

THE EIGHT CONFERENCE OF THE INTERNATIONAL ASSOCIATION  
FOR THE STUDY OF COMMON PROPERTY  
CONSTITUTING THE COMMONS; CRAFTING COMMONS IN THE NEW  
MILLENNIUM

BLOOMINGTON-INDIANA  
MAY 31-JUNE 4 , 2000

COMMONS AND PROTECTED AREAS IN BRAZIL  
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**Introduction**

Common access to land resources was one of the main feature of the land structure in Brazil until the middle of the XIX Century. The Brazilian hinterland was scarcely populated and land was abundant, except in few areas where coffee and sugar-cane were planted and cattle was raised. In 1850, the Land Law was promulgated and large tracts of land were legally given by the State, on request, to private owners, although, very often, this land was in fact occupied by traditional communities which did not have land titles. In the following decades, part of these peasant communities were forced to occupy less fertile soils under forest cover using the slash and burn system. As only small areas were planted in this system, most of the land was left on fallow where the forest could recover. Peasants continue to occupy these lands without land title and in many cases, using them on a communal basis, particularly for subsistence cultivation. Land was still available and most of the peasants were poor and illiterate and as result, land titles were not demanded by them. Under the slash and burn planting system, although the house and nearby garden was considered private, land for cultivation was not, as neighbours could use them, when it was not used by the peasant who first cleared the land. This land use pattern was and is still used by many traditional communities of “caiçaras”, in the Atlantic Forest. In some cases, not only the soil was used communally, but also native trees such as “erva-mate”, from which a special tea is produced in the southern states. A special case of commons also exist in large farms ( fazendas) that were given to ex-slaves( quilombolas) who remained after the abolition of slavery in the holdings, by legal owners who did not have any children.. The 1988 Constitution finally recognized the land rights of the “ quilombolas” and over 500 legal demands are being considered by Brazilian courts. Very often, the

quilombolas want to continue owning the land communally, although the State only recognize private and public land.

In addition to these examples, fishing in many lakes, rivers and estuaries is undertaken communally by small-scale fishermen, although most these ecosystems are public property.

These remaining commons are threatened today either by the expansion of private farms, urbanization or by the establishment of protected areas, such as national parks, biological stations from where, by law, dwellers, including traditional communities have to be expelled. This model of nature conservation is creating a series of conflicts between national park administrations and traditional communities as they are no longer allowed to have their livelihood based on traditional activities such as land cultivation, forest extractivism, fishing and hunting. Unable to survive under such prohibitive conditions, traditional communities are moving to slum areas around growing cities in the Atlantic Forest and other ecosystems. It is striking that, having signed the Biodiversity Convention, Brazil should be protecting those who own a first hand knowledge about biological diversity instead of evicting them from their traditional land..

### **1. State property, protected areas and commons**

In North America, the myth of "wilderness" as an uninhabited space has fueled the move to create protected restricted-use areas. By the end of the 19th century, after the conquest and widespread massacre of the native peoples, and the westward expansion of the frontier by European settlers, the land was perceived to be uninhabited. With the movement of human settlements to the west, the mid-19th century saw natural areas being degraded by mining and forestry companies. This raised protests from the nature lovers who had been influenced by the ideas of Henry David Thoreau and George Perkins Marsh. In 1864, in his widely read book *Man and Nature*, Marsh argued that the preservation of virgin areas was justified as much for artistic and poetic reasons as it was for economic reasons and held that the destruction of the natural world threatened the very existence of humans on Earth.

In the early 19th century, artist George Catlin traveled throughout the American West. He cautioned that the Indians as well as the bison were threatened with extinction

and suggested that the native people, the bison, and the virgin areas could be equally protected if the government were to establish a national park that incorporated humans and animals "in all their primitive and natural beauty."<sup>ii</sup> This idea was not implemented, however, and the notion of wilderness as a virgin, uninhabited area prevailed. On March 1, 1872, when the decision was made to create Yellowstone National Park, the U.S. Congress decided that the region could not be colonized, occupied, or sold, but would be separated as a public park or recreation area for the benefit and enjoyment of the people. Any person who occupied any part of this park would be breaking the law and would be removed.

A North American model of conservationism, which dichotomizes "people" and "parks," has spread rapidly throughout the world. Because this approach has been adopted rather uncritically by the countries of the Third World, its effects have been devastating for the traditional populations—extractivists, fisherfolk, and indigenous peoples. This model was transposed from industrialized countries with temperate climates to the Third World, whose remaining forests have been, and continue to be, inhabited by traditional populations.

