern agricultural production methods impact the environment so drastically that the effects are seen not only in the land dedicated for production but also on the surrounding areas. The solution usually has been to create a zone between the protected area and the production area in order to protect the former from the effects of the latter. However, this solution does not challenge the source of the problem and buffer zones in general tend to be extensions of the protected area instead of a search for alternatives in the production land. (Colchester 1995: 45) It is as if after an increase in robbery the state decides just to increase the number of police on the street and the number of jails without trying to solve whatever might be causing the increase in robbery. By creating these zones, the root of the problem goes unchallenged. In this way buffer zones have just taken the dichotomy further by showing that there is not only a line, but also a need for a shield that separates

²² There are no closed systems, but establishing adequate labels and considering the origin of the product

humans from Nature. If there is a need for buffer zones, it is not around protected areas but around industrial areas, around modern monocultures and around high input agriculture.

If the new role for conservationism will be to integrate protected and productive areas, should protected areas expand to breakout of the dichotomy outside or should protected areas contract to serve as examples of sustainable management? In other words, should production be gradually expanded outside protected areas, at the same time that we search for sustainable production practices, or should alternative production practices be tested in what is now a protected area? This is a crucial question that should be examined case by case, but given the inclination of the balance at this time, the first option (expansion) looks to be the safer, more logical and most likely to be taken forward by the conservation movement. However, in the past this type of expansion has led to an extension of the restrictions from protected areas (many times through the creation of buffer zones) with the consequent opposition of the local population. If buffer zones can go beyond this, they will play a very important role while being used to show the possibilities of sustainability and the advantages of living in proximity to a protected area.

In order to do this and follow the goals of conservation, some precautions should be taken. Carroll (1990) makes some suggestions for agricultural buffer zones to "improve rather than degrade the embedded natural areas"

can help to insure that 'sustainability' is not being based on unsustainable practices somewhere else

These suggestions are (Carroll 1990: 377-378):

- 1 The project should be both economically and culturally attractive to the family and or the labor pool.
- 2 The plan should be consistent with national policy. [Also see Barzetti 1993: 63-64]
- 3 The design should be explicitly related to the ecological management goals of the natural area.
- 4 The buffer-zone activities should be able to be modified to meet new contingencies.
- 5 The economic and the ecological vulnerability of the system should be well understood.

I would add three points. First, this process and other experimental ones, backed up by a national policy, should be carried out with the intention of expanding the systems to other parts of the territory. Second, the process needs to be a bottom up one with initiatives from the local population. These kinds of approaches have proven to be the most successful ones in buffer zones. (Colchester 1996) Third, monitoring is directly connected to point number 4. It is fundamental to receive a very needed feedback from the environment and this feedback might call for a revision of the approaches in practice. Monitoring is the only way to be sure that production is being done by working with Nature rather than against.

It has to be noted that the role proposed for buffer zones here differs and at the same times learns from the role buffer zones have played in the so called integrated conservation-development projects (ICDPs)²⁷. ICDPs' objective is "enhancing biodiversity conservation through approaches which attempt to address the needs, constraints and opportunities of local people." (Wells and Brandon 1993: 158) ICDPs

²⁷ For more information on ICDPs see Wells and Brandon 1992.

main concern is conservation or the protection of conservation practices. ICDPs came into being after recognizing that conservation cannot be sustained without the cooperation and participation of local people. But, to reiterate, the main role of ICDPs is conservation, and the inclusion of local people in development projects that take place either in the buffer zones or near the protected areas is to protect the protected areas from local peoples' discontent more than to try and integrate Humans and Nature. Wells and Brandon show the dichotomy is still intact. It should be noted before that ICDPs are not always taken forward in buffer zones.

[W]e would argue for a considerably more restricted use and application of the term buffer zone to (a) emphasize park protection and relegate the supply of local economic benefits to a secondary role; and (b) focus on specifically designated areas of land along protected area borders. Buffer zones would then have an important role to play in ICDPs, *being physically situated between protected areas and broader efforts to promote social and economic development outside park and buffer zone boundaries*. (1993: 160, emphasis added)

Beyond the different uses of the term buffer zone, it is clear from this statement that ICDPs do not intend to integrate Humans and Nature but to 'improve' the situation of local communities in order to create conditions around protected areas under which the dichotomy can continue in a peaceful manner. The Man and the Biosphere programme, on the other hand, had very different roots.

Man and the Biosphere

The UNESCO's Man and the Biosphere programme, which is compatible with protected areas' new role, came forward with the concept of biosphere reserves in 1974 and by 1995 it included 324 reserves in 80 countries. (<http://www.unesco.org/mab>)

Biosphere reserves are intended to fulfil three complementary functions: a conservation function, to preserve genetic resources, species, ecosystems and landscapes; a development function, to foster sustainable economic and human development, and a logistic support function, to support demonstration projects, environmental education and training, and research and monitoring related to local, national and global issues of conservation and sustainable development. (<http://www.unesco.org/mab/>)

According to Bower (1991), there are only a few successful examples of the total concept of biosphere reserves. In Bower's opinion this is a consequence of the lack of national interest. Wells and Brandon believe that biosphere reserves have been unsuccessful because "most biosphere reserves have been superimposed on existing parks and reserves.... As a result, the change of status to a biosphere reserve has usually been in name only, *with little change in the emphasis or management philosophy*" (1993: 159, emphasis added). This last point is crucial. Biosphere reserves, although having the intention of integrating Humans and Nature, have been associated with National Parks by local populations. In addition, government officials have largely been carrying on with the traditional approach to conservation. UNESCO made a survey to find out the degree in which biosphere reserves carried out their objectives. The promotion of regional planning, rural development and local participation in land use management ranked low and the conservation of natural or "minimally disturbed ecosystems" ranked high. (Gregg 1991: 278) However, the reason why biosphere reserves are introduced in this section, is not their past performance, but *their potential to channel a future transformation of conservation* under the goals presented in this chapter. The biosphere reserves have existed for almost 30 years, have institutional support and global reach. It would be more

effective to bring new strategies, conceptions and support to the existing MAB programme than to start a new programme from the beginning.

As a report on the MAB programme recognizes, "many biosphere reserves have evolved considerably, from a primary focus on conservation to a greater integration of conservation and development through increasing co-operation among stakeholders." (<http://www.unesco.org/mab/>) Moreover, in 1995 the International Conference on Biosphere Reserves was held in Seville and new goals and strategies were presented. These new goals and strategies propose the biosphere reserves "*become theatres for reconciling people and nature*" (<http://www.unesco.org/mab/>, emphasis added)

The strategies and directions proposed for biosphere reserves are compatible with the role suggested for protected areas on page 90. There are some crucial aspects that have to be followed if the intention is to extend sustainable management and sustainability to the entire national territory or to a certain extended region. These are 'key point' number 6 and 'goal' number II of the Seville Declaration and read as follows:

Extend the transition areas to embrace large areas suitable for approaches such as ecosystem management, and use biosphere reserves to *explore and demonstrate approaches to sustainable development at the regional scale*. For this, *more attention should be given to the transition area*. (<http://www.unesco.org/mab/>, emphasis added)

Establish, strengthen or extend biosphere reserves to include areas where *traditional life styles* and indigenous uses of biodiversity are practiced (including sacred sites), and/or where there are critical interactions between people and their environment (e.g., peri-urban areas, degraded rural areas, coastal areas, freshwater environments and wetlands). (<http://www.unesco.org/mab/>, emphasis added)

However, no example of a biosphere reserve would be complete if the 'sustainability' of the community living in the reserve is based on unsustainable practices outside the reserve, or in exploitation, social or ecological, of other communities, whether this is consciously done or not. This means that not only management practices inside the reserve are considered in the analysis of sustainability. Consumption practices and other effects the biosphere community has outside the reserve are, as mentioned in page 96, equally important.

The idea of including industrial sites on biosphere reserves or of extending a biosphere reserve to include industrial sites has to be considered. As goal number IV of the Seville Declaration proposes, "private-sector initiatives [should be encouraged] to establish and maintain environmentally and socially sustainable activities in appropriate zones of biosphere reserves and in surrounding areas, in order to stimulate community development." (<http://www.unesco.org/mab/>) Industries located in these sites can be subsidised to include better technology that leads to less contamination. Also, their impact can be better absorbed due to the high resilience of the surroundings. Whichever is the case, if the goal is sustainability, we have to find a way to include some kind of industrial production into the equation. Moreover, these will constitute powerful examples, and will make a very strong point towards the non-separation of lands for production and lands for conservation

Integrating protection and production

As Altieri points out, buffer zones can play a role and be the place for productive and conservation activities. Diversification can also take place outside the farm, e.g., in crop-field boundaries with windbreaks, shelterbelts, and living fences, which can *improve habitat for wildlife* and beneficial insects, provide sources of wood, organic matter, resources for pollinating bees, and, in addition, modify wind speed and the microclimate. *Such structures can also serve as biological corridors for the circulation of biodiversity across large-scale agricultural landscapes.* (Altieri 1999: 29, emphasis added)