Governments rarely assess the environmental and social impact that the creation of parks will have on the local inhabitants, whose land-use practices often have preserved these natural areas over the years. They are transferred from regions where their ancestors lived to regions that are ecologically and culturally different. The hunters, fisherfolk, and other resource users who have developed a symbiosis with the forests, rivers, and coastal areas, once relocated to other areas, have great difficulty surviving due to the accompanying prohibition of their traditional activities.

These populations have difficulty comprehending how their traditional activities could be considered detrimental to nature, when hotels and tourism infrastructure are created for the use of people from outside the area. Very little of the budget for protected areas is allocated for improving the living conditions of the traditional populations, who, if encouraged, could make a positive contribution. When they have

organized and become vocal about defending their historical right to remain on ancestral land, they are accused of being against conservation. In most cases, these are people who are illiterate, without political power or legal ownership of the land, and are therefore not compensated when their land is expropriated. But, as has occurred in the Mata Atlântica (Atlantic rain forest) in Brazil, when land is expropriated from the large landowners, who often have obtained their land by usurping the rights of the traditional residents, they are royally compensated because they can prove legal ownership.

The authorities who are responsible for the preserved areas perceive the traditional inhabitants as destroyers of wildlife, which eliminates any real opportunity for their inclusion in the conservation project. In many cases, and especially in the Amazon, the so-called participation of traditional populations in the establishment of parks and reserves does not go beyond well-intentioned words that are offered to assuage international demands from such large institutions as the World Bank, the IUCN, and the World Wildlife Fund.

This model of preserving wilderness has been criticized both inside and outside the USA, and part of this opposition has come from the American "pure preservationists." John Rodman holds that the idea of parks subscribes to an anthropocentric view, that the creation of parks principally values the aesthetic, religious, and cultural motivations of humans, demonstrating that it isn't wilderness in and of itself that is considered valuable and worthy of being protected. Yet Rodman considers this mode of preservation based on the model of parks and natural reserves to be unjustly selective because it privileges natural areas that appeal to a Western aesthetic—such as forests, large rivers, and canyons—and discriminates against natural areas that are considered less noble—swamps, bogs, and marshes.<sup>ii</sup> Arturo Gomez-Pompa and Andrea Kaus have also criticized this notion of a "natural world" that privileges an urban perspective:

The concept of wilderness as untouched or domesticated is fundamentally an urban perception, a view of people who live far from the natural environment on which they depend for raw material. The inhabitants of rural areas have different perceptions of the areas that the urbanites designate as wilderness, and base their use of the land on alternate views.<sup>iii</sup>

More recently, a socio-environmental focus has been adopted in the critique of "the Yellowstone model." This new approach to conservation arose out of the collaboration between the social movements that fight for the continued access of peasants, fisherfolk, and forest people to land and natural resources and the Third World environmentalists who see the environmental crisis in their countries as being linked to the existing model of development. This movement, which Eduardo Viola and Hector Leis have called "peasant ecology,"<sup>iv</sup> critiques the imported environmentalism for its lack of consideration of the traditional communities who depend on the forests for their livelihood.

## **2.Types of Traditional Peoples' Movements in Protected Areas**

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In the 1960s, after much of the "wilderness" had been "tamed" and even destroyed in most of the northern countries, environmental preservationists, in search of this lost, untouched nature, turned their attention to the vast rain forests and savannahs in tropical countries, particularly in Africa and South America. In Brazil, the Amazonian rain forest became the focus for the construction of a new myth. Called the "lungs of the earth," this tropical forest was considered to be "empty space," only sparsely inhabited by the remaining indigenous tribes—although it is now estimated that at the beginning of the 16th century, five to seven million Amerindians were living in the region, largely concentrated in the river floodplains (*várzeas*), an even higher density than today.

The Brazilian military group in power in the sixties and seventies exploited this neo-myth in order to occupy the region, which led to the rapid transformation of vast rain forest areas into large cattle-raising and agricultural farms. It is no coincidence that most of the protected areas also began to be established during this period, in order to counterbalance the widespread forest destruction. Neither the preservationists nor the military acknowledged the presence of the people living in those areas. Indians were confined in special reserves, and non-Indian local inhabitants were resettled outside the borders of the newly created national parks and other strictly protected reserves.