In order to integrate protection and production, some radical changes have to be effected in modern agriculture. As Schroeder points out, there is a "tendency toward a *reduction* of species diversity in many commodity based systems, and a parallel trend toward more exclusive land holding rights.... these social and ecological contradictions are... structural tendencies which grow directly out of the profit-taking ethos of commodity production." (1995: 327, emphasis in the original) Together with this reduction of species diversity, modern agriculture has often been accompanied by soil erosion, pesticide pollution, social problems such as expulsion of small farmers, concentration of population in main cities (Carruthers 1997) and a production which is highly energy-dependent. Moreover, modern agricultural systems are imitated under different situations without considering the different landscapes in which they function in different parts of the world. Of course, with modern agricultural systems came an increase in crop productivity, but is this increase as necessary to feed the growing world population as agribusiness tell us? In a world in which corn is used to feed cars, potatoes

to make potato chips, farm land to make golf courses, grain to feed cattle, and yet many international food prices go down, can we talk about how necessary modern agriculture is to feed the growing population? Alternative agriculture systems, like the ones that will be discussed below, provide a way to integrate production and conservation lands and, according to the National Research Council, have the following characteristics (in USA) in comparison to modern agriculture. (Altieri 1995)

- 1) They use less synthetic pesticides, fertilizers and antibiotics.
- 2) They use less of these inputs and decrease "agriculture's potential for adverse environmental health effects without necessarily decreasing, and in some cases increasing, per-acre crop yields and the productivity of livestock management systems" (Ibid.: 182-183)
- 3) They require more information and labour.
- 4) Their adoption is discouraged by federal policies "by economically penalizing those who adopt rotations, apply certain soil conservation systems, or attempt to reduce pesticide applications" (Ibid.: 183)

Agroecosystems

According to Martin et. al.

Agroecology can best be described as an approach that integrates the ideas and methods of several subjects, rather than as a specific discipline. Agroecology has introduced a new concept which may contribute to clarifying the man/environment relationships: the agroecosystem. The challenge for agroecology, then, is to find a research approach that consciously reflects the nature of agriculture as the coevolution between culture and environment, both in the past and in the present. The concept of the agroecosystem can (and should) be expanded, restricted or altered as a response to the dynamic relationship of human cultures and their physical, biological and social environments. (1993: 216)

We can recognize two components of biodiversity in an agroecosystem: the planned biodiversity "associated with the crops and livestock purposely included in the agroecosystem..." (Altieri 1999: 21) and the associated biodiversity "...from the surrounding environments...that will thrive in the agroecosystem depending on its management and structure" (Ibid: 21). The planned biodiversity should be built considering the characteristics of the associated biodiversity and this last one can provide important ecological services to the former "such as biological pest control... nutrient cycling, water and soil conservation, etc (Ibid: 22). The goals for protected areas (presented in page 91) can be achieved if buffer zones are committed to a new role of searching for sustainability while including the surroundings in the equation. The protected area will not be completely isolated from the buffer zone and viceversa, as Altieri points out sustainable agroecosystems should be "in tune with the locally available biodiversity and with the existing environmental and socioeconomic conditions" (1999: 31). In the same way, protected areas have to be more flexible in order to collaborate with the overall goal of sustainability without compromising their own goals. As Wild and Mutebi (1997) point out, parks and people can collaborate, and protected areas can be used without compromising their purpose. In Bwindi Forest in Uganda, local people have been authorized to harvest some resources for medicine and basketry as well as to do some beekeeping inside national park borders. (Ibid.) Moreover, "in protected area management, there are a number of situations where no use may entail more risks than use" and "a policy of no use can bring greater risk to an ecosystem where communities depend on the resources" (Ibid: 48). The first part of the quotation refers to biological

situations and the second one refers to political situations. In Bwindi National Park, protection of the forest can lead to a decrease in gorilla habitat. Prohibition on timber harvesting has made secondary vegetation more common and "disturbed secondary habitats which gorillas prefer" less common. (Wild and Mutebi 1997: 50) The Cree in northern Quebec managed the beaver maintaining stable populations. When the harvest is stopped for too many years, beaver population will increase and then have a collapse until it increases and collapses again. The human management of the beavers maintained the population more stable than the 'natural' fluctuations.

Agroforestry

Agroforestry is the generic name used to describe an old and widely practiced land use system in which trees are combined spatially and or temporally with agricultural crops and or animals. It combines elements of agriculture with elements of forestry in sustainable production systems on the same piece of land. (Farrell and Altieri 1995: 247)

Agroforestry systems can be classified in agrisilviculture, silvo-pastoral, agro-silvo-pastoral and multipurpose forest tree production systems. (Ibid) One of the main characteristics of these systems is that they "optimize the beneficial effects of interactions between woody species and crops or animals. By *using natural ecosystems as models* and applying their ecological features to the agricultural system, it is hoped *that long-term productivity can be maintained without degrading the land*. (Ibid.: 248. emphasis added)

In Tabasco State in southern Mexico, the 'Chontales' practice a multiple cropping system from which they obtain, from a small area, a great variety of products that provide at the same time a balanced nutrition and insurance from the risks of market prices. (Hoffman 1992) This multicropping system promotes the symbiosis between different crops that fixes nitrogen and generates a natural fertilization superior to the chemical one because it "conserves the structure of the soil and avoids pollution." (Ibid.: 115, authors translation) Each component of the system has its 'role' and some of the 'wild weeds' are used to combat weeds that could negatively affect the crop²⁴. Finally, and crucial, is the fact that these agroforestry systems "in combination with wild plants are much closer to the biological diversity and the stratification of a natural rainforest ecosystem than any other specialized crop." "These traditional technologies...insured the economic subsistence of the community and the natural recovery of the ecosystem..." (Ibid.: 116)

Also in Mexico, under the PROAFT (Programa de Accion Forestal Tropical: Tropical Forestry Action Program) project, some Mixtec peasants decided to set aside a small portion of their lands to create a new type of protected area. The amount of land set aside varied between 0.5 and 15 hectares per producer, with a total of 167 ha in an area of more than 2,000 km². (Gomez-Pompa and Kaus 1999) "This approach may mimic a hypothetical conservationist approach of ancient cultures, which would have set up patches of "left-alone" forests throughout the environment from which biodiversity

²⁴ Chacon and Gliessman (1982) provide examples in which traditional farmers use weeds as "integral element of the agroecosystem...[that] can be managed to maintain productivity for a longer time on the same land, or utilized to improve productivity..." (8)

was able to regenerate after abandonment." (Ibid. 1999) But these patches of land also serve as reservoirs of seeds and plants that are planted there or protected during their growth by weeding around them. These patches could also be related in the case of the Maya regions to their old forest gardens. (Gomez-Pompa and Bambridge 1995) In these gardens there is an abundance of useful trees that "provide shade, firewood, food, drink, medicine, and fodder." (Ibid.) but there are also introduced plants, such as "papaya, guava, banana, lemon, orange, and other citrus trees". (Ibid.) Between 60 and 80 different utilized species can be found in an individual garden and an average of 200 can be found in each town. (Remmers and Ucan Ek' 1996) In areas with light or taking advantage of the shadow provided by trees, many other useful species (pineapple, coffee, corn, onions among others) are grown. (Gomez-Pompa and Bambridge 1995) This use of microclimates, 'collaboration' and balance between different plants, is one of the key components of permaculture. These systems are built on the local ecosystem characteristics and rely on the recovery of these characteristics for the system to be continued.

Permaculture and restoration ecology

Permaculture and restoration ecology can be combined to promote conservation and production in degraded areas that beside their value as productive and biodiversity rich areas can serve as examples to follow in similar situations.

The term permaculture, permanent agriculture, was coined 30 years ago by Bill Mollison. A few 'definitions' of permaculture will help us understand their importance in

the process of searching for more sustainable production systems that integrate with conservation strategies.

Graham Bell:

Permaculture is the conscious design and maintenance of agriculturally productive systems which have the diversity, stability, and resilience of natural ecosystems. It is the harmonious integration of the landscape with people providing their food, energy, shelter and other material and non-material needs in a sustainable way.

(<http://www.permaculture.org/about/definitions.html>)

Bill Mollison

Permaculture is a philosophy of working with, rather than against nature; of protracted & thoughtful observation rather than protracted & thoughtless action; of looking at systems in all their functions rather than asking only one yield of them & of allowing systems to demonstrate their own evolutions. (Ibid.)

Finally, Gus and LaNada James:

Permaculture combines current technology with aboriginal cultural knowledge collected over generations: to create self-contained, self-perpetuating ecological systems. (Ibid.)

In chapter one we encountered several definitions of restoration, and after examining the concept we concluded that it was inadequate to limit this concept by a view that excluded exotic species because their inclusion by humans was considered 'unnatural'. Dobson et. al. suggest two different approaches to conservation. One is the traditional one using protected areas and the second one proposes the following.

The second main approach is the restoration of degraded agricultural and industrial land, to reduce the pressure for further natural habitat conversion by providing lands that can be used for agricultural or recreational activities and even to provide new land for nature preserves. (1997: 518)

Under this approach and considering that restoration does not have to try to mimic a certain past structure of the 'natural' environment, putting together restoration and permaculture can become an interesting future endeavour. Both permaculture and restoration ecology intend to create self-sustainable systems that are built by humans but which follow the landscape and do not work against the landscape. Both systems search for resilient ecosystems which will 'demonstrate their own evolution'. While permaculture emphasizes the cultural and productive side without forgetting the importance of nature's guidance, restoration emphasizes the biological side but understands the role played by humans in the system.