Due mainly to a lack of support for this type of conservation within southern countries—particularly among the communities who live inside and adjacent to protected areas—there have been frequent failures in the implementation of protected areas. Consequently, nature conservation practices and the underlying ideas that have guided the creation of protected areas are changing in many countries around the world, including Brazil. There is a growing awareness that the reason for this lack of social support is the unsuitability of this conservation model to local realities rather than, as some preservationists argue, the lack of appreciation for the importance of protected areas. National parks and other strictly protected areas cannot simply be considered "islands" created to conserve biodiversity, since biological diversity also lies beyond the parks.

In southern countries, environmental movements are emerging that are different from those in northern countries in that they are attempting to harmonize nature conservation with the need to improve the living conditions of inhabitants of national parks and adjacent regions. These new social-environmental movements recognize the importance of the knowledge and management practices of traditional populations. In many of these countries the process of decolonization and democratization has also led to the challenging of the imported model of nature conservation. People living inside protected areas have mounted spontaneous and increasingly organized resistance against resettlement.

A significant number of traditional communities, with distinctive ways of life, with their corresponding systems of communal appropriation of resources, were irreversibly disrupted both by invasions of real estate speculators and by expulsion of community members from protected natural areas. However, more recently, especially after the return to democracy in 1984, local populations have opposed expulsion from their ancestral territories. This opposition derives from the reorganization of Brazilian civil society. This process of reorganization involves the emergence of a large number of social movements and the resurgence of active rural unions, as well as the emergence of non-governmental organizations and a set of alliances that include parts of the national and international environmental movement.

Social resistance to the expropriation of territories of communal use is manifested in a wide range of forms, as described below.

***Autonomous Local Movements Not Linked  
to Larger Social Movements***

Brazil has two types of social movement of traditional communities living in protected areas. In the *first category* there are local movements without a direct link to broad national movements. They can be considered as local reactions, of local people, against the administration of conservation areas that curtails the traditional activities of forest harvesting, hunting and agricultural practices. These movements may also include the local spontaneous reaction of people against invasion of their territory by outsiders — a process that may result in the unofficial declaration of an ‘exclusive resource use unit’ by the environmental authorities. Another type of local movement is the result of the creation of local institutions that oppose state administration of protected areas. These local institutions or organizations have succeeded in pressuring park administrations into the opening of negotiating channels concerned with the alternative use of natural resources. These local institutions, however, are incipient and weak and are still subordinate to state administration (local movements under state control). In this first category we may also include local movements that have the institutional support of NGOs .

The second category includes movements that have succeeded in building up a solid organization at local, regional and national level, with the support of NGOs, research institutions and progressive political parties (eg. National Council of Rubber-Tappers and their extractive reserves)

*a) Spontaneous Local Movements*

Spontaneous local movements are local instances of resistance and organization of small-scale local extractivist producers, in defense of their traditional territory. They are frequently local movements whose objective is to achieve control over access to natural resources, and which in some instances later came to be recognized by IBAMA as legitimate (or tolerable) forms of action.

One example of these autonomous movements is that of ‘closing of the lakes’ in the Amazon region, with the establishment of lake reserves by local Amazonian communities, who themselves have assumed control of the territories that they have traditionally occupied but which now were threatened by commercial fishers coming from the cities. For example many *vargeiros* and riverine communities of Amazonia have had access to their local fishing sites reduced by the fences of large landowners. Along with this, they have begun to suffer from the impact of overfishing by commercial fishermen from the cities, who use predatory fishing equipment. The *vargeiros* from many rivers of Amazonia spontaneously closed lakes for the sake of their survival and to protect the natural resources.

*b) Local Movements under State Control*

Some local movements in protected areas are not totally autonomous but are under control of park administrations.

One example of this type of social movement of traditional populations in protected natural areas, occurs in the state of São Paulo. In this State, about 37.5% of the existing parks are occupied by traditional and non-traditional inhabitants. These populations are heterogeneous in regards to their geographic origin, historical ties to the region, nature or existence of land ownership, and use of natural resources. Some who



moved into the park at or after the time of its creation, do not have the traditional knowledge and management systems of the local communities (*Caiçaras*). And there are traditional populations that have lived for many generations in the area which became a park, and who maintain important historical links with the land, depending for their survival on the use of renewable natural resources, about which they have a vast knowledge (Vianna et alii, 1990).