The adoption of any of the different options mentioned above, or of others, will depend on each particular circumstance, but the transition will not be the same in industrial agriculture regions and in traditional agricultural regions. Although both can heavily alter the environment, they constitute different situations, they have a different background and the transition is probably going to be very different. The situation of a farmer who is trying to survive is not the same as that of a farmer who is trying to make his farm survive or the situation of an agribusiness that is trying to survive in the stock market. They have completely different relations with the land, different goals and different dependency on the land, and this has profound consequences. While peasants might be trying to diversify their crops in order to be safe from the risk of crop failure, agribusiness will be trying to expand monocultures in order to justify the high inputs they have in modern agricultural systems. Finally, it is not a coincidence that poor farmers are

expanding the agricultural frontiers into more 'natural' areas. The best lands for agriculture are being occupied by monocrops from agribusiness (Carroll 1990) which are driving poor farmers to expand the agricultural frontier. So, as Vandermeer points out, "[t]he alternative farms are alternatives for a large number of reasons, and the fact of their alternativeness may not be the determining feature of their success or failure" (1995:215).

If the conservation movement wants to solve the problem of peasants opening new agricultural frontiers or even posing pressures on protected areas in search of land, food and resources, it must search for alternatives in the surroundings of protected areas, and also mobilize to try and address the root of the problem which is sometimes located far away from the protected areas but has a direct impact on them.

Management alternatives and Indigenous Peoples

As we said above, indigenous systems are not static. In the search for new alternatives to production and conservation or in the continuance of old practices, the knowledge of western science cannot be ignored or left out of the equation. Nakashima argues that in a changing world which poses new pressures to humans and the environment, it is important that cultures look at their past.

[A] society's cultural heritage provides continuity with the past while offering the raw material for further innovation and change.... [I]t is vital to understand that the way to the future is a truly innovative and integrative process. Viewed in this manner, it is easy to understand that an appropriate compromise between old ways and new ways, outside and inside, tradition and modernity, can only be determined by the society itself. (Nakashima 1998: 9)

As Clay points out, conservation shows better results when it goes hand in hand with cultural survival and they "appear to be enhanced when indigenous peoples develop modified resource management strategies which incorporate both traditional, subsistence activities as well as intensified or new income-generating activities." (1991: 272)

Indigenous Peoples and conservationists

In 1993, a debate took place in the pages of *Conservation Biology* between Redford and Stearman, (1993a; 1993b) and Alcorn (1993). The role of Indigenous Peoples in conservation, the definition of conservation, the characteristics of Indigenous Peoples, and mainly, which are the common interests between Indigenous Peoples and conservationists, were some of the topics. The different views among the authors, in relation to conservationists' and Indigenous Peoples' goals, seem to be the main point of disagreement. Redford and Stearman do not think their interests are compatible. They suggest Indigenous Peoples might play an important role in conservation outside protected areas. Alcorn argues that conservation goals presented by Redford and Stearman are too narrow and thinks that under different goals, Indigenous Peoples "offer the best option for achieving on-ground conservation both inside and outside parks." (1993: 426) This discussion around the role of Indigenous Peoples and the goals of conservation is crucial for the future of both. However, this thesis presented in page 90 a set of goals for conservation that differ from the ones suggested by Redford and Stearman (1993a) and under these goals, the role of Indigenous Peoples is important inside and outside protected areas. Indigenous Peoples have an important role in conservation outside protected areas as Redford and Stearman seem to suggest, but also inside. The

following examples will show how indigenous management can be compatible with the goals of conservation inside protected areas (as set in this thesis) and also how indigenous management is important for conservation, outside protected areas.

According to Rajasekaran,

Indigenous knowledge as the basis for decision making is often unknown or overlooked by developmental workers seeking solutions to agricultural and natural-resource management problems.... The lack of an interdisciplinary approach to agricultural and forest management problems that includes farmer participation has been one of the several causes for the underutilization of indigenous natural-resource management systems by national planners. (1991: 389)

Many of the alternative management proposals described have been built using inputs from traditional agricultural techniques. As Altieri points out, "realistically, the search for sustainable agriculture models will have to combine elements of both traditional and modern scientific knowledge." (1995: 368). "The ecological principles extractable from the study of traditional agroecosystems can be used to design new, improved, sustainable agroecosystems in industrial countries and thus correct the many deficiencies affecting modern agriculture." (1990: 552) So traditional management systems and the indigenous cultures they are imbedded in, can play a role in sustainability in their homeland, and also contribute to the search for sustainability in different places.

The Kuna

The Kuna people from Panama constitute an example of integrating "new ideas and techniques to serve old values." (Breslin and Chapin, 1984: 31) When the Kuna receive scientists from the western world they are the ones in charge, they monitor their activity and they learn by requiring that a local assistant be hired by the scientist. (Clay

1991) This local assistant will be giving and receiving information and knowledge at the same time. In the Kuna case, their isolation, which they had to fight for, and their ethnic and political autonomy (Breslin and Chapin 1984) might be a factor that contributes to their "ability to search through the wares of Western culture, pick out those ideas and techniques that seem useful, and then tailor them to their own traditions." (Ibid.: 31) However this mix of traditional and modern scientific knowledge did not come without problems.

There is a widening gap between youth and elders in Kuna communities and this gap is starting to reach even the most isolated communities. The young do not follow tradition in the way their parents did, they do not go to the jungle every day like their ancestors did, and this comes as a direct consequence of having to be at school. (Chapin 1994). Moreover, the chants, which are the way of communicating tradition and knowledge among the Kuna, are not understood any more by the young members of the community because to understand the chants they have to know and understand the jungle to which they no longer go. The respect the Kuna have for their land is embedded in their cosmovision.

Their relation with the earth, which is seen as their mother, is sacred, as is the relation with the animals. However the traditions are not being carried on. As Chapin asks, "If the traditional belief system...disappears and is no longer a living part of their culture, will the Kuna continue to treat the earth and all of its creatures with the same respect? Will the new ecological ethic of the Western scientific tradition be able to

perform anything approaching the same function?" (1994: 100) I believe that the future will tell us the answer for this community and others facing the same question. However, the Kuna have shown that they can succeed in using western institutions to continue with traditional practices. They are trying to obtain biosphere reserve designation. They have supported the idea of creating botanical parks, which resemble their spirit sanctuaries, in the areas of the spirit sanctuaries. These sanctuaries are places in the jungle in which, according to the Kuna, the spirits hang their clothes. In these areas, certain trees can not be touched and agriculture is not practiced. However medicine plants are harvested from these reserves. (Chapin 1994) This use of western techniques to protect their land is possible due to the education and contacts the Kuna have in the international community. Moreover, it might be the only weapon they have to save their communities from outside pressures like logging, colonization, and the tourist industry. Without the youth being educated in universities maybe the Kuna would not have gained the autonomy they have, and at this point they would not even have the power to decide how to continue their way of life. The sources used to analyze the Kuna case are not recent, however, Gilles Seutin pointed out to me that recently the Kuna have closed the door to outside researchers (personal communication 7/2000). This can be interpreted as a reaction to an acculturation that might have been going out of their control.

Indigenous People's management in Thung Yai Naresuan Wildlife Sanctuary

The Karen People live in northern Thailand and part of their land, in which they have lived for at least two centuries, is in the Thung Yai Naresuan Wildlife Sanctuary.

Their subsistence and traditional way of life, maintained by at least one group in the park area, became endangered in the 1980s when a hydroelectric project threatened to flood the Sanctuary, forcing them to move and reducing the long-term survival of wildlife. (Thongmak and Hulse 1993) The Karen, together with a coalition of conservation groups, managed to stop the dam construction. However, the threat of eviction from the area was reborn when the sanctuary was declared a World Heritage site by UNESCO, and they were threatened with being removed from the park. (Ibid.) Ironically, after the area was declared a World Heritage site, the first in Southeast Asia and therefore a source of pride for the national government, they were seen as a threat for the survival of the forest and wildlife which they had struggled to save. The frustration grown from this irony is illustrated by the words of a Karen elder:

When we moved to these forests over centuries ago, Bangkok was just a small village surrounded by lush vegetation. Over these many years, we Karen have protected our forestlands out of respect for our ancestors and our children. Maybe if we had cut down the forests, destroyed the land, and built a great city like Bangkok, we would not be faced with possible eviction. (Ibid.: 167)

The Karen's agroecosystem and management of their land is based on diversity, observation and respect for the land. While the forests are managed communally, the rice paddy fields and the swidden cultivation fields are family owned. (Nakashima 1998: Thongmak and Hulse 1993) In the rice paddy fields some traditional rules have to be respected. "[F]armers never plant rice over a natural spring, on opposite banks or at the fork of a stream, in an area populated with rare birds and wildlife, or on top of a hill." (Thongmak and Hule 1993: 165) In addition, several varieties of rice are planted on the same plot as an insurance against pests and diseases, and multicropping with bananas,

potatoes and sesame acts as a natural fertilizer. (Ibid.) In the swidden plots, which are rotated every 7-10 years and cultivated only for one year, multicropping is practiced with several species, among which some cash crops are included. The recovery of the plot after cultivation is helped by several techniques used by the Karen such as cutting the trees, leaving the roots intact and using fields close to old fallow plots. After the crops are harvested, the fallow are a source of medicinal plants, tubers, area for grazing and natural dyes until the fifth year, in which they are also a source of fire wood. (Nakashima 1998)

The forests, which are maintained by the Karen in this diversified landscape, provide them with wood, bamboo, herbs, mushrooms, water and spiritual areas for ceremonies. Moreover, the forests provide important resources when some of the crops fail and they have to rely on them.