The traditional populations that live in parks were ignored by the state authorities for decades. This was the case in the State Park of Ilha do Cardoso, on the south coast of São Paulo, created in 1962, where hundreds of families lived, many of which left their birthplace because of persecution by the park wardens. After the creation of the park when hundreds of families were still in the area, a sophisticated and detailed management plan was developed for the flora and fauna and support structures for tourism and research. This plan, developed by the Forest Institute with the assistance of two ‘specialists’ from the Food and Agriculture Organization (FAO), did not even mention the existence of the inhabitants, one of the key elements of any management plan (Negreiros et alii, 1974). This plan, an example of top-down planning without participation of the inhabitants, was fortunately shelved.

#### c) Local Movements with Incipient Alliances with NGOs

Some local movements in isolated regions such as Amazonia, are supported by NGOs and research institutes, although they are not linked to any major social movement at the national level. Some examples of these are presented below.

##### — Movement of the Riverine Population (*Vargeiros*) of Mamirauá, Amazonas:

One example of recent incorporation of traditional populations in restrictive conservation areas is the project of the Mamirauá Ecological Station, in the State of Amazonas, administered by the Mamirauá Civil Society and supported by several international environmental non-governmental organizations, among them the World Wildlife Fund (WWF).

The EEM (Mamirauá Ecological Station) covers 1,124,000 ha, having been created to protect a large part of the floodplain between the Japurá and Solimões rivers.

In this huge area live 4,500 *vargeiros*, spread over 50 small communities, with an average of 14 households in each. These communities live from fishing, hunting and gathering forest products. Along with these traditional activities, however, there is logging for sale to the sawmills in the cities.

Contrary to what is required by legislation (expulsion of the population of the area), the project administrators decided to allow the *vargeiros* to remain in this territory where they have always lived. During the floods, water covers millions of hectares, making law enforcement, carried out exclusively by government officials, an impossible task.

The management team, belonging to a local non-governmental organization, believed that only with community participation could the biodiversity and culture of the region be protected. This type of management, however, is different from the establishment and imposition of 'management plans' by scientists and bureaucrats. It requires a longer time for development, since it depends on continuous consultation and a constant dialogue with local populations, inclusion of social scientists in research teams, and more flexibility in planning. It places more value on the process of decision-making than on the establishment of rigid conservation objectives. The experience of this project has demonstrated, however, that once a decision is taken by the local population, it has a much greater chance of being followed. This is demonstrated, for example, in the consensus that was reached by the local population in regards to the conservation and sustainable use of lakes, which had extreme biological and socio-economic importance.

In these discussions, the communities decided to define six categories of lakes, including totally preserved areas, such as lakes for reproduction of fish (untouchable, with the shoreline included in the area of total preservation); 'subsistence lakes' (for exclusive use of the community for subsistence fishing); 'market-oriented lakes' (for exclusive use of the community, with the fish to be sold); and 'lakes for use of the nearby urban centres' (where fishing is permitted to satisfy the needs of municipalities).

***.Local Movements with Connections to Larger Social Movements: the Extractive Reserves***

The rubber-tappers extractive reserves are the most nationally and internationally known movements or local institutions of this category. They are one of the outcome of the rubber-tappers movement, which was created in the 1970's, during the height of conflict over land in Acre. This movement organized the first blockade (*empate*) in which the organized rubber-tappers confronted the machines that were cutting down the forest and threatening their way of life. In 1975, when the first rural union was created in Basiléia in Acre, in one of the centres of high density of rubber trees, the reaction of the land owners was violent, and in many cases the houses of the rubber-tappers were burned and the leaders assassinated. The National Council of Rubber-tappers, established in 1985, had a strategy of pursuing the creation of 'extractive reserves'.

The extractive reserves are administered communally. Although not allocated in individual lots, families have the right to exploit the resources along their traditional extractivist tapping routes (the *colocações*) within the reserves. The land cannot be sold or transformed into non-forest uses, except for small areas that are allowed to be cleared for subsistence agriculture (not more than 5 ha per family, or approximately 1% to 2% of the area of the reserve).

The creation of these reserves is also based on the local organization of rubber-tappers and on programmes of education, health, cooperativism, marketing, and research into alternative systems of forest management.