Every aspect in Karen management is embedded in a spiritual background. "The villagers seek forgiveness from nature, for they fully realize that they depend on the forest for their sustenance and that it is an offense against nature every time they gash the soil to raise crops or cut fruit from a tree." (Thongmak and Hulse 1993: 166) The forests, in addition, are a sacred place in which ceremonies associated with thanksgiving, cremation and birth are practiced. (Nakashima 1998: Thongmak and Hulse 1993)

Conclusion

The proposed continued use of buffer zones and protected areas is not a continuation of the dualism. Moreover, it recognizes the illusionary independence from Nature in which Western society lived during the last three centuries and therefore

acknowledges the need for a gradual transition. These management instruments constitute an adequate, established, and flexible group of techniques that can help make possible the transition to the new conservation goals.

The goals presented in this chapter intend to modify the Human - Nature dichotomy by expanding protected areas with a new role that aims at sustainability as the ultimate goal. Buffer zones were evaluated and presented as a useful category to carry out the transition towards the new role of conservation, and the MAB programme was mentioned and considered as a crucial component. The role of land management inside and outside protected areas was presented as equally important in the quest for sustainability and different management alternatives were suggested. These alternatives come from a mix of traditional and modern management and can serve to substitute the expansive and environmentally destructive modern agriculture. Several examples of alternative management were presented among which there were indigenous and 'non-indigenous' cases.

Cultural diversity is interlinked to biological diversity. We cannot pretend to conserve biodiversity and reach sustainability following a single form of management and a single cultural perspective. Diverse ecosystems and landscapes require diverse management techniques and diverse approaches to the land. Indigenous peoples provided that diversity of management by working with the land and not dominating the land. We have learned from this diversity of approaches and we can continue to learn. Indigenous management alternatives and the combination of those with modern ones can provide

new ways of management, but the main lessons should be to keep those alternatives diverse and to end with the illusionary separation of Humans and Nature.

CONCLUSION

This thesis identified and discussed the conceptions of "Nature" behind protected areas and the conservationist movement. It showed that the dominant western conception of Nature, the 'wilderness idea', is based on a dualistic view of the world in which humans and Nature are separated and need to be separated if we want to conserve Nature. The consequences of building protected areas around the world following a single particular conception of Nature were discussed, presenting several different pieces of legislation that defined protected areas and/or wilderness. People living in high biodiversity areas were the ones who suffered the most from this conservation strategy, even though there is a high correlation between highly culturally and biologically diverse areas.

Different conceptions of Nature and different ways of relating to Nature that come from these different perceptions were analyzed in chapter 3, in which we explored the concept of the noble savage and what we called the three myths. The importance of diversity and indigenous knowledge was highlighted and the interrelationship between management, knowledge, cosmovisions, Nature and spirituality was brought forward. In chapter 3, we conclude that there are possible alternatives to the western production-conservation dichotomy. Some of the alternative approaches to land management, which are based on a non dual perception of the land and come from a mix of traditional and modern management, were presented in chapter 4, together with new conservation goals and an analysis of the concept of sustainability. Buffer zones were analyzed and

presented as a useful category to carry out the transition towards the new role of conservation, and the MAB programme was mentioned as a crucial component. Several examples of alternative management were presented among which there were indigenous and 'non-indigenous' cases.

Protected areas alone are not going to be enough to save life as we know it from destructive practices that occur outside those areas. Moreover, without the collaboration of local communities and without a change of attitude in the management outside of those areas, even the goals established for these areas cannot be achieved. Conservationists have to follow what they have been suggesting, they have to think in the long term. If production practices outside protected areas continue, if consumption and population growth, and its causes, are not controlled, what is going to be the role of protected areas in the future? Alternatives have to be proposed to the actual dualistic management of the land, and conservationists can lead the way by presenting sustainable alternatives that come from within protected areas. Putting aside the wilderness idea will not hurt the conservationist movement or protected areas any more than the continuance of the actual path will do in the near future. Moreover, it will open the door for new alternatives to be investigated, explored, proposed and tested.²⁵ It will open new spheres to the conservation movement to act in, spheres in which it cannot enter if it does not put the wilderness idea aside. The process of searching for alternatives might sound utopian, but we have to ask ourselves, which is the utopia, searching for alternatives or pretending we can continue to live in the way we have been doing so for the last 3 centuries?