The community members of extractivist reserves are aware, through their representative organizations, that a legal guarantee against aggression by large economic interests is not enough. It is fundamental that their extractivist production has economic viability, since they currently depend primarily on only a few products, such as rubber, nuts or babassu palm-trees. Rubber production is precarious because of the high cost of production and an external market unfavourable to primary products, and also because of the lower price of latex produced by monoculture plantations in the south of the country. The rubber-tappers solicit government subsidies to maintain prices for rubber on the internal market, while they look for alternative markets for products of Amazonia on the international market. To this end, a few cooperatives are organized to eliminate the middle men (Schwartzman, 1988) and facilitate marketing.

The extractive reserves gained international notoriety after the assassination of the rubber-tappers leader, Chico Mendes, in 1988. The first extractive reserve was officially created in 1988, and was called the Project of Extractivist Settlement, being

part of the National Plan for Agrarian Reform of INCRA (order # 627/INCRA). In 1990, the extractive reserves became part of the protected areas system under the authority of IBAMA (Government Decree # 98897).

The rubber-tappers movement, despite the organized reaction of large landowners through UDR (Democratic Rural Union), expanded not only into Acre, where already by 1980 around 60% of the municipalities had rubber-tapper organizations, but also into other states such as Amapá, Rondônia, and Amazonas, including 10 extractivist settlements and 4 extractivist reserves covering 3,052,527 ha, and benefiting around 9,000 families (CIMA, 1991).

In 1992, IBAMA created CNPT (National Council of Traditional Populations), for the purpose of technical support for the reserves in Amazonia and expanding the idea to other regions of the country. Currently there are other extractivist reserves outside of this region, based on extractivism of *babassu*, a natural resource of the *cerrado* (savannah vegetation in semi-arid areas), and on fishing resources in Santa Catarina State.

The movement to establish extractivist reserves is an example of defending, reinforcing and recreating threatened ways of life. Furthermore, in Amazonia it is an alternative that can enable the sustainable use of natural resources, which respects both biological diversity and the traditional way of life of populations. As Silberling stated (1992), official and public recognition of these reserves was only made possible by the strong social movement that worked together with the National Council of Rubber-tappers, looking for national as well as international legitimacy, especially in their struggle against other forms of ownership, in particular the large land holdings. They managed, through social mobilization, to raise the levels of consciousness and education of their members, creating and recreating values of group solidarity fundamental to the continuity of the creative process. The frequent meetings of the leaders of the National Council with the rubber-tappers in many regions of Amazonia helped them to organize associations that will propose new reserves. Their ideological and symbolic role has been based on the creation of solidarities involving the support of other groups, social forces and policies within and outside the country, and on obtaining financial and technical resources, along with contributing decisively to the growth of the power of local associations of rubber-tappers, who feel linked to a larger movement that transcends Amazonia.

#### **4. Traditional Communities and Biodiversity**

One of the preservationists' arguments against the existence of traditional populations in "restrictive" protected natural areas is the assumed incompatibility between their presence and the protection of biodiversity. The establishment of protected areas for the preservation of biodiversity is, however, a relatively recent objective, promoted by international environmental organizations in response to the disappearance of species and ecosystems. The earlier parks were created primarily for environmental education, research, and the recreation and enchantment of urbanites.

Recent studies have shown that the maintenance and even the enhancement of biological diversity in tropical forests is intimately related to the shifting agriculture practiced by traditional communities. The use of small areas of land for agriculture and their abandonment after the decline of agricultural production (shifting agriculture) has an effect similar to that produced by the occasional destruction of the forests by natural causes. Shifting agriculture has been a natural means of using the regenerative properties of the rain forest for the benefit of humans. Gomez-Pompa suggests that tropical ecologists have recognized that "a large part of the primary vegetation of many zones, seen as virgin, actually contain vestiges of human disturbances, and there is more and more difficulty in finding zones that are totally virgin."<sup>v</sup> Many dominant species of the primary forests of Mexico and Central America were actually protected by humans in the past, and their current abundance is related to this fact. In the case of tropical forests, it is very difficult to distinguish "virgin" forests from "disturbed" forests, especially in areas where itinerant agriculture is practiced. The establishment of protected natural areas that respect these traditional practices can contribute to socio-cultural diversity as well as to conservation of the natural world, whether it be "virgin" or already altered by traditional populations.

Protected areas, especially those with very restricted use, are more than a government strategy of conservation—they are emblematic of a particular relation between humans and nature. The spread of the U.S. mid-19th-century idea of

uninhabited national parks is based, first, on the myth of an untouched natural paradise, an image of Eden from which Adam and Eve were expelled, and, second, on what Serge Moscovici has called "reactive conservationism." This reactive conservationism of the 19th century, in which the natural world is attributed all the virtues and society all the vices, was a reaction to "culturalism," which sees in nature the infirmity of man, a threat of return to savagery to which culture must be opposed.<sup>vi</sup>

Even when urban-industrial society and the advance of science has desacralized the world and weakened the power of myths, the image of national parks and other protected areas as a paradise in which "virgin nature" is expressed in all its beauty—transformed into an object of reverence by urban humanity—confirms the idea that mythologies continue and can be reborn under the shadow of rationality. This myth of an untouched and untouchable nature not only reshapes old creeds, but also incorporates elements of modern science—such as the notion of biodiversity and ecosystem function—in a symbiosis expressed by the alliance between particular currents of natural science and preservationist ecology. The persistence of the idea of a wild and untouched natural world has considerable force, especially with urban and industrial populations who no longer have daily contact with the rural environment. This occurs despite growing scientific evidence that for thousands of years, humans have, in one way or another, interfered with many terrestrial ecosystems, so that today very little untouched virgin nature remains.

In tropical countries, the historical realization of the myth of an untouched nature in the creation of national parks and reserves continues unabated. The conflict between the views of the so-called traditional populations and the preservationist and state conservationist institutions cannot be analyzed simply in terms of the oppositions between different mythologies and symbolisms. The conflict also revolves around a political ecology, to the extent that the State imposes new spaces that are "modern and public" upon territories where traditional populations live—the parks and reserves from which, by law, inhabitants must be expelled. To those with power, these social actors are invisible. The acknowledgment of their existence and their importance to the

conservation and maintenance of biological diversity is a recent phenomenon, which is the result of the socio-environmental ecologism that has developed in Third World countries.

This new ecologism has been translated into social movements that propose a new alliance between humans and nature, the need for democratic participation in nature conservation, and a respect for cultural diversity as the basis for the maintenance of biological diversity. Park inhabitants became more visible as a result of the conflicts that arose when landless populations occupied park areas that were not effectively administered by the government. Traditional populations and newcomers have recently begun to organize against the enforcement actions of the State, which, in most cases, impede the social and cultural reproduction of these human communities.

In Brazil, at the federal level as well as in some NGOs, the question of the presence of traditional inhabitants in national parks and other conservation areas has been dealt with from a conservative point of view, one that is still influenced by urban perceptions of the natural world and wilderness. In underdeveloped countries, conservation could be better achieved through the real integration and participation of the traditional populations who to a great extent have been responsible for maintaining the biological diversity that today we are trying to rescue.

However, there is also a need to guard against a simplistic view of the "ecologically noble savage."<sup>vii</sup> Not all inhabitants are "born conservationists," but among them there exist traditional populations with a vast store of empirical knowledge of the workings of the natural world in which they live. We need to better understand the relations between the maintenance of biological diversity and the conservation of cultural diversity. An interdisciplinary view is urgently needed, whereby biologists, forestry engineers, sociologists, anthropologists, and political scientists, among others, work in an integrated way in cooperation with traditional populations. As Gomez-Pompa and Kaus have said, we are discussing and establishing policies on a subject that we know little about; and traditional populations, who know their environment better than us, rarely participate in debates and decisions about conservation management.

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- <sup>i</sup>. J. McCormick. *Rumo ao paraíso* (Rio de Janeiro: Ed. Relume-Dumará, 1992).
- <sup>ii</sup>. John Rodman, "What Is Living and What Is Dead in the Political Philosophy of T. H. Green". *The Western Political Quarterly* 26 (1973): 566-86.
- <sup>iii</sup>. Arturo Gomez-Pompa and Andrea Kaus, "Taming the Wilderness Myth." *Bioscience* 42/4 (1992): 273.
- <sup>iv</sup>. Eduardo Viola and Hector Leis, "Desordem global da biosfera e a nova ordem internacional: o papel das organizações do ecologismo." In Leis, H. (org.). *Ecologia e política mundial* (Rio de Janeiro: Vozes/Fase, 1991).
- <sup>v</sup>. Arturo Gomez-Pompa, et al, "The Tropical Rainforest: A Non-Renewable Resource." *Science* 177 (1992): 762-65.
- <sup>vi</sup>. Serge Moscovici, *Hommes domestiques, hommes sauvages* (Paris: Union Générale d'Éditions, 1974).
- <sup>vii</sup>. K. Redford, "The Ecologically Noble Savage." *Orion* 9/3 (1990): 25-29.