The role proposed in this thesis for protected areas and the conservation movement goes beyond buying time for new approaches, beyond saving patches of nature that will serve as reservoirs for the future, beyond recording the existence of ancient forms of relationship with the land, beyond conserving beautiful places for future generations. This new role proposes to start with new approaches now, to use the reservoirs now, to try and save the cultural diversity in which biological diversity is based now, and to bring Nature closer to humans and future generations closer to Nature now. Because the illusion of living isolated from Nature is just that, an illusion; and a non sustainable one.

²⁵ The PRATEC group in Colombia is an example of such an approach (Prattis, August 2000, personal communication).

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APPENDIX

The graphs included in this appendix were made by the author with information extracted from several different years of 'World Resources' (World Resources Institute UNDP) the oldest being 1986 and the most recent being 1998-1999. In some cases data from different years was merged to form one category like "early 80s" or "mid 80s". For example, if there was data for Zimbabwe for 1980 and from Bolivia for 1981 but not for 1980, both were merged into "early 80s".

There are two distinctive groups of graphs. One group represents the number of endangered species per country with a time line that starts in the early 1980s and finishes in the late 1990s. The other group represents the amount of land being designated as a protected area in each country and starts in 1985 up to 1997.

In several of the endangered species graphs it can be noted that there is an abrupt decline in the number of endangered species going from the early 1980s to the mid 1980s. Such an abrupt decline, as well as some of the abrupt changes from one period to another that can be seen in several countries, might be due to several factors. Some of those factors might be: new data available in the country of origin, non-serious collection of data from institutions in charge of doing so or just because the definition of what constitutes an endangered species changes in the country for whatever reasons.

The countries which appear here were selected for different reasons. It was my intention to include some of the biggest countries in the world in order to obtain as much territory as possible with few samples. Another selected criteria was countries which are considered as having areas of high biodiversity. Also, three countries from each continent were selected with the exemption of Oceania with two, and North America and Central America which combined have three countries selected. No other criteria was used in the selection of the countries from each continent and the intention was to take them as randomly as possible in order to obtain results that are as objective as possible.

For all that has been said these graphs have to be analyzed carefully and considering the above mentioned criteria. Nevertheless, I believe they constitute an interesting sample and they show an increasing tendency in the amount of endangered species from the mid 1980s up to the late 1990s, while in the same period of time the amount of land for protected areas was growing constantly. The drop that is shown from the early 1980s to the mid 1980s are highly influenced by the numbers of Central and South America which had a disproportionate decrease probably due to one or more of the factors mentioned above.

More consistent criteria, as well as more years of data, will make these tendencies more reliable, but the tendencies showed here should at least make us think that there might not be a firm relation between the amount of land designated as protected area and

the protection of biodiversity. Moreover, this will highlight the importance of ending
with the dichotomy of lands for production and lands for conservation.

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WORLD PROTECTED AREAS

WORLD ENDANGERED SPECIES

KENYA PROTECTED AREAS

KENYA ENDANGERED SPECIES

MADAGASCAR PROTECTED AREAS

MADAGASCAR ENDANGERED SPECIES

ZIMBABWE PROTECTED AREAS

ZIMBABWE ENDANGERED SPECIES

COSTA RICA PROTECTED AREAS

COSTA RICA ENDANGERED SPECIES

MEXICO PROTECTED AREAS

MEXICO ENDANGERED SPECIES

US PROTECTED AREAS

US ENDANGERED SPECIES

BOLIVIA PROTECTED AREAS

BOLIVIA ENDANGERED SPECIES

PERU PROTECTED AREAS

PERU ENDANGERED SPECIES

BRAZIL PROTECTED AREAS

BRAZIL ENDANGERED SPECIES

CHINA PROTECTED AREAS

CHINA ENDANGERED SPECIES

INDIA PROTECTED AREAS

INDIA ENDANGERED SPECIES

NEPAL PROTECTED AREAS

NEPAL ENDANGERED SPECIES

SPAIN PROTECTED AREAS

SPAIN ENDANGERED SPECIES

FRANCE PROTECTED AREAS

FRANCE ENDANGERED SPECIES

AUSTRALIA PROTECTED AREAS

AUSTRALIA ENDANGERED SPECIES

UK PROTECTED AREAS

UK ENDANGERED SPECIES

NEW ZEALAND PROTECTED AREAS

NEW ZEALAND ENDANGERED SPECIES